REGULAR MEETING & WORK SESSION OF THE CITY COUNCIL

November 13, 2018

ADDISON TOWN HALL

5300 BELT LINE RD., DALLAS, TX 75254
5:30 PM RECEPTION & WORK SESSION
7:30 PM REGULAR MEETING

1. Call Meeting to Order

WORK SESSION

2. Reception for the **2018 Addison Citizens Academy Graduates.**

3. Present and Discuss **Midway Road Landscape Coordination with the Master Transportation Plan.**

4. Present and Discuss the **Findings of the Addison Circle/Cotton Belt Special Area Study.**

REGULAR MEETING

Pledge of Allegiance

Announcements and Acknowledgements regarding Town and Council Events and Activities

Discussion of Events/Meetings

5. Present **Certificates to the 2018 Citizens Academy Graduates.**

6. 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.

7. Consider Action to Approve the **October 22, 2018 Special Meeting , October 23, 2018 Work Session and Regular Meeting and October 29, 2018 Town Meeting Minutes**

8. Consider Action to Approve a **Resolution for a Professional Engineering Services Agreement with Eikon Consulting Group, LLC, for the Construction Management Services Associated with the Addison Athletic Club HVAC Project and Authorize the City Manager to Execute the Agreement** in an Amount not to Exceed $66,720.

9. Consider Action to Approve a **Resolution for a Conduit Occupancy License Agreement Between the Town of Addison and MCImetro Access Transmission Services Corp. d/b/a Verizon Access Transmission Services, for Occupancy of the Town of Addison Underground Conduit System on Belt Line Road Between Midway Road and Marsh Lane**, and Authorizing the City Manager to Execute the Agreement.

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10. Present, Discuss, and Consider Action on a **Resolution for a Construction Agreement with Felix Construction Company for the Construction Operations and Installation Services Associated with Surveyor Pump Station Pump #1 Replacement and Authorize the City Manager to Execute the Agreement** in an Amount Not to Exceed $79,000.

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11. Consider Action to Approve a **Resolution for an Events Sponsorship Agreement with DCO Reality, Inc., (UDR) for the Purposes of Sponsoring Events at Vitruvian Park to Include, but not limited to, Vitruvian Nights Live, Vitruvian Salsa Nights and the Vitruvian Holiday Lights Display and Authorize the City Manager to Execute the Agreement** in an Amount not to Exceed $185,000.

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12. Consider Action to Approve a **Resolution for a Contract with The World Affairs Council of Dallas/Fort Worth for Consulting Services and Authorize the City Manager to Execute the Agreement** in an Amount not to Exceed $60,000.

Regular Items

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13. Hold a Public Hearing, Present, Discuss, and Consider Action on an **Ordinance to Amend Article XX, Special Uses, Item (39) Microbrewery, and Article XXX, Definitions, By Revising the Definition of Microbrewery**. Case 1785-Z/Town of Addison.

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14. Hold a Public Hearing, Present, Discuss, and Consider Action on an Ordinance Approving **Development Plans for the Development of Vitruvian West Phase II and III, Including Site Plan, Landscape Plan, Building Elevations, and Floor Plans for 767 Multifamily Units, Including Amenities, on a 6.854 Acre Property in an Existing Planned Development District (PD O07-034 as Amended By O16-017),**

Generally Located on the Northeast Corner of Marsh Lane and Vitruvian Way, and Approving Waivers to Construction Materials. Case 1786-Z/Vitruvian West Phase II and III.

15. Present, Discuss, and Consider Action on an **Ordinance Granting a Meritorious Exception from Various Sections of Chapter 62 of the Code of Ordinances for Flower Child Located at 5290 Belt Line Road Suite 100 on the South Side of Belt Line Road east of Montfort Drive in Order to Permit Additional Attached Signage and Window Signage.**

16. Present, Discuss, and Consider Action on a **Resolution for an Agreement with Infinity Contractors International, LTD., for Construction Operations and Installation Services on the Addison Athletic Club HVAC Project and Authorize the City Manager to Execute the Agreement** in an Amount not to Exceed $1,180,035.

17. Present, Discuss, and Consider Action to Approve a **Resolution for a Grant Funding Agreement with Metrocrest Chamber of Commerce and Authorize the City Manager to Execute the Agreement** in an Amount not to Exceed $35,000.

18. Present, Discuss, and Consider Action Related to **Potential Municipal Debt Issuances for the Midway Road Rehabilitation Project and Funding of the Addison Grove Development Incentive.**

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: _____
Irma Parker, City Secretary
DATE
Time:

THE TOWN OF ADDISON IS ACCESSIBLE TO PERSONS WITH DISABILITIES. PLEASE CALL (972) 450-7090 AT LEAST 48 HOURS IN ADVANCE IF YOU NEED ASSISTANCE.

Work Session and Regular Meeting **2.**

Meeting Date: 11/13/2018

Department: City Manager

AGENDA CAPTION:

Reception for the **2018 Addison Citizens Academy Graduates.**

BACKGROUND:

Citizens Academy is a three-day instructional program designed to provide residents of Addison with a strong working knowledge of civic and municipal operations of the Town of Addison. The program consists of three Saturday sessions covering a variety of civic and local government topics including City Council roles and responsibilities, economic development, finance, infrastructure and development services, and many other Addison-focused municipal topics. Participants must attend all three days to receive their certificates. At the conclusion of the program, a reception is held during the work session of the City Council in honor of the graduates of the program.

Following the reception, graduates are presented with their certificates during the regular session of the City Council.

RECOMMENDATION:

Information only, no action required.

Work Session and Regular Meeting **3.**

Meeting Date: 11/13/2018

Department: Parks & Recreation

Pillars: Excellence in Transportation Systems
Optimize the Addison Brand

Milestones: All roads in an acceptable condition and well maintained
Define and promote Addison Identity

AGENDA CAPTION:

Present and Discuss **Midway Road Landscape Coordination with the Master Transportation Plan.**

BACKGROUND:

In 2012, Addison voters approved $16 million in General Obligation bonds for the revitalization of Midway Road from Spring Valley Road to Keller Springs Road. The roadway is failing due to age, heavy truck traffic, and sub-grade soil issues. Design for the project began in October 2014. The original project scope included a concrete roadway reconstruction, median reconstruction, Americans with Disabilities Act (ADA) compliance improvements, and an Oncor lighting package. As design progressed, the replacement of the water, sanitary sewer, and storm water lines was added to the scope due to the age of the utility lines and the likely need for replacement in the near future. Preliminary cost estimates for the project are $38 million (in 2016 dollars). The design had been placed on hold pending the outcome of a discussion concerning funding for the project.

While the design was on hold, the Town adopted a new Master Transportation Plan (MTP). The MTP updated the requirements for the width of streets, as well as the width and location of the pedestrian amenities along those streets. The plan also identified Midway Road as a corridor for an off-street trail.

As the consultant is incorporating the MTP into the design of the project, several concerns have arisen regarding the Town's requirement for visibility triangles and the placement of trees along the corridor. Staff will present recommended modifications to the proposed cross section and will ask Council for direction related to the implementation of the MTP along Midway Road.

RECOMMENDATION:

Staff requests direction from Council.

Attachments

Midway Road Landscape Coordination with the Master Transportation Plan

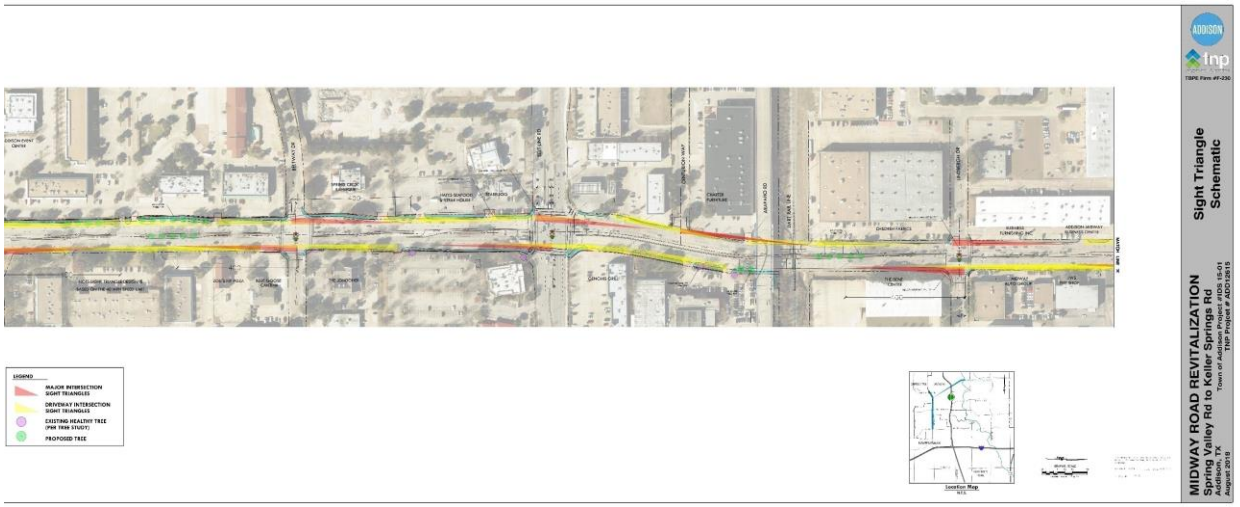
November 13, 2018

Midway Road Background

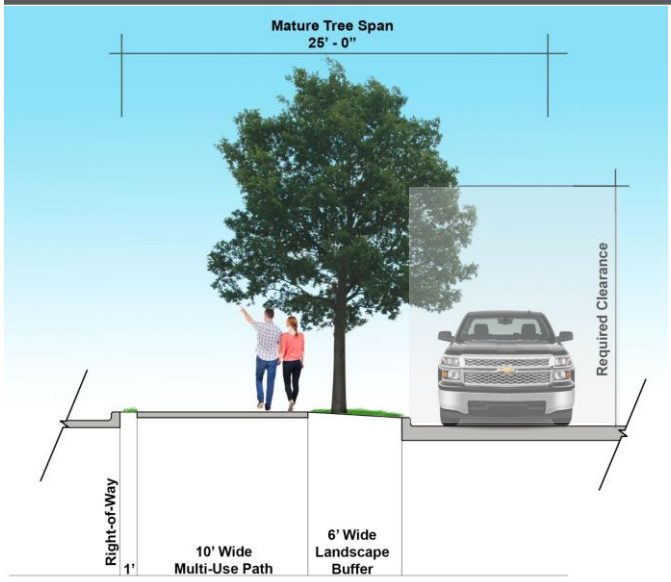
- Council directed staff to apply the Master Transportation Plan (MTP) to Midway Road.
- Council directed staff to replace as many trees as possible along Midway.
- The MTP was intended to be applied to a 25' wide corridor. Due to existing conditions along Midway a minimum 16' wide corridor is currently in the design. Staff is recommending changes to this width.
- As the consultant is incorporating the MTP into the roadway design several concerns have arisen:
  - Per the Town's Transportation Technical Design Standards, the engineering visibility triangles must be applied to both streets intersections and driveway approaches. Those standards state that "adequate sight distance at the intersections of roadways with other roadways and with driveways must be ensured. On Midway Road, the required engineering visibility triangle is 15'X400' from the intersection of a roadway or driveway."
  - Applying the required visibility triangle will not allow trees to be planted within the 6' landscape buffer allotted in the MTP.

Required Visibility Triangles

Required Visibility Triangles



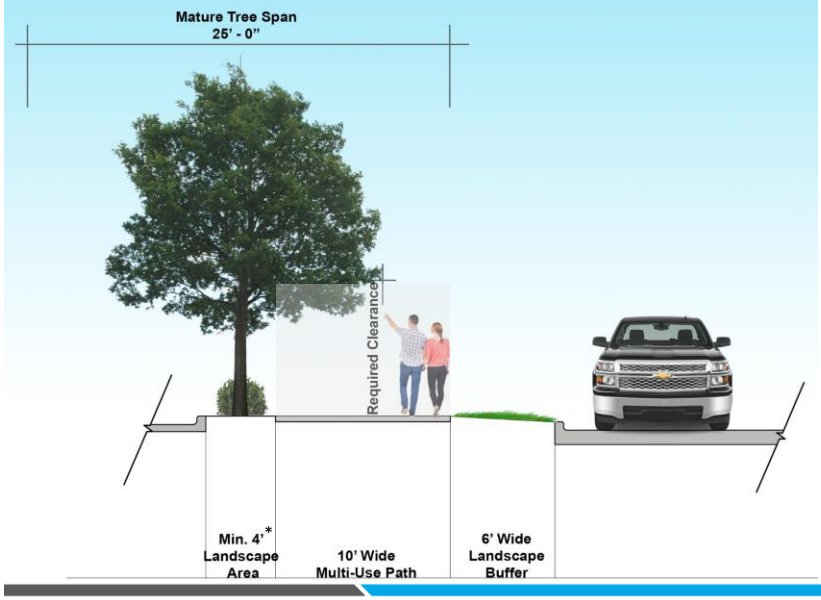
Master Transportation Plan Cross Section



- **Current Design** - Corridor is 16' Wide with 1' transition to existing conditions.
  - Trees would fall within the required 15' x 400' visibility triangle, and are not allowed per the Town's Technical Design Standards.
  - Trees planted 4' from the roadway would have conflicts with larger vehicles.
  - Required 14' clearance over the roadway would impact the shape of the trees.
  - More of the road would be shaded than sidewalk.

5

Proposed Revision – Preferred Scenario

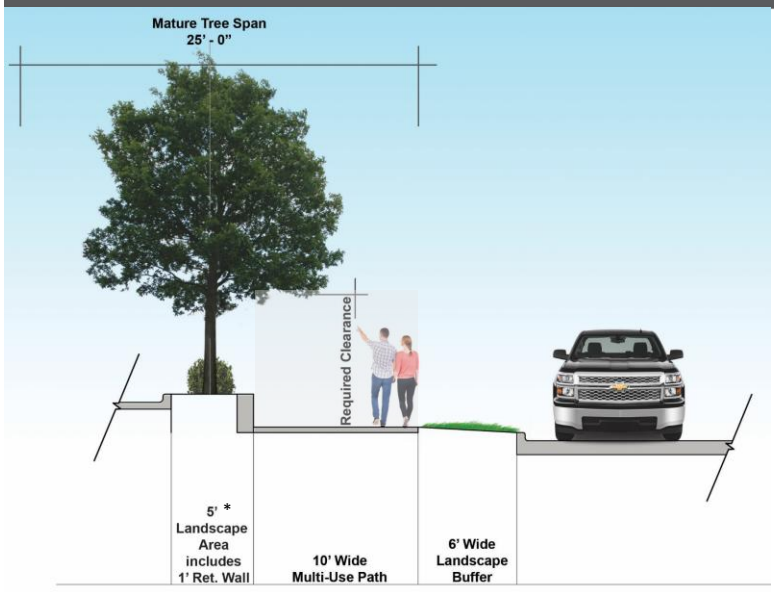


- **Proposed Corridor** – Width increased to 20' wide.
  - Place trees and screening shrubs between private property and the trail, away from the roadway.
  - Where space allows, or where parking is drastically impacted, create a 6' buffer between the trail and back of curb.
  - Required clearance over trail is less stringent than over the roadway and less impactful to the tree.
  - This proposal would better shade the sidewalk.

* Proposed landscape area may vary by 6" to avoid encroachment of existing parking.

6

Proposed Revision – Preferred Scenario

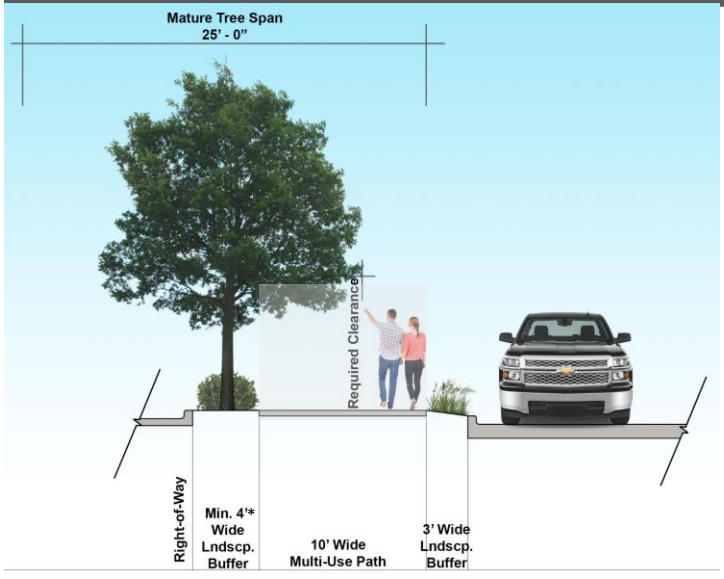


- **Proposed Corridor With Retaining Wall** – Width increased to 21' wide.
  - Place trees and screening shrubs between private property and the trail, away from the roadway.
  - Where space allows, or where parking is drastically impacted, create a 6' buffer between the trail and back of curb.
  - Required clearance over trail is less stringent than over the roadway and less impactful to the tree.
  - This proposal would better shade the sidewalk.

* Proposed landscape area may vary by 6" to avoid encroachment of existing parking.

7

Proposed Revision – Alternative Scenario



- **Proposed Corridor for Narrow Areas**– Width increased to 17' wide.
  - Plant the 3' buffer strip with ornamental grasses, perennials or shrubs that are 30" or less in height.
  - Allow for a minimum 4' wide buffer adjacent to ROW that would allow for tree planting and screening shrubs.
  - Required clearance over trail is less stringent than over the roadway and less impactful to the tree.
  - This proposal would better shade the sidewalk.

* Proposed landscape area may vary by 6" to avoid encroachment of existing parking.

8

Staff Recommendation

- **Preferred Scenario-** Where additional landscape areas area available or proposed project is impacting existing parking, enlarge the landscape area to accommodate a wider planting area. Overall corridor width would be 20 ' – 21' wide. **This would apply to approximately 67% of the corridor, excluding transitions to corners.**

- **Alternative Scenario**– Where Preferred Scenario is not feasible, modify the proposed cross – section in the Master Transportation Plan to decrease the landscape buffer by the roadway from 6' to 3' wide. Create a 4' wide planting area between the ROW and multi-use path to accommodate planting of canopy trees. Overall corridor width would be 17' wide. **This would apply to approximately 33% of the corridor, excluding transitions to corners.**

- Apply the Belt Line 1.5 Design Palette to Midway Road. Staff recommends incorporating the proposed color scheme and plant palette for Belt Line 1.5 into the design of Midway Road.

- Proposed landscape areas between the back of curb and ROW are often utilized by the property owners to meet landscape ordinance requirements and is maintained by the property owner. Staff recommends applying this standard to Midway Road.

Work Session and Regular Meeting **4.**

Meeting Date: 11/13/2018

Department: Infrastructure- Development Services

Pillars: Excellence in Transportation Systems

Milestones: Develop a Cotton Belt Strategy

AGENDA CAPTION:

Present and Discuss the **Findings of the Addison Circle/Cotton Belt Special Area Study.**

BACKGROUND:

In November 2017, the City Council approved a contract with Kimley-Horn and Associates, Inc., to facilitate a special area study for two areas adjacent to Addison Circle. The first area includes the properties adjacent to the Cotton Belt Rail Line consisting of approximately 29 acres. The second area includes the 8 acres abutting Addison Circle on the east side of Addison Road from Airport Parkway to Morris Avenue.

During the study process, the consultant and staff completed a strategic assessment of the study area to review existing conditions, identify opportunities and constraints, and conduct a high-level market analysis. The team received stakeholder and community input using stakeholder interviews, four committee meetings, and two community workshops. As part of the study process, the consultant developed two alternatives for the study area for consideration before crafting a preferred development concept based on the committee and community feedback. Staff and the consultants presented the findings of the study to the Council on August 14, 2018. At that time, Council had several questions that staff and the consultant have answered.

Staff and the consultant will present an overview of the study findings and answers to Council's questions, and will then facilitate additional discussions with the Council to receive guidance on the proposed vision statement, guiding principles and the preferred development concept. Should Council approve of the study findings, staff will begin the process of formally amending the Comprehensive Land Use Plan.

RECOMMENDATION:

Staff requests direction from Council.

Attachments

QUESTIONS ASKED BY COUNCIL AT THE AUGUST 14, 2018 COUNCIL MEETING

Question 1: Given discussions about becoming a regional draw and the future of special events, do we want to give up the green space in between the transit center and Addison Circle Park?

Response: This is ultimately a policy question for the Council on which to provide guidance. Currently, the vacant land in between the transit center and Addison Circle Park is used a few times a year to support the Town's major special events. During these events, this area is used for the carnival and as the "back of house" area. According to the Comprehensive Plan, the Town purchased these properties in the 1990s and has been warehousing them with the intent to "lease or sell its holdings on the north side of the track to a developer who will build a high-density mixed-use development around the rail stop" (Page 298). While any future development will impact the Town's events, staff and the consultant do not believe that choosing one excludes the other.

If the land is developed, staff will adapt how the events are organized. Conceptually, there are several options for adapting the Town's events. For example, if Festival Way becomes the new entryway for events, then Addison Circle Drive or Addison Road could host the carnival and the Conference Centre parking lot could be used as the "back of house" area. There may also be opportunities through the development process to integrate the events into the developed area through such things as shared parking agreements and access agreements. Staff is aware that the Town's events will need to evolve and believes that the issue should be explored further once the details of a proposed development are known and future opportunities and constraints are clearer.

Reorienting the event may even be warranted regardless of whether the land develops or not. In the future, if a significant number of guests arrive from the transit center, it may not make sense for the entrance of the event to remain on the northeast corner of Addison Circle Park, with the "back of house" area closest to the rail station. It may be more convenient to reorient the event layout in some way to create an entrance closer to the Cotton Belt. Again, this is something that will need to be explored in more detail at the appropriate time.

In addition to Special Event considerations, staff and the consultant heard strong interest from the community regarding using the land within the study area to facilitate a variety of new activities and uses. At the initial community Workshop, attendees were polled to determine the community's interest in a variety of uses for future development within the study area. From a housing perspective, 84.6% supported the addition of housing for active seniors and 81.6% supported additional housing for young professionals. There was also strong support for a variety of restaurant, retail and entertainment uses including a restaurant incubator (79.5%), performance and entertainment spaces (71.1%), a food hall (76.9%), and both neighborhood and destination retail (77.5%). Furthermore, there was support for commercial uses including a hotel (56.4%), space for small businesses (82.1%), and space for corporate offices (56.8%).

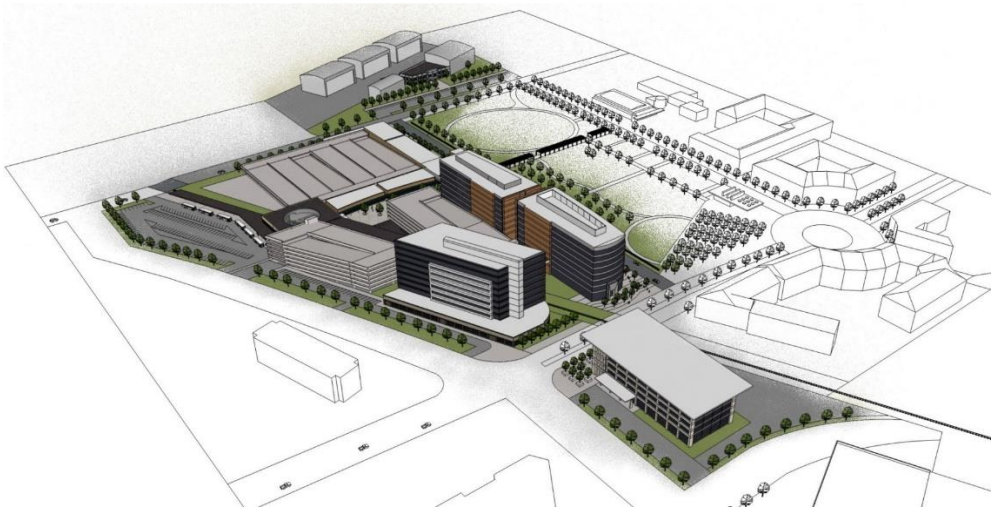
Throughout the study process, staff and the consultant heard the committee's desire to use this development to create a regional destination that would draw additional people to Addison. While Special Events are an important part of Addison's brand, the desire was to create a unique destination that would provide a more consistent draw throughout the year. This was reinforced during a tour of local transit-oriented developments that all included some sort of regional draw to make them successful. This input guided the strategic direction for the study area laid out in the report.

Question 2: What does it mean to preserve the character of Addison Circle?

Response: This is intended to mean that new development should carry forward the look and feel of what exists today in Addison Circle. This includes continuing similarly scaled development, a mix of uses, ensuring high quality of design and attractive open spaces and sidewalks. In practice, staff anticipates that the Urban Center zoning requirements that apply to Addison Circle would be applied to the study area as well, when feasible, and should serve as the foundation of any new zoning requirements where it may not be feasible to apply the exact requirements. Additionally, there was a significant amount of discussion by the advisory committee about maintaining the quality of experience as people walked from the transit center up to Addison Circle Park, mimicking the Addison Circle streetscapes, being mindful about building orientations that do not block sightlines, that encourage the construction of underground parking structures or that hide the parking, thereby creating inviting pedestrian plaza areas between the buildings.

Question 3: Do we desire to increase urban scale adjacent to the transit center, as opposed to a less dense use such as Townhomes?

Response: This is another policy question for Council to discuss. Previously, the plan for this area was to maximize density, even to a greater level than what currently exists in Addison Circle today. As mentioned previously, the Comprehensive Plan indicates that the Town purchased these properties with the intent to hold them for a high-density mixed-use development associated with the rail station. Furthermore, the Town has conducted prior land studies of the area which also contemplated high density development. The plan below was conducted in early 2011 and included several high-rise office buildings and a potential hotel.



Question 4: What is being proposed as a gateway feature to Addison Circle?

Response: The term gateway is used in two contexts within the report. First, generally, there is a desire that, while being a destination itself, future development adjacent to the rail station should also serve as a gateway to the rest of the Town. Second, a Guiding Principle of future development would be to continue with Addison Circle's strong tradition of public art. This could include distinctive landmarks, including some sort of gateway feature. If this is something that the Town ultimately explores, this will warrant more specific study at the appropriate time.

Question 5: How will this development serve as a jumping off point to the rest of Addison?

Response: In the Environmental Impact Statement, DART estimated that the Addison station would be the second highest station in overall ridership with approximately 1,700 riders daily and would have the highest walk egress for all stations. It also noted that Addison Transit Center is one of the busiest transit centers in the DART system with 4,800 bus riders per day. As discussed above, it was important that the rest of Addison be accessible to these riders. There are several ways to accomplish this. These are known collectively as first mile/last mile solutions, meaning solutions that facilitate getting people from the transit stop to their intended destination. To do so, there are several elements that the Town should begin to consider. These might include additional trail and sidewalk connections, the circulator bus concept suggested by the Master Transportation Plan, bike and electric scooter sharing services, as well as ride sharing services such as Zipcar, Uber, and Lyft. Additionally, the Town might consider investing in communication that will provide station users with additional information about destinations in Addison. These might include signage or digital solutions. For example, DART is working on an app that would promote first mile/last mile options to transit riders. The study contemplates that these types of solutions would be explored at a later date as part of the implementation matrix so that such tools are in place once rail service begins.

Question 6: What is the initial feel at the transit center and train station?

Response: This will be determined during the design/build phase of the Cotton Belt Project. DART has set aside funding and intends to allow cities some flexibility to design the stations in a way that is consistent with their communities. These design discussions have not started yet. Any improvements beyond those funded by DART would need to be funded by the Town. This is another topic that will need additional discussion at the appropriate time.

Question 7: What is the appropriate density to produce a viable, walkable transit-oriented development?

Response: This is a difficult question to answer with specificity, as it is a very context sensitive determination. Generally, transit-oriented development should be compact and highly-dense to maximize the number of people within walking distance of the transit service. In the academic paper, *Urban Densities and Transit: A Multi-Dimensional Perspective (2011)*, the authors calculated that a density level between 30-45 people per acre place developments within the top quarter of cost-effective rail investments, meaning how well transit systems recovered their costs. When converting this to people per square mile, this would equal 19,200-28,800 people per square mile.

Typically, planners discuss density based on the number of people per acre. In the book, *The New Transit Town: Best Practices in Transit-Oriented Development* (2004), the authors state:

> *"Though density and concentration of activity sufficient to support transit operations are TOD essentials, there is no absolute density standard for TOD. Given the variety of urban forms and settings in the case studies, it is not surprising that project densities vary from under 10 to one hundred units per acre. What is consistent is that TOD density matches or exceeds the highest densities found elsewhere in the community […] While conventional ordinances often establish density maximums, TOD ordinances are more likely to establish minimums in order to ensure density adequate to support transit orientation. On mid- and large-sized sites there is generally a density gradient, with lower densities (and heights) at the perimeter of the property and higher density at the center, reflecting the fact that TOD is generally the highest density development in the neighborhood."*

It is also important to distinguish between density and building heights. While the two are related, there are other factors to consider that drive each individually. In the draft preferred development plan, one consideration was creating the wide, open plazas that would promote the human scale of development and create inviting places for people to traverse between the transit center and the rest of Addison Circle. By increasing the open space on the ground, the buildings had a smaller footprint and were pushed taller. The same density could be achieved with shorter buildings with larger footprints, but this would reduce the plaza areas.

Question 8: Is the preference for single-use buildings versus multiple-use buildings?

Response: Staff believes that, in active areas, special attention should be given to creating active ground floor spaces. For example, a single-use office building will often be dark and desolate during nights and weekends. Alternatively, an office building with appropriate ground floor retail can promote more active and inviting environments that are more favored by people and that are safer.

Staff also believes that buildings should be constructed in a way that allows them to be flexible and adaptable to different uses over time. It is likely that buildings constructed today will stand for the next 50-75 years, if not longer. It is important that buildings are designed to accommodate not only what is appropriate today but also allows them to adapt to future market trends and preferences. This gets to the discussion about creating retail-ready spaces in certain buildings so that they can respond better in the future.

Question 9: Are we creating an urban environment or a suburban environment?

Response: This also gets to the question about density and the built environment. In some ways, the lines between urban and suburban are beginning to blur in developments such as Addison Circle, Legacy West and City Line, where more urban nodes are in otherwise suburban places. Overall, Addison Circle is viewed as an urban environment, and, as discussed above, best practices would indicate that the areas closest to the transit station would be the most dense/urban in form.

Question 10: How likely are high-density office buildings off the Tollway?

Response: This is a valid question that is difficult to answer with certainty. Taller buildings with structured parking are more expensive to build, and, therefore, require higher lease rates. There is a question as to whether new high-rise office buildings would be able to compete with lower density, surface parked buildings or other existing office buildings. The assumptions used during the study were that office demand would continue to increase within the trade area and rents would be driven higher. The location adjacent to the Cotton Belt and Addison Circle Park, the proposed plazas and ground floor activities could also be amenities that would command higher rental rates.

Additionally, the Town's ownership of the land allows more flexibility than in a typical development situation. If density is an important goal, the Town could incentivize such development by reducing or eliminating land costs. There are other incentives the Town may be able to offer to encourage higher density development. As a reminder, there is $3 million in bond funds approved for a parking structure near Addison Circle Park. The Town could enter in to a public private partnership to share in the cost of constructing a garage, either above or below ground, and mitigate some development costs. Shared parking arrangements or reduced parking requirements given the adjacency to transit might also be encouraged to reduce development costs.

Question 11: What is envisioned as the regional destination?

Response: The plan does not call out a specific proposal for a regional destination. It could be any number of uses. The draft preferred development plan assumes that it would be on the ground floor(s) of the office buildings. The policy question is whether it is important for future development in this location to include some sort of regional draw. If so, the Town would solicit developer interest to determine what types of regional destinations would be viable in this location and would assess specific uses and plans later.

Question 12: How does a boutique hotel fit in to this plan and the overall Addison Circle neighborhood?

Response: The idea to include a hotel in the preferred development plan came from a variety of inputs reviewed by staff and the consultant. Hotels were suggested as a potential use first during the stakeholder interviews at the beginning of the process. As mentioned previously in the response to Question 1, 56.4% of the community indicated support for a hotel within the study area. This input mirrors one of the strategies listed in the Comprehensive Plan, that states that Addison should "work to encourage development of new hotels in areas that are suitable for supporting them, such as Village on the Parkway, Addison Circle, and Vitruvian Park" (Page 69).

Staff and the consultant believe that the boutique hotel fits into this plan and Addison Circle very well. There are no hotels within Addison Circle. Having a new hotel within walking distance of many residences would offer their guests an attractive location to stay. The hotel could also support the offices contemplated in the draft preferred development plan.

Additionally, the Town has long discussed how to make the Conference Centre more competitive. Having a hotel operate in the vicinity of, and in partnership with, the

Conference Centre, could allow the Conference Centre to attract multi-day conferences. It could also enable the Conference Centre to have an on-site caterer and offer on-site tastings to potential clients. Parking has, at times, been an issue for larger events at the Conference Centre. This might be addressed through additional parking associated with the hotel. Additionally, the Conference Centre lacks any type of breakout space. A hotel could be designed to include such space and could potentially expand the variety of events that the Conference Centre might compete for.

The inclusion of a hotel within the Addison Entertainment District would also allow the Town to pursue additional taxing authority that could fund qualifying projects within the district that promote tourism. Pursuing this authority would require approval by the Texas legislature and would require additional discussions to determine whether this should be explored, but the first step is to have a hotel within the district.

Lastly, it should also be noted that the edge of the airport noise contours cut through the southwestern edge of the property where the hotel is being suggested. While the proposed urban residential may encroach slightly into the noise contours, staff and the consultant wanted to limit residential encroachments as much as possible. Since this location is not suitable for residential uses, another use was needed for the southern edge of this property. Neither office or retail make sense in this location. Therefore, a hotel was proposed as a viable alternative.

Question 13: How prescriptive do we want to be in giving direction to future development within the study area?

Response: This is another policy question for the Council. There are four components to the study report:

1.) Vision Statement
2.) Guiding Principles
3.) District Strategic Direction (for Addison Circle West and Addison Central)
4.) Preferred Development Plan (for Addison Circle West and Addison Central)

Staff and the consultant recommend that the level of flexibility relate to the component that is being discussed. Starting with the first component and moving down to the fourth, these elements build on one another. The Vision Statement serves as the foundation for future development. Once agreed upon, it provides the most general direction and should be the least flexible. The Guiding Principles describe what the Town believes to be important elements of any future development within the study area. In combination, these principles should achieve the vision. There may be some limited flexibility here, but any adjustments should continue to achieve the vision. The District Strategic Direction provides a narrative description of future development within each of the two districts that make up the study area. There can be more flexibility here as long as the development is still in keeping with the vision and Guiding Principles. The Preferred Development Plan is the most detailed element of the study and is intended to be the most flexible. It is included in the study to provide a visual example of how the Vision Statement, Guiding Principles and District Strategic Direction can be achieved. Often, it is easier to explain these concepts with the aid of a visual. While the Preferred Development Plan is an option, it is not intended to be the only option.

Additionally, the study includes exact square footages and unit counts for different uses. Again, this is intended to be an option, but not the only option. An important piece of the study process was to conduct a market analysis of the proposed uses to determine if what is being proposed would generally be acceptable to the market. Therefore, numbers were put to the Preferred Development Plan. These, however, are not intended to be binding or limiting in any way.

QUESTIONS SUBMITTED BY COUNCIL SINCE THE AUGUST 14, 2018 MEETING

Question 14: One of the Committee discussions has been that it would be good for this area to be a regional draw. I have wondered if it would not be better to reserve the area south of Addison Circle Park for a yet-to-be-determined something than to zone it or indicate a preference for example for office/residential. What is the Consultant's and Staff's perspective on this strategy?

Response: As mentioned in the response to Question 1, staff and the consultant do not believe that the current Preferred Development Plan excludes a regional draw or indicates a preference between office and residential, except where residential is excluded because of the airport noise contours. The draft plan anticipates that the buildings between the transit center and Addison Circle Park would be multi-use buildings, with the regional draw occurring on the bottom floors with office or residential above.

Question 15: If this strategy were to be chosen, is it sufficient to reserve the area south of Addison Circle Park or should a larger area be considered?

Response: Regional draws come in many forms and have different spatial requirements. Staff and the consultant believe that the area in between the transit center and Addison Circle Park is sufficient to support many types of regional draws.

Question 16: What provisions are envisioned to ensure there are clear, inviting corridors that would encourage visitors to go to the Circle and Beltline?

Response: First, staff and the consultant believe that the design of the station is key. As discussed previously, there will be opportunities to discuss and participate in the design of the station at a future date. Additionally, this is addressed in the report through the Guiding Principles under Desired Character, Relationship to Addison Circle, Open Space Design, and Public Art. Staff would also look to TOD best practices that include the following from the report:

3.) Promote walkable design of development sites and adjacent streets with pedestrians as the highest priority, and with routes that are short, continuous, and direct.

4.) Ensure good urban design that creates an interesting public realm through architecture and streetscape enhancements, relates a relationship between ground level uses and the sidewalk, and creates a high-quality pedestrian realm with adequate lighting, shade, and signage.

5.) Create a gateway to the community and surrounding uses with memorable landmarks, sightlines and views to guide pedestrians to destinations and public

plazas or open spaces near the transit station to emphasize the station area as a public gathering space.

Lastly, the answer to Question 5 discusses first mile/last mile solutions that should be explored to move people beyond the immediate area around the station.

Question 17: Addison Circle is often described as a neighborhood with a character reminiscent of New York City. What characteristics have been articulated as defining the character of Addison Circle that should be part of the new development and how far across new development is it envisioned that these characteristics would extend? Things that come to mind are streets with concrete/brick pavers, brick buildings, tree-lined streets, comfortable walkways, certain heights of buildings, etc.

Response: Staff and the consultant agree with the characteristics included in the question. As mentioned previously, it is likely that the Urban Center zoning district standards would be replicated here, where feasible, so that future development anywhere in the study area would flow seamlessly into the development that exists currently.

Question 18: In addition to having an inviting corridor to the Circle and Beltline, the Transit Center will likely be the/a hub from which bike 'spokes' go out to interconnect with other streets, trails, etc. What provisions are envisioned to facilitate this?

Response: Addison continues to work with property owners redeveloping properties along Quorum Drive to improve the streetscape and sidewalks to be consistent with Addison Circle and promote connectivity. Staff will continue these efforts so that, in the long term, the Addison Circle character extends all the way to Belt Line Road. If the City Council desired to advance these efforts more quickly, it would require a significant capital expenditure to acquire right-of-way and make the necessary pedestrian improvements. Staff also continues to work with regional partners to advance the Cotton Belt Trail that could tie in to the trail being contemplated for Midway Road, as well as the Redding Trail terminus at Arapaho Road. Lastly, an answer to Question 5 discusses first mile/last mile solutions that should be explored to facilitate this interconnectivity.

Question 19: Comments were made during Committee meetings questioning the need for hotel rooms and viability of a hotel. I've also heard comments that the hotel would be a way to add meeting rooms for the Conference Center to address the lack of breakout rooms. Would Staff/the Consultant please comment further about pros/cons of a boutique hotel near the Conference Center and whether developers should be encouraged to consider this?

Response: This question is similar to Question 12 answered above.

Question 20: Any inputs from MAA (previously Post Properties)? Has there been a reach-out to MAA to ask for comments?

Response: No. There was some discussion among Council regarding appointing a representative from MAA to the Special Project Committee for this study. Staff contacted a representative of MAA when the study committee was formed, and the company could not find anyone who would commit to participating in the process. Therefore, a representative of MAA was not appointed to the Special Project Committee. Staff has not

contacted any business owners, including MAA, outside of the study area for input. To staff's knowledge, no one from MAA attended any of the community meetings or staff's presentation to the Addison Circle Community Association.

Question 21: How is the current infrastructure (all infrastructure) positioned to support this development/redevelopment? Are we going to be facing a similar situation as we did with AMLI whereby the developer had to commit over a $1,000,000 in their money to improve infrastructure to accommodate the development?

Response: There are five infrastructure elements to consider:

1.) *Water* – Based on a preliminary review of the proposed uses and the intensities suggested in the draft Preferred Development Plan, there is sufficient capacity in the water mains to support future development. All that would be needed are the services lines and loops typically associated with new development projects.
2.) *Sanitary Sewer* – Based on a preliminary review of the proposed uses and the intensities suggested in the draft Preferred Development Plan, there is sufficient capacity in the system to accept additional flow from Addison Circle West, but there is not sufficient capacity for Addison Central. There are sections of existing sewer lines that would be over capacity, ranging up to 106% above capacity. The exact implication of this for development in Addison Central cannot be determined at this time. There are several potential lines that the flows could be discharged in to, but until a development is proposed, sewer connections are laid out, and elevations are known, exactly how the development will interact with the existing system cannot be determined.
3.) *Stormwater* – Based on a preliminary review of the proposed uses and the intensities suggested in the draft Preferred Development Plan, there is not sufficient capacity in the stormwater system to accept the additional stormwater run-off that any new development would create. Therefore, the Town would require that stormwater be detained on-site and discharged into the system slowly over time. This is typical of new development in Addison and a potential developer would be required to conduct a more thorough analysis to determine exact detention requirements. For example, Cawley Partners was required to study stormwater impacts and had to detain their stormwater on-site for both Tollway Center and both phases of the 14555 Dallas Parkway development.
4.) *Overhead Utilities* – All utilities have been undergrounded throughout Addison Circle. Overhead utilities remain on Addison Road running the entire length of the Addison Circle neighborhood. Aerial utilities are also present on Quorum Drive from Belt Line Road to the railroad tracks. If the Town desires to replicate Addison Circle standards, this would include undergrounding the utilities along Addison Road as well as for some portion of Quorum Drive. The Council will need to determine whether this should be an expense for the developer or for the Town.
5.) *Streets* – The majority of the roadways within the study area are in place, however some additional streets may be required in the ultimate development plan. Additionally, minor improvements may be needed at key intersections within and around the study area to improve traffic flow. At the appropriate time, staff will work with the developer(s) to conduct a traffic impact analysis that will indicate what types of improvements are necessary. Addison Road is also planned to be reconstructed sometime after Midway Road. The Master Transportation Plan calls for a complete transformation of Addison Road, including

installing a median and improving pedestrian amenities. These activities will need to be coordinated with future developers.

Question 22: Are there any steps needing to be taken to consolidate property ownership in both tracks? Would staff recommend bonded indebtedness to obtain property ownership to help facilitate development/redevelopment?

Response: The Town owns a significant percentage of the property in Addison Central, but there are a number of small private lots that are currently occupied. In Addison Circle West, there are also several properties that are owned privately. While it would make redevelopment easier if the parcels were under common ownership, the Town does not *need* to undergo any sort of parcel accumulation nor could the Town, unless there was a willing seller or a public purpose for the desired land.

As mentioned previously, $3 million was approved in the 2012 Bond Program for property acquisition and construction related to parking facilities within the Addison Events District. The 2012 Bond Program also included $3 million property acquisition and construction related to road extensions. This could be used for the new road connection between Addison Road and Artists Way or any other new streets within the study area. Additional debt instruments would need to be approved by the Council, and/or voters.

Question 23: Would Staff feel it appropriate to include in the plans a commitment by the Town to create/improve infrastructure (thinking of building any new streets called for and improvements to Addison Road) as opposed to having the developer have to absorb those costs in their pro-forma?

Response: Addison's historic practice has been to incentivize certain types of development/redevelopment by funding public infrastructure improvements. The Council would need to determine if it wants to continue that practice for development within the study area and how that would be funded. Additionally, the Town would need to determine how that construction should occur. The Town has managed public infrastructure projects associated with private developments in the past but has also made private developers responsible for overseeing the construction of public infrastructure and reimbursed them for those costs. There are pros and cons to each approach. Staff can manage either approach that the Council desires.

Question 24: DART was not able to give us any information about the people who transfer buses in Addison. Would they be prospects for retail in the area? What demographics would contribute to successful retail around the station?

Response: It is likely that train riders would be more attractive to retailers than bus riders. As a general statement, retailers follow people and prefer those with higher levels of disposable income. Without knowing the type of development and specific retail uses, it is difficult to say specifically what type of demographics are needed to ensure success. Staff has heard, anecdotally, from several retail developers that additional residential population is needed to support the kind of new retail that Addison residents desire. While many establishments have plenty of business during lunch on weekdays, they struggle to attract customers in the evenings and on weekends.

Question 25: High end senior living – If airport zoning allows, Addison Circle West might be a spot (or on Midway Road)?

Response: The “Urban Residential” shown on the draft preferred development concept for Addison Circle West would include senior living among other types of residential uses including condos and apartments.

Question 26: Boutique Hotel by Conference Centre – Would another small hotel next door really increase use of conference center? When will Addison need another hotel? How successful is conference center now? Who uses it?

Response: Staff believes that a hotel operating in conjunction with the Conference Centre could make the Conference Centre a more desirable location for a wider variety of events. A more detailed response can be found in the answer to Question 12.

Staff frequently gets requests from hotel developers interested in building new hotels in Addison. While staff does not have data regarding demand for new hotel rooms, developer interest indicates that such exists. Additionally, staff approached this issue from a long-term perspective. As redevelopment continues, it is important to consider not just how many hotels there are today, but where should they be in the future. The Comprehensive Plan gives guidance on this and identifies Addison Circle as a location for future hotels. Through the Town’s redevelopment efforts, it may be that hotels in less successful areas are transitioned out so that, in the long-term, there may not be more hotel rooms, but those rooms are in more appropriate locations throughout the Town.

Regarding the Conference Centre, in Fiscal Year 2018, the facility had 272 different clients with an estimated 25,000 attendees. In Fiscal Year 2018 the budget for the Conference Centre was $1,024,215 and revenue equaled $556,113, equating to a cost recovery of approximately 54%.

Question 27: Is anyone considering how special events will change without the carnival space? Maybe the carnival could move north on Addison Road?

Response: This question is similar to Question 1 answered above.

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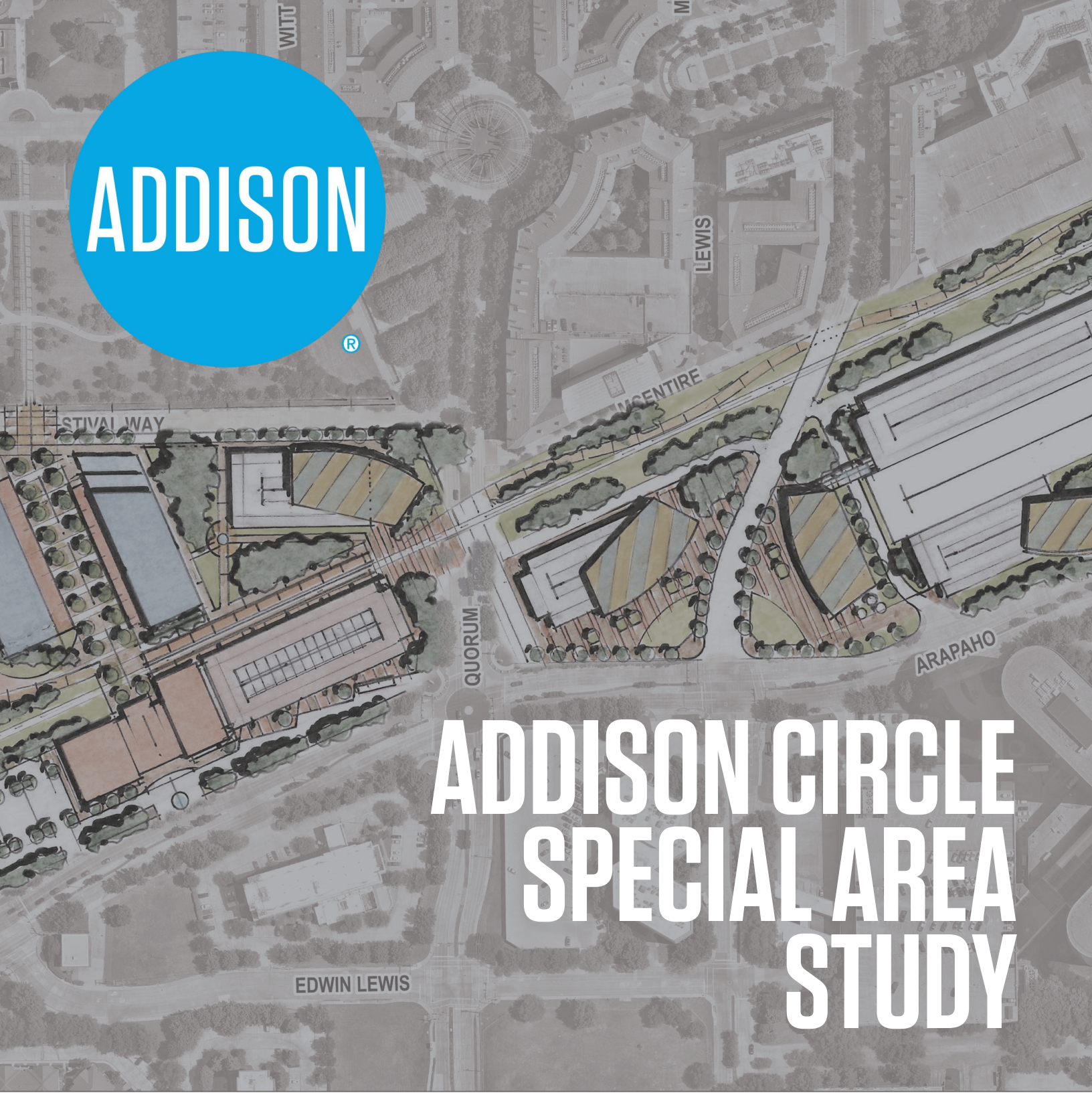

ADDISON CIRCLE SPECIAL AREA STUDY

DRAFT
AUGUST 9, 2018

Kimley»Horn

STRATEGIC COMMUNITY SOLUTIONS

Ricker | Cunningham

ACKNOWLEDGEMENTS

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EXECUTIVE SUMMARY

What is the Addison Circle Special Area Study?

A number of focus areas were identified through analysis as part of Addison's 2013 Comprehensive Plan which warranted more in depth analysis and visioning. This included an area of undeveloped and underdeveloped properties near Addison Circle and the future Cotton Belt rail station. This special area study is a document that establishes a desired vision or goal for these areas. It responds to unique challenges and opportunities that exist in the study area, and allows for a greater level of focus than is possible at the Town-wide level. The resulting plan serves to guide Town programs, regulations, and other implementation strategies that will allow the community's goals and vision to come to fruition.

Planning Process

The study began in December 2017 with a project kickoff and tour with Town staff. The planning team completed an up-front phase of data collection, existing conditions analysis, and interviews with key stakeholders to provide a background of the existing opportunities and issues related to the study area. Input from local residents, property owners, and other stakeholders was criticial throughout the process, and the study utilized a Special Project Committee appointed by City Council to provide direction, guidance, and feedback during the area plan development process. This committee was tasked with reviewing and commenting on materials developed during the planning process to assist in aligning them with the community's desired vision. Additionally, two community workshops offered all local residents and interested attendees the opportunity to weigh in on the direction of the study.

Preferred Development Plan Summary

The Addison Circle Special Area Study addresses two individual study areas: **Addison Central**, located along the future Cotton Belt Rail line, north of Arapaho Road, and **Addison Circle West**, located along the western edge of the existing developed Addison Circle district, east of Addison Road and south of Airport Parkway. The following Vision Statement summarizes the preferred direction for the both of these study area sites:

These special study sites contribute to Addison's future by making Addison a major destination on the Cotton Belt, enhancing Addison Circle's reputation as a desirable place to live, work and play, and strengthening the Town's tax base.

This study and preferred development plan for each study area addresses strategic direction, development form, uses and character, economic impacts, open space, and circulation. The following summarizes the resulting preferred development plan for each site, including the type and quantity of the anticipated land uses:

		Addison Central	Addison Circle West
Land Use Character		• Distinctive and appealing regional destination that activates the area around the future Cotton Belt Station • Multi-story office, retail, and urban residential, with park and plaza space	• Extend the Addison Circle neighborhood character to Addison Road • Urban residential, retail-ready space, and boutique hotel
Residential (units)	*Townhomes/ Condominiums*	134	50
	Apartments	224	330
Nonresidential	*Retail (sq ft)*	92,700	15,300
	Office (sq ft)	700,400	-
	Hotel (rooms)	-	208

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CHAPTER 1: INTRODUCTION

Study Background

The 2013 Town of Addison Comprehensive Plan identified several key areas that warranted further analysis as part of its review of the land use and existing conditions for redevelopment in the Town. The Addison Circle Special Area Study was commissioned in late 2017 in fulfillment of this directive, examining two key, developable groups of parcels around the Addison Circle district: 29 acres north of Arapaho Road, south of Festival Way and McEntire Place, east of Addison Road, and west of the North Dallas Tollway; and 8.2 acres north of Morris Avenue and south of Airport Parkway, bordering Addison Road to the east. In total, the study areas encompass 37 parcels with a mix of 17 different public and private property owners. The future Cotton Belt commuter rail alignment will run through, and include a station in, the Addison Circle area. This was a major consideration in the drafting of this study. Other considerations included meeting the needs of the existing and growing resident community near Addison Circle, increasing opportunities for homeownership, and capitalizing on the Town's unique assets, such as its airport, transit center, Conference and Theatre Centre, restaurants, and the hub of business activity along the Dallas North Tollway.

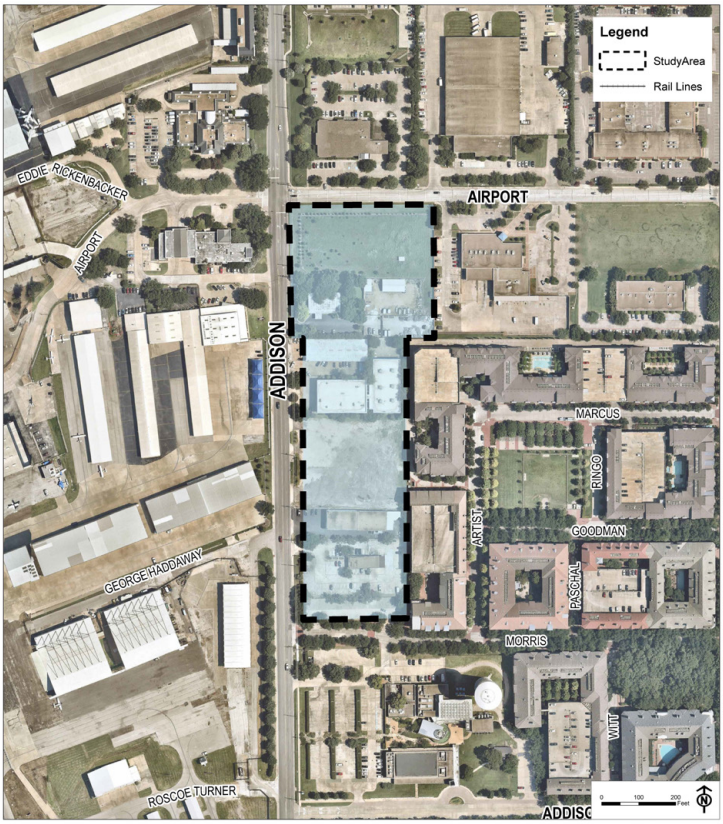
Study Area Description

The Town of Addison is located in northern Dallas County, about twelve miles north of Downtown Dallas. The two study areas are located in the greater Addison Circle area, a mixed-use area with a large urban residential component that stands in contrast to other traditional single-family neighborhoods, office, and retail districts that exist in other parts of town.

Addison Circle West

The first study area includes 9 parcels, with 6 different property owners, to the east of Addison Road, north of Morris Avenue, and south of Airport Parkway. Public and committee input was gathered on a potential name or brand for this study area site, and for the purpose of this report is referred to as **Addison Circle West**. This area is illustrated in the map to the right.

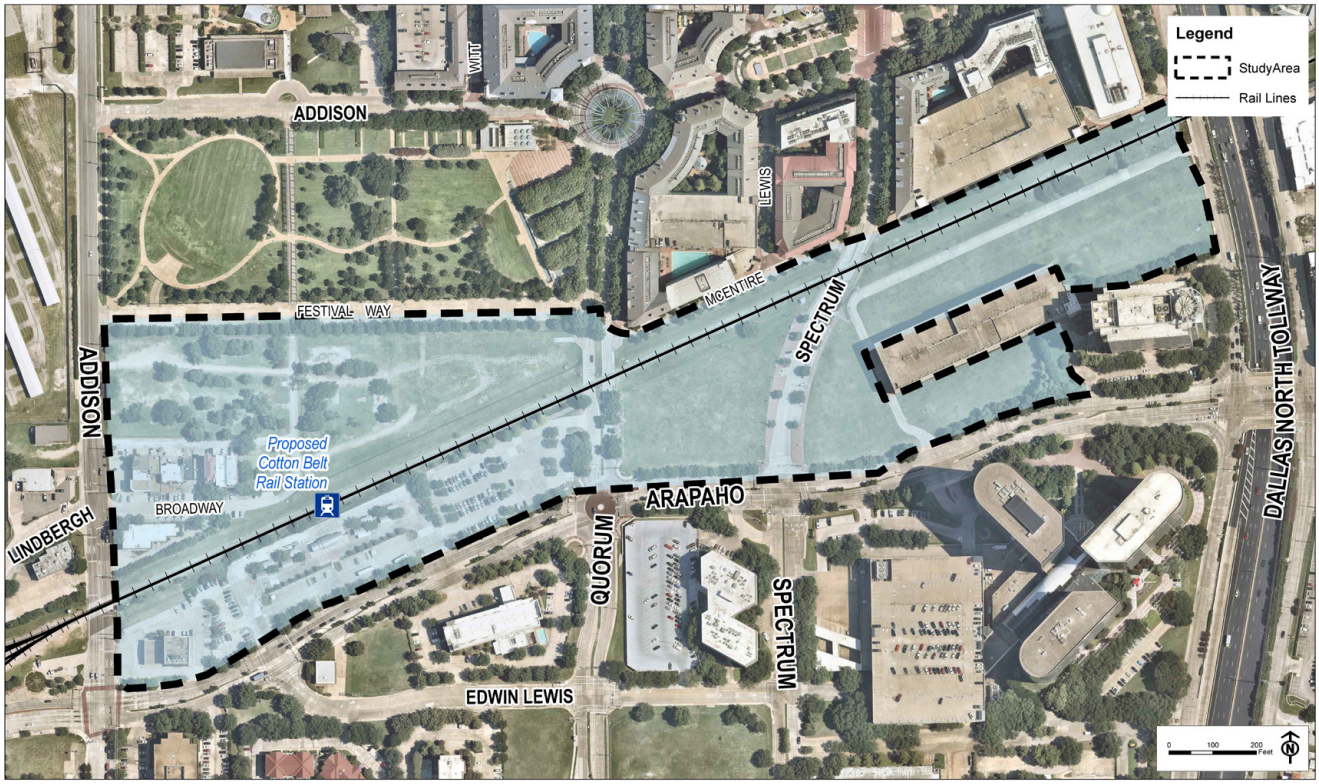
Addison Circle West is composed of a series of underutilized commercial spaces and vacant lots that border the western edge of Addison Circle's urban residential development and Addison Airport to its west. This portion of the study area lacks connectivity to the rest of Addison Circle, and therefore attracts less pedestrian traffic than areas nearer to the Circle. Still, as the Town of Addison looks to redevelop vacant and underutilized space, this area has emerged as an opportune location to capitalize on the economic potential of the area with increased commercial or residential activity.



Addison Circle West Study Area

Addison Central

The second study area consists of 29 parcels, with 12 different property owners, along the future Dallas Area Rapid Transit (DART) Cotton Belt rail alignment between Dallas Parkway and Addison Road. Approximately 71% of the property within this study area is publicly owned, either by the Town of Addison or DART. Public and committee input was gathered on a potential name or brand for this study area site, and for the purpose of this report is referred to as **Addison Central**. This area is adjacent to, but does not include, the Millennium Tower development on the corner of Arapaho Road and Dallas Parkway. The following map provides an illustration of the area:



Addison Central Study Area

Addison Central is bisected by the existing DART rail line, just north of two of the Town's major east-west corridors: Beltline Road and Arapaho Road. Quorum Drive serves as a central north-south corridor through Addison Circle for both vehicles and pedestrians, and is a major consideration factor in this area. The greater potential for increased transit ridership and pedestrian traffic in this area provides significant opportunities for economic development, such as the recruitment of unique retailers, restaurants, small entertainment venues, and office tenants, as well as satisfying increased demand for transit-adjacent residential options. The Cotton Belt rail alignment, and the future rail station located at the existing DART Addison Transit Center, will provide many opportunities for commercial development and redevelopment in this area.

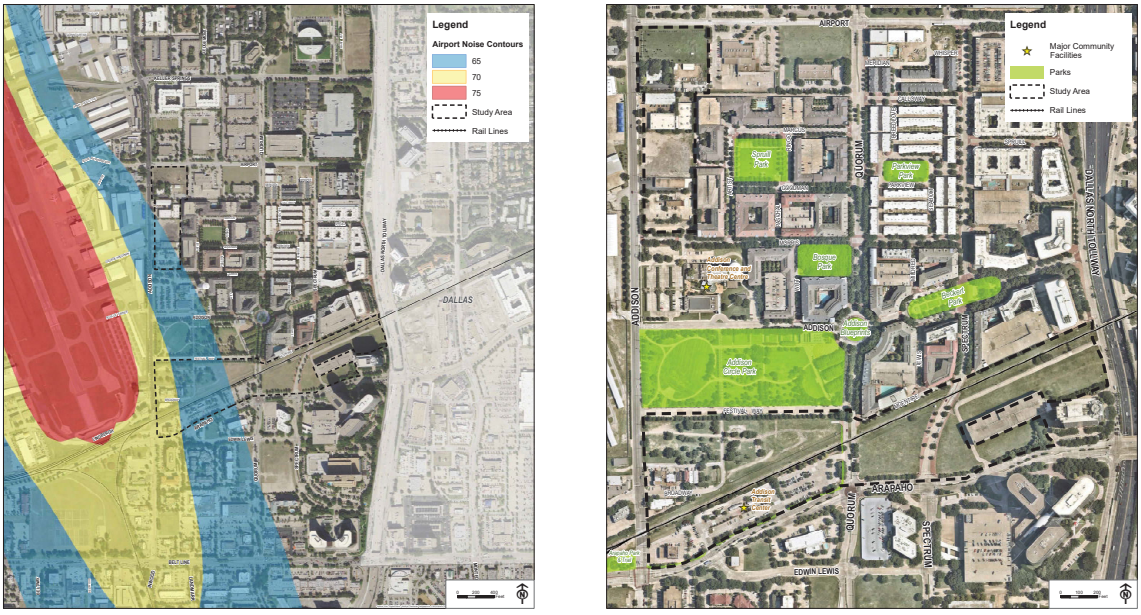
Opportunities and Constraints Overview

Many development opportunities exist within the study areas, bounded by the realities of physical and economic constraints. The following sections discuss both of these topics, with supplemental material available in Appendix I of this report.

Physical

Several development opportunities exist in these study areas, primarily with the land nearest to the rail corridor that the DART Cotton Belt service will eventually utilize. The future Cotton Belt alignment was one of the defining physical opportunities in the Addison Central site. In addition to this, parcel ownership in both study areas—but particularly Addison Central— lends itself to visionary transit-oriented development opportunities, due to publicly owned land that has been reserved for future development to capitalize on rail transit service. The two public entities that own land in these study areas are the Town of Addison and DART, the latter of which owns and operates the Addison Transit Center.

Physical constraints have also been considered that guide the allowed heights and uses in parts of each study area. Noise contours from nearby Addison Airport and the existing airport activity that accompany it were taken into consideration for the southern and western parts of Addison Circle West and Addison Central, respectively. Areas within the restrictive noise contours should be reserved for non-residential uses, as the noise produced by air traffic is considered a nuisance to residents, or appropriate noise mitigation design techniques should be utilized during construction to reduce the adverse impacts of aircraft noise. Similarly, height restrictions for approaching air traffic requires transitional building heights for development nearest to Addison Road. Existing community assets near the study areas were also considered, including the parks and civic uses. These spaces provide significant opportunities to create unique connections to future development, but land use and site layout recommendations should be sensitive to the community's desire to maintain views, character, and walkability.



Addison Circle Area Physical Opportunities and Constraints (Airport Noise Contours, Parks, and Public Features)

Market

An analysis of current and future market trends for various land uses was completed to provide both a baseline for the planning process and a roadmap for identifying future opportunities. The purpose of the market context analysis was to:

- Assess current and future market conditions in the DFW Metroplex in general, and the trade surrounding the Study Area, in particular;
- Evaluate the Study Area's current and future attractiveness for various land use types within the DFW Metroplex;
- Ensure planning and investment decisions for the Town are grounded in market and economic reality; and
- Provide an independent, third-party story to tell potential developer and investor audiences.

The market analysis summarized herein focused on identifying market opportunities within project trade areas representative of various land uses. A trade area is the area from which a project(s) or area will draw the majority of its residents (housing), patrons (retail) and employees (office)—the area that will likely be a source of competition and demand. The boundaries of the trade area are often irregular as they are influenced by the following conditions:

- Physical Barriers
- Location of Possible Competition
- Proximity to Population and/or Employment Concentrations
- Zoning
- Market Factors
- Drive Times, Spending and Commuting Patterns

The trade area estimated for the Study Area was based on a 10- to 15-minute drive from Addison Circle. The demographics and psychographics (i.e., lifestyle attributes) of residents and employees of this Trade Area are characterized by the following:

- High percentage of nonfamily, one- and two-person and renter households
- High median household incomes, especially considering the smaller household size
- Younger, highly educated age cohorts
- Moderate, but growing level of ethnic diversity
- Psychographics dominated by young, well-educated, mobile residents and employees who are entering their wealth-building years

These characteristics represent a sizable "pool" of potential urban housing residents, with nearly one half in ESRI's Principal Urban Center and Urban Periphery Urbanization Groups. A more typical suburban community would have closer to 25% of households in these two groups. These households would support both higher-density rental and ownership housing products at market price points and above.

In addition to these younger age cohorts, the trade area contains a higher than average population aged 65 and over – potential empty nesters looking to downsize from larger single-family homes. This demographic segment is providing additional market support for lower maintenance, higher density urban housing products, both rental and ownership.

Based on anticipated Trade Area household growth over the next 10 years, there will be significant support for new residential units, particularly those which are alternative products to single family detached homes. These higher-

density products include both ownership and rental housing. Townhomes, rowhouses, paired homes (duplexes), and condominiums are examples of ownership products, while rental products can include apartments, flats or lofts. Live-work units are a unique blend of housing and employment and are often accommodated in a townhouse-like building. Residential use flexibility can also be provided to offer senior living options, while also maintaining the urban building form appropriate in a transit-oriented area. Urban senior living developments are a growing residential trend, as more seniors are looking to live in mixed-use communities with access to a variety of amenities and services, and integrated with residents of all ages.

The retail market in Addison and the surrounding Trade Area is more challenging. While the retail submarket within which Addison competes (Near North Dallas) continues to show low overall vacancy rates (5%), there is still surplus space in some categories, particularly the foodservice and drinking places sector. There are existing gaps in spending for some retail categories (grocery, health and personal care, and sporting goods, books and hobbies) and steady future household and employment growth and Addison's sizable daytime population should generate opportunities for new retail/service space. The Cotton Belt gives the Study Area the opportunity to "create" a retail and entertainment market opportunity, rather than "react" to the existing market. It provides the Study Area with regional access and a level of potential tourist/visitor traffic that couldn't otherwise be generated. This site has the potential to differentiate itself from current retail development in the area and attract unique, destination-oriented retailers and services – and in addition to retail, entertainment-oriented uses and major office tenants – that would attract not only those within the local area, but also draw from a more regional level trade area.

While office vacancy rates in the Addison trade area and the surrounding DFW Metroplex hover around 20%, there is still a robust level of new construction (5.5 million square feet currently under construction). Addison's employment base, and a majority of the Trade Area's, is dominated by service industries such as finance, insurance, real estate and professional and business support. Educational and healthcare services also represent a significant share of Trade Area employment. Over the next 10 years, these industries are anticipated to be among the fastest growing in Dallas County, generating demand for new office space in the DNT Corridor.

In summary, the Addison Circle Study Area provides a unique infill development opportunity supported by attractive demographics, strong job growth, and a potential regional tourist/visitor market. As an infill opportunity, it will require both a unique draw to differentiate it from an established market and a higher level of development density to offset higher land and site development costs.

More detailed estimates of market supply and demand are provided in Appendix IV.

Planning Process and Community Input Overview

From the inception of this study, a major focus was providing sufficient opportunities for public input from those who were interested in providing their thoughts, comments, and feedback to the planning team and Town staff.

Stakeholder Interviews

In February of 2018, at the beginning of the study process, the planning team conducted a series of stakeholder interviews with a variety of homeowner's association representatives, property owners and members of the local business community. These interviews were designed to understand the stakeholders' objectives and expectations in terms of future use of the property. Questions covered a range of topics including investment interests, preferred future uses and activities, ways to take advantage of the future rail station, and improving connections between the existing Addison Circle area and future development.

Special Project Committee Meetings

The Special Project Committee was appointed by the Addison City Council. It served as the main, community-based

advisory group during the planning process. Four meetings were held in the winter, spring, and summer of 2018 to gain insight into the visions of stakeholders for the area, discuss information and gather feedback on the plan's direction as the plan unfolded. These meetings offered the committee opportunities to discuss their ideas and concerns about future development of the study area, weigh in on existing site conditions, development opportunities, proposed site development alternatives, and the final preferred development scenario for each study area site.

Community Workshops

Two community workshops, one held in March and another in May of 2018, encouraged residents, property owners, area employees, residents, and other interested individuals to get involved in the planning process.

At the first workshop, the consultant team shared background on the study, the results of research on existing conditions and key findings for each site, and potential development concepts. Community members and stakeholders were able to review materials at stations organized by topic and provide written input. Based on public input from the first workshop and direction from the Special Project Committee, two development plan alternatives were developed for each site. The second workshop presented attendees with these alternatives, as well as a draft vision and set of guiding principles for the study area. Individual stations presented additional analysis information including implications related to adjacent land uses, parks and environmental character, mobility (trip generation and walkability), and market-related factors. Both workshops included the opportunity for participants to review information at topical stations and provide feedback and further ideas on these topics. Electronic polling was also used in both workshops to gain a sense of the perspectives of the participant group as a whole. Both events exhibited strong attendance, and provided valuable commentary on the direction of the plan. Feedback received at this workshop guided the development of the final preferred development plans.

Community Workshop #1

A summary of the community input received at each of the workshops is provided in the report Appendix III.

Transit-Oriented Development (TOD) Tour

In July of 2018 the planning team, members of the Special Project Committee, and members of the City Council and Planning & Zoning Commission toured the Cityline/Bush, Galatyn, Mockingbird, and Downtown Garland DART stations. Invited speakers, including former DART Executive Vice-President and CFO David Leininger and representatives from the Cities of Richardson and Garland gave presentations about each station-oriented development and offered attendees time to walk around and explore.

CityLine Station Area Development

CHAPTER 2: STRATEGIC DIRECTION FOR THE STUDY AREA

The strategic direction explains what the desired outcome of this project is and how individual decisions and specific investments should be made to achieve this result. The Vision Statement and Guiding Principles establish the plan's strategic direction at two different levels of detail, providing clarity and articulating the intent of this project and its aims.

Vision Statement

The **Vision Statement** describes the area's future desired by the Addison community. It is an aspirational statement. It is not intended to describe the current situation; instead, it is designed to create an inspiring image of the future that participants seek to achieve. A Vision Statement should:

- Describe where the community wants to go (i.e., the result, not the process to get there)
- Be succinct and memorable
- Not contain a laundry list of ideas about individual topics

The Vision Statement for the Addison Circle Special Study Area is:

> *These special study sites contribute to Addison's future by making Addison a major destination on the Cotton Belt, enhancing Addison Circle's reputation as a desirable place to live, work and play, and strengthening the Town's tax base.*

Guiding Principles

Guiding Principles provide overall guidance for future development of the area. They explain the most important general principles that should be followed to achieve the Vision. These Guiding Principles shape the more detailed concepts and recommendations on matters of policy, design, land use, infrastructure, development, and other topics of importance to the community. The guiding principles for the Addison Circle Special Area Study are as follows:

1. **Desired Character.** The places to be created by development in Addison Circle West and Addison Central should continue the human scale, mix of uses and high quality of design that are the hallmarks of Addison Circle.

2. **Relationship to Addison Circle.** New development, along with its roads, paths, public spaces and other infrastructure, should connect seamlessly to the existing Addison Circle neighborhood.

3. **Relationship to Addison Airport.** The Addison Airport is a vital economic asset for the Town of Addison. New development should generally be consistent with the restrictions resulting from the airport's safety and noise contours. Future uses should support the success of aviation and aviation-related activities at the Airport. Development uses and intensities near the Airport must be compatible with Airport operations.

4. **Relationship to the Addison Cotton Belt Station.** The future land uses, development pattern and intensity in the Addison Central area should create a successful Transit-Oriented Development (TOD) area. A successful TOD area includes market-supported uses that benefit from a location near transit, property values that increase tax revenues to the Town and activities that generate strong levels of ridership for the DART system.

5. **Economic Development.** Development in the Special Study Area should diversify Addison's residential and non-residential products and its employment base. Development should generate sufficient tax revenues to

support the Town's obligations to DART and contribute resources to the Town's General Fund.

6. **Tourism.** Addison Circle has become known for its entertainment events, and the Town should continue to support events within existing public areas and as part of future development that make both Addison Circle and the Town of Addison an entertainment destination for locals and visitors.

7. **Open Space Design.** Public and private open spaces within the Special Study Area should continue the Town of Addison's tradition of designing unique parks, plazas and open spaces that create destinations for individuals, small groups and large events or festivals.

8. **Public Art.** As in Addison Circle, public art should be incorporated in the Special Study Area's development to create distinctive landmarks, gateways and destinations. Special public art installations at the Cotton Belt Station should convey the character of the Town of Addison to rail system users.

9. **Mobility for People.** Addison Central and Addison Circle West are intended to be places that focus on people before cars. Mobility plans for the area should emphasize walking and biking. Trolleys, shared use vehicles and other travel modes should be readily available and should reduce the need for automobile travel between locations in the Special Study Area. These networks should support the use of DART by area residents and visitors for travel to destinations outside this area.

10. **Automobile Use.** The roadway network should facilitate trips by auto into and out of the Special Study Area. Within the Special Study Area, other transportation modes should take priority. Sufficient parking for vehicles should be included, but it should be located and designed so it does not dominate the character of the area.

11. **Environment & Sustainability.** The design of public and private developments and infrastructure in the Special Study Area should reduce the use of energy, water and other non-renewable resources. It should increase the long-term sustainability of these developments and of the Addison community.

12. **Town Involvement & Investment.** The Town of Addison should continue its involvement in the design and development of the Special Study Area to ensure that future development creates the greatest benefit for the Addison community. The Town's past and future investments in the Special Study Area should generate tax revenues and create places that achieve the Town's vision for this area.

Transit-Oriented Development (TOD) Best Practices

Due to its central location in the Dallas-Fort Worth Metroplex and adjacency to the Addison Transit Center, the Addison Circle development pattern is inherently linked to transit and the transportation infrastructure of this part of the region. Transit-Oriented Development (TOD) practices are those that orient real estate development around the transit system, rather than the other way around. TOD focuses on the creation of mixed-use activity centers along transit corridors, such as rail stations or other major transit facilities. The following TOD-based best practices have been identified as relevant guiding considerations for the Addison Circle special study area and its districts. These practices are general principles for successful transit areas, but should not be considered requirements that limit the creativity of new development around the Addison Circle station area.

Transit-oriented development should:

1. Be a regional node with a mixture of uses in close proximity (office, residential, retail, or civic)

2. Encourage a high density of uses within a 10-minute (or 1/2 mile) pedestrian travel distance surrounding train station to create a walkable district accessible to both local residents and transit users

3. Promote walkable design of development sites and adjacent streets with pedestrians as the highest priority, and with routes that are short, continuous, and direct

4. Ensure good urban design that creates an interesting public realm through architecture and streetscape enhancements, creates a relationship between ground level uses and the sidewalk, and creates a high-quality pedestrian realm with adequate lighting, shade, and signage

5. Create a gateway to the community and surrounding uses with memorable landmarks, sightlines and views to guide pedestrians to destinations, and public plazas or open spaces near the transit station to emphasize the station area as a public gathering space

6. Have a supporting transit system to increase access beyond the TOD area, including bus, circulator, or streetcar service

7. Accommodate vehicle access with convenient parking and drop-off zones, but parking areas should be reduced and managed within pedestrian-oriented areas

8. Discourage non-transit supportive uses – those that consume large areas of land, generate little or no ridership, and are dependent on vehicles for goods and services

Transit-Oriented Development Examples (Downtown Plano, TX and Fruitvale Village, Oakland, CA)

Addison Circle West

District Strategic Direction

The Strategic Direction for Addison Circle West focuses on a simple but important primary concept: **extend the character of the Addison Circle neighborhood to Addison Road**. This strategic direction includes four additional concepts that add detail to this direction:

- Residential uses along Addison Road should be of a more urban scale and design (compared to the townhomes in Addison Circle itself) because of the traffic along Addison Road, noise from the road and the Airport, and proximity to the Airport.

- The high-quality design and amenities of Addison Circle's existing residences should be included in these new residential developments as well.

- Immediately adjacent to the Addison Conference Centre, new uses that support tourism, conferences and events are an appropriate extension of Addison Circle's character and activities.

- At the intersection of Addison Road and Airport Parkway, some neighborhood-serving non-residential uses may be appropriate, continuing Addison Circle's mixed-use character. The buildings at this intersection should be designed to be flexible so that the ground floor is 'retail ready' – that is, it should be able to accommodate retail uses when those are supported by the market in the area.

Development Plan

The development plan for Addison Circle West identifies the types and character of the buildings that will support the vision for the built environment of Addison Circle's northwest corner. The development plan layout is intended to suggest appropriate building form, the types of activities that could occur in each development site, and the buildings' relationship to surrounding streets and the public realm.

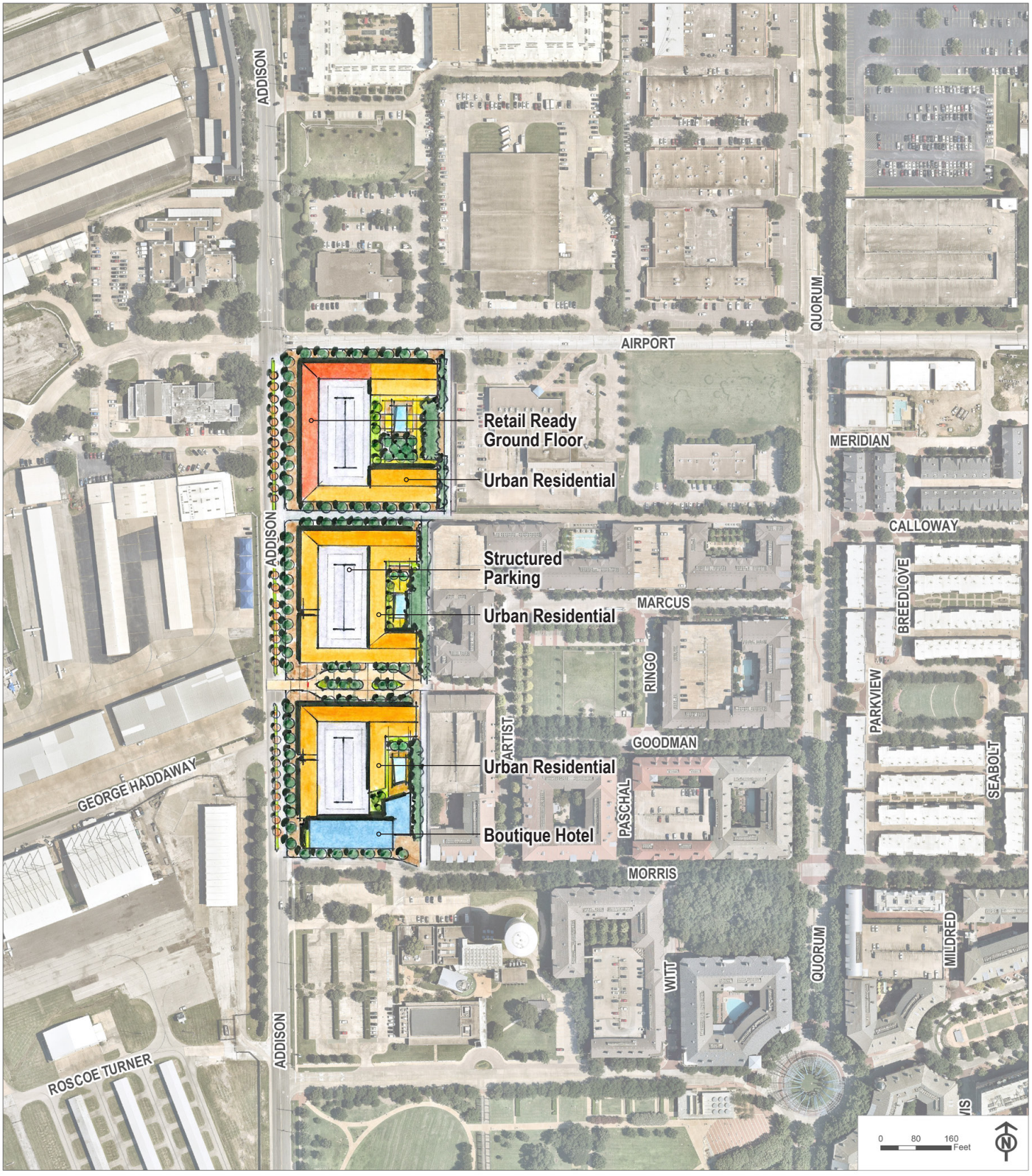
Urban Residential with Ground-Floor Retail

Uses and Character

Multiple potential uses and building types were considered by the public and Special Project Committee to support the future vision established for the Addison Circle West area. Given the site's close proximity to the Addison Conference Centre and residential development, the site's location further from the future Cotton Belt rail station, and the configuration of the smaller site, it was determined that the overall character of the area should be an extension of the Addison Circle neighborhood and supportive of existing prominent adjacent uses.

Urban residential development is intended to be the primary use in the northern parts of the districts outside of the Addison Airport noise contours, or with minimal encroachment into the contour area if appropriate noise mitigation strategies are taken during design and construction. Residential types may include multi-story condos, apartments, live-work units, or senior living, with community preference toward additional options for owner-occupied living. The northern site, at the corner of Addison Road and Airport Parkway may be a suitable site for ground floor retail and services to support the needs of area residents and other adjacent businesses. One strategy to provide market flexibility for retail uses, but still accommodate residential if needed, is to construct ground floor space with ceiling height, facades, and entries that can be occupied as a residential unit or be marketed for commercial uses. The intent of this "retail-ready" space is to provide the flexibility of occupying a space in accordance with market demand and allowing the use in such space to change to retail/commercial uses accordingly. Uses in this space should be community-supporting, and could include not only retail, but also office or live/work uses.

Boutique Hotel



Addison Circle West Preferred Development Plan

Sites within the southern portions of the district, particularly at the corner of Addison Road and Morris Avenue, would be an appropriate site for a boutique hotel to support the nearby Addison Conference Centre and offer complementary services and meeting spaces. Other non-residential uses that support the immediate area may also be appropriate here, and within the noise contours if residential uses are not preferred, but should maintain a walkable urban form that addresses the street and complements the residential uses to the north and east.

Addison Circle West Development Plan Summary

Land Use Type		Net Square Feet	Units/Rooms
Residential	*Condominiums/ Live-Work Units*	120,000	50
	Apartments	264,000	330
Nonresidential	*Retail-Ready Space*	15,300	-
	Office	-	-
	Hotel	83,200	208

Addison Central

District Strategic Direction

The Strategic Direction for Addison Central **maximizes the benefits of the new DART Cotton Belt Station to Addison and creates a destination with opportunities for appropriate and successful new development on some of the last remaining undeveloped land in Addison**. This strategic direction includes seven additional concepts that add detail to this direction:

- The uses and activities at the Cotton Belt Station must make this a distinctive and appealing regional destination.
- Between the Cotton Belt Station and Addison Circle Park, new development should be designed so that these two appealing amenities contribute to residential or business locations unlike anything else in the region.
- The parks and plazas of Addison Circle should extend into the Central area as interconnected 'fingers of green'.
- Development intensity in these areas should respect the Airport noise and safety constraints while delivering the economic and fiscal returns needed for the Town's long term fiscal health.
- Multi-story development is appropriate east of Quorum, but the Town should provide market flexibility for property owners by considering either residential or non-residential uses in these areas.
- Development along the Dallas North Tollway should continue the existing pattern of high-rise office development.
- In residential developments, ownership units are preferred over rental units.
- Underground parking, is preferred where feasible between the rail station and Addison Circle Park, to maximize the pedestrian experience.

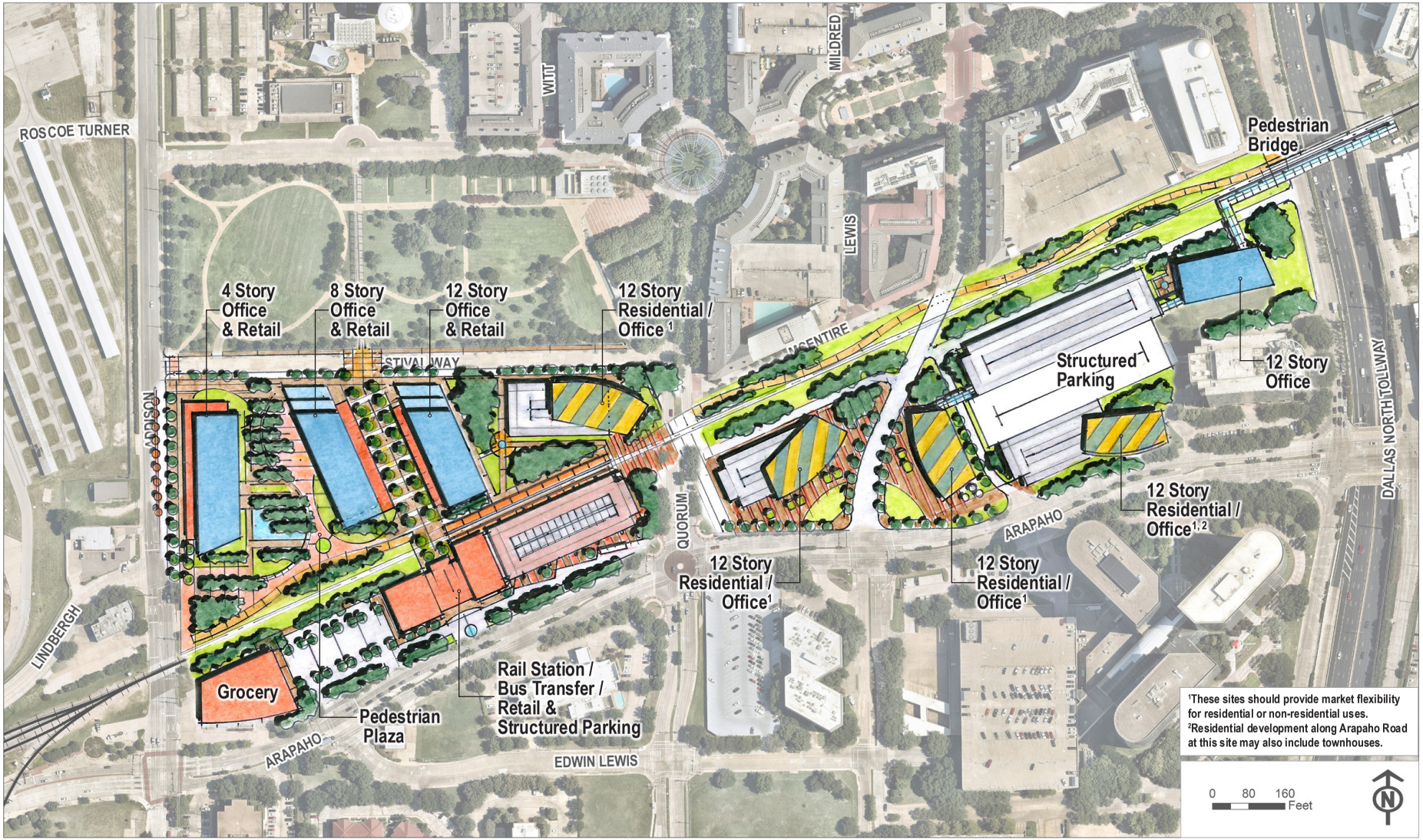
Development Plan

The development plan for Addison Central identifies the types and character of the buildings that will support the vision for the built environment to create a transit-supportive district along the Cotton Belt rail line. The development plan layout is intended to suggest appropriate building form, the types of activities that could occur in each development site, and the buildings' relationship to surrounding streets and the public realm.

- Buildings should be angled to offer new views of Addison Circle Park and preserve the authenticity and appeal of the park itself.
- There should be flexibility with regards to zoning and land use regulations to allow for the market to fill the area between Quorum and the Dallas North Tollway with either residential or office space.
- Trail connectivity will be emphasized as the premier east-west pedestrian connection along the rail route.

ADDISON CENTRAL

Addison Circle Special Area Study



Addison Central Preferred Development Plan

Uses and Character

A variety of land uses, activity centers, and public space options were considered for the properties within the Addison Central area. Given that an increased variety of uses in close walking distance to the future rail station is a preferred best practice of transit-oriented design, the development plan recommends a flexible mix of residential and commercial uses, with a strong activity anchor near the transit center. Based on public and Special Project Committee input, the immediate rail station area should be redeveloped to create a hub of activity focused around food-oriented retail that both creates a unique destination for visitors and also supports everyday shopping needs of nearby residents, office workers, and restaurants. This type of food-focused markets and food halls have become popular

Food-Oriented Retail Concept (Granville Island, Vancouver, BC)

in other major cities around the country, with examples including San Francisco's Ferry Building. These types of markets tend to involve low commitment and start-up costs for vendors, and can be a great way to grow a local business. The site can include shared seating areas and offer a mix of entertainment and social events to draw additional foot traffic.

The food-oriented retail concept is one example of creating an experience-based, compelling retail destination with a regional draw. In order to stand out from traditional retail development, the site should create an inspiring, interactive, and immersive environment. Other retail mixes that have proven successful include experiential social destinations, with a mix of entertainment and interactive shopping venues. These entertainment destinations might include live music venues or specialty movie theaters. Other concepts

San Francisco Ferry Building Marketplace:
Historic ferry port and transit hub restored with shops oriented toward local farmers and artisan food producers

might include wellness destinations such as yoga studios, specialty fitness workshops, or health-oriented food stores. This future development should also be designed to support DART's existing bus transfer center activity and future rail service with bus loading bays and structured parking for both visitors and transit users.

Beyond the immediate station area, office and urban residential uses with ground-floor retail activity are desired uses that would capitalize on existing market demand and increase the mixed-use environment of the district. Western portions of the district should include only non-residential uses within the Addison Airport noise contours, with flexibility to develop residential or office in areas east of Quorum Drive. However, sites that immediately front the Dallas North Tollway should be reserved for office only to maintain the commercial visibility and access to this major transportation corridor. Additionally, an urban-form grocer is also recommended as a desired use for this area, with the corner of Arapaho Road and Addison Road as a suitable site with good access and visibility for both district area residents and the surrounding community.

Transit-Oriented Land Uses: Mixed-Use Multi-story Office/Residential, Urban Residential/Townhomes, Public Plaza Space

Development character in this district should find a balance between providing the appropriate densities to support transit-oriented activity, while also creating a building form that respects the adjacent Addison Airport and Addison Circle Park. Buildings along Addison Road and Festival Way should be oriented to maintain sight lines between the station area, Addison Circle Park, and existing Addison Circle. Building heights will need to develop in accordance with airport height requirements, which allow for buildings to step up in height as the site moves east from Addison Road. Suggested maximum building heights are identified on the plan in accordance with height constraints. While

lower height buildings are currently present in the Addison Circle area, the focus should be on creating density to support an effective transit-oriented environment, especially around the station area. To balance increased density with existing district character, buildings should also be stepped in height moving away from the park edge so not to create a closed-in feeling along Festival Way. Alternatively, an "urban room" feel could be created closer to the rail station with building edges encompassing public spaces, plazas, or water features. Throughout the district, structured parking is preferred for all parking areas, with underground or development-wrapped parking encouraged near the station to minimize the view of blank parking structure facades. Parking structures with exposed walls should incorporate design principles and façade treatments to complement the architecture of nearby structures and blend into their surrounding environment. These design approaches include using high-quality exterior materials, architectural variation, landscaped setbacks, enhanced pedestrian access points, and activated ground floor space, when feasible.

Addison Central Development Plan Summary

Land Use Type		Total Square Feet	Units/Rooms
Residential	*Condominiums/ Townhomes*	201,600	134
	Apartments	179,200	224
Nonresidential	*Retail*	92,700	-
	Office	700,400	-

Economic and Fiscal Impacts

Over the past decade, community planning efforts have increasingly considered the impacts of land use mix on public sector operating revenues and expenditures. Consideration of these "fiscal" implications ensures that the community "vision" is grounded in market and economic reality, and the Town's future fiscal health or "balance" is maintained. However, because large-scale community planning efforts require a long-term perspective, oftentimes 20 years or more, it is difficult to achieve precision in estimating municipal revenues and expenditures over the community's expected buildout.

For the purposes of the Addison Circle Special Area Study, an analysis of potential long-term fiscal operating impacts was completed at a macro level to determine the development plan's ability to generate a balance between revenues and expenditures. General assumptions used in the fiscal analysis included:

- The City's current budget (2017-18) reflects a reasonable balance between revenues and expenditures.
- Future revenues (taxes and fees) are based on current (2018) market values for various development types (housing, retail, office, hotel, other).
- Future expenditures are based on current (2018) service costs per capita, including residents and employees.

The analysis considered the expected buildout of each of the Addison Circle Study Areas separately.

Considering new development growth only, the land use mix envisioned in each study area appears to generate a fiscal surplus for the Town in terms of operating revenues and expenditures. This is due to the following:

- Addison is expected to continue to attract its fair share of new development in the surrounding Trade Area and can be somewhat selective in pursuing new market opportunities. Including the additional office space

development capacity south of Arapaho Road, Addison would have the total available capacity to support a major office tenant.

- The high-value development environment that Addison Circle has established will be further enhanced by strategic investments in community amenities.
- Addison Circle's future development pattern will take advantage of existing infrastructure and "leverage" public/private investments in new infrastructure (e.g., the Cotton Belt Line).
- A more compact future development pattern should provide cost efficiencies in providing services to residents and employees.

In summary, the more compact development pattern, with higher density uses in targeted areas, should result in a more attractive value-to-cost relationship for the Town. It represents a balanced mix of revenue-generating and cost-producing land uses designed to maintain the Town's long-term fiscal health.

Open Space / Environmental Character

Addison Circle Park and the existing pocket parks and tree-lined streets of the Addison Circle district set a precedent for the desired relationship between the environment and development in this area. The development plans of both Addison Circle West and Addison Central recommend maintaining inviting green spaces and landscaped pathways to provide both shade and visual interest for pedestrians. The environmental character of Addison Circle West is intended to be an extension of the existing pattern within Addison Circle with the majority of landscaping improvements along street rights-of-way and in small enhanced areas. Addison Central provides the greatest opportunities to create unique public spaces that blend natural areas of shade trees, landscaping and water features with hardscaped urban plazas and pathways. This environmental character can also be emphasized at intersection corners as part of character-defining gateways. Open space and public art improvements in this district can also be developed in association with improvements along Quorum Drive, as identified in the Quorum Art Walk concept, which would create an attractive streetscape and pedestrian connection between Addison Circle and Belt Line Road.

Circulation and Infrastructure

One of the primary challenges of transit-oriented design is the emphasis on providing a safe and inviting environment for pedestrians, while also accommodating access and circulation for vehicles. Vehicle circulation will be maintained on all existing streets, but both site development plans recommend adapting existing street design to make pedestrian routes comfortable and connected and encourage slowed vehicle speeds throughout the Addison Circle district through basic speed management design principles. These may include corner curb extensions, presence of on-street parking, and a dense built environment that visually narrows the roadway. Wayfinding signage in this area for both vehicles and pedestrians is also recommended to make circulation to parking areas and key destinations easier. Public input indicated that while parking is currently available for Addison Circle visitors, it is not often obvious where one should park. As additional public parking areas are introduced to support new development, an effective wayfinding signage plan should consider district-wide sign standards that include parking locations and major district destinations, with clear and consistent visual communication.

Along the Addison Circle West district, Addison Road is currently designed as a 4-lane undivided roadway. This corridor has been identified in the Town's Master Transportation Plan (MTP) for future improvements to a 4-lane divided roadway with a median or center turn lane. This design would improve traffic flow by providing a separate lane for turning vehicles accessing cross streets and adjacent development. A continuous pedestrian pathway along Addison Road should also be included with future street improvements to better connect this area to the surrounding district. An extension of Artist Way has also been identified in the MTP to create an additional western entrance into Addison Circle. This connection is intended primarily for local traffic, and street entrance design could include an attractive entry gateway feature that reduces direct views between Addison Road and the internal residential areas.

Aside from the Artist Way extension, no additional through street connections are proposed as part of this plan. However, should properties outside of these study areas redevelop, additional minor connections could be made. These new connections should not create new vehicular throughways, but could be designed as mews streets, oriented for pedestrian use or local garage/alley access.

Pedestrian-Oriented Connectivity

Throughout the Addison Central district, pedestrian connections should be strengthened, with the addition of an east-west trail along the Cotton Belt rail providing a signature pathway across the entire district. This connection has also been recommended as part of the North Central Texas Council of Government's (NCTCOG) regional network of trails known as the Veloweb. Beyond Addison Circle, this trail connection could continue across the Dallas North Tollway with a pedestrian bridge that would connect Addison to development to the east. Where pedestrian pathways and trails intersect with vehicular streets, intersection design techniques should be utilized to reinforce slow travel speeds and increase pedestrian comfort. These may include pedestrian refuge islands, raised crosswalks, or bollards along intersection corners. In addition to pedestrian improvements, local transit connectivity should be further enhanced with targeted service between the Addison Circle rail station and other major Town destinations. Circulator buses or shuttle service that operate within a fixed area are recommended as a way to provide "first-mile, last-mile" connections between area hotels, employment centers, or other dining and entertainment locations, and would increase multimodal trip options beyond the immediate Addison Circle area.

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CHAPTER 3: IMPLEMENTATION STRATEGY

Introduction

A crucial part of any study or plan is its implementation. Without a clear and realistic approach to action, the vision expressed by a community through its plan may never be realized. This Implementation Strategy should give Addison's leaders and stakeholders a clear game plan of steps to take and the timing for completion.

This chapter describes the role of various partners in plan implementation. Next, it provides a framework for organizing the many potential action items that help Town of Addison achieve its vision. Finally, the Implementation Matrix lists the action items that are most important to make this vision a reality.

Communities that are most successful at achieving their long-term vision have a tradition and reputation for collaboration, partnership and accountability. The Town of Addison has this tradition, so continuing action in this special study area should benefit from this long-standing reputation.

Implementation Partners

A desirable and long-lasting community is the result of many individual choices made over time by many people and organizations. The local government's actions play an important part, of course. But many other choices also contribute to long-term success. Each time an individual or a family decides between renovating a home in an existing neighborhood and moving to a new neighborhood (or another community), the vitality of that existing neighborhood is strengthened or challenged. When a business or industry decides to locate in a particular area, that business decision affects the community's ability to attract related businesses and employees. A community group's annual celebrations may be the foundation for a distinctive community identity as well as economic benefits from tourism.

This study's recommendations will involve action by the Town of Addison; other partners will also need to be involved. The support and commitment of the partners listed below play an important role in the implementation process.

Town of Addison

The Town of Addison is the key implementer of this plan and will be involved at some level in all the action items. In many cases, the Town of Addison has the primary role. In other cases, a different partner has the primary role. Within the Town of Addison organization, these leaders and agencies are expected to have significant involvement in the plan implementation.

- Mayor and City Council
- City Manager's Office
- Addison Airport
- Economic Development & Tourism
- Infrastructure and Development Services
- Marketing and Communications
- Parks, Recreation and Landscape Development
- Special Events
- General Services

Other Local and Regional Government Entities

This study's implementation relies on major investment by Dallas Area Rapid Transit (DART). Continued coordination between the Town and DART during design and construction of the Cotton Belt will ensure the best outcome for this study area. The North Central Texas Council of Governments (NCTCOG) also plays a significant role because it funds regional transportation investments, including transit and bike/pedestrian networks. The North Texas Tollway Authority (NTTA) will be involved in aspects of the project that affect the Dallas North Tollway, such as the pedestrian bridge crossing the tollway adjacent to the Cotton Belt line.

State and Federal Agencies

State and Federal agencies can provide funding for plan implementation, particularly for capital improvements such as roads or parks. Their programs may also help achieve the community's vision.

Businesses and Private Sector Partners

Realizing the vision for this study area requires investment by businesses and non-residential property owners and developers. These individual decision-makers and their investments create job opportunities, grow the tax base and provide the goods and services needed by local residents. Property owners, business owners, real estate agents, brokers and bankers will all affect the community's ability to achieve this vision.

Community and Non-profit Organizations

Community and non-profit organizations have a particular issue or area of focus that make them valuable partners for plan implementation. Their leadership and members may contribute time, energy, expertise and other resources to programs and initiatives that make a community special. Arts and cultural organizations will play a role in achieving this vision since future development will change some of Addison's current events and will create opportunities for new events and programming. Foundations including the Addison Arbor Foundation and Addison Legacy Foundation have long played an important role in funding important Addison projects and initiatives. They should become partners for this plan's implementation. The Addison Circle Community Association can mobilize members to take action in support of the plan's implementation.

Individuals, Households and Families

Individuals, households and families can play a role through their own investments and buying decisions. They can participate on committees and volunteer for events that complete plan projects. In addition, they should remain involved, providing feedback on progress through regular communications (in person, in print and online) with the Town of Addison.

Implementation Measure Framework

The individual Action Items are grouped into five categories, so similar actions can be coordinated. These categories are explained below. For each action item, information is provided about when and how the item will be completed. These parts of the implementation matrix are also explained below.

Implementation Category

Capital Investments (C)

The public sector itself makes significant investments that implement this plan. The Cotton Belt line and its station in Addison are major investments of public resources. These investments shape the vision reflected in this plan. Additional capital improvements will be needed to create the places described here. These include parks and plazas, bike and pedestrian trails, public art and other investments.

Education and Engagement (E)

Education is an important part of plan implementation. The developments envisioned here will attract particular types of private developers and investors who may not know about these new opportunities in Addison. Other investors and stakeholders need to be informed and educated about these opportunities, and engaged in the implementation process. Their investments are needed to achieve this vision.

Engagement of the Addison community will also be important. Addison residents will need information and communication about future Town investments and private development. There should be a regular process for updates about progress on plan implementation.

Financial Incentives (F)

The public sector can use incentives so private property owners and developers can more economically build projects that achieve the community's desired character. These incentives range from reductions in development fees or processing times, to tax abatements, to investment in a project's infrastructure or other features. Economic development incentive programs should be evaluated and refined so they support and encourage the development envisioned by this plan, and so they discourage development that is contrary to this vision.

Guidelines and Regulations (G)

Guidelines provide decision-makers and investors with direction and information about the community's desired development pattern and design, community character or priorities. They are recommendations, not requirements. For this reason, City Council, Planning and Zoning Commission and Town staff will consider them but must use judgment to determine whether a particular proposal is consistent with the community's desires reflected in the guidelines.

Unlike guidelines, regulations are adopted by Town ordinance and do establish requirements to be followed in the design and construction of public or private developments. The Town's zoning and subdivision ordinances are important tools for implementing this plan, so refinements or amendments to these or other regulations may be needed to encourage the development envisioned by the plan.

Programs & Partnerships (P)

The programs and operations provided by local government or the private sector also play a role in implementing the community's plan. Activities and programs create the attractions and excitement that will bring people to events in these new gathering places. Annual budgets are usually the means to fund these programs, so decisions must

be made each year about the appropriate level of investment in this aspect of plan implementation.

Many plan implementation programs require a partnership with organizations in addition to the Town of Addison. These partnerships are included here.

Studies (S)

For some of the capital investments, new incentives or programs, the first step is to conduct a more detailed study of the issues to determine the most effective actions to take. These studies are included as individual implementation measures. Until they are completed, the specific actions that will have the greatest benefit cannot be determined.

Tracking (T)

No matter how thoroughly considered a plan has been, its implementation will be affected by changes that occur after its adoption. These may be national or global events, such as an economic boom or bust; they may be changes in the funding sources for specific action items. As implementation occurs, the actual experience may demonstrate that projects can move more quickly or need to take more time. For all these reasons, the plan should have a mechanism to track progress and to review and revise its implementation approach over time.

Timing

Information on timing explains when to initiate action on a particular item. The abbreviations used are:

1. Short-Term (S) items should begin in the adoption year – 2018.
2. Mid-Term (M) items should begin in years 2 through 5, up to the opening of the Cotton Belt – 2019 through 2022.
3. Long-Term (L) is after the Cotton Belt is open -- 2023 and beyond.
4. On-going (O) is an activity that must become a continuing part of Town practices & operations.

Responsibility

Lead Entity

This is the entity that has primary responsibility will lead completion of the action item – a Town of Addison department, another public entity, property owners, or others.

Support Entities

These are entities that will support the lead organization.

Intervention Level

Intervention level indicates the extent to which the Town should proactively invest resources (dollars, staff time, political will, policy or regulatory change, etc.) to accomplish the Action Item. The range is from 1 to 5, with 5 being most aggressive.

Public Sector Cost

The estimated cost for each Action Item is presented symbolically to represent an order of magnitude.

- $ reflects a Town action, but a minor cost up to approximately $50,000.
- $$ represents projects like planning or urban design studies with a cost up to approximately $250,000.
- $$$ represents projects like land acquisition or construction with approximate costs between $250,000 and $1 million.
- $$$$ represents major projects with approximate costs over $1 million.

Implementation Matrix

The implementation matrix lists each of the identified Action Items for implementation of this plan. These action items are organized according to the Implementation Framework described above.

Action Item #	Action Item	Timing	Responsibility		Intervention Level	Public Sector Cost
			Lead Entity	Support Entities		
C: Capital Investments						
C1	Construct Cotton Belt Station.	M	DART		1	$$$$
C2	Design and construct parks and other open spaces in the study area.	M	Parks Dept.	Developer	3	$$$$
C3	Design and construct bike/pedestrian paths along Cotton Belt right-of-way.	M	DART	NCTCOG, IDS Dept.	1	$$$$
C4	Design and construct features on Artist Way to screen views of the dog park from Addison Road.	M	Town		4	$$$
C5	Design and construct the pedestrian bridge over the Dallas North Tollway.	M	NCTCOG	NTTA, IDS Dept.	2	$$$$
E: Education and Engagement						
E1	Meet with leaders in the North Texas development and brokerage communities, particularly those with expertise in TOD and urban residential ownership projects, to share the plans for these areas.	S	EDT Dept.	IDS Dept.	5	$
E2	Meet with restauranteurs and the leaders of 'local food' initiatives in North Texas to further explore a food focus for the destination at the Cotton Belt Station.	S	EDT Dept.	IDS Dept.	4	$
E3	Involve the Addison community in planning and design of parks and public art.	M	Parks Dept.	IDS Dept., Addison Arbor Foundation	4	$
F: Financial Incentives						
F1	Consider creation of a TIF or similar district to generate funds for area infrastructure.	S	IDS Dept.	Finance Dept.	4	$
F2	Conduct a developer RFP process for mixed-use, TOD development proposals on the land adjacent to the Cotton Belt Station.	S	IDS Dept. & DART		5	$
G: Guidelines and Regulations						
G1	Develop design guidelines for Addison Circle West.*	S	IDS Dept.		4	$
G2	Develop design guidelines for Addison Central.*	S	IDS Dept.		4	$

**The intent is to provide more details about the design expectations for future projects to ensure that the high quality and character of Addison Circle continues here.*

Action Item #	Action Item	Timing	Responsibility		Intervention Level	Public Sector Cost
			Lead Entity	Support Entities		
P: Programs and Partnerships						
P1	Work with DART to establish an appropriate name for this Cotton Belt Station.	S	IDS Dept. & DART		3	$
P2	Evaluate changes to Addison Special Events to respond to future development pattern and opportunities.	M	Special Events Dept.		5	$$
P3	Meet with Addison Airport stakeholders to ensure coordination between these projects and investments at the Airport.	S	IDS Dept.		3	$
P4	Meet with Addison Arbor, Legacy and other foundations to establish specific partnerships for funding and implementation of this plan.	M	Parks Dept.	Founda-tions	3	$
P5	Create recommendations for office owners and tenants (in and near the study area) to maximize project's appeal to office employees, and the customer benefits to DART and project retail and restaurants from office employees.	M	EDT Dept.	Business Community	3	$
S: Studies						
S1	Conduct an area parking study to examine issues such as parking requirements, parking structures shared by multiple uses and owners, use of private parking for Town special events, role for 'teaser' parking, way-finding to encourage use of parking structures, potential changes to Town parking procedures or regulatory changes, and any related funding issues.	M	IDS Dept.		4	$$
S2	Conduct a feasibility study to determine market demand for meeting space and hotel adjacent to the Conference Centre.	M	GS Dept.		3	$
S3	Design public art for installation in study area.	M	Parks Dept.		4	$
S4	Collaborate with DART's public art program to ensure the station art coordinates with art in the surrounding area.	M	DART	Parks Dept.	3	$
S5	Determine appropriate design for a shuttle or circulator route, as well as other shared use systems, within the study area and nearby areas.	M	IDS Dept.		3	$
S6	Design and implement a way-finding system for the area, including signage to guide DART riders from trains to other Addison destinations, including the Restaurant Row on Beltline and Addison Circle retail.	M	IDS Dept.		3	$$
S7	Evaluate existing water, sewer and stormwater to evaluate capacity and identify any needed improvements to support future development.	S	IDS Dept.		3	$

Action Item #	Action Item	Timing	Responsibility		Intervention Level	Public Sector Cost
			Lead Entity	Support Entities		
T: Tracking						
T1	Establish a detailed schedule for action items to be completed by the time the Cotton Belt Station opens.	S	IDS Dept.		4	$
T2	Provide annual report to the City Council and community on progress for the study area.	S	IDS Dept.		4	$

APPENDIX I: STUDY AREA EXISTING CONDITIONS

Study Area Existing Conditions

As part of the scope of this project, an existing conditions analysis was conducted for both study area sites, providing the planning team and public at large with a thorough understanding of land use patterns, ownership composition, zoning, and other items of relevance to the plan. The existing conditions analysis is a detailed mapping of infrastructure, community assets, and other considerations and constraints.

The following datasets were mapped as part of the existing conditions analysis of the study area, and are included in this Appendix:

- **Parcel Ownership**. This data will prove useful for Town officials and administrators as they seek to convene stakeholders in the area to implement the objectives of this plan. Addison Circle West encompasses less parcels and, therefore, less parcel owners than Addison Central. While Addison Central has 10 non-governmental owners, the public sector—the Town of Addison and DART—owns most of the land.

- **Existing Land Use**. The creation of a Future Land Use Plan is grounded in realities of the existing conditions and character of the study area. The greater Addison Circle area is largely mixed-use in character, with a series of different uses of land situated on smaller lots and parcels scattered throughout the area. Residential uses, such as multifamily complexes, townhomes, and condominiums, are generally located north of the circle. Hotels, motels, and transit-oriented uses are more common south of Addison Circle, while civic and institutional space clusters in the west. Parks and mixed-use space gravitate around the circle. Commercial space is present throughout the greater area.

- **Existing Zoning**. Existing zoning patterns, like land use, helps form a baseline from which a newly envisioned Future Land Use Plan can be developed. “Urban Center” zoning covers much of the area east, north, and northeast of the circle. “Planned Development” is concentrated south of the DART line, bordering an area of “Commercial”-zoned land along the Quorum and Spectrum Drive corridors. “Commercial” is also common west of Quorum Drive and north of Morris Avenue. Also west of Quorum Drive but south of Morris Avenue lies a sizable concentration of “Public Property” zoning.

- **Existing Parks and Public Features**. Public amenities are of great value to the community, providing space for socialization and recreation within the confines of the corporate limits of the Town. Addison Circle Park, the largest of all parks in the greater area, is just southwest of Addison Blueprints. Smaller parks exist east and north of Addison Circle, but green space is generally limited in the south.

- **Existing Street Network**. The Addison Circle road network is largely focused on funneling traffic north and south, with a couple of connectors and one major arterial—Arapaho Road—directing traffic east and west. Major north-south thoroughfares include Addison Road, Quorum Drive, Spectrum Drive, and Dallas Parkway. Local roads service the multifamily, mixed-use, and urban residential developments north of Addison Circle Drive.

- **Existing Transit Network**. As the DART Cotton Belt Rail project has provided an impetus for this special area study, a review of the existing transit network helps to inform the planning team of the needs of the larger community. As with the existing street network, the focus here is also largely north-south, with Addison Road, Quorum Drive, and the Dallas North Tollway carrying the bulk of transit through the area. Arapaho Road funnels bus traffic east and west next to its sister corridor to the north: the future Cotton Belt rail alignment.

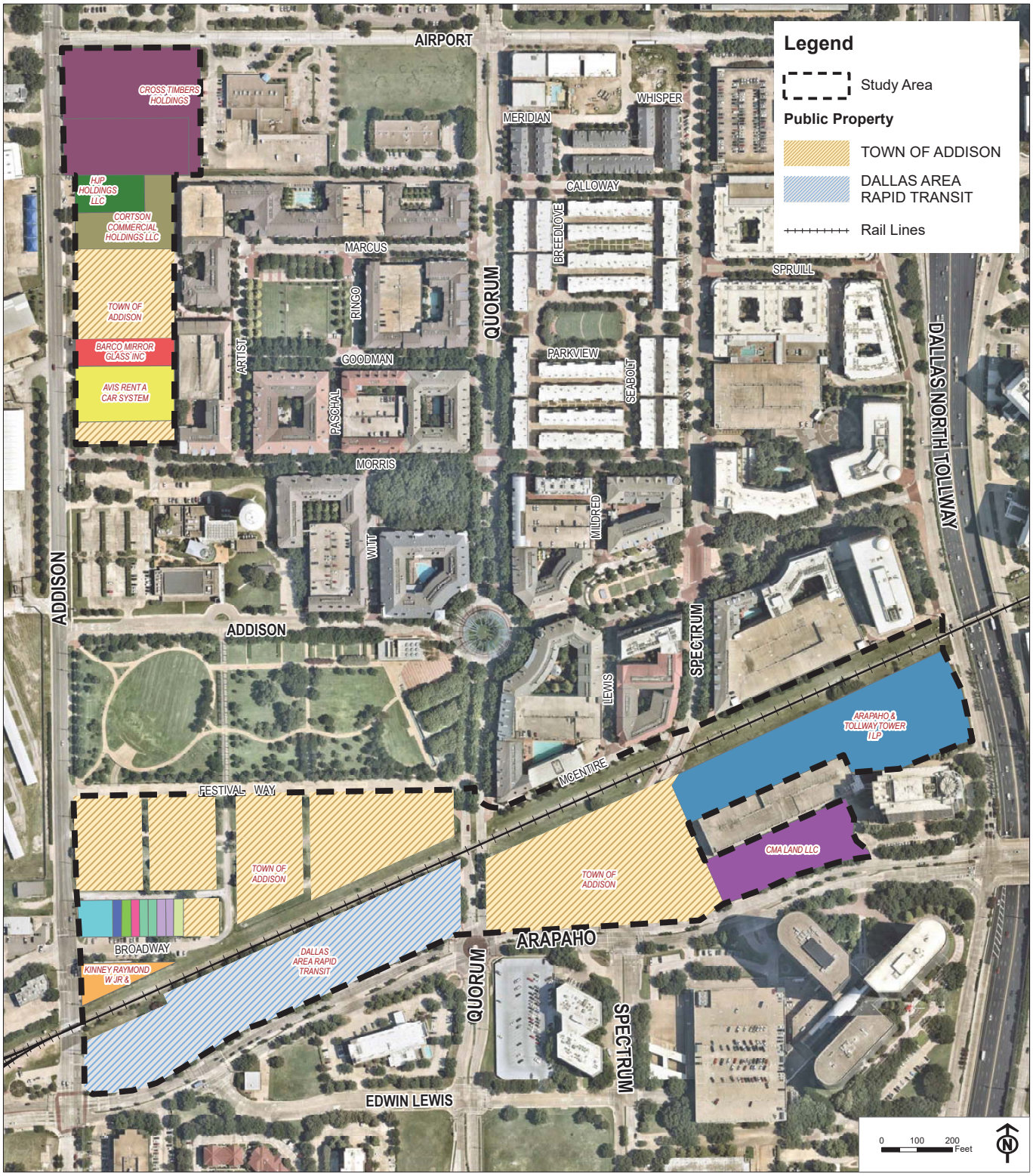
- **Addison Airport Noise Contours**. Noise from the adjacent Addison Airport is a serious consideration for real estate development, particularly as it relates to residential uses. Developers in the western and

southern portions of Addison Central and Addison Circle West, respectively, should be aware of excessive noise from the airport. Development in these segments of the study area may be more favorable to commercial, retail, or transit-oriented uses.

- **Addison Airport Height Restriction Overlay**. Height restrictions in place due to adjacent air traffic define the maximum building heights in which development may take place. About half of Addison Circle West and Addison Central are classified as transitional surfaces, which becomes more restrictive for development heights closer to the airport.

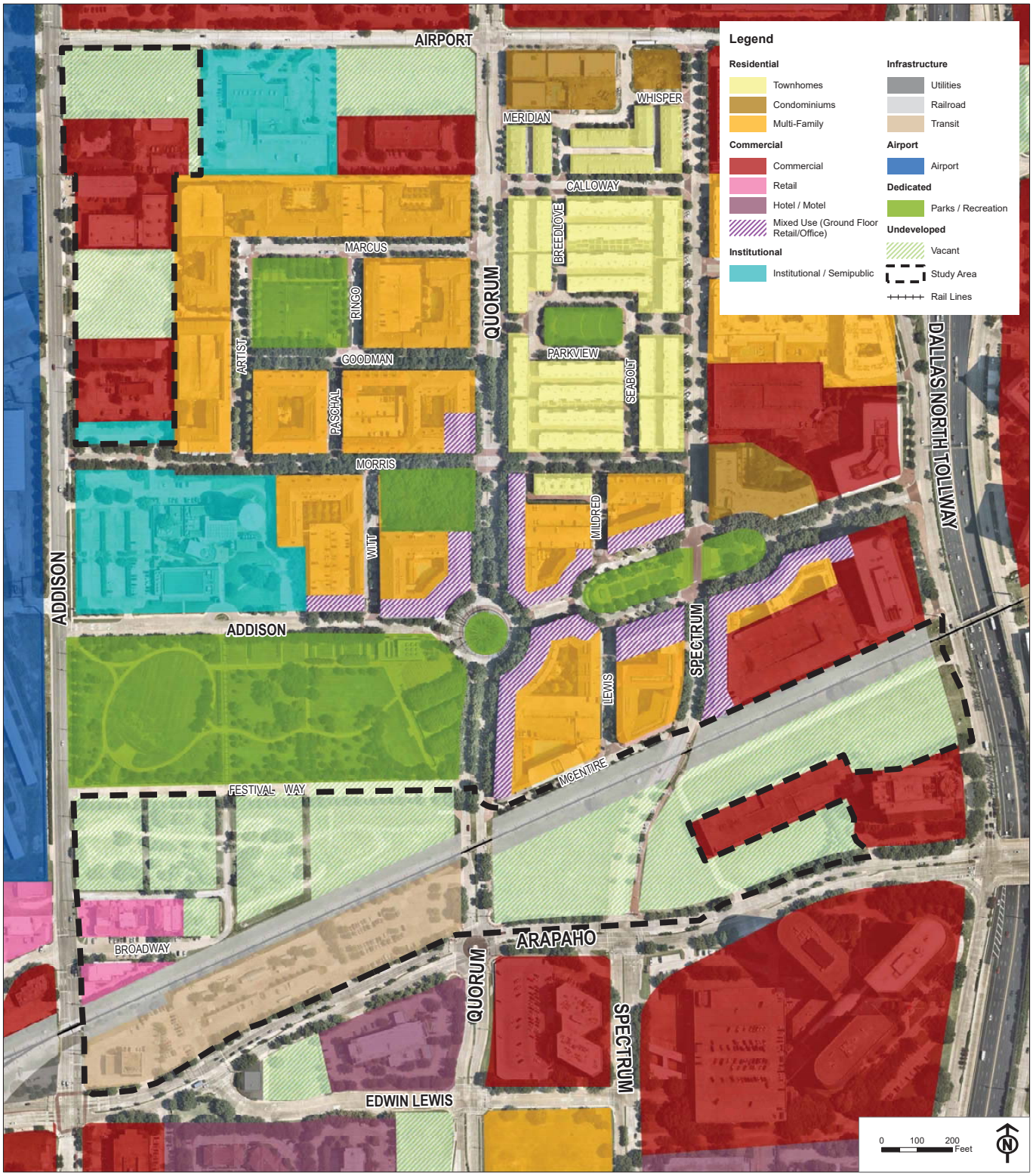
Parcel Ownership

Addison Circle Special Area Study



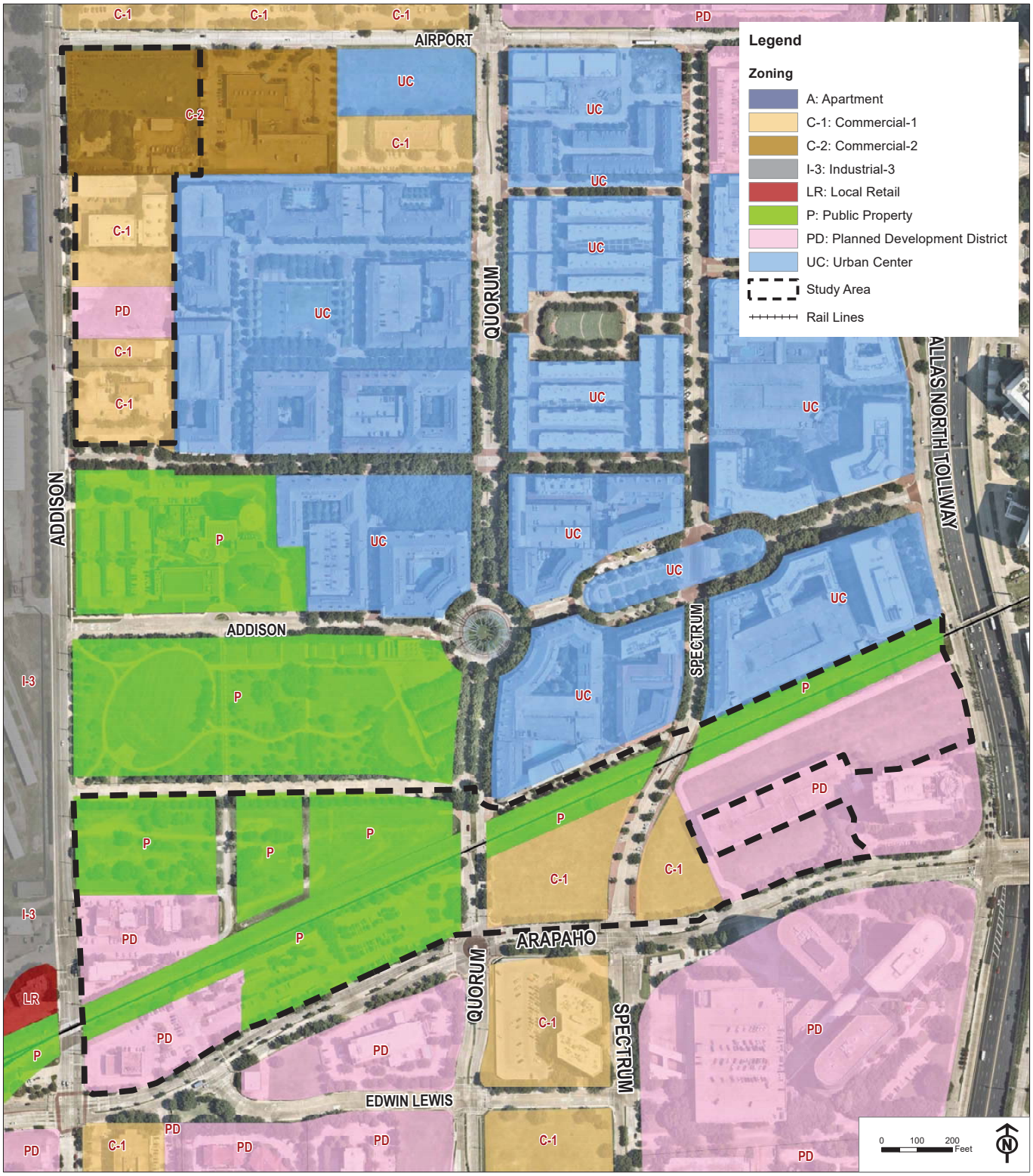
Existing Land Use

Addison Circle Special Area Study



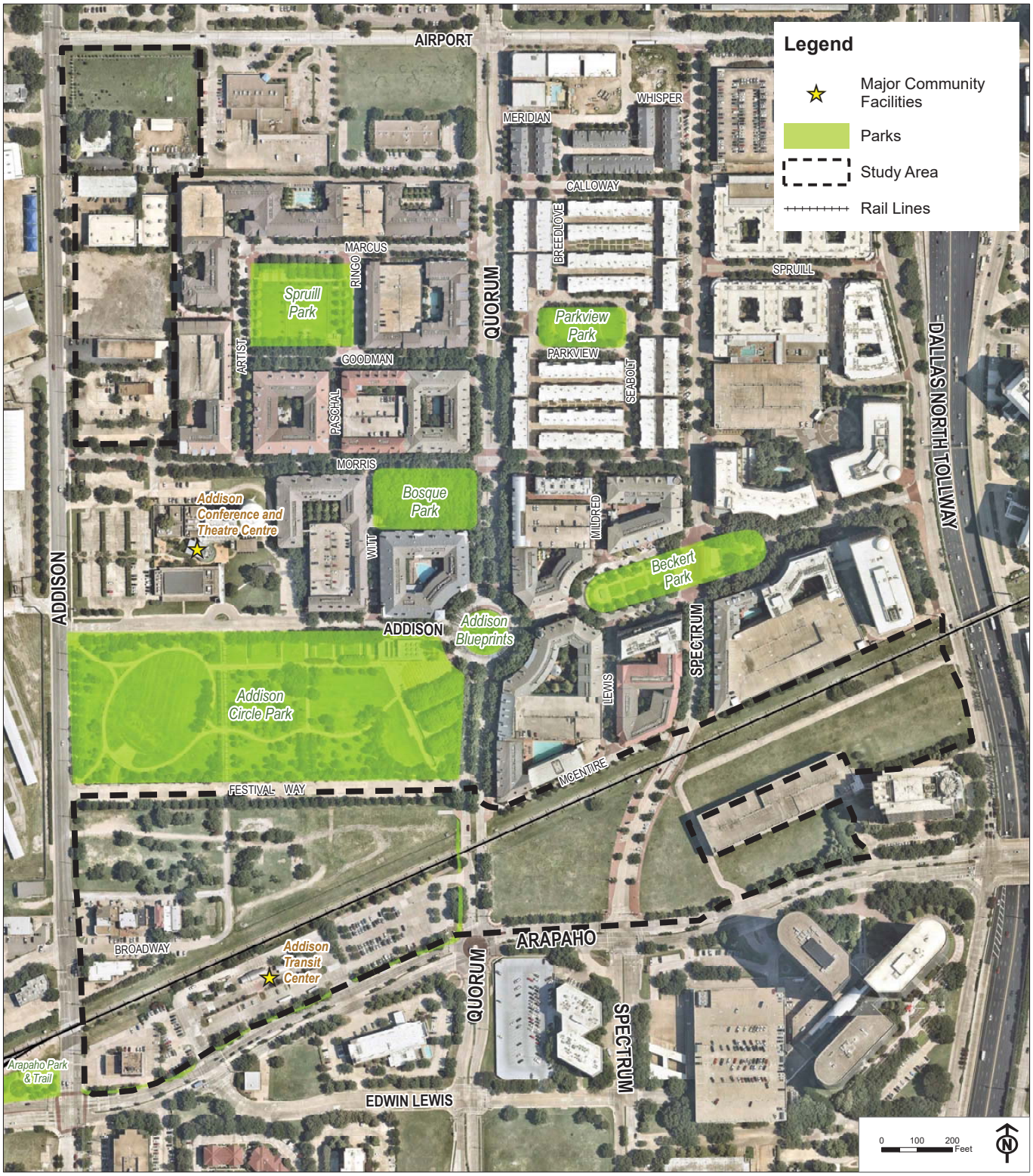
Existing Zoning

Addison Circle Special Area Study



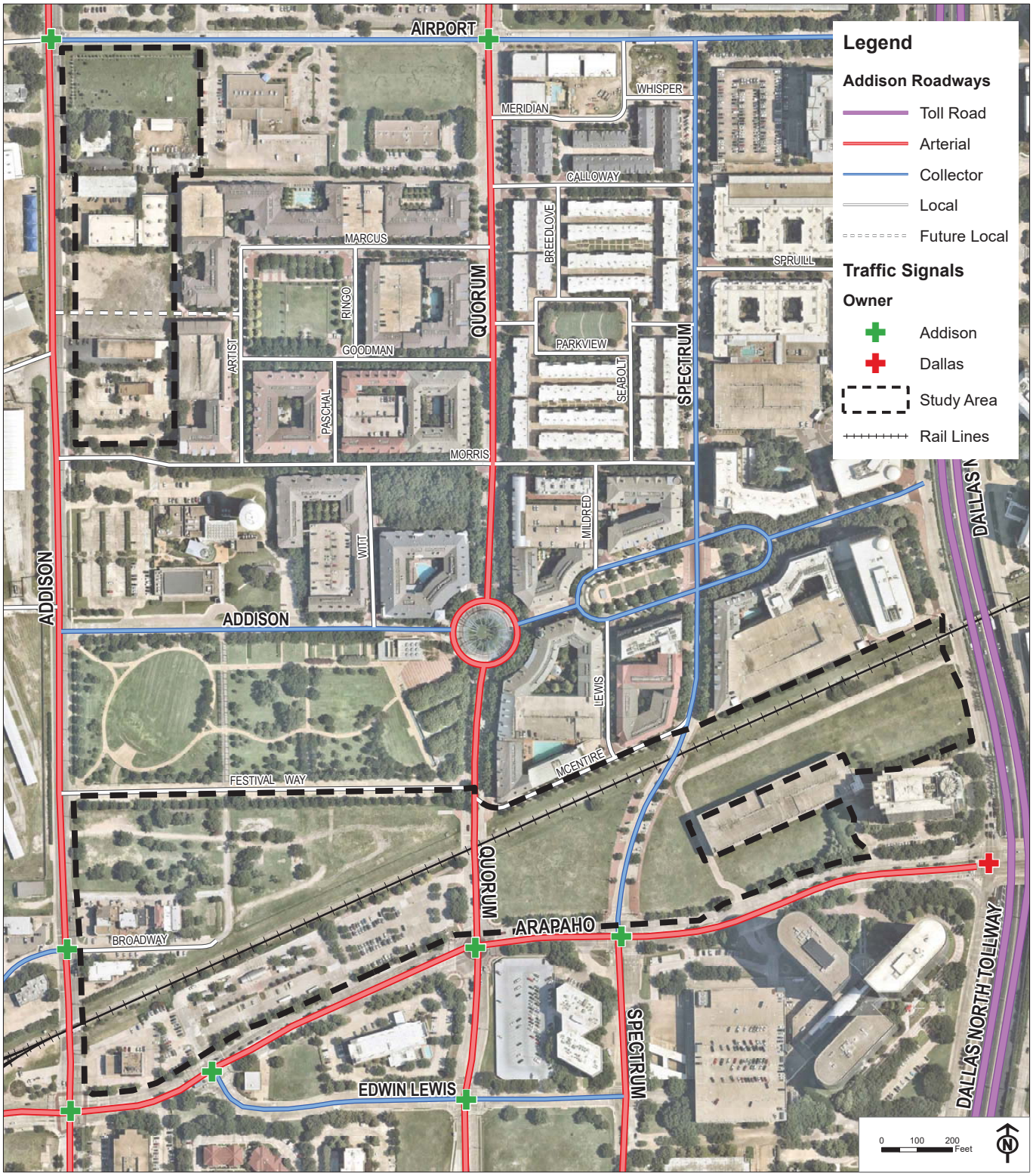
Existing Parks & Public Features

Addison Circle Special Area Study



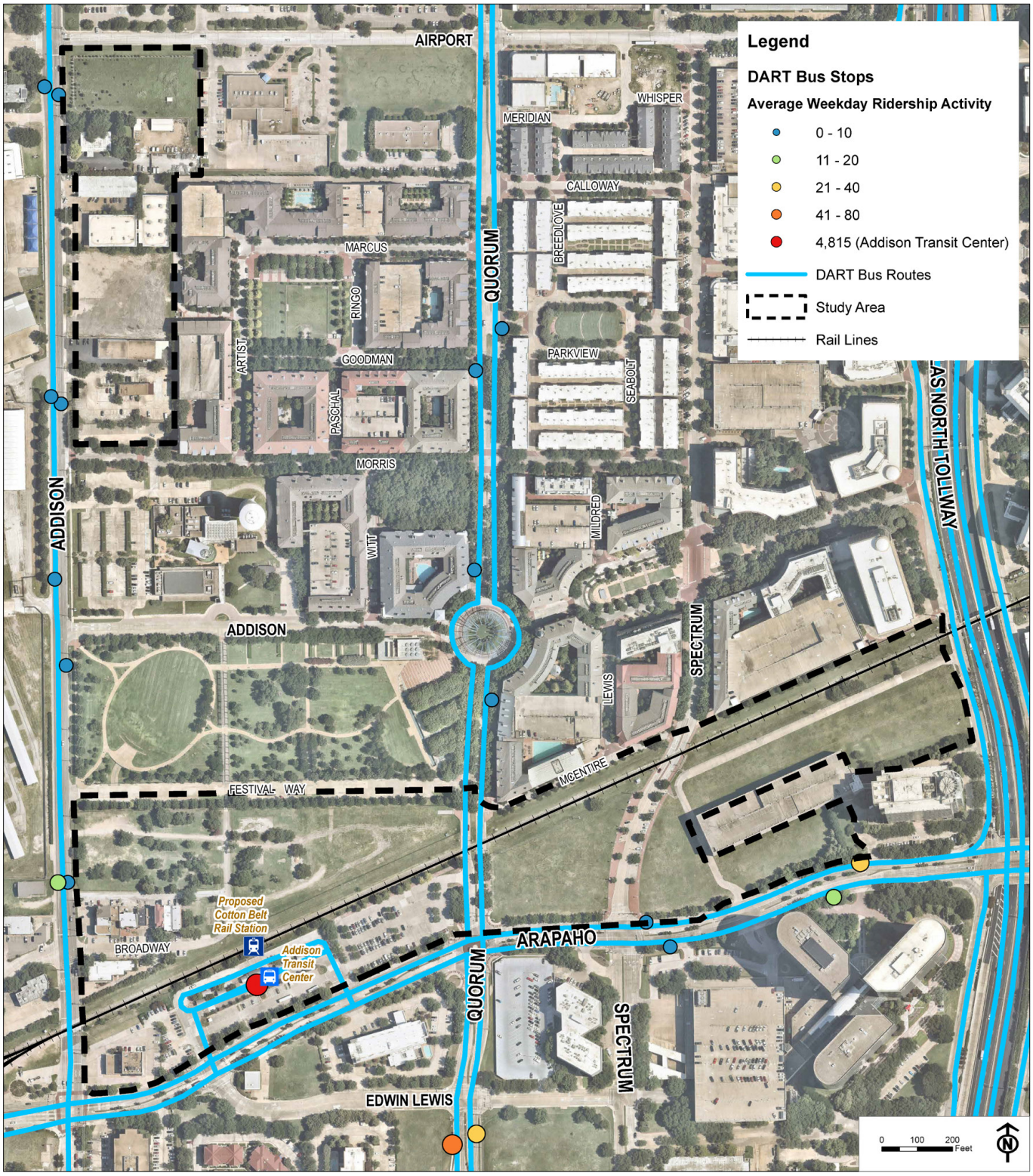
Existing Street Network

Addison Circle Special Area Study



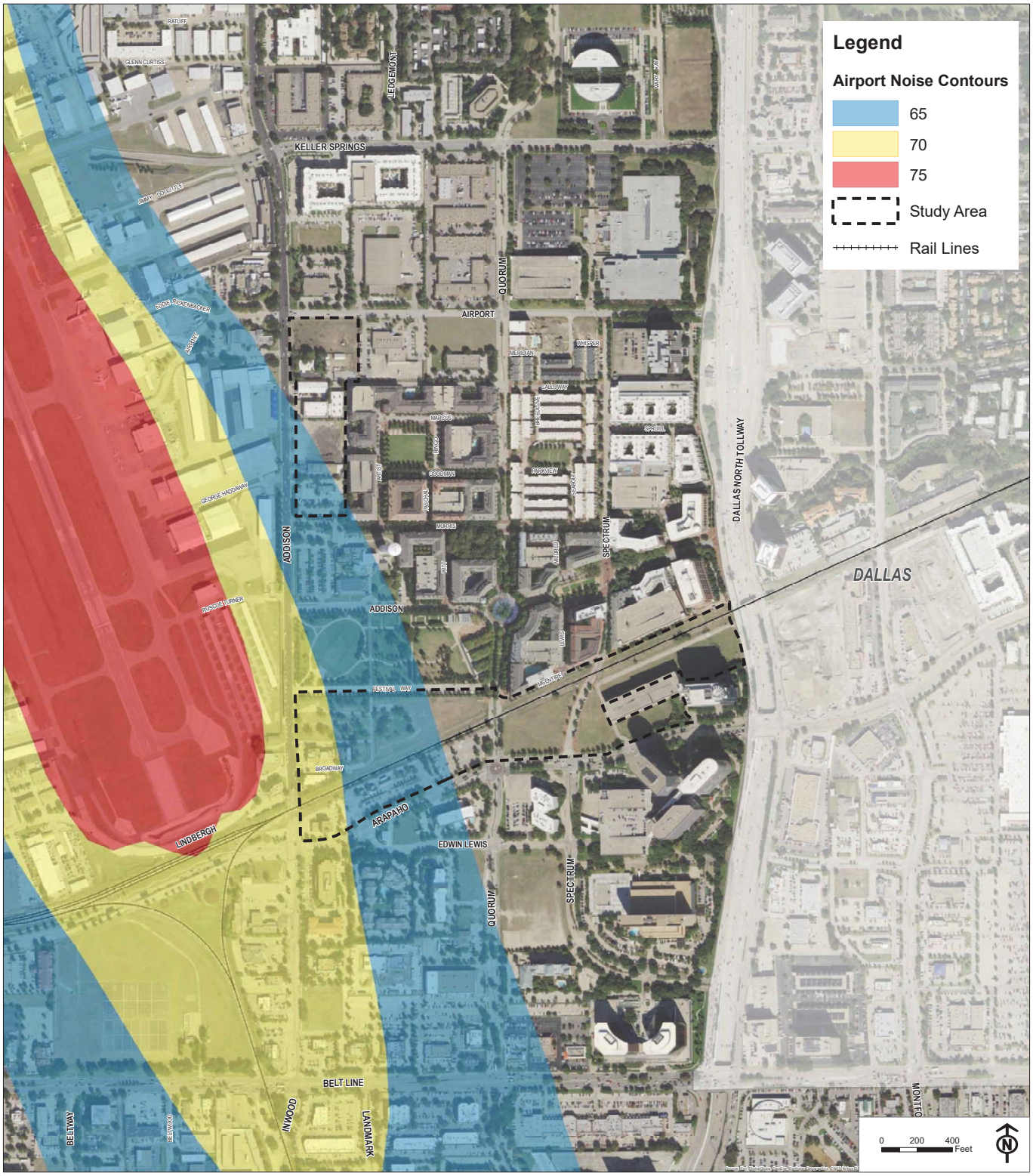
Existing Transit Network

Addison Circle Special Area Study



Addison Airport Noise Contours

Addison Circle Special Area Study



Addison Airport Height Restriction Overlay

Addison Circle Special Area Study

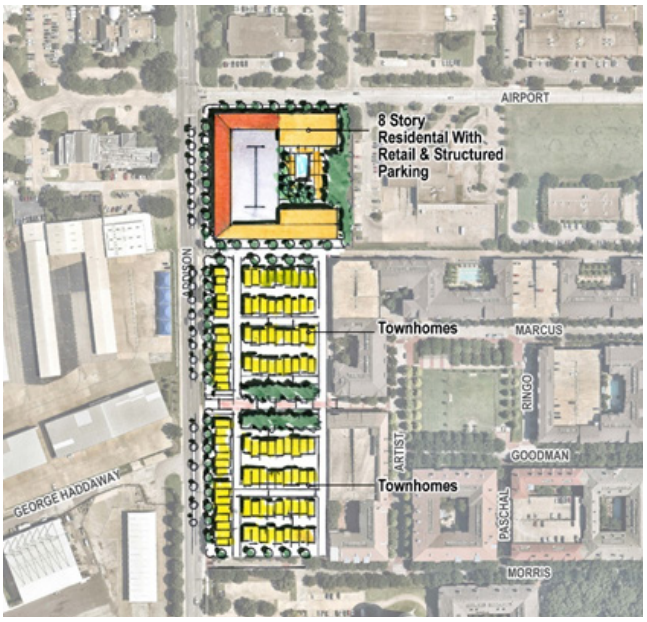
APPENDIX II: DEVELOPMENT ALTERNATIVES

Based on guiding preferences from the public and the Special Project Committee, two development alternatives were developed for both Addison Circle West and Addison Central. At Community Meeting #2 (May 24, 2018), these alternatives were presented along with implications related to land uses, open space, mobility, and market analysis. The following summarizes the development alternatives:

Addison Circle West Alternatives

Option A – Tourism

Option B – Expanded Neighborhood

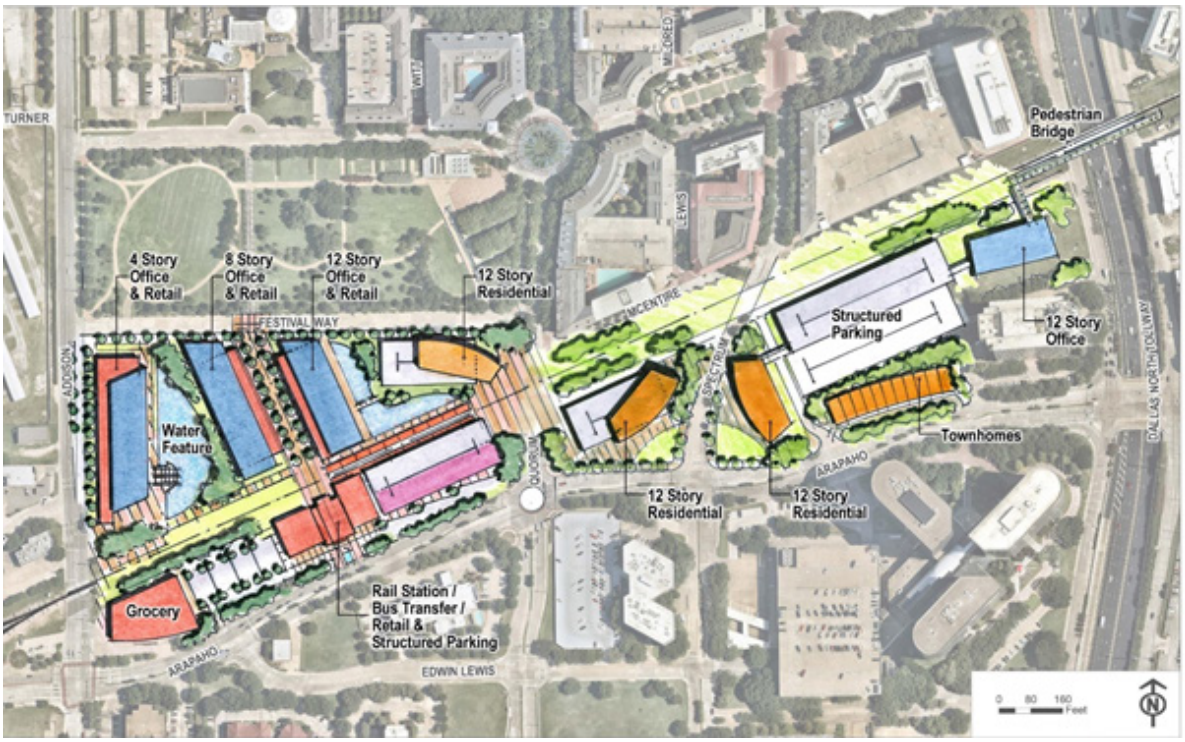


Addison Circle West Alternatives Comparison

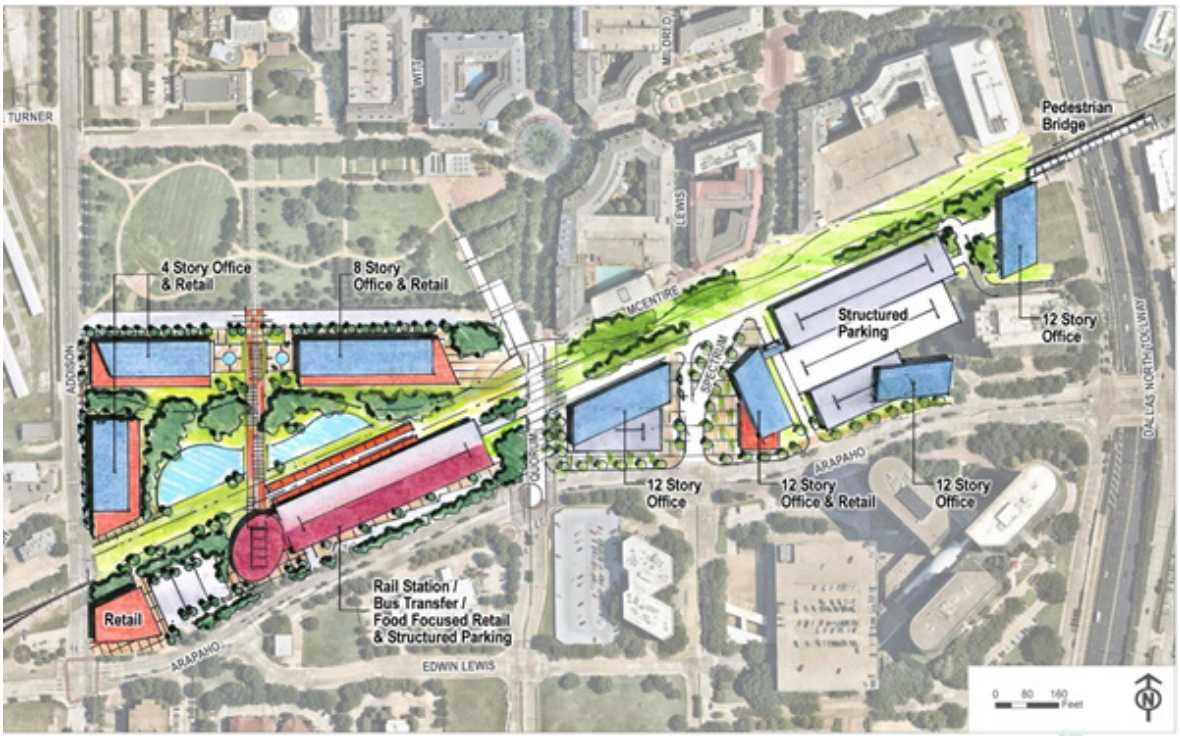
	Option A - Tourism	Option B - Expanded Neighborhood
Strategic Direction (Desired Future Character)	• Build on Addison's reputation for events and festivals • Strengthen Conference Centre by building a boutique hotel next door • Provide retail, office and services adjacent to Addison Airport	• Extend the Addison Circle neighborhood character to Addison Road • Use corner of Addison Road and Airport for urban residential with ground floor retail • Extends the Addison Circle neighborhood with Urban Residential and Townhome Uses
Other Defining Features	• Direct roadway connection from Artist Way in Addison Circle to Addison Road • Live/Work units along Addison Road to support small businesses • Surface parking to support the retail uses on the site, and structured parking to support the Hotel, Live/Work and Urban Residential Uses	• Direct roadway connection from Artist Way in Addison Circle to Addison Road • Structured parking to support the Urban Residential use on the corner, and on street and on-site parking for Townhome uses
Estimated Daily Trip Generation (Total New Trips)	5,300	1,700
Estimated External Trips (Vehicle or Transit)	95%	88%
Estimated Internal Trips (Short-Distance Walk/Bike Trips)	5%	12%
Market Implications	• This area supports additional higher-density housing and neighborhood retail uses. • Both rental and for-sale housing products are appropriate for this area. • While this location lacks the cross traffic and through traffic to support community retail uses (like a grocery store), the concentration of housing, Airport employment, and future employment and lodging uses could support more convenience and neighborhood-oriented uses.	

Addison Central Alternatives

Option A – Residential Focus



Option B - Food Central



Addison Central Alternatives Comparison

	Option A - Residential Focus	Option B - Food Central
Strategic Direction (Desired Future Character)	• Add new housing options to the Addison Circle neighborhood • Create unique office opportunities facing Addison Circle Park • Include new community serving retail • Continue office focus along the Tollway	• Create a cluster of food-oriented attractions at the Cotton Belt Station • Include restaurant incubator (Trinity Groves), local food shops (San Francisco Ferry Building), chef-driven and local restaurants, culinary training programs, etc. • Other areas continue office development along Tollway and extend office to Addison Circle Park
Other Defining Features	• Combined structured parking supporting residential and office buildings • Urban style park with a water feature north of future rail station • Potential location for grocer • Pedestrian / Bicycle connectivity between the Dallas North Tollway and future rail station provided along Arapaho Road	• Passive green space north of future rail station • Pedestrian / Bicycle connectivity between the Dallas North Tollway and future rail station provided along rail line
Estimated Daily Trip Generation (Total New Trips)	13,300	18,800
Estimated External Trips (Vehicle or Transit)	83%	86%
Estimated Internal Trips (Short-Distance Walk/Bike Trips)	17%	14%
Market Implications	• This area supports both higher-density office/employment and residential uses. • Addison continues to be an attractive location for office space along the DNT corridor. This location is enhanced by transit and public amenities (e.g., Addison Circle Park). • Depending on the level of activity created at this location, a grocery store and/or several specialty food stores could be supported. • A “Food Central” concept is a market-supported opportunity that could take a few years to develop, depending on its ability to secure an experienced operator, foster a healthy tenant mix, and acquire financial backing.	

APPENDIX III: COMMUNITY INPUT

Input, feedback, and guidance from the community was an important component of the study process. Public outreach through events, work sessions, and meetings provided the Town and planning team with a well-rounded perspective of both the study sites and the Addison community as a whole.

Stakeholder Interviews

Several interviews with community leaders, neighborhood associations, and other key stakeholders and stakeholder groups articulated local expectations for the development of the two sites. These interviews took place in February of 2018, during the initial stages of the study.

Stakeholder Group 1 – 8:15 – 9:15 am: HOAs/Neighborhood Associations in the Circle – 2 representatives from each of the 4 associations. (8 Total – 7 Attended the Session)

1. Where are the neighborhoods you represent?

- Meridian –On Airport- Condos – Townhomes and Condos
- Aventura at Addison Circle and Spectrum
- District A – 83 Townhomes

Please tell us something about the types of units and the people who live there

- There are not a lot of children living in the developments
- Many of the developments are 3 stories, and those have people below 50
- There are currently more empty nesters moving into the neighborhoods, and young people moving out

2. What aspects of today's Addison Circle are most important to your neighborhood's residents?

- Like proximity to Legacy and Downtown
- Ability to walk
- Like the proximity to variety of restaurants
- Looking forward to connection to DFW with Cotton Belt
- There is a strong sense of safety in the area – even at night – well lit
- Like the smaller events focused for the community – well programmed – summer series, the issue is when there are regional events
- Cotton Belt will assist with people from region getting into events – and especially leaving the events (people arrive over an extended period of time, but all leave at the same time when the event is over

3. What aspects of today's Addison Circle cause concern to your neighborhood's residents?

- Traffic during events is a nightmare
- People tend to speed on Spectrum and Quorum
- Visitors do not know where to find parking – it exists, but maybe needs better signage
- If people that live in the Circle would park in the garages, there would be more on the street for businesses and visitors
- Existing residents need to support the Circle businesses more

- Young people in Addison Circle are not eating in the Circle
- Post is in the business of keeping retail space leased, so sometimes the establishments are not well run – MAA (the company that took over from Post) has not leased retail previously

4. What new uses or activities would you most like to see within this study area?

- Restaurants like exist in Trinity Groves – this could attract the young people in Addison Circle to stay in the Circle
- A real grocery store like Trader Joe's – only have a convenience store today
- Starbucks
- Could possible see more townhomes or condos, but that would also increase the traffic and parking problems
- If you create a restaurant destination here on the rail, people could use the Cotton Belt to get to the facility
- Want to see the necessary retail establishments so that one would never need to get in a car and leave the Circle
- Would like to see inexpensive office space for co working – rents on existing spaces are outrageous – not exciting to some – would prefer to see the sites maintained as green space, but know that is not practical
- Assisted living may be a potential use, but Traditions is close by – home health may be preferred if elevators could be added to units
- Addison Circle is a more mature Uptown

5. What changes would improve the connections between this study area and the main Addison Circle area?

- The triangle along the north side of the rail should be considered as an entrance rather than an edge
- The triangle should be a grocery store and supporting shopping – or maybe another Mockingbird Station type development
- Like the idea of trails throughout the area connected to the surrounding communities
- Could be a great entry feature at the mid-point to Festival Way that connects to the new development to the south
- There is also an opportunity to keep office workers in the Circle for lunch with this type of development – restaurants are currently empty in the daytime
- The parcels to the north are better suited for grocery store or additional residential – prefer condos over apartments – Multi Story

6. If the Town could invest in just one or two capital investments next year, which ones would provide the greatest catalytic benefit for desirable development?

- Want to see a series of trail loops that provide options for distance / time
- Bike trail along Cotton Belt is a positive aspect in the future – will be 52 miles long as envisioned – this could lead to specialty bike shops / repairs
- Should consider shuttle service during events to alleviate parking and traffic issues

7. What other short-term actions would bring the greatest benefit to this study area?

- A restaurant incubator could be a good area of focus

Stakeholder Group 2: Property owners along Broadway (Triangle Property North of DART Rail (8 Owners – 2 Attended the Session)

1. **Which properties do you own, how long have you owned them, and what uses do you currently have?**

- Have owned two of the buildings since the 1990's – they were RTC buildings – were leasing from the owner and then bought them – they are offices for their Advertising Agency
- Have about 7500 square feet
- Buildings are live/work with apartments on top floors
- For now, would like to see the company stay there (it is doing well), considered living in the building, also considered vacating and consolidating to their building on Wiley Post

2. **Do you use Addison Circle in your marketing for the property and its tenants? If so, how has it been helpful? If not, why not?**

- Are not really connected to Addison Circle today – it hurt them when their road was closed for Addison Circle development
- The events are not a huge problem for them now, although there were problems in the past with communication from the Town about closures
- There will be issues with properties along Addison Road due to 2 story height restriction

3. **What new uses or activities would you most like to see within this study area?**

- Would like to see an extension of the park in the future
- Believe there is enough residential in the area – see this area as more retail and office, although the restaurants in the Circle are not successful
- There would need to be better access – the one way in and out does not work
- Miss the 7/11 that used to be close by
- Everybody delivers now, so it is not as important to have things close to you
- In the area to the north at Airport, there could be something more retail oriented – this could be a great location for the Grocery Store concept
- Would like to see more of the Circle types of activities, or restaurant development like in the Woodlands to the east of their property
- Could envision restaurants in the park
- Need to accommodate dogs
- A hotel would be very good to support the existing conference center

4. **What changes would improve the connections between this study area and the main Addison Circle area?**

- It is important to see walking and bicycle trails connecting all of these sites to the existing Circle development
- Need water features in the area

5. **How can this area take advantage of a future Cotton Belt DART line and station?**

- Legacy West type development with restaurants and office could occur to the east along the rail line – that would appeal to the apartment people
- High end grocery store / restaurant would be of value to the area (Central Market, Whole Foods, etc.) – Even a walk-through market like

Baltimore of San Francisco

- Indoor concert venue
- Parking Garages supporting the multiple venues will be needed
- Native plantings could add identity to the area
- Special events every weekend would be supportive of the Rail / Bus aspects

6. Do you have any other recommendations for this area's future?

- Basically need to enhance what is already going on in the area

Stakeholder Group 3: Property owners from the northwestern portion of the study area combined with the two privately held undeveloped parcels at Arapaho and the Tollway (7 Owners – 4 Attended the Session representing 3 properties)

1. Which properties do you own, how long have you owned them, and what uses do you currently have?

- Van Trust has property on DNT – Purchased in 2015 – zoned for sister office tower planned to be identical to building to the south – part of Quorum Business Association – bought the property intending to build to suit, but tenant went away – now want to consider live work with a residential component to their project – may also look at retail
- Avis/Budget has the property on Addison Road - $26 Million Operation – Works well as it is today – supports the FBO at the Airport – In the future, will have more automated rental system
- 3.2 acres on corner of Airport and Addison – have owned property since 1957 – Airport was a dirt strip at that time – office there – underutilized interim use – property is for sale currently – there has been a lot of interest from multi-family developers – several don't currently have a presence in Addison Circle but would like to have one

2. What new uses or activities would you most like to see within this study area?

- Would like to see the properties along Addison Road at Airport up to the same level of quality and development type as Addison Circle
- Would like to see live work concept for the properties in this area to support the car rental activity
- Would like to see the area along the Tollway more activated with retail, walkability, residential and office –there is already open space, but it is hidden – this site has the ability to connect to Addison Circle with pedestrian connectivity
- It is hard to pull restaurants away from Belt Line and into Addison Circle – the success of Belt line is hard to overcome (statement was made that this is true if you are focused on your car – Addison Circle has walkability)
- Would like to see the level of food and beverage in Addison Circle increased
- The existing office building site on the tollway is perceived to be on an island
- Addison Circle has lost some of its energy and needs to be re-energized
- The height required by the zoning on the DNT will drive this to be Class AA space due to construction costs. Class AA tenant expects a lot of amenities – Frisco Station is Class AA and there are a lot of amenities with restaurants, entertainment, walkability, etc. People are saying for the rates that are being expected, they can go to the new areas further north. Years ago met with the CEO and COO, now are meeting with CEO and HR Director. Everything is focused on employee retention. Need to brand the office development as being part of Addison Circle, not the Tollway.
- Need to get a name brand restaurant, but may need and supplement the rent to get a

recognizable anchor to catalyze the area

- Need to turn Addison Circle into a District that becomes a destination that gives people a reason to get off of the train. Need to tie into Addison Circle Architecture, but make it more fresh and new
- Southlake has done a lot with outdoor spaces and locating brand restaurants (chains) into the area – need to avoid constant turnover of restaurants
- Need to become a destination like Trinity Groves
- Restaurants should be focused on millennials and empty nesters
- Independent senior living would be a great addition to the area with the walking trails, theatre, events, etc, it could be very successful

3. What changes would improve the connections between this study area and the main Addison Circle area?

- Offices are currently oriented to the tollway – need to have stronger connection between office buildings and Addison Circle – a circulator and additional office space to support daytime use of restaurants may be needed – circulator would need to have minimal wait time

4. If the Town could invest in just one or two capital investments next year, which ones would provide the greatest catalytic benefit for desirable development?

- Make it as easy and safe as possible to get across the railroad tracks
- Consider a grade separated station
- If we cannot put the station above, consider elevating the pedestrians

5. Do you have any other recommendations for this area's future?

- Accommodating small children could help attract more families to the area
- The Town may need to make some sort of financial commitment to make the development envisioned a reality

Stakeholder Group 4: Town of Addison and DART representatives (3 – 2 City and 1 DART)

1. What are the current plans and concepts for the Cotton Belt station here?

- There are a lot of things that DART can do with the surrounding properties
- The platform is essentially set at this point
- Each station may have its own architectural identity
- There will be a certain number of spaces that DART needs – they will look at shared parking
- DART maintains ownership – 99 year leases
- Cotton Belt Construction timeline is currently 2022
- Submitted EIS and looking for ROD by June or July
- Bus bays and parking could be separated from development as long as it is clear visibility to the platform
- There can be at grade pedestrian access at both ends of the platform

2. What development would be most supportive of the success of transit?

- This should be the ultimate destination – Addison Circle was designed for Rail
- DART will send ridership projections

- The difference between 20 minute headways (light rail) and 30 minute (commuter rail) should not be an issue
- DART has commissioned a study on how much parking has been provided and what is being utilized (this is to address the overparking requirements of lenders) – will be complete by this time next year
- Have an issue with parking garages being built where it would be better as active space
- Dense environment in this area is needed with strong pedestrian connections
- Bus shuttles may be an option if there is a PID or TMA – 50/50 cost split
- Need to build an identity of "Downtown Addison"
- All of the stations are doing well from a housing standpoint – focus on millennials and knowledge workers – there has not been much demand for condos around stations – mainly market rate apartments
- Galatyn Station is a great example of having festivals next to a station
- It is possible to develop above the tracks, but the price of land is not there to support that type of development.

3. What new uses or activities would you most like to see within this study area?

- The area to the north should be looked at in relation to "last mile" – it has a bus line on Addison Road and could support the station.
- It should be envisioned for residential, but because of proximity to the airport, should probably not be owner occupied

Special Project Committee Meetings

The Addison City Council appointed members of the Special Projects Committee to serve as citizen guides during the study process. Four meetings between February and July of 2018 facilitated discussion and the review of the project's status as it progressed towards completion. The following notes detail comments submitted to the planning team by members of the committee over the span of these four meetings:

Meeting 1: February 28, 2018

Strengths and Opportunities – Area 1 (Addison Central)

- Only 3 Property Owners
- Increase Tax Base
- Sense of Community – Knit the whole together
- Convenience
- Special Recreation
- Something different that nobody has
- Dovetail with Parks Plan Update
- Support traffic to Taste of Addison
- Support traffic for labor force to restaurant business
- Addison Transit Center is already there – these facilities transfer to and from the train
- Rail becoming the primary transportation to DFW Airport
- Blend into Addison Circle Park and the new Addison Airport development
- Need for public multi-level parking to support stop in Addison as well as support for events & retail on Beltline
- Walking distance for Circle residents
- Expand urban lifestyle that's here now
- Recruiting top talent from other suburbs for businesses in Addison
- Special Rec
  - something more than regular park activities
  - Opportunity to dovetail with Parks plan
- Recruiting
  - Corporate concern about attracting top talent – they want transit
- CRITICAL
  - attracting talent
  - need for multi-purpose parking
    - address concerns
  - Building on existing assets
    - transit center
  - expand the urban life style
  - Sense of community
    - knitting the pieces together
  - add value to increase tax base

Weaknesses and Threats – Area 1 (Addison Central)

- Keeping pedestrian walkways safe along Quorum & Addison Road along the Cotton Belt
- Even when there is not a festival, there is heavy foot traffic
- Walking to the Belt Line Safety with Train
- Odd Shaped Properties
- MAA Management not being responsive to the apartment residents and retail tenants' needs. Gate malfunctions. Closed shops. Unhappy residents who leave Addison.
- Making sure management works
- This would be different CO

- Lose carnival area for special events
- Need much more parking
- Increased traffic
- Less green environment
- Safety (community)
- Do we want more residents?
- Too dense?
- Challenge creativity – what do we have no one else does?
- Reduce parking spaces for Taste Addison, Kaboom Town Vendors
- Uber, Lyft instead of transit?
- Cost of transit?
- CRITICAL
  - Management issues f/ development
  - pedestrian safety
  - questions with Uber/Lyft vs. DART
  - questions on cost to use DART

Strengths and Opportunities – Area 2 (Addison Circle West)

- Use of town land for developing
- town building alternatives – ie. new town hall area
- retail opportunities for airport businesses and customers and residential areas
- tie rest of community to airport
- opportunity to develop land that has not been in line with other Addison development
- Rectangular land parcels allow for efficient development
- opportunity to embrace Addison airport
- Opportunity to set tone for Addison Circle 2.0 on heavily traveled Addison Road
- Mix use/park development
- CRITICAL
  - Park/open space
  - airport businesses and customers services (retail)
  - Tie community to the airport

Weaknesses and Threats – Area 2 (Addison Circle West)

- multiple property owners
- no residential – airport noise contours
- disrupt residents in the townhomes/apartments, if incompatible here
- reduce potential parking space for Taste Addison for vendors
- Isolated from Addison Circle
- No synergies to north or west
- we need overflow parking for major events
- leave the cow pasture alone, it's a nice touch the way it is
- size of area/layout – narrow
- increased traffic/ need more stop lights
- CRITICAL
  - Better access for vendors for Taste of Addison
  - Bridge the airport and Circle
  - isolated
- INVESTIGATION
  - parking (current) and changes anticipated with DART

Site 1 (Addison Central) Brainstorming

- Parking
- "Legacy food hall" /restaurant cluster
- Stronger connectivity East/west and North/South
- Ride Share pick up/drop off
- Multiple options (tunnel/bridge)
- permanent carnival/entertainment area
- more office/mixed-use
- R/R Training Center/incubator/exhibitions
- Art Incubator
- All-year round destination (not just festivals)

Site 2 (Addison Circle West) Brainstorming

- Retail/commercial
- connect the street grid
- multifamily (senior?)
- town hall development (synergy with fire and police)
- expand the convention center?
  - what are current needs?
- food options (takeout or casual)
- Grocery options?
- Art district (tied to conference?)
- Car rental
- Convenience store – 24-hour option
- Entertainment facilities
- Wider sidewalk/trail, tie west side to east

Further Investigation

- Conference center needs
- specifics on height restrictions
- exhibit/stations on DART (get DART presentation)
- Ridership on line (by station)
- Need for senior living

Meeting 2: April 25, 2018

Vision Statement

- Making Addison a major destination, not just Addison Circle
- Nod to architecture – quality, high density, mixed-use
- "TOD" sometimes overused
- Hesitant to use "high density"; use urban character/lifestyle instead
- Multimodal; hub for mobility
- Welcoming for live/work/play for all Addison
- New gateway into Addison

Guiding Principles

- Public art
- Environmental/sustainable features

- Gateway
- Support for community events and performances
- Relationship to Airport and Conference Centre
- "vehicular" seems emphasized over other modes

Site 1 (Addison Central)

- Concern for competition with Belt Line restaurants
- Support existing residential vs. building up additional residential
- Concern for development activity fronting Arapaho; used primarily for through routes
- Support for more services along Addison Road
- Question about the demand for additional tollway office
- Option B office building may act as barrier between station and the park; open up the views, permeable
- Support for developing the full site (including Addison Rd/Arapaho corner)
- Food market concept; food-focused retail
- Add support for existing restaurants in principles; more emphasis on shops and culinary school
- Arts destination more than just the theater
- Work the green space into area south of the rail

Site 2 (Addison Circle West)

- Is there a way to better connect the airport to Addison Circle?
- No sidewalk along some of the east side of Addison Road or a way to cross Addison Road
- A direct street connection may invite parking for community dog park
- Hard to imagine successful retail at the corner of Addison Rd & Airport Pkwy
- Lack of traffic
- Townhome development may work well here; ownership product +1
  - Change layout on Option B to extend residential to Airport Pkwy
- Community rec center
- Small business services, co-working space (Option A) at Airport Pkwy corner

Indicators

- Safety

Meeting 3: May 31, 2018

Vision Statement

- No additional comments

Addison Circle West

- Curvilinear Artist Way connection preferred or some other measure to mitigate traffic
- Not sure about the need for another hotel
  - Non-res uses, parking structure
- Support for urban res + retail at northern site
  - Concern for success of retail along Addison

Road

- Senior living could be a viable component

Addison Central

- Potential concern for building heights adjacent to park
- Support the extension of park activities into the site before and after development
- Market flexibility for res vs office between Quorum and Tollway
- High design standard for buildings and public realm
- Strong Quorum to station ped connection toward Belt Line
- Support for bike/ped line along rail
- Support for an urban grocer

Meeting 4: July 26, 2018

DART TOD Tour

- Mockingbird trail seemed disconnected and barren (no trees)
  - Addison trail should be more pleasant for peds
  - Bring in Arbor and Legacy Foundations as partners
  - Plan should address ped amenities
- Liked the look of the newer Richardson stations
- Shade, fountains
- Signage should be intuitive at the platform
- Liked the master developer approach to Cityline
  - Created a corporate campus with third party vendors
- Importance of Angelika Theater stood out as regional draw
  - You have to be destination-oriented (day or night)

Chapter 2 – Strategic Direction – Addison Circle West

- Zoning tool for market flexibility with uses but maintain form
  - ex. senior living
- Parking needs to be intuitive for the retail

- More discussion in text, teaser parking? Signage?
- Clarify intended vehicle connections (fire lanes)
- Retail ready seems too limiting; “Flex space”

Chapter 2 – Addison Central

- Screening of parking structures is important
- Worry that grocery is a viable use
  - Keep it flexible

- Building height: “up to” language; Should it be more similar to existing Addison Circle?
- Don’t pigeon-hole just food; Should also be entertainment-oriented

Chapter 2 – Economic

- Alternatives that include senior housing
- This section will include capacity of development
- What is meant by being somewhat “selective” in the market?

Chapter 2 – Open Space

- Design standards that continue the high quality in the area

Chapter 2 – Circulation

- Supporting transit and circular trolley

Chapter 3 – Implementation

- Town should stay aware of DART's action and schedule for service implementation

Additional Questions

- How realistic is the market for retail?
- How do we create enough of a destination?
- Why the drive time for the extended trade area?
- Can economic analysis address retail ready space?
- Special event usage?
- Demographics to support the proposed uses? DART demographics that are using transfer center?

Community Workshop 1

The first community workshop was held on March 8, 2018. This event provided the public input necessary for the development of two alternative scenarios for each site. These alternatives were based on direction received from both committee members and the public at large.

Results from the keypad polling exercise conducted at this event are provided in this appendix, as well as feedback from the following stations:

- Where Am I? (Registration)
- Station 2 – Mobility
- Station 3 – Site 1
- Station 4 – Site 2

Station 1 – Existing Conditions

What do you like best about the existing character of Addison Circle and the study area sites?

- Parks/walking trails
- Open space – variety of possible uses
- Trees, nature, walkable, open space for activities, sports, fitness
- Wide open spaces
- Walk to bars/restaurants
- Free Wi-Fi to work in park
- Open space – small town atmosphere
- Major connectivity hub of the future
- Green space – not just concrete

What features, activities, or services are currently missing?

- Bike paths
- Playgrounds
- Farmers market/culinary education +1
- Boutique hotel
- High rise condo
- Bars and restaurants
- Medical
- Pedestrian mall
- Grocery store (Sprouts/Trader Joes)
- Condo complex with mixed-use included
- Lighting
- Soccer/futsal court open to public, bocce ball
- Sidewalk cafes
- Better connectivity/crosswalks
- Restaurants that last more than a few months +1
- Restaurant incubator/market +1
- Senior living

Station 2 – Mobility

What connections should be created or strengthened?

- Elevate track over Addison Road +1
- Smart street technology
- Plan for little/no need for parking garages
- Rail crossing timing for traffic
- Need for ped crossing across tollway
- Potential circulation issues for cars with train crossings
- Lighting/safety for evening ped activity
- Trail along the rail (for bike, running/walking) +3
- Cotton Belt + TexRail integration
- Ensure safety at pedestrian crossings on Quorum and Addison Road
- Elevated pedestrian crossing at Arapaho & Dallas North Tollway
- Wide sidewalks
- Bike trail/walk trail, bike racks
- Bike trail to Welch Road from Addison Circle area
- Some of Addison Road does not have sidewalks – area south of the conference center to Addison Transit Center. For mobility of pedestrians, bicycles, and wheelchairs, please create sidewalks where they do not exist. Also look at additional areas of Addison Road for lack of sidewalks
- First mile/last mile connectivity to DART station

Station 3 – Site 1

What should the area be called?

- Rail Mctrackface
- Addison Central +1
- Addison Train Way
- Quorum Centre
- Addison Centre
- Addison Way Station
- Addison Circle Station
- Cotton Belt Commons
- Addison Cotton Belt Vicinity
- Addison Crossing +1

Other Comments

- Higher-end hotel with direct airport access via rail +2
- Free trolley around Addison (and Addison in particular) +3
- Need more trees, trails
- Improved infrastructure to alleviate crowds and traffic for big Addison events
- Sidewalks and open spaces +1
- Better parking signage

Station 4 – Site 2

What should the area be called?

- Addison Circle West +1
- Addison Circle (just market it as part of Addison Circle) +5
- Addison Uptown
- Airport Row
- West Addison Park

Other Comments

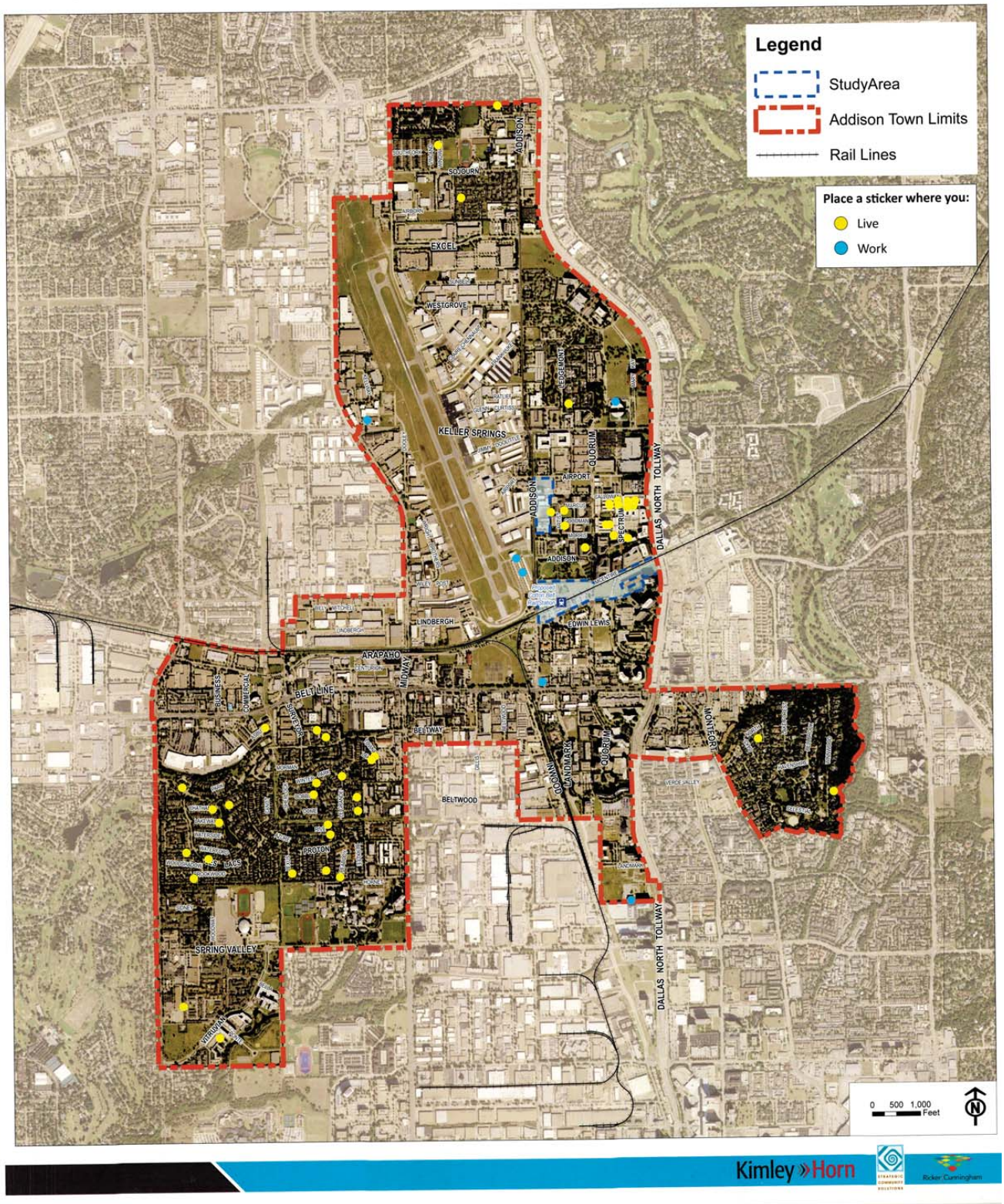
- Creative pockets
- Water (interactive fountains) in a park is okay, but care should be taken to prevent children from being hurt
- Open sports area within and public green space
- Please note votes for streetscapes – landscaping and wide sidewalks softens image, shade=walkability
- Wide sidewalks, brick preferred +1
- Community garden +1
- Senior living +4
- Amazon GO!
- Theater academy
- Creative outlet – all ages such as painting with a twist, Quiqqleys clayhouse, sip and board

Other Comments

- Increased collaboration between Addison, Farmers Branch, and Carrollton +1
- Addison needs more public sports fields/courts
- Community garden
- We need connections between areas, trails, etc.
- Circulator all along Belt Line and Arapaho loop
- Parking garage
- Taxi, Uber, Lyft pickup/dropoff lane and separate area for cell phone waiting like at airport
- Safety – lights, security personnel, emergency phone
- Impact on Keller Springs if Arapaho/Belt Line blocked by train traffic

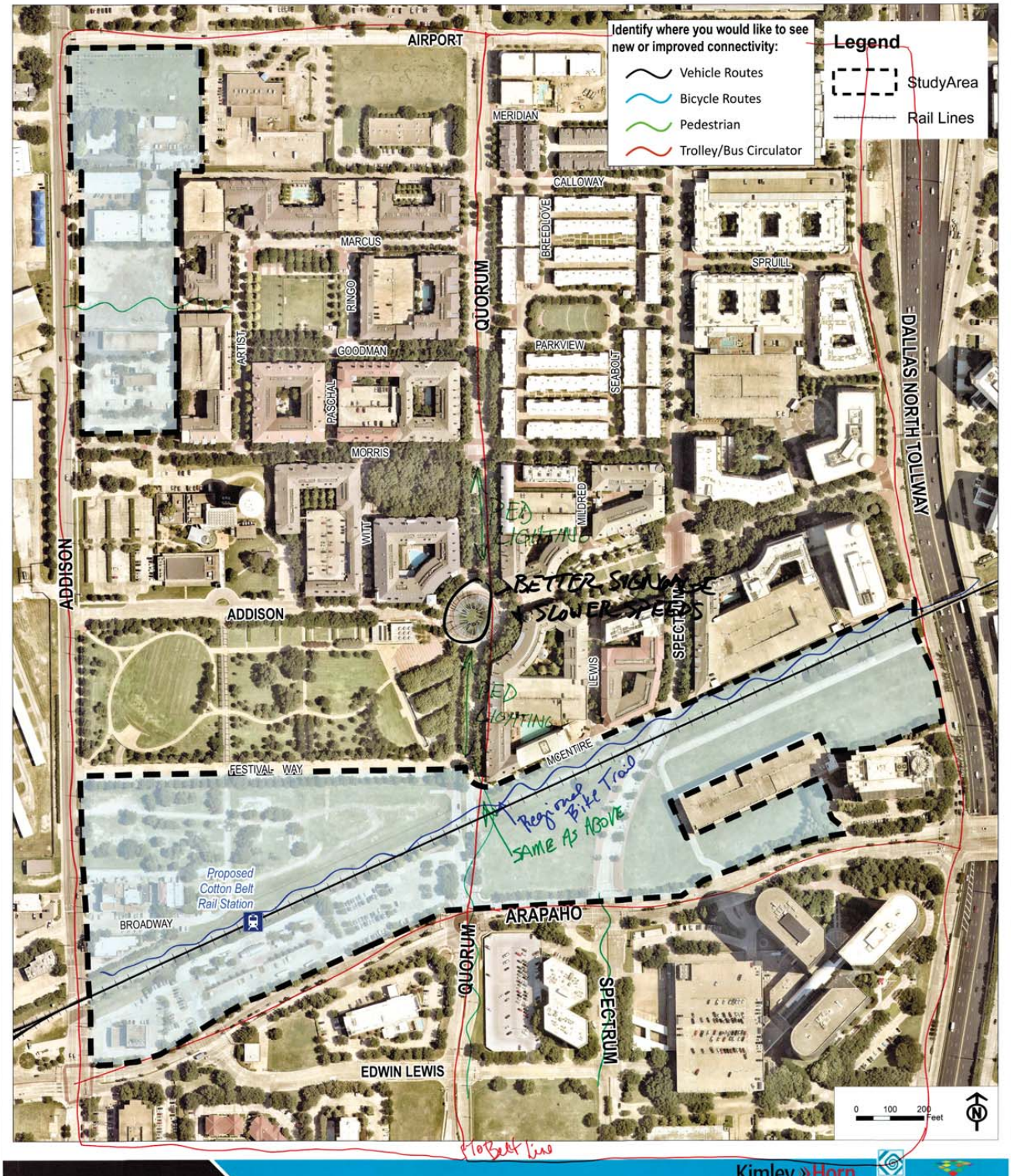
Where Am I?

Addison Circle Special Area Study



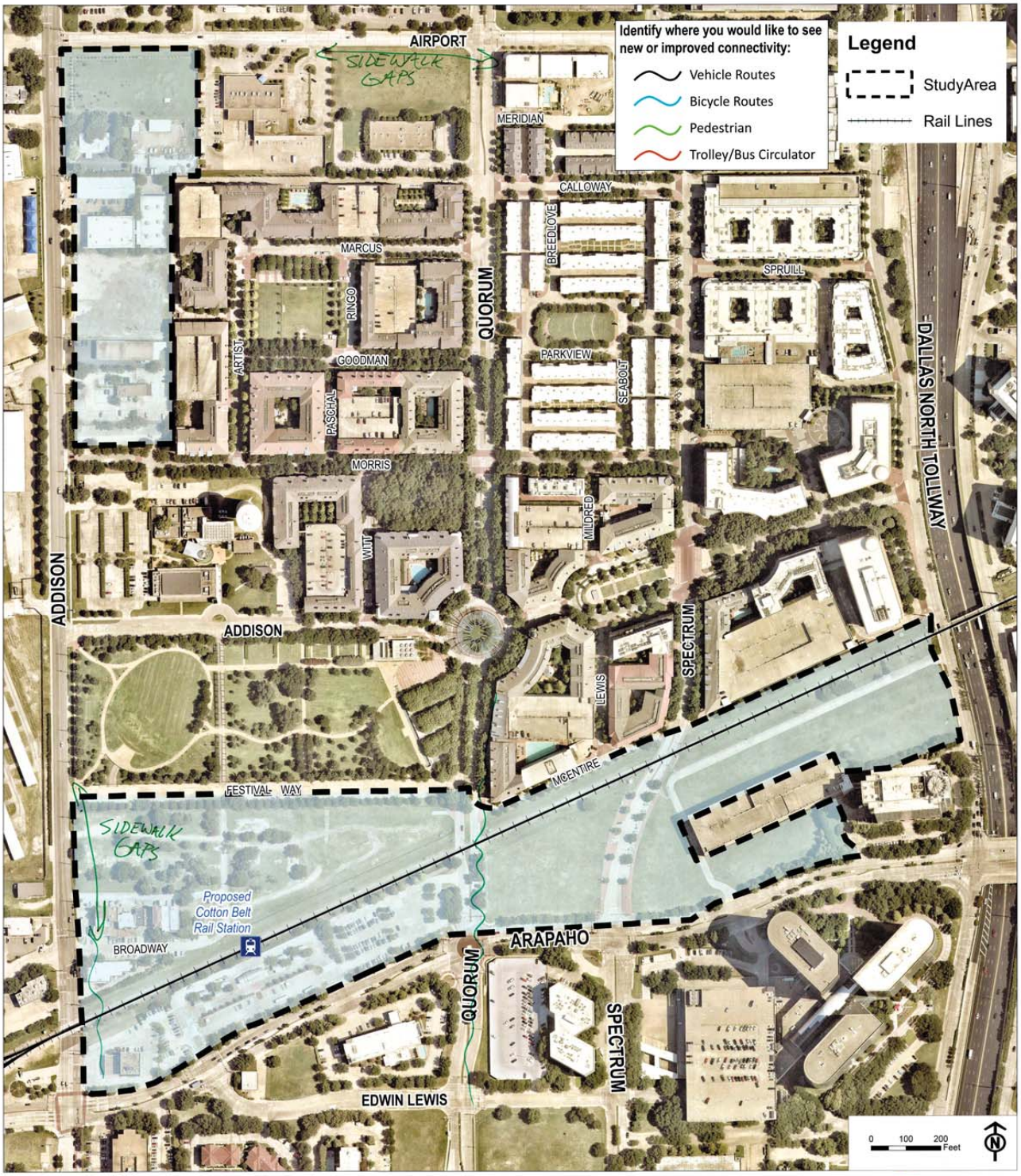
Study Area Mobility

Addison Circle Special Area Study



Study Area Mobility

Addison Circle Special Area Study



Kimley»Horn

Development Type Image Board - Site 1

Addison Circle Special Area Study

Which of these images show the character or activities you'd like this area to have in the future?

Urban Residential

Green = Like / Red = Dislike

Mixed Use

Kimley»Horn

Development Type Image Board - Site 1

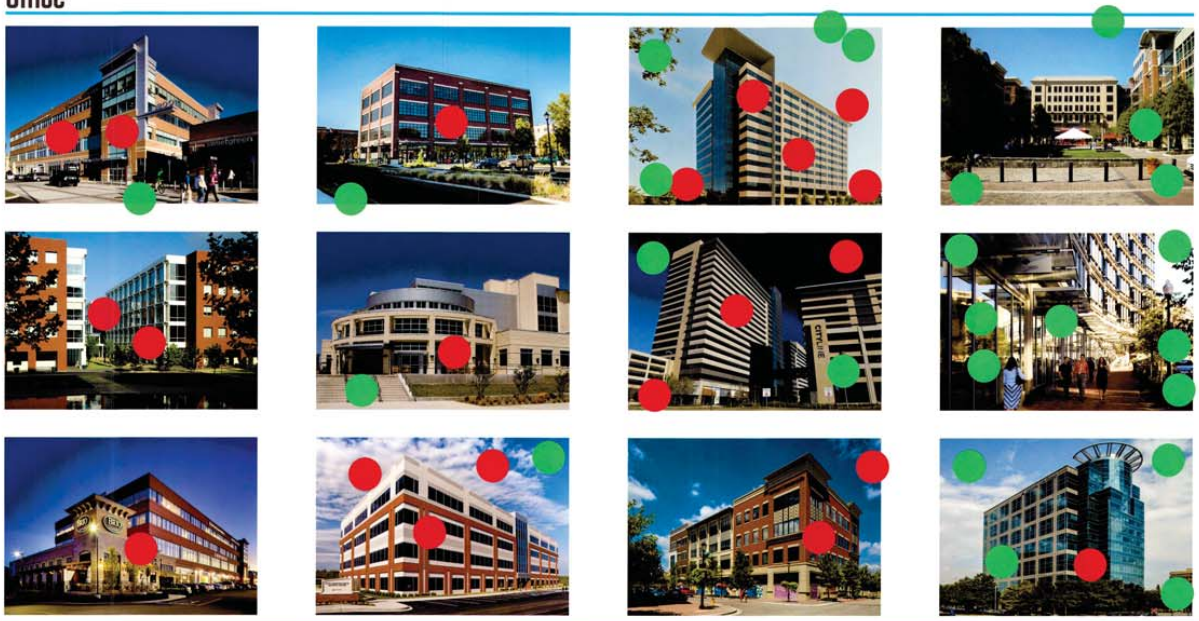
Addison Circle Special Area Study

Which of these images show the character or activities you'd like this area to have in the future?

Businesses & Restaurants

Green = Like / Red = Dislike

Office



Kimley»Horn

Development Type Image Board - Site 1

Addison Circle Special Area Study

Which of these images show the character or activities you'd like this area to have in the future?

Public Amenities

Green = Like / Red = Dislike

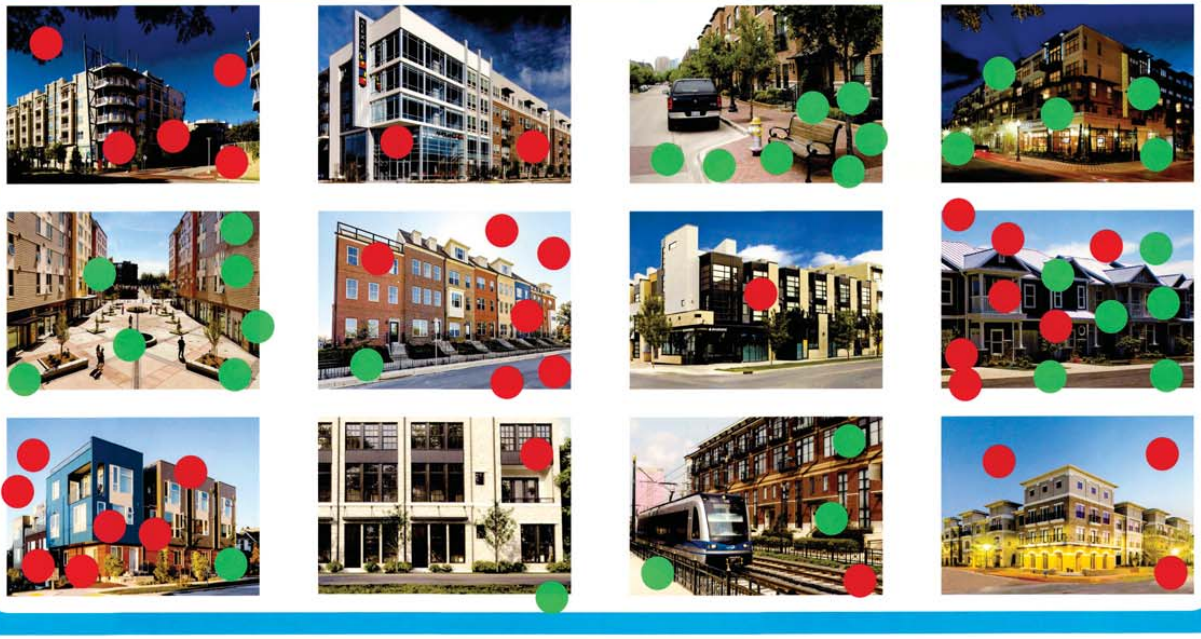
Development Type Image Board - Site 2

Addison Circle Special Area Study

Which of these images show the character or activities you'd like this area to have in the future?

Urban Residential

Green = Like / Red = Dislike



Mixed Use

Kimley»Horn

Development Type Image Board - Site 2

Addison Circle Special Area Study

Which of these images show the character or activities you'd like this area to have in the future?

Businesses & Restaurants

Green = Like / Red = Dislike

Office

Kimley»Horn

Development Type Image Board - Site 2

Addison Circle Special Area Study

Which of these images show the character or activities you'd like this area to have in the future?

Public Amenities

Green = Like / Red = Dislike

Keypad Polling Preferences - Community Workshop #1

What activities and uses should be part of the study area's future?	Strongly agree (1)	Somewhat agree (2)	Somewhat disagree (3)	Strongly disagree (4)	I'm not sure (5)	Agree (1+2)	Disagree (3+4)
A restaurant cluster or incubator like Trinity Groves	61.5%	17.9%	15.4%	5.1%	0.0%	79.5%	20.5%
Performance spaces and entertainment attracting people who live or work in Addison	52.6%	18.4%	7.9%	13.2%	7.9%	71.1%	21.1%
A trolley/bus circulator running throughout the Addison Circle area	48.7%	28.2%	5.1%	15.4%	2.6%	76.9%	20.5%
A 'food hall' like the one at Legacy West	46.2%	30.8%	10.3%	7.7%	5.1%	76.9%	17.9%
Performance spaces and entertainment attracting people traveling on the Cotton Belt line	46.2%	28.2%	10.3%	12.8%	2.6%	74.4%	23.1%
Parking for the homes and businesses in this area	46.2%	23.1%	20.5%	10.3%	0.0%	69.2%	30.8%
Fast-casual restaurants	44.7%	34.2%	15.8%	5.3%	0.0%	78.9%	21.1%
Enough parking for visitors to Addison's special events	44.7%	18.4%	21.1%	15.8%	0.0%	63.2%	36.8%
Housing for active seniors	43.6%	41.0%	7.7%	5.1%	2.6%	84.6%	12.8%
A grocery store	41.0%	33.3%	12.8%	12.8%	0.0%	74.4%	25.6%
Retail shops and services to serve visitors to Addison Circle	41.0%	25.6%	12.8%	12.8%	7.7%	66.7%	25.6%
Retail shops and services to serve people traveling on the Cotton Belt line	40.0%	37.5%	10.0%	10.0%	2.5%	77.5%	20.0%
Shared office space for small businesses	38.5%	43.6%	5.1%	10.3%	2.6%	82.1%	15.4%
Retail shops and services to serve area employees	37.8%	32.4%	21.6%	5.4%	2.7%	70.3%	27.0%
Housing for young professionals	36.8%	44.7%	7.9%	5.3%	5.3%	81.6%	13.2%
Parking and loading areas for the vendors at Addison's special events	32.5%	27.5%	15.0%	15.0%	10.0%	60.0%	30.0%
Retail shops and services to serve Addison Circle residents	30.8%	46.2%	12.8%	7.7%	2.6%	76.9%	20.5%
A hotel to support the Convention Center	30.8%	25.6%	23.1%	15.4%	5.1%	56.4%	38.5%
Businesses that benefit from location near Addison Airport	26.3%	26.3%	18.4%	21.1%	7.9%	52.6%	39.5%
Art galleries and studios	25.6%	41.0%	7.7%	17.9%	7.7%	66.7%	25.6%
Education or training programs to support Addison companies	25.6%	25.6%	20.5%	23.1%	5.1%	51.3%	43.6%
Locations for corporate offices of major companies	21.6%	35.1%	10.8%	27.0%	5.4%	56.8%	37.8%
High-end, famous restaurants	21.1%	42.1%	21.1%	13.2%	2.6%	63.2%	34.2%
Housing for families with children	15.8%	21.1%	28.9%	28.9%	5.3%	36.8%	57.9%
Businesses used by people traveling in and out of Addison Airport	15.4%	20.5%	35.9%	10.3%	17.9%	35.9%	46.2%
Housing for seniors needing assistance	12.8%	30.8%	17.9%	28.2%	10.3%	43.6%	46.2%

What activities and uses should be part of the study area's future?	Strongly agree (1)	Somewhat agree (2)	Somewhat disagree (3)	Strongly disagree (4)	I'm not sure (5)	Agree (1+2)	Disagree (3+4)
A new Town Hall	12.8%	20.5%	17.9%	43.6%	5.1%	33.3%	61.5%
Restaurants focused on fast food or take-out	2.5%	15.0%	20.0%	62.5%	0.0%	17.5%	82.5%
What activities and uses should be part of Site 1's future?	**Strongly agree (1)**	**Somewhat agree (2)**	**Somewhat disagree (3)**	**Strongly disagree (4)**	**I'm not sure (5)**	**Agree (1+2)**	**Disagree (3+4)**
There should be inviting pedestrian connections between the future Site 1 and the office towers along the Tollway.	92.5%	5.0%	2.5%	0.0%	0.0%	97.5%	2.5%
There should be inviting pedestrian connections between Addison Circle and the office towers along the Tollway.	86.8%	13.2%	0.0%	0.0%	0.0%	100.0%	0.0%
The urban character of Addison Circle should be continued in this area.	86.5%	8.1%	2.7%	0.0%	2.7%	94.6%	2.7%
Addison Circle Park should have a major entrance from the future Site 1.	68.4%	18.4%	0.0%	2.6%	10.5%	86.8%	2.6%
There should be events here that bring people to Addison every week or month, in addition to the Town's big events.	44.7%	39.5%	13.2%	2.6%	0.0%	84.2%	15.8%
What activities and uses should be part of Site 2's future?	**Strongly agree (1)**	**Somewhat agree (2)**	**Somewhat disagree (3)**	**Strongly disagree (4)**	**I'm not sure (5)**	**Agree (1+2)**	**Disagree (3+4)**
People living or working here should be able to walk or bike to Addison Circle and the Site 1.	97.4%	0.0%	0.0%	2.6%	0.0%	97.4%	2.6%
Development here should extend the character of Addison Circle to Addison Road.	69.4%	22.2%	8.3%	0.0%	0.0%	91.7%	8.3%
People flying in and out of Addison Airport should be able to walk or bike to restaurants, shops and services here.	56.4%	20.5%	15.4%	5.1%	2.6%	76.9%	20.5%

Community Workshop 2

The second community workshop took place on May 24, 2018. The major objective for this event was to weigh the advantages, disadvantages, opportunities, and challenges of either option for both sites.

Results from the keypad polling exercise conducted at this event are provided in this appendix. The following notes were recorded by attendees over the course of the event:

Addison Central/Commons Character Feedback

- Addison has an involved senior population. They want to stay in Addison – own in Addison. A three-story townhome is not an option for seniors. One story condominiums?! Plus senior living like Traditions (in Dallas) on Arapaho – please!
- Addison Central
- I suggest senior housing (rental). This would be a great location for active seniors, since it's so close to public transportation.
- Water features are good.
- Retain friendly, neighborhood character of Addison.
- Will there still be enough space for carnival?
- Need + avenue to Belt Line.

Addison Circle West Character Feedback

- Consider senior (rental) housing – since it's close to public transportation, it would be a natural for active seniors.
- Option A
  - No surface parking/add another wrap residential project with retail at lower level.
- Option B
  - Add small pocket park
  - Add live/work facing Morris; Suggest high density apts. vs townhomes as it is by airport and busy Addison Rd.
- Townhomes would sell quickly to Aviation buffs.

Mobility Comments

- More sidewalks
- Walk/bike trails
- Study of actual resident "ped shed"
  - We walk/ride bikes greater distances.
  - We live in a higher density area with green walk paths because we like to walk/ride bikes.
- Does study include the types of streets around the area?
  - Sidewalks near parks vs along busier streets
  - Amount of trees

Market Comments

- What is the current occupancy of retail and office spaces in this area vs proposed retail and office space in options A and B?
- Show us retail that isn't another "salon"/"spa" in current/existing comm. space. More comm. space does not equate to useful retail.

Strategic Direction Feedback

- Consider senior rental housing. It's near public transportation – currently bus and with the addition of the train, the location would be perfect for active seniors.
- Will there be enough food and entertainment and lodging for visitors?
- Pedestrian bridge over the tollway makes sense. +1
- Suggest high sound barrier wall along Addison Road if residential to be direct opposite airport.
- Boutique Hotel at Addison Central/Commons – Option A.
- B. This option is better draw than office. Suggest cafes, food, activities, rest, retail that face the park and connect to DART.
- B. This option is better with the current surrounding of the area. It's a better attraction area for business than living. Adds entertainment options.
- B. Entertainment, comedy, clubs, bars, activities for various ages.

Keypad Polling Preferences - Community Workshop #2

Feedback on Addison Circle West

	Strongly agree	Some-what agree	Some-what disagree	Strongly disagree	I'm not sure	Agree	Disagree	Rank for Agree
	Addison Circle West, Option A (Tourism)							
The development character of the Option will create desirable places to live, work and visit.	31.3%	31.3%	18.8%	12.5%	6.3%	62.5%	31.3%	4
The uses in the Option will add to the choices found in Addison today.	21.4%	50.0%	7.1%	7.1%	14.3%	71.4%	14.3%	1
The development character of the Option is appropriate along these major roadways.	25.0%	37.5%	31.3%	6.3%	0.0%	62.5%	37.5%	5
The development character of the Option supports the success of Addison Airport.	18.8%	50.0%	6.3%	12.5%	12.5%	68.8%	18.8%	2
The development character of the Option will enhance today's Addison Circle neighborhood.	37.5%	18.8%	31.3%	12.5%	0.0%	56.3%	43.8%	7
The Option includes uses that the market will support in this part of the Metroplex.	13.3%	20.0%	26.7%	6.7%	33.3%	33.3%	33.3%	11
The Option's uses allow Addison to compete more successfully in attracting businesses.	12.5%	37.5%	25.0%	12.5%	12.5%	50.0%	37.5%	10
The Option's uses allow Addison to compete more successfully in attracting residents.	18.8%	37.5%	18.8%	12.5%	12.5%	56.3%	31.3%	8
The Option's uses should make Addison's tax base stronger and more diverse.	18.8%	43.8%	12.5%	18.8%	6.3%	62.5%	31.3%	6
The Option encourages trips on foot or by bike.	25.0%	31.3%	6.3%	18.8%	18.8%	56.3%	25.0%	9
The Option supports travel by transit (DART bus or Cotton Belt rail).	31.3%	37.5%	12.5%	12.5%	6.3%	68.8%	25.0%	3

Feedback on Addison Circle West

	Strongly agree	Some-what agree	Some-what disagree	Strongly disagree	I'm not sure	Agree	Disagree	Rank for Agree
	Addison Circle West, Option B (Expanded Neighborhood)							
The development character of the Option will create desirable places to live, work and visit.	20.0%	60.0%	13.3%	6.7%	0.0%	80.0%	20.0%	1
The uses in the Option will add to the choices found in Addison today.	37.5%	18.8%	37.5%	6.3%	0.0%	56.3%	43.8%	8
The development character of the Option is appropriate along these major roadways.	18.8%	18.8%	31.3%	25.0%	6.3%	37.5%	56.3%	9
The development character of the Option supports the success of Addison Airport.	6.3%	12.5%	37.5%	18.8%	25.0%	18.8%	56.3%	11
The development character of the Option will enhance today's Addison Circle neighborhood.	31.3%	37.5%	12.5%	18.8%	0.0%	68.8%	31.3%	2
The Option includes uses that the market will support in this part of the Metroplex.	12.5%	50.0%	12.5%	18.8%	6.3%	62.5%	31.3%	6
The Option's uses allow Addison to compete more successfully in attracting businesses.	12.5%	25.0%	43.8%	6.3%	12.5%	37.5%	50.0%	10
The Option's uses allow Addison to compete more successfully in attracting residents.	26.7%	40.0%	20.0%	6.7%	6.7%	66.7%	26.7%	5
The Option's uses should make Addison's tax base stronger and more diverse.	12.5%	56.3%	12.5%	6.3%	12.5%	68.8%	18.8%	3
The Option encourages trips on foot or by bike.	25.0%	37.5%	18.8%	6.3%	12.5%	62.5%	25.0%	7
The Option supports travel by transit (DART bus or Cotton Belt rail).	31.3%	37.5%	18.8%	12.5%	0.0%	68.8%	31.3%	4

Feedback on Addison Central - Commons

	Strongly agree	Some-what agree	Some-what disagree	Strongly disagree	I'm not sure	Agree	Disagree	Rank for Agree
	Addison Central - Commons, Option A (Residential Focus)							
The development character of the Option will create desirable places to live, work and visit.	68.8%	25.0%	0.0%	6.3%	0.0%	93.8%	6.3%	1
The uses in the Option will add to the choices found in Addison today.	62.5%	25.0%	0.0%	12.5%	0.0%	87.5%	12.5%	5
The development character of the Option is appropriate adjacent to the new Cotton Belt Station.	56.3%	37.5%	0.0%	6.3%	0.0%	93.8%	6.3%	2
The development character of the Option is appropriate adjacent to the North Texas Tollway.	66.7%	26.7%	0.0%	6.7%	0.0%	93.3%	6.7%	4
The development character of the Option is appropriate adjacent to Addison Circle Park.	60.0%	13.3%	13.3%	13.3%	0.0%	73.3%	26.7%	12
The development character of the Option will enhance today's Addison Circle neighborhood.	73.3%	13.3%	0.0%	13.3%	0.0%	86.7%	13.3%	7
The Option includes uses that the market will support in this part of the Metroplex.	56.3%	18.8%	0.0%	18.8%	6.3%	75.0%	18.8%	11
The Option's uses allow Addison to compete more successfully in attracting businesses.	53.3%	26.7%	13.3%	6.7%	0.0%	80.0%	20.0%	9
The Option's uses allow Addison to compete more successfully in attracting residents.	73.3%	13.3%	0.0%	6.7%	6.7%	86.7%	6.7%	8

Feedback on Addison Central - Commons

	Strongly agree	Some-what agree	Some-what disagree	Strongly disagree	I'm not sure	Agree	Disagree	Rank for Agree
	Addison Central - Commons, Option A (Residential Focus)							
The Option's uses should make Addison's tax base stronger and more diverse.	53.3%	33.3%	6.7%	6.7%	0.0%	86.7%	13.3%	6
The Option encourages trips on foot or by bike.	40.0%	40.0%	0.0%	13.3%	6.7%	80.0%	13.3%	10
The Option supports travel by transit (DART bus or Cotton Belt rail).	81.3%	12.5%	0.0%	6.3%	0.0%	93.8%	6.3%	3

	Strongly agree	Some-what agree	Some-what disagree	Strongly disagree	I'm not sure	Agree	Disagree	Rank for Agree
	Addison Central - Commons, Option B (Food Central)							
The development character of the Option will create desirable places to live, work and visit.	31.3%	18.8%	18.8%	31.3%	0.0%	50.0%	50.0%	5
The uses in the Option will add to the choices found in Addison today.	25.0%	25.0%	12.5%	37.5%	0.0%	50.0%	50.0%	6
The development character of the Option is appropriate adjacent to the new Cotton Belt Station.	12.5%	43.8%	12.5%	31.3%	0.0%	56.3%	43.8%	3
The development character of the Option is appropriate adjacent to the North Texas Tollway.	13.3%	46.7%	20.0%	13.3%	6.7%	60.0%	33.3%	2
The development character of the Option is appropriate adjacent to Addison Circle Park.	18.8%	25.0%	25.0%	31.3%	0.0%	43.8%	56.3%	8
The development character of the Option will enhance today's Addison Circle neighborhood.	6.3%	25.0%	12.5%	43.8%	12.5%	31.3%	56.3%	10
The Option includes uses that the market will support in this part of the Metroplex.	12.5%	25.0%	25.0%	18.8%	18.8%	37.5%	43.8%	9
The Option's uses allow Addison to compete more successfully in attracting businesses.	25.0%	25.0%	37.5%	12.5%	0.0%	50.0%	50.0%	7
The Option's uses allow Addison to compete more successfully in attracting residents.	6.3%	18.8%	37.5%	31.3%	6.3%	25.0%	68.8%	12

	Strongly agree	Some-what agree	Some-what disagree	Strongly disagree	I'm not sure	Agree	Disagree	Rank for Agree
	Addison Central - Commons, Option B (Food Central)							
The Option's uses should make Addison's tax base stronger and more diverse.	6.3%	18.8%	43.8%	25.0%	6.3%	25.0%	68.8%	11
The Option encourages trips on foot or by bike.	12.5%	43.8%	0.0%	37.5%	6.3%	56.3%	37.5%	4
The Option supports travel by transit (DART bus or Cotton Belt rail).	18.8%	56.3%	18.8%	6.3%	0.0%	75.0%	25.0%	1

APPENDIX IV: FISCAL IMPACT ANALYSIS

Development Program

Total Development Plan Summary		
Residential (units)	*Condominiums/ Townhomes*	184
	Apartments	554
Nonresidential	*Retail (sq ft)*	108,000
	Office (sq ft)	700,400
	Hotel (rooms)	208

Development Value

Total Development Plan Summary		
Product Type	**Total Development**	**Development Value**
Townhomes/ Condominiums	184	$64,540,000
Apartments	554	$69,250,000
Retail	108,000	$21,600,000
Office/ Employment	700,400	$140,080,000
Hotel (rooms)	208	$31,200,000
	Total	**$326,670,000**

Values based on:		
Townhomes/Condominiums	$350,000	per Unit
Apartments	$125,000	per Unit
Retail	$200	per Sq Ft
Office/Employment	$200	per Sq Ft
Hotel	$150,000	per Room

Tax Revenue Estimates

Total Development Plan Summary		
Product Type	**Taxable Value at Buildout**	**Property Tax Revenue**
Townhomes/ Condominiums	$64,540,000	$354,970
Apartments	$69,250,000	$380,875
Retail	$21,600,000	$118,800
Office/ Employment	$140,080,000	$770,440
Hotel	$31,200,000	$171,600
	Property Tax*	**$1,796,685**
	Sales/Lodging Tax**	**$828,012**
	Total Tax Revenues	**$2,624,697**
	Other Revenues ***	**$92,892**
	Total Revenues	**$2,717,589**

* based on City .55000 property tax rate

** sales tax based on retail sales of $250 per square foot and 1% retail sales tax rate; lodging based on $150 per night room rate, 70% annual occupancy rate and 7% hotel tax rate

*** based on 2018 general fund revenues from permits, fees, licenses, fines, etc.

Resident Population/Service Employment

Total Development Plan Summary	
Resident/Job Type	**Estimated Total**
Residents	978
Retail Employees	270
Office Employees	3,502
Hotel Employees	208
Total	**4,958**

Resident estimates based on:		
Townhomes/Condominiums	1.7	Household Size
Apartments	1.2	Household Size
Employment estimates based on:		
Retail	400	Sq Ft per Employee
Office/Employment	200	Sq Ft per Employee
Hotel	1	per Room

Net Operating Surplus/Deficit

Total Development Plan Summary		
Product Type	**Residents / Employees**	**Annual Service Costs***
Residents	978	$308,970
Retail Employees	270	$85,274
Office Employees	3,502	$1,106,036
Hotel Employees	208	$65,693
Total Service Costs		**$1,565,973**
Total Revenues		**$2,717,589**
Total Surplus/Deficit		**$1,151,616**
% Surplus/Deficit		**74%**

* based on % growth in population

Note: Service cost impacts of employees estimated at 1/3 of residents.

Analysis Objectives

- Quantify Build-out of Preferred Development from the Town's Fiscal Perspective (Revenues vs. Service Costs)
- Raise Awareness as to Fiscal Implications of Land Use Decisions

General Assumptions

- The Town's current budget (2017-18) reflects a reasonable balance between revenues and expenditures.
- Future revenues (taxes and fees) are based on current (2018) market values for various development types (housing, retail, office, hotel, other).
- Future expenditures are based on current (2017-18) service costs, considering both residents and employees.

Analysis Components

Development Program

- Buildout Analysis (market-supportive)
- Mix of Land Uses
- Value of Product Offerings
- Considers Fiscal Operating Revenues/Expenses Only (General Fund impacts)

Fiscal Revenue Estimates

- Tax Revenues (Property, Sales)
- Franchise Fees
- Licenses and Permits
- Fees and Charges
- Fines and Forfeitures
- Other Revenues

Service Cost Estimates

- General Fund Operating Expenditures from 2017-18 Budget
- Based on growth in population and impacts on affected departments (Police, Emergency Communications, Fire, Development Services, Streets and Parks)

Net Fiscal Impact

- Revenues vs. Expenses (Net Operating Surplus/Deficit)

Model Assumptions

Land Use Values

- Townhomes/Condominiums = $350,000/unit
- Apartments = $125,000/unit
- Retail = $200/square foot
- Office/Employment = $200/square foot
- Hotel = $150,000/room

Tax Revenue Estimates

- Property tax rate = .55
- Retail sales = $250 per square foot
- Sales tax rate = 1.0%
- Hotel average room rate = $150 per night
- Hotel average occupancy rate = 70%
- Hotel tax rate = 7.0%
- Other revenues = includes franchise fees, licenses and permits, service fees and fines and penalties

Summary

In summary, the Preferred Plan's more compact development pattern, with higher density uses in targeted investment areas, should result in a more attractive value-to-cost relationship for the Town. It represents a balanced mix of revenue-generating and cost-producing land uses designed to maintain the Town's long-term fiscal health. Lastly, this analysis can be utilized as a tool to measure impacts from development/redevelopment projects as they come forward. In this way, the Town will be able to "benchmark" revenue and expenditure impacts on a periodic basis. The following tables summarize the fiscal impact calculations described above.

Work Session and Regular Meeting **5.**
Meeting Date: 11/13/2018
Department: City Manager

AGENDA CAPTION:
Present **Certificates to the 2018 Citizens Academy Graduates.**

BACKGROUND:
N/A

RECOMMENDATION:
Information only, no action required.

Work Session and Regular Meeting **7.**

Meeting Date: 11/13/2018

Department: City Secretary

AGENDA CAPTION:

Consider Action to Approve the **October 22, 2018 Special Meeting , October 23, 2018 Work Session and Regular Meeting and October 29, 2018 Town Meeting Minutes**.

BACKGROUND:

The City Secretary has prepared the minutes for approval.

RECOMMENDATION:

Administration recommends approval.

Attachments

Minutes October 22

Minutes October 23

Minutes October 29

DRAFT

OFFICIAL ACTIONS OF THE ADDISON CITY COUNCIL WORK SESSION

MONDAY, OCTOBER 22, 2018 @ 4:00 pm
ADDISON TREEHOUSE
14681 Midway Road, Addison, TX 75001

Present: Joe Chow, Mayor; Paul Walden, Mayor Pro Tempore; Tom Braun, Deputy Mayor Pro-Tempore; Ivan Hughes, Council Member; Guillermo Quintanilla, Council Member; Lori Ward, Council Member; Marlin Willesen, Council Member

WORK SESSION

1. CALL TO ORDER

2. INTRODUCTION OF FACILITATORS

Economic Development and Tourism Director Orlando Campos introduced Ady Advantage Consultant Janet Ady with Gateway Planning Consultant Brandon Planker who conducted Phase II "Visioning & Goal Setting Session" of the Town's new Economic Development Strategic Plan.

The Phase I report summary developed from stakeholder interviews, surveys, and poster boards placed at various locations in the Town were presented and discussed. The report was divided into four key topics: Doing Business, Talent, Accessibility, and Quality of Place. Phase II consisted of various visioning exercises related to each of these key topics identified in Phase I. This visioning process will help establish the Town's new Economic Development Strategic Plan by providing a road map for the Town's economic development into the next five to ten years.

The meeting was made available for viewing online on the Town's website addisontexas.net and on our PEG Channels - Channel 99 for AT&T subscribers, Channel 16 for Spectrum subscribers.

Adjourn Meeting

TOWN OF ADDISON, TEXAS

Joe Chow, Mayor

ATTEST:

Irma G. Parker, City Secretary

D R A F T

OFFICIAL ACTIONS OF THE ADDISON CITY COUNCIL WORK SESSION

October 23, 2018

Addison Town Hall, 5300 Belt Line Rd.,
Dallas, TX 75254
6:00 p.m. Work Session
7:30 p.m. Regular Meeting

Present: Mayor Joe Chow; Mayor Pro-Tempore Paul Walden; Deputy Mayor Pro-Tempore Tom Braun; Councilmember Ivan Hughes; Councilmember Guillermo Quintanilla; Councilmember Lori Ward;; Councilmember Marlin Willesen.

1. **Call Meeting to Order:** Mayor Chow called the Work Session to order at 6:00 pm

WORK SESSION

2. **Present and Discuss the Communications Plan for the New Utility Billing Platform.**

Presentation: *Mary Rosenbleeth, Director of Public Communications* – The Finance Department will be moving the utility billing system to a new platform beginning with the November bill. In order to communicate the necessary changes, Town staff developed a communications plans. Messaging includes making customers aware of the upcoming changes and educating them on what steps they will be required to take when they receive their November bill. Step-by-step instructions will be mailed in November and video instructions will be available online. Finance Staff will also host an open house in early December at the Athletic Club to personally walk customers through the process. COUNCIL COMMENTS: Information only, no action required.

3. **Present and Discuss Schematic Design Recommendations for Belt Line 1.5 Enhancements from Marsh Lane to Midway Road.**

PRESENTATION: *Jana Tidwell, Director of Parks & Recreation* – The history of this project was presented and discussed. Results from the advisory committee meetings and public input opportunities were incorporated in this schematic design phase. A design pallet was developed to unify the corridor by proposing consistent paving, retaining wall and plant materials. The preferences of residents and the special project committee of medians, bus shelters, and enhancement of key intersections was to pursue the medium schematic plan with the high finish options. The addition of three bus shelters and possible funding was deliberated. Long-range goals, property acquisition, landscape plans, irrigation issues and potential partnerships with adjacent property owners were discussed. Gateway signage ideas were presented showing the votes received for each design. Suggestions or modifications to the design were discussed. Next steps will include a public hearing, receive direction from Council and then development of a contract with the consultant for Phase I construction drawings. COUNCIL COMMENTS: Operational and construction costs will be evaluated and presented at a future meeting along with specific design elements.

REGULAR MEETING

Pledge of Allegiance

Announcements and Acknowledgements regarding Town and Council Events and Activities

Discussion of Events/Meetings

4. **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.*

There were no Citizens who wished to address the City Council on a topic not on the 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.

5. **Consider Action to Approve the October 9, 2018 Work Session & Regular Meeting Minutes.**

6. **Consider Action to Approve a Resolution Renewing Blue Cross Blue Shield of Texas as the Employee Health Insurance and Vision Provider and Directing the City Manager to Negotiate and Execute an Agreement in Accordance with the Benefits Schedule.**

7. **Consider Action to Approve the Fourth Quarter Update from the Finance Committee to the City Council for the Period from July 2018 to September 2018.**

8. **Consider Action to Approve a Resolution for a Grant Funding Agreement with Metrocrest Services and Authorize the City Manager to Execute the Agreement in an Amount not to Exceed $66,000.**

9. **Consider Action to Approve a Resolution for a Grant Funding Agreement with The Cavanaugh Flight Museum and Authorize the City Manager to Execute the Agreement in an Amount not to Exceed $50,000.**

10. **Consider Action to Approve a Resolution for a Grant Funding Agreement with the Addison Arbor Foundation and Authorize the City Manager to Execute the Agreement in an Amount not to Exceed $65,000.**

11. **Consider Action to Approve a Resolution for a Grant Funding Agreement with Metrocrest Chamber of Commerce and Authorize the City Manager to Execute the Agreement in an Amount not to Exceed $35,000.**

12. **Consider Action to Approve a Resolution for a Grant Funding Agreement with The Family Place and Authorize the City Manager to Execute the Agreement in an Amount not to Exceed $2,500.**

13. **Consider Action to Approve a Resolution for a Grant Funding Agreement with On Eagles Wings, Inc. d/b/a Woven Health Clinic and Authorize the City Manager to Execute the Agreement in an Amount not to Exceed $5,000.**

14. **Consider Action to Approve a Resolution For an Agreement with Prettyman & Associates for a One-Time Telecommunication Inventory and Billing Audit and Authorize the City Manager to Execute the Agreement.**

15. **Consider Action to Approve a Resolution Expanding the Scope of Services for Belmont Icehouse for additional Tourism Advertising and Authorize the City Manager to Execute the Agreement in an Amount not to Exceed $100,000.**

16. **Consider Action to Approve Ordinances to Re-appoint Larry Dwight as Presiding**

Municipal Judge to the Addison Municipal Court of Record and to Re-appoint Cass Callaway and Thaddeus A. Iwuji as Alternate Municipal Judges to the Addison Municipal Court of Record and Authorize the City Manager to Execute the Agreements.

Mayor Chow called for any requests to remove an item(s) from the Consent Agenda to discuss separately. Mayor Pro-Tempore Walden requested to remove CONSENT AGENDA Item 11 for separate discussion. Deputy Mayor Pro-Tempore Braun requested to remove CONSENT AGENDA Item 15 for separate discussion. Councilmember Hughes requested to remove CONSENT AGENDA Item 16 for separate discussion.

Mayor Chow called for a motion to approve CONSENT AGENDA Items 5-10 and 12-14.

MOTION: Mayor Pro-Tempore Walden moved to approve CONSENT AGENDA Items 5-10 and 12-14. Councilmember Ward seconded the motion. Motion carried unanimously.

Resolution No. R18-84: Renewing Employee Health and Vision Insurance - Blue Cross Blue Shield of Texas.
Resolution No. R18-85: Grant Funding Agreement Metrocrest Services
Resolution No. R18-86: Grant Funding Agreement Cavanaugh Flight Museum
Resolution No. R18-87: Grant Funding Agreement Addison Arbor Foundation
Resolution No. R18-88: Grant Funding Agreement The Family Place
Resolution No. R18-89: Grant Funding Agreement On Eagles Wings, Inc. dba Woven Health Clinic
Resolution No. R18-90: Telecommunication Inventory & Billing Audit Agreement - Prettyman & Associates

* * * *

CONSENT ITEM #11: Grant Funding – Metrocrest Chamber of Commerce.

Mayor Pro-Tempore Walden requested this item be pulled from the Consent Agenda to discuss the Chamber's non-compliance of Article II. (4)(a) "Grant Use" which requires at least one Chamber event to be held at the airport. Metrocrest Chamber of Commerce President Erin Carney responded saying the Chamber had made a good faith effort to conduct an event at the airport in this last funding year but was unable to do so. Mayor Pro-Tempore Walden suggested that $5,000 be deducted from the 2019 contract due to the non-compliance issue. Ms. Carney advised she was unable to authorize the deduction in this contract as it had already been presented and approved by the Board.

MOTION: Mayor Pro-Tempore Walden moved to Table CONSENT ITEM #11 grant funding agreement for Metrocrest Chamber of Commerce. Councilmember Quintanilla seconded the motion. Motion carried 5 to 2 with Deputy Mayor Pro-Tempore Braun and Councilmember Ward casing the dissenting votes.

* * * *

CONSENT ITEM #15: Expansion of Scope of Services for Belmont Icehouse.

Deputy Mayor Pro-Tempore Braun advised he requested this item to be pulled to clarify and/or correct the total additional funds for tourism research. The contract document indicates the amount to be $100,000; however, the Resolution authorizes $175,000. Staff acknowledged the $175,000 amount was in error.

MOTION: Deputy Mayor Pro-Tempore Braun moved to approve Resolution amending the Belmont Icehouse amendment with correction of a maximum of $100,000. Mayor Pro-Tempore Walden seconded the motion. Motion carried unanimously.

* * * *

CONSENT ITEM #16: Re-appointment of President and Alternate Municipal Court Judges

Councilmember Hughes advised he wanted to take this opportunity to recognize and thank each of the candidates for their service to the Town of Addison. Members of the Council took the opportunity to personally thank each judge for the outstanding work and dedication to the Town.

MOTION: Councilmember Hughes moved to Approve Ordinance to Re-appoint Larry Dwight as Presiding Municipal Judge to the Addison Municipal Court of Record and to Re-appoint Cass Callaway and Thaddeus A. Iwuji as Alternate Municipal Judges to the Addison Municipal Court of Record for a two-year period beginning January 1, 2019 through December 31, 2020. Deputy Mayor Pro-Tempore Braun seconded the motion. Motion carried unanimously.

Ordinance No. O18-36: Re-Appointment of Larry Dwight as Presiding Municipal Judge
Ordinance No. O18-37: Re-Appointment of Cass Callaway as Alternate Municipal Judge
Ordinance No. O18-38: Re-Appointment of Thaddeus A. Iwuji as Alternate Municipal Judge

Regular Items

17. **Hold a Public Hearing, Present, Discuss, and Consider Action on an Ordinance to Change the Zoning on Property Located at 4141 Spring Valley Road, Currently Zoned Residential-1 (R-1) with a Special Use Permit for a Private School, to Amend the Existing Master Site Plan to Allow for Indoor Batting Cages. Case 1784-SUP/Greenhill Batting Cages.**

After Mayor Chow read the Ordinance header, Deputy Mayor Pro-Tempore Braun advised he was abstaining from any discussion on this item due to a Conflict of Interest. Said Conflict of Interest Affidavit was filled with the City Secretary and is made a part of these minutes as Attachment 1. Deputy Mayor Pro-Tempore Braun excused himself from the room.

This item was introduced by Senior Planner Olga Chernomorets. Ms. Chernomorets advised that

only one Public Hearing was required and that was conducted at the October 9 City Council Meeting. One adjacent property owner, Bob Baumann, 4004 Sherry Lane, spoke in opposition of this Zoning Request. After a lengthy discussion Greenhill School indicated they were not opposed to postponing this action for two weeks in hopes of reaching a resolution with Mr. Baumann and the Council subsequently tabled the item until the October 23rd meeting. Ms. Chernomorets informed the City Council that the parties met and reached an agreement. Those changes are to be noted in the site plan, floor plan and building elevation maps. Prior to issuance of a Certificate of Occupancy for the enclosed batting cages, Staff will verify compliance.

MOTION: Councilmember Willesen moved to approve Ordinance changing the zoning of property located at 4141 Spring Valley Road, currently zoned Residential-1 (R-1) with a Special Use Permit for a private school with amendments to the existing master site plan to allow for indoor batting cages – Case 1784-SUP/Greenhill Batting Cages. Councilmember Ward seconded the motion. Motion carried unanimously.

Ordinance No. O18-39: Case 1784-SUP/Greenhill Batting Cages, 4141 Spring Valley Road.

Deputy Mayor Pro-Tempore Braun returned to the dais after action/discussion was concluded.

18. **Hold a Public Hearing, Present, Discuss and Consider Action on a Resolution Relating to the Giving of Notice of Intention to Issue Town of Addison, Texas Combination Tax and Revenue Certificates of Obligation, Series 2018 and Providing an Effective Date.**

Chief Financial Officer Olivia Riley presented this Resolution giving notice of the Town's intention to issue certificates of obligation in an amount not to exceed $13,500,000. Approximately $7,000,000 is proposed to be issued for construction of the combined U.S. Customs and Board Protection Federal Inspection Station and the Airport Administration offices at 4545 Jimmy Doolittle Drive. The debt service payments for this project will come from airport operating revenues. The remaining $6,500,000 are for additional water and wastewater capital projects to improve or maintain the existing infrastructure. The debt service payments for this portion of the Certificates of Obligation will be paid for by utility rate revenues.

City Manager Pierson noted that this item was listed as a Public Hearing although the Town was not legally required to conduct a Public Hearing. However, this was posted as a Public Hearing to offer citizens an opportunity to express their views and to provide transparency. Mayor Chow opened and closed the Public Hearing. There were no individuals present wishing to discuss or make their views known. Hilltop Securities Managing Director Nick Bulaich was present to answer questions.

MOTION: Councilmember Hughes moved to approve the Resolution relating to the giving of notice of intention to issue Town of Addison, Texas Combination Tax and Revenue Certificates of Obligation, Series 2018. Councilmember Ward seconded the motion. Motion carried unanimously.

Resolution No. R18-92: Notice of Intention to Issue Certificates of Obligation Series 2018

19. **Present, Discuss and Consider Action on a Resolution Appointing Members to the Planning & Zoning Commission.**

Consideration of the appointment of three members to the Planning and Zoning Commission was presented by City Secretary Irma Parker. Staff submitted a listing of applicants, the current membership roster, and governing document for this Commission from the Code of Ordinances. This is a seven-member commission with three – Places 1- 3 appointed in even numbered years and Place 4-7 appointed in odd numbered years. Each of the current Place 1-3 Members have requested reappointment to their second appointment. Appointments by the respective Councilmembers are shown below:

Place	Name	Appointed by:
1	Kathryn Wheeler	Council Member Willesen
2	Linda Groce	Council Member Quintanilla
3	John Meleky	Mayor Pro-Tempore Walden

Resolution No. R18-93: Appointing Members to the Planning & Zoning Commission for a 2-year term ending in December 2020.

MOTION: Deputy Mayor Pro-Tempore Braun moved to approve all three nominations for a term of two years ending 12/31/2018. Councilmember Hughes seconded the motion. Motion carried unanimous.

20. **Present, Discuss and Consider Action on a Resolution Appointing Members to the Board of Zoning Adjustment.**

Consideration of the appointment of three members to the Board of Zoning Adjustments was presented by City Secretary Irma Parker. Staff submitted a listing of applicants, the current membership roster, and governing document for this Board from the Code of Ordinances. This is a seven-member board with three – Places 1- 3 appointed in even numbered years and Place 4-7 appointed in odd numbered years. Current Place 1 and Place 2 Members, Lary Brown and Peggy Gilchrist-Ploss, have requested reappointment. Troy Cooper, Place 3, is ineligible for re-appointment as he completes his 3rd term. Appointments by the respective Councilmembers are shown below:

Place	Name	Appointed by:
1	Lary Brown	Council Member Willesen
2	Peggy Gilchrist-Ploss	Council Member Quintanilla
3	Chris DeFrancisco	Mayor Pro-Tempore Walden

Resolution No. R18-94: Appointing Members to the Board of Zoning Adjustments for a 2-year term ending in December 2020.

MOTION: Councilmember Ward moved to appoint members to the Board of Zoning Adjustments as stated. Deputy Mayor Pro-Tempore seconded the motion. Motion carried unanimously.

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21. **Present, Discuss, and Consider Action on a Resolution for an Agreement with GTS Technology Solutions, Inc. for License Plate Recognition and Optical Camera Technology Services and Authorize the City Manager to Execute the Agreement in an Amount not to Exceed $600,000.**

Executive Director of Business Performance & Innovation/Interim Deputy City Manager Hamid Khaleghipour presented the License Plate Recognition and Optical Camera Technology Services contract for Council consideration. The use of cutting-edge technology to enhance public safety has been discussed since July 2017. In 2012 voters approved a bond election for a city-wide wireless application which includes a secure network infrastructure for video, data and voice applications for first responders and protection of certain infrastructure areas in the amount of $2 million. A phased implementation strategy for a pilot program that would help develop a future master plan was presented to Council in July 2018. The proposed plan called for installation of 20 License Plate Recognitions at 8 intersections and neighborhood entrances and the installation of 7 Optical cameras at 2 jogging, hiking and biking trails before the end of March 2019. The collection of data will take place between April and September 2019. Staff will share their findings, including a 10-year cost of ownership and lessons learned from the pilot program and provide Council sufficient information to establish a roadmap for expansion along with a multi-phased implementation strategy. The proposed resolution recommends the selection of GTS Technology Solutions to provide the services to begin implementation of this project. Cost is estimated at $596,641.64 which also includes a 5-year maintenance agreement.

MOTION: Mayor Pro-Tempore Walden moved to approve item #21. Councilmember Willesen seconded the motion. Motion carried unanimously.

Resolution No. R18-95: Agreement with GTS Technology Solutions, Inc. for LPR and Optical Camera Technology.

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22. **Present, Discuss and Consider Action on a Resolution for an Agreement with Gadberry Construction Company, Inc. for the Construction of Addison Circle Plaza and Fountain Repair located at 4970 Addison Circle and Authorize the City Manager to Execute the Agreement in an Amount not to Exceed $1,046,354.**

Jana Tidwell, Director of Parks & Recreation presented the item. At the September 11th Council Meeting Staff updated Council and advised that the consultant's cost estimate exceeded initial cost projections provided by Staff. To provide Council with options on how to move forward, the bid was configured to include a base bid project and alternate bid items. Two bids were received with Gadberry Construction Company, Inc. the low bidder. Staff recommends awarding contract to the low bidder, Gadberry Construction Company, Inc. for Base Bid of $954,770, plus adding of a 5% contingency and including Bid Alternate #1 – Splash Pad

Filtration system in the amount of $91,584 for a total of $1,046,354 or an estimated 8% over the estimated construction budget.

MOTION: Councilmember Hughes moved to approve this item as submitted. Councilmember Ward seconded the motion. Motion carried unanimously.

Resolution No. R18-96: Agreement with Gadberry Construction Company, Inc. for Addison Circle Plaza and Founding Repairs.

Adjourn Meeting

There being no further business the meeting was adjourned.

TOWN OF ADDISON, TEXAS

Joe Chow, Mayor

ATTEST:

Irma G. Parker, City Secretary

DRAFT

OFFICIAL ACTIONS OF THE ADDISON CITY COUNCIL WORK SESSION

ANNUAL TOWN MEETING
Monday, October 29, 2018 @ 7:00 pm
Addison Conference Center
15640 Addison Road, Addison, Texas

The Addison City Council conducted its 2018 Annual Fall Town Meeting on Monday, October 29, 2018 at 7:00 pm at the Addison Conference Center, 15650 Addison Road, Addison, TX 75001. The Mayor and City Council updated Addison Citizens on current and future Town projects which included:

- Budget Update – Mayor Joe Chow;
- Non-Profit Grant Funding Update – Council Member Marlin Willesen;
- Addison Circle Special Area Study/Cotton Belt Status Update – Council Member Ivan Hughes;
- Airport Development/Customs Building Update – Council Member Guillermo Quintanilla;
- Economic Development Update – Council Member Lori Ward;
- License Plate Reader (LPR) and Optical Camera Pilot Project – Mayor Pro-Tempore Paul Walden; and
- On-Going Initiatives/Status update of ISO Rating, Parks Master Plan, Belt Line 1.5 Beautification, New Utility Billing, Town Website – Deputy Mayor Pro-Tempore Tom Braun.

The meeting was made available for viewing online on the Town's website addisontexas.net and on our PEG Channels - Channel 99 for AT&T subscribers, Channel 16 for Spectrum subscribers. Meeting was concluded after question and answer period. No action was taken.

TOWN OF ADDISON, TEXAS

_____

Joe Chow, Mayor

ATTEST:

Irma G. Parker, City Secretary

Work Session and Regular Meeting **8.**

Meeting Date: 11/13/2018

Department: Infrastructure- Development Services

Pillars: Excellence in Asset Management
Optimize the Addison Brand

Milestones: Implement the Asset Management Plan

AGENDA CAPTION:

Consider Action to Approve a **Resolution for a Professional Engineering Services Agreement with Eikon Consulting Group, LLC, for the Construction Management Services Associated with the Addison Athletic Club HVAC Project and Authorize the City Manager to Execute the Agreement** in an Amount not to Exceed $66,720.

BACKGROUND:

The Addison Athletic Club HVAC project includes replacement of several components that are at the end of their service life. Replacement components include the installation of a 200-ton chiller, several package air handling units, installation of several large diameter fans, and all associated duct and electrical work. Currently, there is no one on staff with the capacity and expertise to manage the construction of this project.

Eikon was qualified by RFQ in 2017 to perform design, project management and construction management related services for the Town. Eikon has a long history of performing facility related design and construction management. They come very highly recommended by their references and staff finds them capable of performing this work.

Eikon will provide construction management and inspection services for the Addison Athletic Club HVAC project. The scope of their work includes:

- Weekly site visits and coordination with the contractor
- Coordination of phasing and staging activities with the contractor and Athletic Club staff
- Review and response to contractor requests for information (RFI) and construction submittals
- Review and approval of contractor pay applications, change orders, and construction schedules
- Schedule and prepare the contractor's punch list
- Assist with final project close out
- Perform and provide oversight of the third-party test and balance firm

The contract value for this work is $66,720, which includes $19,320 for the test and balance of the new HVAC components. This is a crucial step in the HVAC installation process to fine tune the system and provide the most efficient, reliable operation.

The total project budget for the HVAC and elevator projects was $1,142,000. The elevator modernization was completed in early 2018 at a cost of $65,834. A total of $71,526 has been spent on the HVAC to date, leaving available funding in the Self-funded Projects fund of $1,004,640 for the project.

RECOMMENDATION:

Administration recommends approval.

Attachments

Resolution - Eikon Professional Engineering Services Agreement

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TOWN OF ADDISON, TEXAS

RESOLUTION NO. _____

A RESOLUTION OF THE CITY COUNCIL OF THE TOWN OF ADDISON, TEXAS APPROVING THE AGREEMENT FOR PROFESSIONAL ENGINEERING SERVICES BETWEEN THE TOWN OF ADDISON AND EIKON CONSULTING GROUP, LLC, FOR CONSTRUCTION MANAGEMENT SERVICES ASSOCIATED WITH THE ADDISON ATHLETIC CLUB HVAC PROJECT IN AN AMOUNT NOT TO EXCEED $66,720.00, 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 Agreement for Professional Engineering Services between the Town of Addison and Eikon Consulting Group, LLC, for construction management services associated with the Addison Athletic Club HVAC Project in an amount not to exceed $66,720.00, 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 13th day of November 2018.

_____
Joe Chow, Mayor

ATTEST:

By: _____
Irma Parker, City Secretary

APPROVED AS TO FORM:

By: _____
Brenda N. McDonald, City Attorney

EXHIBIT A

EXHIBIT "B"
COMPENSATION SCHEDULE / PROJECT BILLING / PROJECT BUDGET

AGREEMENT
BETWEEN
THE TOWN OF ADDISON, TEXAS (TOWN)
AND
EIKON Consulting Group, LLC (CONSULTANT)

FOR

PROFESSIONAL ENGINEERING SERVICES

Made as of the 25th day of October in the year 2018,

BETWEEN the Town: The Town of Addison, Texas
16801 Westgrove Drive
Addison, Texas 75001
Telephone: (972) 450-7001

and the Consultant: EIKON Consulting Group, LLC
1405 W. Chapman Dr.
Sanger, TX 76266
Telephone: (940) 458-7503

for the following Project: Addison Athletic Club Owner's Rep

The Town and the Consultant agree as set forth below.

THIS AGREEMENT is made and entered by and between the **Town of Addison, Texas**, a Home-Rule Municipal Corporation, hereinafter referred to as "Town," and **EIKON Consulting Group, LLC**, hereinafter referred to as "Consultant," to be effective from and after the date as provided herein, hereinafter referred to as "Agreement."

WHEREAS, the Town desires to engage the services of the Consultant to provide professional services which shall include, but not be limited to, providing services in the role of owner's representative for the HVAC upgrades to the Addison Athletic Club within the Town of Addison, Texas; hereinafter referred to as "Project"; and

WHEREAS, the Consultant desires to render such professional engineering services for the Town upon the terms and conditions provided herein.

EXHIBIT A

NOW, THEREFORE, KNOW ALL PERSONS BY THESE PRESENTS:

That for and in consideration of the covenants contained herein, and for the mutual benefits to be obtained hereby, the parties agree as follows:

ARTICLE 1
CONSULTANT'S SERVICES

1.1 **Employment of the Consultant** – The Town hereby agrees to retain the Consultant to perform professional engineering services in connection with the Project. Consultant agrees to perform such services in accordance with the terms and conditions of this Agreement. The standard of care for all professional services performed or furnished by Consultant under this Agreement will be the skill and care used by members of Consultant's profession practicing under similar circumstances at the same time and in the same locality.

1.2 **Scope of Services** – The parties agree that Consultant shall perform such services as are set forth and described in Exhibit "A," which is attached hereto and incorporated herein by reference for all purposes. The parties understand and agree that deviations or modifications to the scope of services described in Exhibit "A," in the form of written change orders, may be authorized from time to time by the Town.

1.2.1 **Requirement of Written Change Order** – "Extra" work, or "claims" invoiced as "extra" work, or "claims" which have not been issued as a duly executed, written change order by the Addison Town Manager, will not be authorized for payment and/or shall not become part of the subcontracts. A duly executed written change order shall be preceded by the Addison Town Council's authorization for the Addison Town Manager to execute said change order.

1.2.2 **DO NOT PERFORM ANY EXTRA WORK AND/OR ADDITIONAL SERVICES WITHOUT A DULY EXECUTED WRITTEN CHANGE ORDER ISSUED BY THE ADDISON TOWN MANAGER**. Project Managers, Superintendents, and/or Inspectors of the Town are not authorized to issue verbal or written change orders.

1.3 **Schedule of Work** – The Consultant agrees to commence work immediately upon the execution of this Agreement and receipt of written Notice to Proceed, and to proceed diligently with said work to completion as described in the Compensation Schedule / Project Billing / Project Budget attached hereto as **Exhibit "B"** and incorporated herein by reference for all purposes, but in no event shall the Project be completed any later than as identified in **Exhibit "A"**.

1.4 **Failure to Meet Established Deadlines** – Consultant acknowledges that time is of the essence in the performance of services under this Agreement as set forth

in the Compensation Schedule / Project Billing / Project Budget attached hereto as **Exhibit "B".**

ARTICLE 2
THE TOWN'S RESPONSIBILITIES

Town shall do the following in a timely manner so as not to delay the services of Consultant:

2.1 **Project Data** – The Town shall furnish required information that is currently has in its possession, as expeditiously as necessary for the orderly progress of the work, and the Consultant shall be entitled to rely upon the accuracy and completeness thereof.

2.2 **Town Project Manager** – The Town shall designate, when necessary, a representative authorized to act on the Town's behalf with respect to the Project (the "Project Manager"). The Town or such authorized representative shall examine the documents submitted by the Consultant and shall render any required decisions pertaining thereto as soon as practicable so as to avoid unreasonable delay in the progress of the Consultant's services. The Project Manager is not authorized to issue verbal or written change orders for "extra" work or "claims" invoiced as "extra" work.

ARTICLE 3
CONSULTANT'S COMPENSATION

3.1 **Compensation for Consultant's Services** – As described in "Article 1, Consultant's Services," compensation for this Project shall be on a Type of Payment Basis not to exceed **Sixty-Six Thousand Seven Hundred Twenty and 00/100 Dollars ($66,720)**, ("Consultant's Fee") and shall be paid in accordance with Article 3 and the Compensation Schedule / Project Billing / Project Budget as set forth in Exhibit "B." **The final five percent (5%) of the Consultant's Fee, or Three Thousand Three Hundred Thirty-Six and 00/100 ($3,336), shall not be paid until the Consultant has completed all of the services described in Exhibit "A" and delivered to the Town all of the documents, plans, data, maps, and/or other information required in Exhibit "A."**

3.1.1 **Completion of Final Report** – Not Required

3.1.2 **Disputes between Town and Construction Contractor** – If the Project involves the Consultant performing Construction Administration Services relating to an agreement between a Construction Contractor (the "Contractor") and the Town, and upon receipt of a written request by Town, Consultant shall research previous and existing conditions of the Project, and make a determination whether or not to certify that sufficient cause exists for the Town to declare the Contractor in default of the terms and conditions of the agreement. Consultant shall submit his findings in

writing to the City, or submit a written request for a specific extension of time (including the basis for such extension), within fifteen (15) calendar days of receipt of the written request from the Town. Town and Consultant agree that if requested by the Town, completion of this task shall be included in the Consultant's Fee and considered to be within the Scope of Services as defined under this Agreement.

3.1.3 **Consultation and Approval by Governmental Authorities and Franchised Utilities** – Consultant shall be responsible for identifying and analyzing the requirements of governmental agencies and all franchise utilities involved with the Project, and to participate in consultation with said agencies in order to obtain all necessary approvals and/or permissions. The Consultant shall be responsible for preparation and timely submittal of documents required for review, approval, and/or recording by such agencies. The Consultant shall be responsible for making such changes in the Construction Documents as may be required by existing written standards promulgated by such agencies at no additional charge to Town.

3.2 **Direct Expenses – Direct Expenses are included in the Consultant's Fee as des**cribed in Article 3.1 and include actual reasonable and necessary expenditures made by the Consultant and the Consultant's employees and subcontractors in the interest of the Project. All submitted Direct Expenses are to be within the amounts as stated in the Compensation Schedule / Project Billing / Project Budget set forth in Exhibit "B," and consistent with Exhibit "C," Town of Addison Guidelines for Direct Expenses, General and Administrative Markup, and Travel and Subsistence Expenses. The Consultant shall be solely responsible for the auditing of all Direct Expenses, including the subcontractors, prior to submitting to the Town for reimbursement, and shall be responsible for the accuracy thereof. Any over-payment by the Town for errors in submittals for reimbursement may be deducted from the Consultant's subsequent payment for services; provided, however this shall not be the Town's sole and exclusive remedy for said overpayment.

3.3 **Additional Services** – The Consultant shall provide the services as described in the Scope of Services as set forth in Exhibit "A" of this Agreement. If authorized in writing by the Town, the Consultant shall provide additional services, to be compensated on an hourly basis in accordance with this paragraph ("Additional Services"). These services may include, but are not limited to:

3.3.1 Additional meetings, hearings, work-sessions, or other similar presentations which are not provided for or contemplated in the Scope of Services described in Exhibit "A."

3.3.2 Additional drafts and revisions to the Project which are not provided for or contemplated in the Scope of Services as described in Exhibit "A." Drafts

or revisions required as the result of errors or omissions by the Consultant shall not be considered Additional Services, but shall fall within the Scope of Services.

3.3.3 Additional copies of final reports and construction plans which are not provided for or contemplated in the Scope of Services as described in Exhibit "A."

3.3.4 Photography, professional massing models which are not provided for or contemplated in the Scope of Services as described in Exhibit "A."

3.3.5 Compensation for Additional Services authorized by the Town shall be in addition to the Consultant's Fee and shall be based on direct billable labor rates and expenses.

3.3.6 Compensation for Additional Services authorized by the Town shall be in addition to the Consultant's Fee and shall be based on an hourly basis according to the following personnel rates. The rates set forth in this chart are subject to reasonable change provided prior written notice of said change is given to Town.

CEO/President/Vice-President:	$215
Principal:	$180
Director:	$170
Senior Engineer:	$150
Senior Architect:	$150
Project Architect:	$135
Staff Architect	$130
Construction Administrator:	$150
Project Manager:	$150
Staff Engineer (EIT):	$130
Senior Designer:	$120
CAD Operator:	$95
Construction Inspector:	$85
Administrative Staff:	$65

3.4 **Invoices** – No payment to Consultant shall be made until Consultant tenders an invoice to the Town. Invoices are to be mailed to Town immediately upon completion of each individual task listed in Exhibit "B." On all submitted invoices, Consultant shall include appropriate background materials to support the submitted charges on said invoice. Such background material shall include, but is not limited to, employee timesheets, invoices for work obtained from other parties, and receipts and/or log information relating to Direct Expenses. All invoices for payment shall provide a summary methodology for administrative markup and/or overhead charges.

EXHIBIT A

3.5 **Timing of Payment** – Town shall make payment to Consultant for said invoices within thirty (30) days following receipt and acceptance thereof. The parties agree that payment by Town to Consultant is considered to be complete upon mailing of payment by Town. Furthermore, the parties agree that the payment is considered to be mailed on the date that the payment is postmarked.

3.6 **Disputed Payment Procedures** – In the event of a disputed or contested billing by Town, only that portion so contested may be withheld from payment, and the undisputed portion will be paid. Town shall notify Consultant of a disputed invoice, or portion of an invoice, in writing by the twenty-first (21st) calendar day after the date the Town receives the invoice. Town shall provide Consultant an opportunity to cure the basis of the dispute. If a dispute is resolved in favor of the Consultant, Town shall proceed to process said invoice, or the disputed portion of the invoice, within the provisions of Article 3.5. If a dispute is resolved in favor of the Town, Consultant shall submit to Town a corrected invoice, reflecting any and all payment(s) of the undisputed amounts, documenting the credited amounts, and identifying outstanding amounts on said invoice to aid Town in processing payment for the remaining balance. Such revised invoice shall have a new invoice number, clearly referencing the previous submitted invoice. Town agrees to exercise reasonableness in contesting any billing or portion thereof that has background materials supporting the submitted charges.

3.7 **Failure to Pay** – Failure of the Town to pay an invoice, for a reason other than upon written notification as stated in the provisions of Article 3.6 to the Consultant within sixty (60) days from the date of the invoice shall grant the Consultant the right, in addition to any and all other rights provided, to, upon written notice to the Town, suspend performance under this Agreement, and such act or acts shall not be deemed a breach of this Agreement. However, Consultant shall not suspend performance under this Agreement prior to the tenth (10th) calendar day after written notice of suspension was provided to Town, in accordance with Chapter 2251, Subchapter "D" ("Remedy for Nonpayment") of the *Texas Government Code*. The Town shall not be required to pay any invoice submitted by the Consultant if the Consultant breached any provision(s) herein.

3.8 **Adjusted Compensation** – If the Scope of the Project or if the Consultant's services are materially changed due to no error on behalf of Consultant in the performance of services under this Agreement, the amounts of the Consultant's compensation shall be equitably adjusted as approved by Town. Any additional amounts paid to the Consultant as a result of any material change to the Scope of the Project shall be authorized by written change order duly executed by both parties before the services are performed.

3.9 **Project Suspension** – If the Project is suspended or abandoned in whole or in part for more than three (3) months, Consultant shall be entitled to compensation

for any and all work completed to the satisfaction of Town in accordance with the provisions of this Agreement prior to suspension or abandonment. In the event of such suspension or abandonment, Consultant shall deliver to Town all finished or unfinished documents, data, studies, surveys, drawings, maps, models, reports, photographs, and/or any other items prepared by Consultant in connection with this Agreement prior to Consultant receiving final payment. If the Project is resumed after being suspended for more than three (3) months, the Consultant's compensation shall be equitably adjusted as approved by the Town. Any additional amounts paid to the Consultant after the Project is resumed shall be agreed upon in writing by both parties before the services are performed.

ARTICLE 4
OWNERSHIP OF DOCUMENTS

4.1 **Documents Property of the Town** – The Project is the property of the Town, and Consultant may not use the documents, plans, data, studies, surveys, drawings, maps, models, reports, photographs, and/or any materials for any other purpose not relating to the Project without Town's prior written consent. Town shall be furnished with such reproductions of the Project, plans, data, documents, maps, and any other information as defined in Exhibit "A." Upon completion of the work, or any earlier termination of this Agreement under Article 3 and/or Article 7, Consultant will revise plans, data, documents, maps, and any other information as defined in Exhibit "A" to reflect changes while working on the Project and promptly furnish the same to the Town in an acceptable electronic format. All such reproductions shall be the property of the Town who may use them without the Consultant's permission for any purpose relating to the Project, including, but not limited to, completion of the Project, and/or additions, alterations, modifications, and/or revisions to the Project.

4.2 **Documents Subject to Laws Regarding Public Disclosure** – Consultant acknowledges that Town is a governmental entity and that all documents, plans, data, studies, surveys, drawings, maps, models, reports, photographs, and/or any items prepared or furnished by Consultant (and Consultant's professional associates and/or Sub-consultants) under this Agreement are instruments of service in respect of the Project and property of the Town and upon completion of the Project shall thereafter be subject to the Texas Public Information Act (*Texas Government Code*, Chapter 552) and any other applicable laws requiring public disclosure of the information contained in said documents.

ARTICLE 5
CONSULTANT'S INSURANCE REQUIREMENTS

5.1 **Required Professional Liability Insurance** – Consultant shall maintain, at no expense to Town, a professional liability (errors and omissions) insurance policy with a company that maintains a minimum rating of "A" by A.M. Best's Key Rating Guide, or other equivalent rating service(s), authorized to transact business in

the State of Texas, in an amount not less than One Million and 00/100 Dollars ($1,000,000.00) for each occurrence, and Two Million and 00/100 Dollars ($2,000,000.00) in the aggregate. Such policy shall require the provision of written notice to Town at least thirty (30) days prior to cancellation, non-renewal, or material modification of any policies, or ten (10) days for non-payment of premium, evidenced by return receipt or United States Certified Mail. Consultant shall furnish Town with certificates evidencing such coverage prior to commencing work on the Project.

5.2 **Required General Liability Insurance** - Consistent with the terms and provisions of Exhibit "D," Town of Addison Contractor Insurance Requirements, Consultant shall maintain, at no expense to Town, a general liability insurance policy with a company that maintains a minimum rating of "A" by A.M. Best's Key Rating Guide, or other equivalent rating service(s), authorized to transact business in the State of Texas, in an amount not less than One Million and 00/100 Dollars ($1,000,000.00) for each occurrence, and Two Million and 00/100 Dollars ($2,000,000.00) in the aggregate. Such policy shall name the Town, its officers, agents, representatives, and employees as additional insured as to all applicable coverage. Such policy shall provide for a waiver of subrogation against the Town for injuries, including death, property damage, or any other loss to the extent that same is covered by the proceeds of the insurance. Such policy shall require the provision of written notice to Town at least thirty (30) days prior to cancellation, non-renewal, or material modification of any policies, or ten (10) days for non-payment of premium, evidenced by return receipt or United States Certified Mail. Consultant shall furnish Town with certificates evidencing such coverage prior to commencing work on the Project.

5.3 **Required Workers Compensation Insurance** – Consistent with the terms and provisions of Exhibit "D," Town of Addison Contractor Insurance Requirements, Consultant shall maintain, at no expense to Town, all Statutory Workers Compensation Insurance as required by the laws of the State of Texas. Such insurance policy shall be with a company that maintains a minimum rating of "A" by A.M. Best's Key Rating Guide, or other equivalent service(s), and authorized to transact business in the State of Texas. Such policy shall provide for a waiver of subrogation against the Town for injuries, including death, property damage, or any other loss to the extent that same is covered by the proceeds of the insurance. Such policy shall require the provision of written notice to Town at least thirty (30) days prior to cancellation, non-renewal, or material modification of any policies, or ten (10) days for non-payment of premium, evidenced by return receipt or United States Certified Mail. Consultant shall furnish Town with certificates evidencing such coverage prior to commencing work on the Project.

5.4 **Circumstances Requiring Umbrella Coverage or Excess Liability Coverage** – If Project size and scope warrant, Town of Addison Contractor Insurance Requirements, Consultant shall maintain, at no expense to the Town, an

umbrella coverage or excess liability coverage insurance policy with a company that maintains a minimum rating of "A" by A.M. Best's Key Rating Guide, or other equivalent rating service(s), authorized to transact business in the State of Texas, in an amount of Two Million and 00/100 Dollars ($2,000,000.00). Consistent with the terms and provisions of Exhibit "F," such policy shall name the Town, its officers, agents, representatives, and employees as additional insured as to all applicable coverage. Such policy shall provide for a waiver of subrogation against the Town for injuries, including death, property damage, or any other loss to the extent that the same is covered by the proceeds of the insurance. Such policy shall require the provision of written notice to the Town at least thirty (30) days prior to cancellation, non-renewal, or material modification of any policies, or ten (10) days for non-payment of premium, evidenced by return receipt or United States Certified Mail. Consultant shall furnish Town with certificates evidencing such coverage prior to commencing work on the Project.

ARTICLE 6
CONSULTANT'S ACCOUNTING RECORDS

Records of Direct Expenses and expenses pertaining to services performed in conjunction with the Project shall be kept on the basis of generally accepted accounting principles. Invoices will be sent to the Town as indicated in Article 3.4. Copies of employee time sheets, receipts for direct expense items and other records of Project expenses will be included in the monthly invoices.

ARTICLE 7
AUDITS AND RECORDS / PROHIBITED INTEREST / VENDOR DISCLOSURE

The Consultant agrees that at any time during normal business hours and as often as the Town may deem necessary, Consultant shall make available to representatives of the Town for examination all of its records with respect to all matters covered by this Agreement, and will permit such representatives of the Town to audit, examine, copy and make excerpts or transcripts from such records, and to make audits of all contracts, invoices, materials, payrolls, records of personnel, conditions of employment and other data relating to all matters covered by this Agreement, and for a period of four (4) years from the date of final settlement of this Agreement or for such other or longer period, if any, as may be required by applicable statute or other lawful requirement.

The Consultant agrees that it is aware of the prohibited interest requirement of the Town Charter, which is repeated on the Affidavit, attached hereto as Exhibit "E" and incorporated herein for all purposes, and will abide by the same. Further, a lawful representative of Consultant shall execute the Affidavit attached hereto as Exhibit "E". Consultant understands and agrees that the existence of a prohibited interest during the term of this Agreement will render the Agreement voidable.

Consultant agrees that it is further aware of the vendor disclosure requirements set forth in Chapter 176, Local Government Code, as amended, and will abide by the same. In this

connection, a lawful representative of Consultant shall execute the Conflict of Interest Questionnaire, Form CIQ, attached hereto as Exhibit "F" and incorporated herein for all purposes.

If the Agreement is required to go to the Town Council for approval, then the Consultant shall execute and deliver to the Town the Form 1295 Certificate of Interested Parties, as required by section 2252.908, Texas Government Code, as amended, prior to the Town's execution of this Agreement.

ARTICLE 8
TERMINATION OF AGREEMENT / REMEDIES

Town may, upon thirty (30) days written notice to Consultant, terminate this Agreement, for any reason or no reason at all, before the termination date hereof, and without prejudice to any other remedy it may have. If Town terminates this Agreement due to a default of and/or breach by Consultant and the expense of finishing the Project exceeds the Consultant's Fee at the time of termination, Consultant waives its right to any portion of Consultant's Fee as set forth in Article 3 herein and agrees to pay any costs over and above the fee which the Town is required to pay in order to finish the Project. On any default and/or breach by Consultant, Town may elect not to terminate the Agreement, and in such event it may make good the deficiency in which the default consists, and deduct the costs from the Consultant's Fee due Consultant as set forth in Article 3 herein. If Town terminates this Agreement and Consultant is not in default of the Agreement, Consultant shall be entitled to compensation for any and all work completed to the satisfaction of the Town in accordance with the provisions of this Agreement prior to termination.

In the event of any termination, Consultant shall deliver to Town all finished and/or unfinished documents, data, studies, surveys, drawings, maps, models, reports, photographs and/or any items prepared by Consultant in connection with this Agreement prior to Consultant receiving final payment.

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 rights to use any or all other remedies. These rights and remedies are given in addition to any other rights the parties may have by law, statute, ordinance, or otherwise.

ARTICLE 9
DISPUTE RESOLUTION / MEDIATION

In addition to all remedies at law, the parties may resolve/mediate any controversy, claim or dispute arising out of or relating to the interpretation or performance of this Agreement, or breach thereof, by voluntary mediation to be conducted by a mutually acceptable mediator.

EXHIBIT A

ARTICLE 10

INDEMNITY

CONSULTANT SHALL HEREBY COVENANT AND CONTRACT TO WAIVE ANY AND ALL CLAIMS, RELEASE, INDEMNIFY AND HOLD HARMLESS TOWN AND ITS TOWN COUNCIL MEMBERS, OFFICERS, AGENTS, REPRESENTATIVES AND EMPLOYEES FROM AND AGAINST ALL DAMAGES, INJURIES (INCLUDING DEATH), INTELLECTUAL PROPERTY INFRINGEMENT CLAIMS (INCLUDING PATENT, COPYRIGHT AND TRADEMARK INFRINGEMENTS), CLAIMS, PROPERTY DAMAGES (INCLUDING LOSS OF USE), LOSSES, DEMANDS, SUITS, JUDGMENTS AND COSTS, INCLUDING REASONABLE ATTORNEY'S FEES AND EXPENSES (INCLUDING ATTORNEYS' FEES AND EXPENSES INCURRED IN ENFORCING THIS INDEMNITY), CAUSED OR RESULTING FROM THE NEGLIGENCE, INTENTIONAL TORT, INTELLECTUAL PROPERTY INFRINGEMENT OR FAILURE TO PAY A SUBCONTRACTOR OR SUPPLIER COMMITTED BY CONSULTANT, ITS OFFICERS, AGENTS, REPRESENTATIVES, EMPLOYEES, SUBCONTRACTORS, LICENSEES, INVITEES, OR ANY OTHER ENTITY OVER WHICH THE CONSULTANT EXERCISES CONTROL, IN ITS/THEIR PERFORMANCE OF THIS AGREEMENT AND/OR ARISING OUT OF PROFESSIONAL SERVICES PROVIDED BY CONSULTANT PURSUANT TO THIS AGREEMENT, REGARDLESS OF THE JOINT OR CONCURRENT NEGLIGENCE OR STRICT LIABILITY OF THE TOWN (HEREINAFTER "CLAIMS"). THIS INDEMNIFICATION PROVISION AND THE USE OF THE TERM "CLAIMS" IS ALSO SPECIFICALLY INTENDED TO APPLY TO, BUT NOT LIMITED TO, ANY AND ALL CLAIMS, WHETHER CIVIL OR CRIMINAL, BROUGHT AGAINST TOWN BY ANY GOVERNMENT AUTHORITY OR AGENCY RELATED TO ANY PERSON PROVIDING SERVICES UNDER THIS AGREEMENT THAT ARE BASED ON ANY FEDERAL IMMIGRATION LAW AND ANY AND ALL CLAIMS, DEMANDS, DAMAGES, ACTIONS AND CAUSES OF ACTION OF EVERY KIND AND NATURE, KNOWN AND UNKNOWN, EXISTING OR CLAIMED TO EXIST, RELATING TO OR ARISING OUT OF ANY EMPLOYMENT RELATIONSHIP BETWEEN CONSULTANT AND ITS EMPLOYEES OR SUBCONTRACTORS AS A RESULT OF THAT SUBCONTRACTOR'S OR EMPLOYEE'S EMPLOYMENT AND/OR SEPARATION FROM EMPLOYMENT WITH THE CONSULTANT, INCLUDING BUT NOT LIMITED TO ANY DISCRIMINATION CLAIM BASED ON SEX, SEXUAL ORIENTATION OR PREFERENCE, RACE, RELIGION, COLOR, NATIONAL ORIGIN, AGE OR DISABILITY UNDER FEDERAL, STATE OR LOCAL LAW, RULE OR REGULATION, AND/OR ANY CLAIM FOR WRONGFUL TERMINATION, BACK PAY, FUTURE WAGE LOSS, OVERTIME PAY, EMPLOYEE BENEFITS, INJURY SUBJECT TO RELIEF UNDER THE WORKERS' COMPENSATION ACT OR WOULD BE SUBJECT TO RELIEF UNDER ANY POLICY FOR WORKERS COMPENSATION INSURANCE, AND ANY OTHER CLAIM, WHETHER IN TORT, CONTRACT OR OTHERWISE. THIS INDEMNIFICATION SHALL EXTEND TO THE PAYMENT OR REIMBURSEMENT OF THE TOWN'S REASONABLE ATTORNEYS FEES AND ASSOCIATED COSTS, COURT COSTS, AND SETTLEMENT COSTS IN PROPORTION TO THE CONSULTANT'S LIABILITY.

CONSULTANT SHALL PROMPTLY NOTIFY TOWN OF THE DEFENSE COUNSEL RETAINED BY CONSULTANT IN FULFILLING ITS OBLIGATION HEREUNDER, AND TIMELY NOTIFY TOWN OF ANY AND ALL LEGAL ACTIONS TAKEN BY THE DEFENSE COUNSEL REGARDING ANY AND ALL CLAIMS.

THIS ARTICLE SHALL SURVIVE THE TERMINATION OF THIS AGREEMENT.

ARTICLE 11
NOTICES

Consultant agrees that all notices or communications to Town permitted or required under this Agreement shall be delivered to Town at the following addresses:

Assistant Director of Infrastructure Services
Town of Addison
16801 Westgrove Drive
Addison, Texas 75001

Town agrees that all notices or communication to Consultant permitted or required under this Agreement shall be delivered to Consultant at the following addresses:

EIKON Consulting Group, LLC
Michael Tubiolo, Senior Project Manager
1405 W. Chapman Dr.
Sanger, TX 76266

Any notice provided in writing under the terms of this Agreement by either party to the other shall be in writing and may be effected by registered or certified mail, return receipt requested.

All notices or communication required to be given in writing by one party or the other shall be considered as having been given to the addressee on the date such notice or communication is postmarked by the sending party. Each party may change the address to which notice may be sent to that party by giving notice of such change to the other party in accordance with the provisions of this Agreement.

ARTICLE 12
MISCELLANEOUS

12.1 **Complete Agreement** – This Agreement, including the exhibits hereto labeled "A" through "F," all of which are incorporated herein for all purposes, constitute the entire Agreement by and between the parties regarding the subject matter hereof and supersedes all prior and/or contemporaneous written and/or oral understandings. This Agreement may not be amended, supplemented, and/or modifies except by written agreement duly executed by both parties. The following exhibits are attached below and made a part of this Agreement:

EXHIBIT A

12.1.1 Exhibit "A," Scope of Services.

12.1.2 Exhibit "B," Compensation Schedule / Project Billing / Project Budget.

12.1.3 Exhibit "C," Town of Addison Guidelines for Direct Expenses; General and Administrative Markup; Travel and Subsistence Expenses.

12.1.6 Exhibit "D," Town of Addison Contractor Insurance Requirements.

12.1.7 Exhibit "E," Affidavit.

12.1.8 Exhibit "F", Conflict of Interest Questionnaire, Form CIQ.

12.2 **Assignment and Subletting** – The Consultant agrees that neither this Agreement nor the work to be performed hereunder will be assigned or sublet without the prior written consent of the Town. The Consultant further agrees that the assignment or subletting or any portion or feature of the work or materials required in the performance of this Agreement shall not relieve the Consultant of its full obligations to the Town as provided by this Agreement. All such approved work performed by assignment or subletting shall be billed through Consultant, and there shall be no third party billing.

12.3 **Successors and Assigns** – Town and Consultant, and their partners, assigns, successors, subcontractors, executors, officers, agents, employees, representatives, and administrators are hereby bound to the terms and conditions of this Agreement.

12.4 **Severability** – In the event of a term, condition, or provision of this Agreement is determined to be invalid, illegal, void, unenforceable, or unlawful by a court of competent jurisdiction, then that term, condition, or provision, shall be deleted and the remainder of the Agreement shall remain in full force and effect as if such invalid, illegal, void, unenforceable or unlawful provision had never been contained herein.

12.5 **Venue** – This entire Agreement is performable in Dallas County, Texas and the venue for any action related directly or indirectly, to this Agreement or in any manner connected therewith shall be in Dallas County, Texas, and this Agreement shall be construed under the laws of the State of Texas.

12.6 **Execution / Consideration** – This Agreement is executed by the parties hereto without coercion or duress for any substantial consideration, the sufficiency of which is forever confessed.

12.7 **Authority** – The individuals executing this Agreement on behalf of the respective parties below represent to each other that all appropriate and necessary action has been taken to authorize the individual who is executing this Agreement to do

so for an on behalf of the party for which his or her signature appears, that there are no other parties or entities required to execute this Agreement in order for the same to be an authorized and binding agreement on the other party for whom the individual is signing this Agreement and that each individual affixing his or her signature hereto is authorized to do so, and such authorization is valid and effective on the date hereof.

12.8 **Waiver** – Waiver by either party of any breach of this Agreement, or the failure of either party to enforce any of the provisions of this Agreement, at any time, shall not in any way affect, limit, or waive such party's right thereafter to enforce and compel strict compliance.

12.9 **Headings** – The headings of the various sections of this Agreement are included solely for convenience of reference and are not to be full or accurate descriptions of the content thereof.

12.10 **Multiple Counterparts** – This Agreement may be executed in a number of identical counterparts, each of which shall be deemed an original for all purposes.

12.11 **Sovereign Immunity** – The parties agree that the Town has not waived its sovereign immunity by entering into and performing its obligations under this Agreement.

12.12 **Additional Representations** – Each signatory represents this Agreement has been read by the party for which this Agreement is executed and that such party has had the opportunity to confer with its counsel.

12.13 **Miscellaneous Drafting Provisions** – This Agreement shall be deemed drafted equally by all parties hereto. The language of all parts of this Agreement shall be construed as a whole according to its fair meaning, and any presumption or principle that the language herein is to be construed against any party shall not apply.

12.14 **No Third Party Beneficiaries** -- Nothing in this Agreement shall be construed to create any right in any third party not a signatory to this Agreement, and the parties do not intend to create any third party beneficiaries by entering into this Agreement.

12.15 **No Boycott – Israel** -- Pursuant to Texas Government Code Chapter 2270, Organization's execution of this Agreement shall serve as verification that the Organization does not presently boycott Israel and will not boycott Israel during the term of this Agreement.

EXHIBIT A

IN WITNESS WHEREOF, the parties have executed this Agreement and caused this Agreement to be effective on the latest day as reflected by the signatures below.

Effective Date: _____

TOWN:
Town of Addison, Texas

By: _____
Wesley S. Pierson, Town Manager

Date: _____

CONSULTANT:
EIKON Consulting Group, LLC

By: _____
Brad Isbell, President

Date: October 25, 2018

EXHIBIT A

STATE OF TEXAS §
§
COUNTY OF DALLAS §

BEFORE ME, the undersigned authority, a Notary Public in and for the State of Texas, on this day personally appeared **Wesley S. Pierson**, Town of Addison, Texas Town Manager, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purpose and consideration expressed, and in the capacity therein stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this ___ day of _____, 2018.

_____
Notary Public In and For the State of Texas
My commission expires: _____

STATE OF TEXAS §
§
COUNTY OF DENTON §

BEFORE ME, the undersigned authority, a Notary Public in and for the State of Texas, on this day personally appeared **Brad Isbell**, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he/she executed the same for the purpose and consideration expressed, and in the capacity therein stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this 25th day of October, 2018.

_____
Notary Public In and For the State of Texas
My commission expires: 2/23/2020

MORGAN BRYNA RICHARDSON
Notary Public, State of Texas
Comm. Expires 02-23-2020
Notary ID 130550296

EXHIBIT A

Exhibit "A"
Scope of Services
Agreement by and between the Town of Addison, Texas (Town)
and (Consultant)
to perform Professional Engineering Services for
Addison Athletic Club Owner's Rep

Detailed Project Description

We understand that the project includes a major HVAC upgrade to the Town of Addison Athletic Club located at 3900 Beltway Dr., Addison, TX 75001. PGAL is the prime consultant for the design of the upgrades and RWB is the design engineer. EIKON will provide services in the role of owner's representative for the project as outlined below. EIKON received drawings and specifications printed on 9/17/1018. The project budget is just under $1,000,000 however the previous bid came in around $1,600,000. Final budget will be determined by the Town of Addison.

Scope of Services (Exhibit A)

Descriptions of Specific Services

- Conduct Pre-construction kick-off meeting
- Conduct weekly job site coordination meetings with contractor
    - (1) site visit per week is budgeted for, additional visits can be added to the scope at an additional charge
- Coordinate sequence and staging between contractor and athletic club staff
- Review Shop Drawings-responses provided by design engineer
- Review RFI Responses-responses provided by design engineer
- Review any Change orders or contingency allowance items
- Observe construction
    - Includes written observation report outlining construction progress including any observed deficiencies
- Review and sign-off on payment applications
- Inform Owner of all progress and issues
- Review Payment Applications
- Provide Punch list
- Provide Test and Balancing for HVAC systems performed by separate company.
    - EIKON will schedule, manage and coordinate.
- Project Close Out

Typical Assumptions

- EIKON will not provide the following services:
    - Continuous on Site Observation or Quality Control
    - Construction Materials Testing
    - Permitting
    - Opinion of Probable Cost
    - Peer Review of Construction Documents
    - Construction As-Built Drawings

Schedule (Exhibit B)

The construction documents will be completed in a timely fashion to meet the Client's requirements.

EXHIBIT A

Agreement by and between the Town of Addison (Town)
and COMPANY NAME (Consultant)
to perform Professional Engineering Services for
Addison Athletic Club Owner's Rep

I. COMPENSATION SCHEDULE / PROJECT BILLING SUMMARY.

- Fixed Fee (refer to the scope of services and assumptions):
  Base project fee: $14,900
  Site Visits and Observations fee: $26,400 ($880 per week for 30 weeks, to be adjusted based on actual project duration)
  Additional Site Visits: NTE $5,000 Billed hourly at rates outlined above.
  Test and Balancing fee: $16,800
  Test and Balancing Management Fee: $2,520

- Reimbursable lump sum fee of $1,100 for all project related expenses including, but not limited to, postage/shipping, printing/reproduction, mileage, and travel expenses.

EXHIBIT A

EXHIBIT "C"
TOWN OF ADDISON GUIDELINES FOR DIRECT EXPENSES; GENERAL AND ADMINISTRATIVE MARKUP; TRAVEL AND SUBSISTENCE EXPENSES

I. **CONSULTANT'S RESPONSIBILITY**. The Consultant shall be solely responsible for the auditing of all direct expense, approved markup (general and/or administrative), and approved travel and/or subsistence charges, including those to be included under a sub-contract, prior to the Town for reimbursement, and Consultant shall be responsible for the accuracy thereof. Any overpayment by the Town for errors in submittals for reimbursement may be deducted from the Consultant's subsequent payment(s) for services; however, this shall not be the Town's sole and exclusive remedy for said overpayment.

II. **GUIDELINES FOR DIRECT EXPENSES**.

A. **Local Transportation** – Transportation in connection with the Project, when such transportation is not a function of routine performance of the duties of the Consultant in connection with the Project, and when such transportation exceeds beyond fifty (50) miles from the Project site, shall be reimbursed at a standard mileage rate consistent with that as issued, and periodically revised, by the United States Internal Revenue Service (IRS). Under no circumstances shall Town reimburse Consultant at a higher standard mileage rate or pay additional markup on charges for local transportation. Completion of Town's Standard Mileage Log is required for submittal of these charges for reimbursement, including justification for each submitted expense.

Under no circumstances are charges associated with rental cars for local transportation eligible for reimbursement by Town. Toll road subscriptions or toll plaza receipts are not reimbursable. Consultant agrees to place these standards in all subcontracts for work on the Project.

B. **Supplies, Material, Equipment** – Town shall reimburse the actual cost of other similar direct Project-related expenses, which are duly presented in advance and approved by Town's Project Manager in writing.

C. **Commercial Reproduction** – Town shall reimburse the actual cost of reproductions, specifically limited to progress prints prepared for presentation to Town at each phase of progress, and final Construction Documents prepared for distribution at bidding phase, provided that the Consultant has duly obtained at least three (3) quotations from commercial firms and has chosen the best value for the Town. Consultant shall provide such documentation to Town for review prior to submitting these expenses for reimbursement. Consultant agrees to place these standards in all subcontracts for work on the Project.

D. **In-House Reproduction** - Consultant shall make arrangements with the Town for prior approval of in-house reproduction rates prior to submitting these expenses for reimbursement. Town shall provide Consultant with a standard format for documenting these charges. Completion of the Town's reproduction log is required as a prerequisite for payment, including the number or

reproductions, the date, time, description, the approved standard rate, and a justification for each submitted expense for reimbursement. Consultant agrees to place these standards in all subcontracts for work on the Project.

E. **Commercial Plotting** – Town shall reimburse the actual cost of plots, specifically limited to final documents, provided the Consultant has duly obtained at least three (3) quotations from commercial firms and has chosen the best value for the Town. Consultant shall provide such documentation to Town for review prior to submitting these expenses for reimbursement. Consultant agrees to place these standards in all subcontracts for work on the Project.

F. **In-House Plotting** – Consultant shall make arrangements with Town for prior written approval of in-house plotting rates prior to submitting these charges for reimbursement. Town shall provide Consultant with a standard format for documenting these charges. Completion of the Town's reproduction log is required as a prerequisite for payment, including the number of plots, the date, time, description, the approved standard rate, and a justification for each submitted charge for reimbursement.

G. **Communications** – Reimbursement for expenses relating to electronic communications shall be limited to long-distance telephone or fax toll charges specifically required in the discharge of professional responsibilities related to the Project. Telephone service charges including office or cellular phones, WATTS, or Metro line services or similar charges are not reimbursable.

H. **Postage, Mail, and Delivery Service** – Town shall reimburse the actual cost of postage and delivery of Instruments of Service, provided the Consultant duly considers all circumstances (including available time for assured delivery) of the required delivery and selects the best value for the Town, which may require comparison of delivery costs offered by three (3) or more sources or methods of delivery, which at a minimum shall include U.S. Mail. Courier service is acceptable only in circumstances requiring deadline-sensitive deliveries and not for the convenience of the Consultant and/or the Consultant's employees. Consultant agrees to place these standards in all subcontracts for work on the Project.

I. **Meals and Other Related Charges** – Meals or any other related expenses are not reimbursable unless incurred outside a fifty (50) mile radius of the Project, and then only reimbursable for the actual cost subject to compliance with the Town's currently adopted policy. Non-allowable costs include, but are not limited to, charges for entertainment, alcoholic beverages, and gratuities.

EXHIBIT A

III. GUIDELINES FOR GENERAL AND ADMINISTRATIVE MARKUP.

1. **Requirement of Prior Approval** – Consultant may be allowed to charge a General and/or Administrative Markup on work completed if Consultant can clearly define to Town specifically what costs are included in the markup calculation. To apply General and/or Administrative Markup, Consultant must also document to Town what costs would be considered direct costs. Town shall issue approval in writing to allow Consultant to charge General and/or Administrative Markup. Town reserves the right to reject any and all requests for General and/or Administrative Markup.

IV. GUIDELINES FOR TRAVEL AND SUBSISTENCE EXPENSES.

1. **Adherence to Currently Adopted Town Travel Policy** – Unless otherwise stated within this Agreement, reimbursements shall be governed by the same travel policies provided for Town employees according to current adopted policy. All lodging and meals are reimbursed in accordance with IRS rules and rates as shown on the U.S. General Services Administration website for the Town: http://www.gsa.gov/portal/category/21287.

2. Prior to the event, Consultant shall request, and the Town shall provide the provisions and the restrictions that apply to out-of-town reimbursements.

EXHIBIT A

EXHIBIT "D"
TOWN OF ADDISON PROFESSIONAL SERVICES/CONSULTANT INSURANCE GUIDELINES

REQUIREMENTS

Contractors performing work on TOWN OF ADDISON property or public right-of-way shall provide the TOWN OF ADDISON a certificate of insurance or a copy of their insurance policy(s) (and including a copy of the endorsements necessary to meet the requirements and instructions contained herein) evidencing the coverages and coverage provisions identified herein within ten (10) days of request from TOWN OF ADDISON. Contractors shall provide TOWN OF ADDISON evidence that all subcontractors performing work on the project have the same types and amounts of coverages as required herein or that the subcontractors are included under the contractor's policy. Work shall not commence until insurance has been approved by TOWN OF ADDISON.

All insurance companies and coverages must be authorized by the Texas Department of Insurance to transact business in the State of Texas and must have a A.M. Best's rating A-:VII or greater.

Listed below are the types and minimum amounts of insurances required and which must be maintained during the term of the contract. TOWN OF ADDISON reserves the right to amend or require additional types and amounts of coverages or provisions depending on the nature of the work.

	TYPE OF INSURANCE	AMOUNT OF INSURANCE	PROVISIONS
1.	**Workers' Compensation Employers' Liability** to include: (a) each accident (b) Disease Policy Limits (c) Disease each employee	Statutory Limits per occurrence Each accident $1,000,000 Disease Policy Limits $1,000,000 Disease each employee$1,000,000	**TOWN OF ADDISON to be provided a *WAIVER OF SUBROGATION AND 30 DAY NOTICE OF CANCELLATION or*** material change in coverage. **Insurance company must be A-:VII rated or above.**
2.	**Commercial General (Public) Liability** to include coverage for: a) Bodily Injury b) Property damage c) Independent Contractors d) Personal Injury e) Contractual Liability	Bodily Injury/Property Damage per occurrence $1,000,000, General Aggregate $2,000,000 Products/Completed Aggregate $2,000,000, Personal Advertising Injury per occurrence $1,000,000, Medical Expense 5,000	***TOWN OF ADDISON to be listed as ADDITIONAL INSURED and provided 30 DAY NOTICE OF CANCELLATION*** **or material change in coverage.** **Insurance company must be A-:VII rated or above.**
3.	**Business Auto Liability** to include coverage for: a) Owned/Leased vehicles b) Non-owned vehicles c) Hired vehicles	Combined Single Limit $1,000,000	***TOWN OF ADDISON to be listed as ADDITIONAL INSURED and provided 30 DAY NOTICE OF CANCELLATION*** **or material change in coverage.** **Insurance company must be A:VII-rated or above.**

EXHIBIT A

Certificate of Liability Insurance forms (together with the endorsements necessary to meet the requirements and instructions contained herein)may be **faxed** to the Purchasing Department: **972-450-7074 or emailed to: purchasing@addisontx.gov.** Questions regarding required insurance should be directed to the Purchasing Manager.

With respect to the foregoing insurance,

1. All liability policies shall contain no cross liability exclusions or insured versus insured restrictions applicable to the claims of the Town of Addison.

2. All insurance policies shall be endorsed to require the insurer to immediately, or no later than thirty (30) days, notify the Town of Addison, Texas of any material change in the insurance coverage.

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

4. All insurance policies, which name the Town of Addison, Texas as an additional insured, must be endorsed to read as primary coverage regardless of the application of other insurance.

5. Insurance must be purchased from insurers that are financially acceptable to the Town of Addison and licensed to do business in the State of Texas.

All insurance must be written on forms filed with and approved by the Texas Department of Insurance. Upon request, Contractor shall furnish the Town of Addison with complete copies of all insurance policies certified to be true and correct by the insurance carrier.

This form must be signed and returned with your quotation. You are stating that you do have the required insurance and if selected to perform work for TOWN OF ADDISON, will provide the certificates of insurance (and endorsements) with the above requirements to TOWN OF ADDISON within 10 working days.

A CONTRACT/PURCHASE ORDER WILL NOT BE ISSUED WITHOUT EVIDENCE AND APPROVAL OF INSURANCE.

AGREEMENT

I agree to provide the above described insurance coverages within 10 working days if selected to perform work for TOWN OF ADDISON. I also agree to require any subcontractor(s) to 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.

Project/Bid#____#18-223_____

Company: EIKON Consulting Group, LLC

Printed Name: Brad Isbell

Signature: Brad Isbell **Date:** 10/25/2018

EXHIBIT A

EXHIBIT "E"
AFFIDAVIT

THE STATE OF TEXAS §
§
THE COUNTY OF DENTON §

I, Brad Isbell, a member of EIKON Consulting Group, LLC, make this affidavit and hereby on oath state the following:

I, and/or a person or persons related to me, have the following interest in a business entity that would be affected by the work or decision on the Project (Check all that apply):

_____ Ownership of 10% or more of the voting shares of the business entity.

____ Ownership of Twenty Five Thousand and 00/100 Dollars ($25,000.00) or more of the fair market value of the business entity.

_____ Funds received from the business entity exceed ten percent (10%) of my income for the previous year.

_____ Real property is involved, and I have an equitable or legal ownership with a fair market value of at least Twenty Five Thousand and 00/100 Dollars ($25,000.00).

_____ A relative of mine has substantial interest in the business entity or property that would be affected by my business decision of the public body of which I am a member.

_____ Other: _____.

_X__ None of the Above.

Upon filing this affidavit with the Town of Addison, Texas, I further affirm that no relative of mine, in the first degree by consanguinity or affinity, as defined in Chapter 573 of the Texas Government Code, is a member of a public body which took action on the agreement.

Signed this 25th day of October, 2018.

Brad Isbell
Signature of Official / Title

BEFORE ME, the undersigned authority, this day personally appeared Brad Isbell and on oath stated that the facts hereinabove stated are true to the best of his / her knowledge or belief.

Sworn to and subscribed before me on this 25th day of October, 2018.

MORGAN BRYNA RICHARDSON
Notary Public, State of Texas
Comm. Expires 02-23-2020
Notary ID 130550296

Notary Public in and for the State of Texas
My commission expires: 2/23/2020

EXHIBIT A

EXHIBIT "F"
CONFLICT OF INTEREST QUESTIONNAIRE, FORM CIQ

FORM CIQ CONFLICT OF INTEREST QUESTIONNAIRE For vendor or other person doing business with local governmental entity

This questionnaire reflects changes made to the law by H.B. 1491, 80th Leg., Regular Session.
This questionnaire is being filed in accordance with Chapter 176, Local Government Code by a person who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the person meets requirements under Section 176.006(a). By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the person becomes aware of facts that require the statement to be filed. *See* Section 176.006, Local Government Code. A person commits an offense if the person knowingly violates Section 176.006, Local Government Code. An offense under this section is a Class C misdemeanor.

OFFICE USE ONLY

Date Received

1. Name of person who has a business relationship with local governmental entity.
N/A

2. Check this box if you are filing an update to a previously filed questio ☐

(The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date the originally filed questionnaire becomes incomplete or inaccurate.)

3. Name of local government officer with whom filer has employment or business relationship.

_____
Name of Local Government Officer

This section (item 3 including subparts A, B, C & D) must be completed for each officer with whom the filer has an employment or other
business relationship as defined by Section 176.001(1-a), Local Government Code. Attach additional pages to this Form CIQ as necessary.

A. Is the local government officer named in this section receiving or likely to receive taxable income, other than investment income, from the filer of the questionnaire? Yes ☐ No ☐

B. Is the filer of the questionnaire receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer named in this section AND the taxable income is not received from the local governmental entity?
Yes ☐ No ☐

C. Is the filer of this questionnaire employed by a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership of 10 percent or more?
Yes ☐ No ☐

D. Describe each employment or business relationship with the local government officer named in this section.

_____
_____
_____
_____
_____
_____

EXHIBIT A

EXHIBIT "F"
CONFLICT OF INTEREST QUESTIONNAIRE, FORM CIQ

4. Signature of person doing business with the governmental entity Date:

Signature _____ Date 10/25/2018

Local Government Officers Town of Addison, Texas

For purposes of completion of the required Conflict of Interest Questionnaire for the Town of Addison Texas (required by all Vendors who submit bids/proposals), Local Government Officers are:

Mayor:	Joe Chow
Council Members:	Marlin Willesen, Council Member
	Guillermo Quintanilla, Council Member
	Lori Ward, Council Member
	Paul Walden, Council Member
	Ivan Hughes, Council Member
	Tom Braun, Council Member
Town Manager:	Wesley S. Pierson

Work Session and Regular Meeting **9.**

Meeting Date: 11/13/2018

Department: Infrastructure- Development Services

AGENDA CAPTION:

Consider Action to Approve a **Resolution for a Conduit Occupancy License Agreement Between the Town of Addison and MCImetro Access Transmission Services Corp. d/b/a Verizon Access Transmission Services, for Occupancy of the Town of Addison Underground Conduit System on Belt Line Road Between Midway Road and Marsh Lane**, and Authorizing the City Manager to Execute the Agreement.

BACKGROUND:

As part of the Belt Line Underground Electrical project, the Town installed extra conduit within the underground duct system that can be leased to telecommunications companies or other similar users. The intent of adding this conduit is to limit the disturbance to the right-of-way and the improvements that were installed during the undergrounding project. Having the extra conduit, also provides the Town an additional source of revenue for future technology installations.

Verizon contacted the Town in the summer of 2018 to discuss using the Belt Line Road right-of-way for their proposed underground telecommunications project. The project would install fiber starting in Carrollton west of Marsh Lane and, using the Belt Line Road right-of-way, would go east to the intersection of Belt Line Road and Midway Road, and then continue along Midway Road through Addison and into Carrollton and Farmers Branch. This network would connect with both potential Addison customers and Verizon's existing facilities in surrounding municipalities. Staff told Verizon that instead of tearing up the right-of-way, they would be required to use the extra conduit that was installed during the undergrounding project.

In order to use the conduit, a Conduit Occupancy License Agreement (Agreement) is needed with Verizon. The initial term of the Agreement is 7 years, with two, 5-year automatic renewals unless either party terminates the agreement. Verizon will pay an annual rental of $1.00 per linear foot of conduit space used. Verizon will occupy approximately 5,280 linear feet. The annual rental is estimated to be $5,280.00. Verizon will also pay a one-time, non-refundable rental payment of $1,500.00. The agreement also includes termination, maintenance, insurance and removal terms.

Staff and the City Attorney have negotiated the terms of the Agreement with Verizon. If approved, Verizon will be required to submit updated plans for review by the Town.

RECOMMENDATION:

Administration recommends approval.

Attachments

Resolution - Verizon Agreement

TOWN OF ADDISON, TEXAS

RESOLUTION NO. _____

A RESOLUTION OF THE CITY COUNCIL OF THE TOWN OF ADDISON, TEXAS APPROVING A CONDUIT OCCUPANCY LICENSE AGREEMENT BETWEEN THE TOWN OF ADDISON AND MCIMETRO ACCESS TRANSMISSION SERVICES CORP. D/B/A VERIZON ACCESS TRANSMISSION SERVICES, FOR OCCUPANCY IN THE TOWN OF ADDISON UNDERGROUND CONDUIT SYSTEM ON BELT LINE ROAD BETWEEN MIDWAY ROAD AND MARSH LANE, 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 Conduit Occupancy License Agreement between the Town of Addison and MCImetro Access Transmission Services Corp. d/b/a Verizon Access Transmission Services, for occupancy of the Town of Addison underground conduit system on Belt Line Road between Midway Road and Marsh Lane, 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 13th day of November 2018.

_____
Joe Chow, Mayor

ATTEST:

By: _____
Irma Parker, City Secretary

APPROVED AS TO FORM:

By: _____
Brenda N. McDonald, City Attorney

EXHIBIT A

CONDUIT OCCUPANCY LICENSE AGREEMENT

THIS CONDUIT OCCUPANCY LICENSE AGREEMENT ("Agreement"), is made and entered into as of the _____ day of November, 2018 ("Effective Date"), by and between the Town of Addison, Texas, a home-rule municipal corporation ("Town") and MCImetro Access Transmission Services Corp. d/b/a Verizon Access Transmission Services, a Delaware corporation ("Verizon"). Town and Verizon may be referred to individual as a "Party" and collectively as the "Parties."

RECITALS

WHEREAS, Town owns an underground conduit system and associated communications network facilities on Belt Line Road, located underground in the right-of-way between Midway Road and Marsh Lane ("Town Owned Conduit"); and

WHEREAS, the Town Owned Conduit was constructed for the benefit of the Town; and

WHEREAS, Verizon made a request to Town to occupy a designated portion of the Town Owned Conduit to provide communications services for Verizon's network and to serve customers in the Town; and

WHEREAS, Town is willing to allow Verizon to occupy a designated portion of the Town Owned Conduit with Verizon-owned Duct and Fiber Optic Cable, and to construct a reasonable number of hand-holes for purposes of access in the Verizon Facilities along the route of the Town Owned Conduit, as identified on Exhibit "A", attached hereto and incorporated herein for all purposes, all being subject to the terms and conditions provided herein.

NOW THEREFORE, for good and valuable consideration, the Parties agree as follows:

TERMS AND CONDITIONS

1. DEFINITIONS.

"Conduit" means a pipe-like structure which may consist of polyvinyl chloride (PVC), high density polyethylene (HDPE), and other materials placed underground to contain Ducts and/or Fiber Cables as part of a communications network.

"Town Owned Conduit" means a single six-inch diameter Conduit owned by the Town and running underneath the Belt Line Road right-of-way from Midway Road to Marsh Lane, adjacent to Belt Line Road.

"Duct" means a single enclosed raceway for Fiber Cable and is sometimes installed in a Conduit. The term Duct may include micro-duct, inner duct, or other industry standard duct-like materials.

"Verizon Duct" means the Duct inside the Town Owned Conduit running parallel with Belt Line Road from Marsh Lane to Midway Road, licensed to Verizon pursuant to this Agreement, as depicted and described in Exhibit A.

"Facility" and "Facilities" means the various elements or components of an underground communications network, including without limitation Conduit, Ducts, Handholes, Manholes, and other ancillary materials, items, equipment, pull rope, mule tape, buried locate tape, markers and structures (e.g., pedestals and vaults).

"Fiber Optic Cable" means fiber optic communications cable.

"Handhole" means a structure placed in the ground and accessible from the surface that is used to provide access to Conduits, Ducts and/or Fiber Cables for the purpose of installing, operating, maintaining and repairing communications Facilities.

"Manhole" means a structure large enough to admit a person's entire body through an opening in the roof placed in the ground and accessible from the surface that is used to provide access to Conduits, Ducts and/or Fiber Cables for the purpose of installing, operating, maintaining and repairing communications Facilities.

"Applicable Law" means laws, rules, regulations, codes, ordinances, permit conditions, the National Electric Code, the National Electrical Safety Code, and the Blue Book, that govern, address, or apply-to construction of underground Conduit systems in public rights of way in the Town.

2. TERM; RENTAL; EXTENSIONS

This initial term of this Agreement shall be for seven (7) years from the Effective Date ("Initial Term"). Rental payments shall commence and be due at a total annual rental rate amount of Five Thousand Two Hundred Eighty and No/100 Dollars ($5,280.00) to be paid to the Town on the anniversary of the Effective Date ("Rental Payment"). Rental Payments shall be equal to One Dollar ($1.00) per linear foot of Verizon Duct on one side of Belt Line Road ($1.00 x 5,280), pursuant to the depiction in Exhibit "A". The first annual Rental Payment shall be due upon the earlier to occur of (i) a date based upon the

date Verizon commences installation of the equipment in the Verizon Duct, or (ii) ninety (90) days following the Effective Date of this Agreement.

Upon agreement of the Parties, Verizon may make Rental Payments by electronic funds transfer and in such event, Town agrees to provide to Verizon bank routing information for such purpose upon request of Verizon.

As additional consideration for this Agreement, Verizon shall pay Town a one-time, non-refundable rental payment of One Thousand Five Hundred and No/100 Dollars ($1,500.00), which shall be considered as "additional rent" for the Town Owned Conduit for the period beginning on the Effective Date of this Agreement until the date that rental payments commence, as provided above, which shall be paid within forty-five (45) days from the date of full execution of this Agreement by the Parties.

This Agreement shall automatically extend for two (2) additional five (5) year terms ("Extension Term(s)"), unless:

a. Either party terminates it at the end of the then current term (including the Initial Term) by giving the other party written notice of the intent to terminate at least ninety (90) days prior to the end of the then current term;

b. a change in municipal, county, state or federal law, rule or regulation results in increased costs to Town that are directly attributable to Verizon's tenancy, then Town shall have the option to terminate this Agreement, unless Town, in its absolute discretion, provides Verizon the option to agree in writing to reimburse Town for those actual increased costs incurred by Town; or

c. Town reasonably determines that the public health, safety or general welfare of the citizens served by Town will be adversely impacted by Verizon's continued use of the Town Owned Conduit, Town may terminate this Agreement by giving Verizon ninety (90) days prior written notice of such termination.

The Rental Payment shall be increased on the first day of each anniversary (yearly) by an amount equal to two percent (2%) of the Annual Rent in effect during the previous year. The Initial Term and any Extension Term(s) shall be collectively referred to herein as the "Term".

3. VERIZON WORK

a) Work for Verizon: The ducts to be placed by Verizon (a 1 ½ inch diameter Duct) shall be for Verizon's sole use and occupancy ("Verizon Duct"). Town grants to Verizon a non-exclusive, revocable, license for the Term, as provided herein, to access and enter the Town Owned Conduit and Facilities in order to place, occupy, operate, lease, repair, restore, protect, maintain, and remove the Verizon Duct and Fiber Optic Cable. The license includes the right for Verizon to create new access points in the Town Owned Conduit and Facilities (with the Town's prior written consent), and to interconnect Verizon Conduit and Facilities with Town Owned Conduit and Facilities, as depicted in Exhibit "A". The license granted by this Agreement is subject and subordinate to: (a) the right of the Town to use the Town Owned Conduit and Facilities, other than the Verizon Duct, for any purpose deemed necessary by the Town in the exercise of its governmental functions, including the right to make any repairs, modifications, or other changes to the Town Owned Conduit and Facilities or to any area contiguous or adjacent to the Town Owned Conduit and Facilities; (b) any existing utility, drainage, or communication facility, or any other facility, located within, on, under, over, or upon the Town Owned Conduit, other than in the Verizon Duct; (c) all vested rights presently owned by any utility, communication, or other company, other than in the Verizon Duct; (d) any existing license, lease, easement, or other interest heretofore granted by the Town other than in the Verizon Duct; (e) the terms and conditions of this Agreement; and (f) Applicable Law.

4. MAINTENANCE AND REPAIR; REMOVAL

a) Town shall maintain and repair the Town Owned Conduit and Facilities and keep them in good working order according to Applicable Law.

b) Verizon shall maintain and repair its Duct, Fiber Optic Cable, and Facilities at its sole cost and expense and keep them in good working order according to Applicable Law. When conducting these activities, Verizon shall be responsible for any and all damages it causes to Town Owned Conduit and Facilities. The use of the Town Owned Conduit and Facilities under this Agreement by Verizon shall be conducted and performed in such a manner so as not to interfere with the public use of any public sidewalk, right-of-way, or street or to create a dangerous condition on any public sidewalk, right-of-way, or street. The Town's approval of any use of the Town Owned Conduit and Facilities shall not and does not relieve Verizon of any responsibility and liability for such use.

EXHIBIT A

c) Verizon acknowledges and agrees that any damage to or destruction of any Town property, including the Town Owned Conduit and Facilities, or to the property of any person or entity, located within or adjacent to the Town Owned Conduct and Facilities and arising out of Verizon's acts or omissions under or in connection with this Agreement, is the sole responsibility of Verizon, and Verizon shall promptly repair (or restore, as the case may be) any such property that is damaged or destroyed at no cost to the Town and to the satisfaction of the Town.

d) Verizon shall have the obligation to undertake emergency repair to the Verizon Duct upon request by the Town or when the Town needs to provide emergency repairs to the Town Owned Conduit and Facilities. When conducting these activities, Verizon shall be responsible for any damages it causes to the Town Owned Conduit and Facilities.

e) Each Party shall use reasonable commercial efforts to provide at least 48 hours prior written notice of all maintenance and repair activity sending notice to the contacts listed in Schedule 1. Notification of emergency repair activity may be undertaken without prior notice, if necessary, provided that continued efforts will be made to notify the other Party as soon as practicable under the circumstances. Each Party shall provide and staff a 24 x 7 x 365 telephone number, listed on Schedule 1 for the other Party to use to provide such notification.

f) Verizon agrees to install equipment of the type and frequency which will not cause harmful interference which is measurable in accordance with then existing industry standards to any equipment of the Town. In the event any after-installed of Verizon's equipment causes such interference, and after Town has notified Verizon in writing of such interference, Verizon will take all steps necessary to correct and eliminate the interference, including but not limited to, at Town's option, powering down such equipment and later powering up such equipment for intermittent testing. The Parties acknowledge that there will not be an adequate remedy at law for noncompliance with the provisions of this paragraph and therefore, either Party shall have the right to equitable remedies, such as, without limitation, injunctive relief and specific performance.

g) Verizon shall, upon expiration of the term of this Agreement, or within ninety (90) days after any earlier termination of the Agreement, remove all of its Fiber Optic Cable, equipment, and all personal property, except the Duct, and restore the Town Owned Conduct and Facilities to its original condition, reasonable wear and tear excepted. Town agrees and acknowledges that all of the equipment, fixtures and personal property of Verizon shall remain the personal property of Verizon and Verizon shall have the right to remove the same at any time during the term, whether or not said items are considered fixtures and attachments to real property under applicable Laws. If Verizon remains in the Town Owned Conduit after termination of this Agreement, Verizon shall pay rent at the then existing monthly rate or on the existing monthly pro-rata basis if based upon a longer payment term, until such time as the removal of the Fiber Optic Cable fixtures and all personal property are completed.

5. NETWORK RELOCATION

a) Town Owned Conduit segments or Facilities may be required to be relocated for any reason determined necessary by the Town, in its sole and absolute discretion. In that event, Town shall bear 100% of its own individual costs of relocating Town Owned Conduit and Facilities. Verizon shall bear 100% of its individual costs of relocating the Verizon Duct Fiber Optic Cable, and Facilities, upon the receipt of a written request from Town.

6. TERMINATION

a) The Agreement may be terminated: (i) by mutual agreement of the Parties; (ii) for uncured default; or (iii) by operation of the terms and conditions of this Agreement.

b) Default. In the event there is a breach by Verizon with respect to any of the provisions of this Agreement or its obligations under it, including the payment of rent, Town shall give Verizon written notice of such breach. After receipt of such written notice, Verizon shall have fifteen (15) days in which to cure any monetary breach and thirty (30) days in which to cure any non-monetary breach, provided Verizon shall have such extended period as may be required beyond the thirty (30) days if the nature of the cure is such that it reasonably requires more than thirty (30) days and Verizon commences the cure within the thirty (30) day period and thereafter continuously and diligently pursues the cure to completion. Verizon shall advise Town in writing of the need for an extended period prior to the termination of the thirty (30) days. Town may not maintain any action or effect any remedies for default against Verizon unless and until Verizon has failed to cure the breach within the time periods provided in this paragraph. Notwithstanding the foregoing to the contrary, except in the case of an emergency as determined by Town that requires immediate correction, it shall be a default under this Agreement if Verizon fails, within fifteen (15) days after receipt of written notice of such breach, to perform an obligation required to be performed by Verizon if the failure to perform such an obligation interferes with Town's ability to conduct its business on the Property or perform its duties as a governmental entity; provided, however, that if the nature of Verizon's obligation is such that more than fifteen (15) days after such notice is reasonably required

for its performance, then it shall not be a default under this Agreement if performance is commenced within such fifteen (15) day period and thereafter diligently pursued to completion.

In the event there is a breach by Town with respect to any of the provisions of this Agreement or its obligations under it, Verizon shall give Town written notice of such breach. After receipt of such written notice, Town shall have thirty (30) days in which to cure any such breach, provided Town shall have such extended period as may be required beyond the thirty (30) days if the nature of the cure is such that it reasonably requires more than thirty (30) days and Town commences the cure within the thirty (30) day period and thereafter continuously and diligently pursues the cure to completion. Town shall advise Verizon in writing of the need for an extended period prior to the termination of the thirty (30) days. Verizon may not maintain any action or effect any remedies for default against Town unless and until Town has failed to cure the breach within the time periods provided in this paragraph.

c) Remedies. Upon a default, the non-defaulting Party may at its option (but without obligation to do so), perform the defaulting Party's duty or obligation on the defaulting Party's behalf, including but not limited to the obtaining of reasonably required insurance policies. The costs and expenses of any such performance by the Town shall be due and payable by Verizon upon invoice therefor. In the event of a default by either Party with respect to a material provision of this Agreement, without limiting the non-defaulting Party in the exercise of any right or remedy which the non-defaulting Party may have by reason of such default, the non-defaulting Party may terminate the Agreement and/or pursue any remedy now or hereafter available to the non-defaulting Party under the Laws or judicial decisions of the state in which the Premises are located; provided, however, either Party shall use reasonable efforts to mitigate its damages in connection with a default by the other.

7. CONFIDENTIAL INFORMATION

a) "Confidential Information" means Verizon materials, Verizon trade secrets, and other Verizon proprietary or business information provided to Town that is clearly labeled, marked or otherwise identified as "confidential" or "proprietary information," or, would otherwise normally be considered Confidential Information in the ordinary course and scope of business. Confidential Information shall not include information that was in the public domain at the time of disclosure; becomes generally known or available through no act or omission on the part of Verizon; is known, or becomes known, to Town from a source other than Verizon or its representatives, provided that disclosure by such source is not in breach of a confidentiality agreement with Verizon; or is independently developed by Town without violating any of its obligations under this Agreement;

b) Town agrees, to the best of its ability, to disclose Confidential Information only to employees, elected officials, agents and contractors of the Town with a need to know the Confidential Information or as otherwise required by code, statute, rule or regulation. However, Verizon acknowledges that Town is a governmental entity subject to the requirements of the Texas Public Information Act ("Act"), and therefore, Verizon agrees that the Town must comply with the provisions of the Act.

c) When a third party ("Requestor") not otherwise authorized to access Confidential Information under this Agreement makes a demand or request to Town for access to Verizon Confidential Information ("Request"), including the terms and conditions of this Agreement, Town will promptly notify Verizon of the Request, in accordance with the Act. Verizon shall then be solely responsible for taking whatever steps Verizon deems necessary to protect Verizon Confidential Information in a timely manner. Verizon shall be responsible for all costs associated with its pursuit of such steps, including the pursuit of any legal remedies.

d) Upon termination or expiration of this Agreement, Town shall make reasonable efforts to either return or destroy all Confidential Information; provided, however, any Confidential Information in electronic format as part of Town's off-site or on-site data archival process system, will be held by Town and kept subject to the terms of this provision or destroyed at Town's option. The obligations of this provision will survive termination or expiration of this Agreement.

8. INDEMNITY, LIABILITY AND LIMITED WARRANTY

a) **VERIZON SHALL DEFEND (WITH COUNSEL REASONABLY ACCEPTABLE TO THE TOWN), INDEMNIFY AND HOLD HARMLESS TOWN AND ITS ELECTED AND APPOINTED BOARDS, OFFICERS, AGENTS, AND EMPLOYEES ("TOWN PERSONS") FROM AND AGAINST ANY AND ALL CLAIMS, LIABILITIES, AND LOSSES OF ANY NATURE WHATSOEVER, INCLUDING REASONABLE OUT-OF-POCKET ATTORNEYS' FEES AND COSTS, FOR DAMAGE OR INJURY TO PROPERTY OR PERSONS (INCLUDING DEATH) ARISING OUT OF OR CONNECTED WITH THE CONSTRUCTION, USE AND/OR MAINTENANCE OF THE VERIZON DUCT (COLLECTIVELY, "LOSSES"). IN THE EVENT OF ANY SUCH LOSSES, VERIZON, IN ADDITION TO DEFENDING, INDEMNIFYING AND HOLDING THE TOWN HARMLESS, SHALL ALSO REIMBURSE TOWN FOR ALL OF ITS REASONABLE, DOCUMENTED OUT-OF-POCKET COSTS TO MAKE NECESSARY REPAIRS TO THE TOWN OWNED CONDUIT.**

EXHIBIT A

VERIZON SHALL PROMPTLY ADVISE THE TOWN IN WRITING OF ANY CLAIM OR DEMAND AGAINST ANY TOWN PERSON RELATED TO OR ARISING OUT OF VERIZON'S ACTIVITIES UNDER THIS AGREEMENT AND SHALL SEE TO THE INVESTIGATION AND DEFENSE OF SUCH CLAIM OR DEMAND AT VERIZON'S SOLE COST AND EXPENSE. THE TOWN PERSONS SHALL HAVE THE RIGHT, AT THE TOWN PERSONS' OPTION AND OWN EXPENSE, TO PARTICIPATE IN SUCH DEFENSE WITHOUT RELIEVING VERIZON OF ANY OF ITS OBLIGATIONS HEREUNDER. THIS DEFENSE, INDEMNITY, AND HOLD HARMLESS PROVISION SHALL SURVIVE THE TERMINATION OR EXPIRATION OF THIS AGREEMENT.

Release. Verizon does hereby RELEASE, WAIVE, ACQUIT, AND FOREVER DISCHARGE the Town and all other Town Persons from, and do COVENANT NOT TO SUE the Town or any other Town Persons for, any and all claims, liability, judgments, lawsuits, demands, harm, losses, damages, proceedings, actions, causes of action, fees, fines, penalties, expenses, or costs (including, without limitation, attorneys' fees and court costs) whatsoever for or related to personal injury of any kind or nature whatsoever (including death), or any damage to or destruction of any property, or any other harm or loss whatsoever, (collectively, "Damages"), which Verizon may sustain or suffer in connection with or related to this Agreement, including, without limitation, ANY and all DAMAGES which arise from, or are alleged or found to have been caused by, in whole or in part, the negligence OR GROSS NEGLIGENCE OF ANY TOWN PERSON, OR CONDUCT BY ANY TOWN PERSON THAT WOULD GIVE RISE TO STRICT LIABILITY OF ANY KIND.

b) Each Party warrants it will comply with all applicable statutes, laws, rules and regulation in the exercise of its rights the performance of its obligations under this Agreement.

c) Limited Warranty

i) Verizon shall undertake all commercially reasonable efforts to pass through to the Town any manufacturer's warranty on any materials placed by Verizon for the Town.

ii) All work performed by Verizon shall be subject to a one (1) year warranty on labor. If the Town identifies defects in labor or workmanship during the one-year period following completion of installation of Town Facilities by Verizon, the Town shall promptly notify Verizon, and Verizon shall remedy the situation at its sole cost and expense.

iii) EXCEPT FOR THE WARRANTIES EXPRESSLY PROVIDED IN THIS AGREEMENT, THE PARTIES MAKE NO WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, TO THE EXTENT PERMITTED BY LAW; AND EACH PARTY DISCLAIMS ALL OTHER WARRANTIES TO THE EXTENT PERMITTED BY LAW, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND IMPLIED WARRANTIES ARISING FROM CUSTOM OR USAGE OF THE TRADE.

9. GENERAL PROVISIONS

a) No use of the Town Owned Conduit by Verizon shall vest in Verizon any easement or any ownership interest or other real property right in such Town Owned Conduit. Nor shall any easement or any other ownership or other form of property right in the Verizon Fiber Optic Cable or Facilities vest in the Town or a third party by virtue of the activities contemplated by this Agreement.

b) All work shall be promptly undertaken in accordance with all Applicable Law.

c) Any notice under this Agreement shall be given in writing and directed to the applicable Party below. Notice shall be deemed to have been delivered: (i) on the delivery date if delivered personally; or (iii) one (1) business day after deposit with a commercial overnight carrier. Either Party may from time to time change its address for purposes of this paragraph by giving the other Party notice of the change in accordance with this paragraph.

If to Town: Director of Infrastructure and Development Services
Town of Addison
16801 Westgrove Drive
Addison, Texas 76001
(972) 450-2878

Brenda N. McDonald
Messer, Rockefeller and Fort, PLLC
6371 Preston Road, Suite 200
Frisco, Texas 75034
(972) 668-6400

If to Verizon: Contracts Management
400 international Pkwy.

EXHIBIT A

Richardson, TX. 75081
Yodete Lane
(972) 560-1589

d) At all times during the Term of this Agreement, Verizon, at its sole expense, shall obtain and keep in force the required insurance as set forth in the attached Schedule 2 (Insurance Requirements).

e) Except for disputes involving confidentiality, if a dispute arises between Verizon and Town pertaining to this Agreement ("Dispute"), prior to the initiation of legal action and within ten (10) days of receipt of a notice of dispute, representatives of the Parties will promptly meet in an attempt resolve the Dispute. If the Parties are unable to resolve the Dispute after this meeting, then the Parties shall be free to pursue any remedies available to them at law or equity.

f) This Agreement may not be assigned without the written prior consent of the other Party, provided however that either Party may assign this Agreement, with prior written notice to the other Party: (i) to any successor by way of any merger, consolidation or other corporate reorganization of such Party or sale of all or substantially all of the assets of such Party, provided that such subsidiary or parent or successor assumes or is otherwise fully bound by all of the obligations of the assigning party under this Agreement; or (ii) in whole or in part to an Affiliate.

g) Neither Party will be responsible for delay of performance due to reasonable causes beyond its control. Such delay automatically extends the time for performance in an amount equal to the period of the delay.

h) If any provision of this Agreement is held to be invalid or unenforceable then such provision will be construed to reflect the intentions of the invalid or unenforceable provision, with all other provisions remaining in full force and effect.

i) The failure of either Party to enforce any right or provision in this Agreement will not constitute a waiver of such right or provision unless acknowledged and agreed to in writhing by the party otherwise entitled to exercise of enforce it.

j) This Agreement and any action related thereto shall be governed, controlled, interpreted and defined by and under the laws of the of the State of Texas, without regard to its conflicts of laws provisions. Venue for any action under this Agreement shall be in a court of appropriate jurisdiction in Dallas County, Texas.

k) The Parties may sign this Agreement in counterparts, each of which will be considered an original, but all of which will constitute the same agreement. Facsimile and portable document format (PDF) signatures shall be binding as if original.

l) This Agreement is solely for the benefit of Town and Verizon including Verizon Affiliates. It is not intended to benefit any third parties.

m) Except as required by law, neither Party shall use the name or logo of the other party in marketing, advertising, promotional materials (e.g., marketing collateral), press releases or other public announcements without receiving the prior written consent of the other Party.

n) Each Party shall be an independent contractor and not a partner or agent of the other. This Agreement will not be interpreted or construed as creating a joint venture, partnership or agency relationship between the Parties.

o) In any legal proceeding pursuant to this Agreement, the prevailing party shall be entitled to recover its costs and attorney fees incurred during such proceeding.

p) Nothing contained herein shall preclude Verizon or its Affiliates from pursuing or bidding on any future Town procurement opportunity or opportunities, and nothing in this Agreement is intended to limit future Verizon-Town bids or business opportunities in any way.

q) Except as otherwise set forth in this Agreement, each Party will remain solely and independently responsible for its own expenses under or arising from this Agreement.

r) This Agreement, including all Exhibits and Schedules, sets forth the entire agreement between the Parties relating to the subject matter hereof, and supersedes any and all prior or contemporaneous agreements and representations written or oral, of the Parties with respect to the subject matter set forth herein. Additions, variations or modifications to this Agreement may only be made in writing and signed by the Parties.

s) The parties agree that this Agreement does not affect, limit or impair the sovereign immunity retained by the Town.

t) Pursuant to Texas Government Code Chapter 2270, Verizon's execution of this Agreement shall serve as verification that the Verizon does not presently boycott Israel and will not boycott Israel during the term of this Agreement.

EXHIBIT A

IN WITNESS WHEREOF, the Parties have executed this Agreement in duplicate as of the day and year first above written.

MCIMETRO ACCESS TRANSMISSION SERVICES CORP.		TOWN OF ADDISON, TEXAS	
By:	[signature]	By:	_____
Name:	L. Gisela Macedo	Name:	Wesley S. Pierson, City Manager
Title:	Sr Manager		
Date:	11/2/2019	Date:	_____

EXHIBIT A

STATE OF TEXAS §
§
COUNTY OF DALLAS §

BEFORE ME, the undersigned authority, on this day personally appeared **Wesley S. Pierson** known to me to be one of the persons whose names are subscribed to the foregoing instrument; he acknowledged to me he is the duly authorized representative for the **Town of Addison, Texas** and he executed said instrument for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this _____ day of _____, 2018.

_____
Notary Public in and for the State of Texas

My Commission Expires:_____

STATE OF Texas §
§
COUNTY OF Dallas §

BEFORE ME, the undersigned authority, on this day personally appeared **L. Gisela Macedo** known to me to be one of the persons whose names are subscribed to the foregoing instrument; he/she acknowledged to he/she is the duly authorized representative for **MCI Metro Access Transmission Services Corp.** and he/she executed said instrument for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this 2nd day of November, 2018.

ALYSHA CALHOUN
Notary Public, State of Texas
Comm. Expires 12-08-2020
Notary ID 13092596-2

_____
Notary Public in and for the State of Texas

My Commission Expires: 12/8/20

EXHIBIT A

Exhibit A

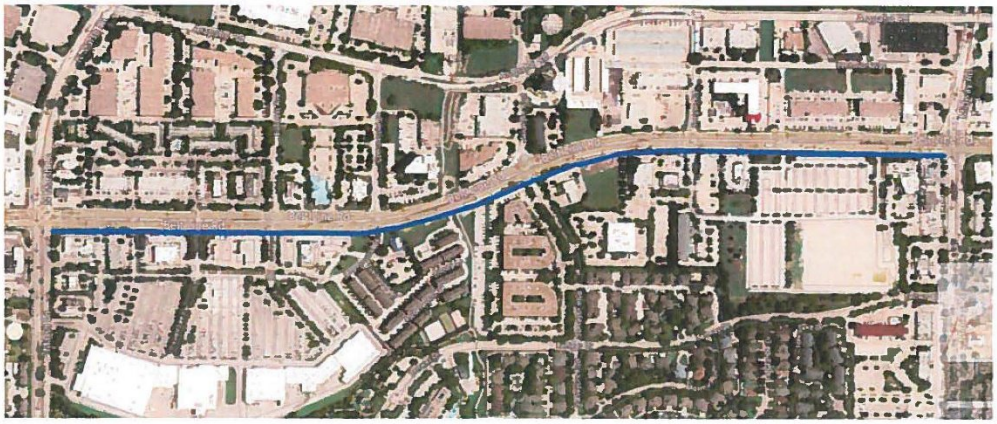

EXHIBIT A

Schedule 1

Work Notification Contact Information

MCImetro:

NOC: (800) 873-7866

EXHIBIT A

Schedule 2

Insurance Requirements

Verizon shall procure and maintain and shall cause any sublicensee to procure and maintain substantially the same coverage with substantially the same limits as required of Verizon (Verizon and/or sublicensees shall be referred to hereinafter, as the context dictates, as "Contractor"), for the duration of the Agreement and any applicable sublicense entered into under and/or pursuant to the Agreement, insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Verizon or its employees.

Scope of Insurance

Coverage shall be at least as broad as:

1. Insurance Services Office Commercial General Liability coverage or its substantial equivalent
2. Worker's Compensation/Employer Liability

Limits of Insurance

Contractor shall maintain limits of:

1. Commercial General Liability: $1,000,000 per occurrence for bodily injury, property damage, independent contractors, personal injury ad contractual liability and $2,000,000 general aggregate.

2. 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.

3. 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.

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.

Other Insurance Provisions

The general liability and automobile liability policies are to contain, the following provisions:

1. Town, its officers, employees and volunteers shall be included as additional insureds as their interest may appear under this Agreement as respects: liability arising out of activities performed by Verizon; products and completed operations of Verizon; premises owned, occupied or used by Verizon; or automobiles owned, leased or borrowed by Verizon. The coverage shall contain no special limitations on the scope of protection afforded to Town, its officers, officials, employees or volunteers.

2. For any claims related to this project, Verizon's insurance coverage shall be primary insurance as respects Town, its officers, employees and volunteers. Any insurance or self-insurance maintained by Town, its officers, officials, employees or volunteers shall be excess of Verizon's insurance and shall not contribute with it.

3. Any failure to comply with reporting or other provisions of the policies including breaches of warranties shall not affect coverage provided to Town, its officers, officials, employees or volunteers.

EXHIBIT A

4. Verizon's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

5. Verizon shall provide the Town a waiver of subrogation and a will give Town a thirty (30) day notice of termination.

Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A-:VII, unless otherwise acceptable to Town. Prior to the execution of this Agreement Verizon shall furnish Town a certificate of insurance, and applicable endorsements, as follows:

1. The Town shall be named as an additional insured with respect to general liability and automobile liability.

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

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

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.

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.

6. All certificates shall be mailed to Town of Addison, Purchasing Dept., P.O. Box 9010, Addison, Texas 75001 or emailed to purchasing@addisontx.gov.

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

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

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

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

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

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:

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

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

Verizon shall require any subcontractors to obtain and maintain substantially the same coverage with substantially the same limits as required by this Agreement.

Work Session and Regular Meeting **10.**

Meeting Date: 11/13/2018

Department: Infrastructure- Development Services

Pillars: Excellence in Asset Management

AGENDA CAPTION:

Present, Discuss, and Consider Action on a **Resolution for a Construction Agreement with Felix Construction Company for the Construction Operations and Installation Services Associated with Surveyor Pump Station Pump #1 Replacement and Authorize the City Manager to Execute the Agreement** in an Amount Not to Exceed $79,000.

BACKGROUND:

The Town of Addison owns and operates two potable water pumping stations, Celestial Pump Station and Surveyor Pump Station. The Surveyor Pump Station is located on the northeast corner of Arapaho Road and Surveyor Boulevard. The pump station was built in the 1970s and serves as one of the two water supply entry points from the Town's water provider, Dallas Water Utilities. The facility includes a two-million-gallon ground storage tank and associated pumps and appurtenances.

The Surveyor Pump Station houses three, 4,000 gallons per minute pumps and 250 horsepower motors that move water from the ground storage tank to the Surveyor Elevator Storage tank that is located across Arapaho Road. It is then distributed to the system for use by the customer. The pump and motor assembly for Pump #2 was refurbished in 2013 for $30,000, and the pump and motor assembly for Pump #3 was replaced in 2014 for $53,234.

Surveyor Pump #1 has been in place since the facility was constructed, and minimal maintenance has been performed on the pump and motor to date. The typical service life for pumps and motors of this type is 30 years. Therefore, Pump #1 has far exceeded its expected life and should be replaced. The scope of this project will include replacement of the pump and motor assembly, relocation of the electrical control box, and structural improvements to the concrete base to minimize pump vibration.

The design for the replacement of the pump and motor was completed in early September and the project was advertised on BidSync. Plans and specifications for this project can be found on the BidSync website that can be accessed from the Finance page on the Town of Addison website. The bids closed on October 11, 2018 and the Town received 3 bids. A more detailed bid breakdown is provided below:

Contractor	Bid
Felix Construction Company	$79,000
Fryer Construction Company	$95,445
308 Construction, LLC.	$169,100

Felix Construction Company has been determined to be the lowest responsible bidder. Felix has a great reputation in the metroplex for performing projects of this type and magnitude. Felix has also performed work for the Town in the past and they have done an excellent job. The total project cost for this work is $79,000 and is expected to take 7 months upon approval of the construction submittals. The 7-month timeframe does include the lead time for the pump and motor.

Funds for the construction of the pump replacement are allocated in the Utility Capital Projects fund in the amount of $289,750. Staff budgeted for two pump refurbishment projects this year. Of this $289,750, $100,000 is budgeted for the replacement of pump #1 at Surveyor.

The improvements to the pump are listed in the Asset Management Plan.

RECOMMENDATION:

Administration recommends approval.

Attachments

Resolution - Felix Agreement

Plans and Specifications - Surveyor Pump #1

TOWN OF ADDISON, TEXAS

RESOLUTION NO. _____

A RESOLUTION OF THE CITY COUNCIL OF THE TOWN OF ADDISON, TEXAS APPROVING A CONTRACT AGREEMENT BETWEEN THE TOWN OF ADDISON AND FELIX CONSTRUCTION COMPANY, FOR CONSTRUCTION OPERATIONS AND INSTALLATION SERVICES ASSOCIATED WITH SURVEYOR PUMP STATION PUMP #1 REPLACEMENT IN AN AMOUNT NOT TO EXCEED $79,000.00, 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 Felix Construction Company, for construction operations and installation services associated with Surveyor Pump Station Pump #1 Replacement in an amount not to exceed $79,000.00, 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 13th day of November 2018.

_____
Joe Chow, Mayor

ATTEST:

By: _____
Irma Parker, 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 23rd day of October, 2018, 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 Felix Construction Company, of the City of Carrollton, County of Denton, 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:

ADDISON SURVEYOR PUMP STATION IMPROVEMENTS
INFRASTRUCTURE AND DEVELOPMENT SERVICES BID NUMBER 18-215

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 two hundred and ten **(210)** 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 **seventy nine thousand Dollars ($ 79,000)** in current funds for the performance of the Contract in accordance with the Proposal submitted thereof for the **Base Bid**, as provided in the General Provisions, and to make payments of account thereof as provided therein.

EXHIBIT A

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: _____
City Manager

ATTEST:

By: _____

FELIX CONSTRUCTION COMPANY (CONTRACTOR)

By: _____ Matt Phillips

ATTEST:

By: _____

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

I, Kevin Felix certify that I am the secretary of the corporation named as CONTRACTOR herein; that Matt Phillips, who signed this Contract on behalf of the CONTRACTOR is the Vice-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

SPECIFICATIONS AND CONTRACT DOCUMENTS

FOR THE CONSTRUCTION OF

ADDISON SURVEYOR
PUMP STATION IMPROVEMENTS

TOWN OF ADDISON, TEXAS
INFRASTRUCTURE AND DEVELOPMENT SERVICES
BID NUMBER 18-215

SEPTEMBER 2018

PREPARED BY

14160 N. Dallas Parkway
Suite 850
Dallas, Texas 75254
(214) 451-2950

TOWN OF ADDISON, TEXAS

MAYOR

Joe Chow

COUNCIL MEMBERS

Ivan Hughes

Guillermo Quintanilla

Marlin Wilesen

Tom Braun

Paul Walden

Lori Ward

CITY MANAGER

Wesley Pierson

DIRECTOR OF INFRASTRUCTURE AND DEVELOPMENT SERVICES

Lisa Pyles

ADDISON SURVEYOR PUMP STATION IMPROVEMENTS
GARVER PROJECT NO. 18088025

I hereby certify that the applicable portions of this project plans and specifications were prepared by me or under my direct supervision and that I am a duly Licensed Engineer under the laws of the State of Texas.

SEAL AND SIGNATURE	APPLICABLE DIVISION OR PROJECT RESPONSIBILITY
Lance Klement, P.E. Digitally Signed: 9/10/2018	Division 01 General Requirements Division 02 Existing Conditions Division 09 Finishes Division 26 Electrical Division 33 Utilities Division 44 Pollution Control Equipment

GARVER, LLC CERTIFICATE OF AUTHORIZATION:

TX ENGINEERING REGISTRATION NO. F-5713

Expiration Date: 01/31/2019

3010 Gaylord Parkway
Suite 190
Frisco, TX 75034
972-377-7480

TOWN OF ADDISON

SURVEYOR PUMP STATION IMPROVEMENTS

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SECTION AB

ADVERTISEMENT FOR BIDS

ADVERTISEMENT FOR BIDS

1. The Town of Addison is requesting bids for the Bid of the Addison Surveyor Pump Station Improvements project. **Bids will be accepted until 2:00 p.m., Thursday, October 4th, 2018** at the Finance Building, 5350 Belt Line Rd., Dallas, Texas 75254 – Attention Purchasing Department, at which time responders names and bids will be publicly read aloud. Late bids will not be considered. The plans, specifications, quantities, pre-bid time and date, and other information are available on www.bidsync.com. The Town of Addison reserves the right to waive any formalities, to reject any and all bids, and to select the proposal deemed most advantageous to the Town of Addison.

2. The Contractor shall identify his bid on the outside of the envelope by writing the words **INFRASTRUCTURE AND DEVELOPMENT SERVICES BID NUMBER 18-215, ADDISON SURVEYOR PUMP STATION IMPROVEMENTS.** PAPER BIDS SHALL BE REQUIRED. Submit one original, two copies, and one electronic version (thumb drive preferred). FACSIMILIE OR EMAIL TRANSMITTALS WILL NOT BE ACCEPTED.

3. Bids shall be accompanied by a bid bond in an amount not less than five percent (5%) of the total maximum bid price payable without recourse to the Town of Addison, 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.

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 specs and/or plans 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 formality in bids received and to select the proposal deemed most advantageous to the City.

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

7. A Performance Bond, 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. The Bidder (Proposer) must supply all the information required by the Bidder Qualification Statement.

9. **An optional pre-bid meeting will be held on-site Thursday, September 20th, 2018 at 11:00am at the Addison Surveyor Pump Station, 15150 Surveyor Boulevard, Addison, TX 75001.**

10. For information on bidding or work to be performed, please submit all questions on Bidsync. **All questions must be received by 5:00pm on Tuesday, September 25th, 2018. All questions received by this deadline will be answered by 5:00pm on Thursday, September 27th, 2018.**

11. The project consists of the replacement of a water pump and motor and pump base plate.

SECTION IB

INSTRUCTIONS TO BIDDERS

INSTRUCTIONS TO BIDDERS

A. PROJECT: ADDISON SURVEYOR PUMP STATION IMPROVEMENTS, in the Town of Addison. The bids will be evaluated as stated in Section "O" of these Instructions to Bidders.

B. PROJECT DESCRIPTION: The project consists of the replacement of a pump and motor, associated drain piping, and pump baseplate.

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

D. DOCUMENTS: Bidding Documents include the Project Manual (consisting of the Advertisement for Bids, these Instructions to Bidders, Proposal Forms, Reference Form, Contract Agreement, Performance Bond, Payment Bond, Maintenance Bond, Contractor's Affidavit of Bills Paid, General Provisions, Special Provisions, Project Sign, and Technical Specifications), a 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 firsthand 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.

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, they may submit questions to the Town of Addison, no later than 5:00pm on Tuesday, September 25th, 2018. All questions received by this deadline will be answered by 5:00pm on Thursday, September 27th, 2018. 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 will be the responsibility of each person who has been issued a set of bid documents to secure all Addenda from 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 released through www.bidsync.com 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: The selected contractor shall use the time period between the awarding of the contract at City Council and the date of Notice to Proceed to submit materials and shop drawings for approval by Garver. Garver shall review and return these submittals in the most expedient manner possible to accommodate immediate material ordering.

a. Upon receiving Notice to Proceed, the selected contractor shall **have 210 calendar days** to construct the project and achieve substantial completion. Substantial completion for this project includes the following items:
    i. Preliminary Punchlist walk-through with the Town performed;

b. After substantial completion is reached, the contractor shall have an **additional 10 calendar days** to achieve 100% final completion. Final completion for this project shall include:
    i. Punchlist items completed and approved by the Town;
    ii. Site clean-up;
    iii. Submittal of Record Drawings; and
    iv. Execution of Maintenance Bond.

J. 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 price written in the bid and that 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.

SUBMITTAL OF BIDS: Sealed proposals will be received at the time, date and place stated in the Advertisement for Bids. Submit one original, two copies, and one electronic version (thumb drive preferred). FACSIMILIE OR EMAIL TRANSMITTALS WILL NOT BE ACCEPTED. Proposals shall be made on unaltered Proposal Forms furnished by the Town of Addison. Bidders shall submit proposals in an opaque, sealed envelope addressed to the Owner and plainly mark on the outside of the envelope the name and address of the bidder. The envelopes shall also be marked with the following project description:

INFRASTRUCTURE AND DEVELOPMENT SERVICES BID NUMBER 18-215

ADDISON SURVEYOR PUMP STATION IMPROVEMENTS

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 bidsync.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. **Bid number 18-215** 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.

K. 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 ***ninety (90)*** calendar days after the time agreed upon for the receipt of bids.

L. 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.

M. SUBMISSION OF POST-BID INFORMATION: Upon notification of acceptance, the selected bidder shall, within twenty-four (24) hours, 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.

N. 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 Operations & 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.

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".

O. 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.

P. 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.

Q. COST PLUS TIME BIDDING: N/A

R. 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.

S. BONDS: A Performance Bond, a Payment Bond and a Maintenance Bond will be required by the Owner. The Performance Bond and Payment Bond 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. (Contractor shall confirm the legal names of obligees prior to execution of Bonds.)

T. BID SECURITY: Bids shall be accompanied by a bid bond in an amount not less than five percent (5%) of the total maximum bid price payable without recourse to the Town of Addison, 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 bid bonds will be returned to all except the three lowest bidders within three (3) days after the opening of bids, and the remaining 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.

U. 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.

V. CONSTRUCTION STAKING: Construction staking and re-staking will not be provided by the Owner. 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.

W. FINAL PAYMENT: The general provisions for Final Payment shall be as stated in Item 109.5.4 of the SSPWC 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 the Special Provisions.
4. A one (1) year Maintenance Bond in accordance with Section MB.
5. Acknowledgement that the project has been reviewed and accepted by TDLR.

X. 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.

Y. 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 Public Works Construction (NCTCOG, October 2004); Town of Addison Standard Drawings. This priority list shall take precedence over Item 105.1.1 of the SSPWC.

SECTION PF-1

PROPOSAL FORM

PROPOSAL FORM

_____ , 2018

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

All:

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 _____

The following pages contain all bid items for:

BID SCHEDULE – ADDISON SURVEYOR PUMP STATION IMPROVEMENTS.
BID NUMBER 18-215

TOWN OF ADDISON
SURVEYOR PUMP STATION IMPROVEMENTS
BID NO. 18-215
UNIT PRICES

ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	BID AMOUNT
	BASE BID			
1	High Service Pump, Motor, Drain Piping, and Pump Baseplate.	L.S.	100%	
	UNIT PRICE IN WORDS:			
			TOTAL BASE BID =	

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 for the construction of the project.

2. Prices must be shown in words and figures for each item listed in the Proposal. In the event of discrepancy, the words shall control.

3. 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.

_____

Name of Person Signing Bid

_____

Signature of Person Signing Bid

_____

Address

_____

Telephone No. Fax No.

_____

T.I.N. (Tax Identification or Employer's Number)

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 _____
(Corporation Name)

_____
(State of Incorporation)

By _____
(Name of Person Authorized to Sign)

_____
(Title)

(Corporate Seal)

Attest _____
(Secretary)

Business address: _____

_____

_____

Phone No. _____

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 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.

SECTION BQS

BIDDER QUALIFICATION STATEMENT

SECTION BQS

ALL BIDDERS ARE NOTIFIED THAT THE FOLLOWING QUALIFICATION STATEMENT MUST BE COMPLETED AND SUBMITTED WITH THE BID PROPOSAL

CONTRACTOR'S QUALIFICATIONS

The Contractor shall show that he has experience with similar projects that require working on water and sanitary sewer projects, working in confined areas and with electrical equipment in close proximity to many physical features (such as: fences, carports, utility poles, guy lines, gas lines and meters, water lines, sewer manholes and cleanouts, etc.) which will require the Contractor to plan his work efforts and equipment needs with these limitations in mind. The Contractor shall submit a complete list of ALL Municipal and Similar Non-Municipal current and completed projects for the past three (3) years for review. This list shall include the names of supervisors and type of equipment used to perform this work.

BIDDERS QUALIFICATION STATEMENT

INFRASTRUCTURE AND DEVELOPMENT SERVICES BID NUMBER 18-215, ADDISON SURVEYOR PUMP STATION IMPROVEMENTS

Contractor:_____

Indicate One: _____Sole Proprietor _____Partnership _____Other

_____Corporation _____ Joint Venture

Name:_____Partner:_____

Title:_____Title:_____

Address:_____ Address:_____

City:_____ City:_____

State & Zip:_____ State & Zip:_____

Phone:_____ ___Phone:_____

State and Date of Incorporation, Partnership, Ownership, Etc._____

Location of Principal Office:_____

Contact and Phone at Principal Office:_____

Liability Insurance Provider and Limits of Coverage:_____

Workers Compensation Insurance Provider:_____

Surety (Performance and Payment):_____

Address:_____

Contact and Phone:_____

Superintendent and Backup Superintendent: (Work Resume - attach additional sheets.) (Safety Record – attached additional sheets; if needed show all verified safety violations.) The superintendent shall be able to communicate in English and not operate any equipment and have not had any verified job safety violations in the past five years. Any variations shall be reviewed by the OWNER for approval or denial. A job site shall be shut down if proper supervision is not provided.

Superintendent Name _____

Backup Superintendent Name _____

Safety Record – List ALL Verified Violations for Superintendent and Backup Superintendent with explanation, date and action taken to correct future safety violations:

Superintendent

_____

_____

_____

_____

Backup Superintendent

_____

_____

_____

_____

Total Number of Employees to be Associated with this Job:_____

Managerial_____ Administrative_____ Professional_____

Skilled_____ Semi-Skilled_____ Other_____

Percentage of work to be done by Bidder's Employees (Based on Dollars Bid): _____

Type(s) of work to be done by Bidder's Employees (examples: concrete paving, structural concrete, waterlines, sanitary sewer lines, storm pipe, storm inlets, excavation, lime, bridge fencing, etc.)

_____

_____

_____

Access to Tools and Equipment: Percent Owned____ Percent Rented____

Number of Years in Business as a Contractor on Above Types of Works:_____

Type(s) of Work to be done by Sub-Contractors
Include Name, Address, and Phone Number of Sub-Contractor.
Use additional sheets if needed.

Type of Work	Sub-Contractor

List Equipment to be used on this project (Make/Model/Age of Major Equipment) Any Equipment not listed shall be reviewed by the OWNER for approval or rejection prior to use of Equipment on this project. (Use additional sheets if necessary)

Type of Equipment	Make	Model	Age (years)

List of ALL Municipal and Similar Non-Municipal current and completed projects for the past three (3) years. (Use additional sheets if necessary.)

1. Project:_____

   Current Status:_____

   Any Litigation Issues: Yes or No (Circle One) If Yes, explain:_____

   _____

   _____

   _____

   Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain:_____

   _____

   _____

   _____

   Project Description:_____

   Owner/Agency:_____

   Year Built:_____ Contract Price:_____

   Contact Person:_____ Phone:_____

2. Project:_____

   Current Status:_____

   Any Litigation Issues: Yes or No (Circle One) If Yes, explain:_____

   _____

   _____

   _____

   Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain:_____

   _____

   _____

   _____

Project Description:_____

Owner/Agency:_____

Year Built:_____ Contract Price:_____

Contact Person:_____ Phone:_____

3. Project:_____

Current Status:_____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Project Description:_____

Owner/Agency:_____

Year Built:_____ Contract Price:_____

Contact Person:_____ Phone:_____

4. Project:_____

Current Status:_____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Project Description:_____

Owner/Agency:_____

Year Built:_____ Contract Price:_____

Contact Person:_____ Phone:_____

5. Project:_____

Current Status:_____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Project Description:_____

Owner/Agency:_____

Year Built:_____ Contract Price:_____

Contact Person:_____ Phone:_____

6. Project:_____

Current Status:_____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Project Description:_____

Owner/Agency:_____

Year Built:_____ Contract Price:_____

Contact Person:_____ Phone:_____

7. Project:_____

Current Status:_____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Project Description:_____

Owner/Agency:_____

Year Built:_____ Contract Price:_____

Contact Person:_____ Phone:_____

8. Project:_____

Current Status:_____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Project Description:_____

Owner/Agency:_____

Year Built:_____ Contract Price:_____

Contact Person:_____ Phone:_____

9. Project:_____

Current Status:_____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Project Description:_____

Owner/Agency:_____

Year Built:_____ Contract Price:_____

Contact Person:_____ Phone:_____

10. Project:_____

Current Status:_____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Project Description:_____

Owner/Agency:_____

Year Built:_____ Contract Price:_____

Contact Person:_____ Phone:_____

Trade references (List Company, Address, Contact Person, and Phone):

_____

_____

_____

Bank References (List Institution, Address, Contact Person, and Phone)

_____

_____

_____

Claims and Suits (if the answer to any of the following questions is yes, please attached details):

1. Has your organization ever failed to complete any work awarded to it?_____

2. Are there any judgments, claims, arbitration proceedings, or suits pending or outstanding

against your organization or officers?_____

3. Has your organization filed any lawsuits or requested arbitration with regard to construction contracts within the last five years?_____

4. Within the last five (5) years, has any officer or principal of your organization ever been an officer or principal of another organization when it failed to complete a construction contract?_____

I,_____,being duly sworn deposes and says that the information provided herein is true and sufficiently complete so as not to be misleading.

Date this_____day of_____, 20_____.
Name of
Organization:_____

By:_____

Title:_____

STATE OF TEXAS

COUNTY OF DALLAS

BEFORE ME the undersigned authority, on this day personally appeared _____ _____, known to me to be the person whose name subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and considerations therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this ___day of _____ 20____.

_____

Notary Public in and for _____ County, Texas

SECTION CA

CONTRACT AGREEMENT

CONTRACT AGREEMENT

STATE OF TEXAS

COUNTY OF DALLAS

THIS AGREEMENT is made and entered into this _____ day of _____, 2018, 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 _____, of the City of _____, County of _____, State of _____, 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:

ADDISON SURVEYOR PUMP STATION IMPROVEMENTS
INFRASTRUCTURE AND DEVELOPMENT SERVICES BID NUMBER 18-215

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 and twenty **(210)** 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 **_____ Dollars ($_____)** in current funds for the performance of the Contract in accordance with the Proposal submitted thereof for the **Base Bid**, 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) **ATTEST:**

By: _____ By: _____
City Manager

_____(CONTRACTOR) ATTEST:

By: _____ By: _____

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

I, _____ certify that I am the secretary of the corporation named as CONTRACTOR herein; that _____, who signed this Contract on behalf of the CONTRACTOR is the _____ (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

SECTION PrB

PERFORMANCE BOND

PERFORMANCE BOND

STATE OF TEXAS }
COUNTY OF DALLAS }

WHEREAS, _____as principal ("Contractor") and _____, a corporation organized under the laws of _____ and being duly authorized to do business in the State of Texas, as surety ("Surety")(whether one or more), do hereby expressly acknowledge themselves to he held and bound to pay to the Town of Addison, Texas, a home-rule municipality organized and operating under the Constitution and laws of the State of Texas (the "Town"), its successors and assigns, and to all persons, firms, subcontractors and corporations who may furnish materials or labor under the contract as more fully described below, the sum of _____ Dollars in the lawful currency of the United States of America ($) for the payment of which Contractor and Surety are liable to the Town, jointly and severally; and

WHEREAS, Contractor has this day entered into a written contract with the Town to build and construct _____
_____
_____
which contract and the plans and specifications therein mentioned (collectively referred to hereinafter as the "Contract") are hereby expressly incorporated into and made a part hereof as though set forth at length; and

WHEREAS, this bond is given pursuant to Chapter 2253 of the Texas Government Code;

NOW, THEREFORE, if Contractor shall well, truly and faithfully perform all of the undertakings, duties, terms, conditions and agreements of the Contract; shall satisfy all claims and demands incurred under the Contract; shall fully indemnify and hold the Town harmless; shall reimburse and repay the Town for any outlay or expense which the Town may incur in making good any default, and shall promptly make payment to all persons, firms, subcontractors and corporations who may furnish materials or labor under the Contract, then this obligation shall be void; otherwise to remain in full force and effect. The obligations of Contractor and Surety under this bond apply both to the original Contract and to any extension or modification of the Contract and Surety agrees that no change, extension of time, addition, expansion or other modification of the Contract, the work to be done under the Contract, or the plans and specifications which are a part of the Contract shall in any manner affect the obligations of Surety under this bond, and Surety waives notice of any such change, extension of time, addition, expansion or other modification. The obligations of Contractor and Surety under this bond are performable and payable in Dallas County, Texas such that exclusive venue for any legal action pertaining to this bond shall lie in Dallas County, Texas. By their signatures below, the persons signing this bond warrant and represent that they are, respectively, duly authorized to sign on behalf of Contractor and Surety.

EXECUTED this the _____ day of _____, 2_____.

CONTRACTOR: SURETY: 1

By:_____ By:_____

Title:_____ Title:_____

ACKNOWLEDGMENTS
[Contractor]

STATE OF TEXAS }
COUNTY OF DALLAS }

Before me _____ (insert the name of the officer) on this day _____ personally appeared _____ known to me (or proved to me on the oath of _____) or through _____ (description of identity card or other document) to be the person whose name is subscribed to the forgoing instrument and acknowledged to me that he/she executed the same for the purpose and consideration therein expressed.

Given under my hand and seal of office this _____ day of _____, 2_____.

_____ _____
Notary Public in and for the State of Texas Typed or Printed Name of Notary
My Commission Expires:_____

[Surety]

STATE OF TEXAS }
COUNTY OF DALLAS }

This instrument was acknowledged before me on the ____day of _____, 2_____ by _____ who is the _____ of the Surety, on behalf of Surety.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this the _____ day of _____, 2_____.

_____ _____
Notary Public in and for the State of Texas Typed or Printed Name of Notary

My Commission Expires:_____

1 Please see attached contact sheet for Surety and the Texas Department of Insurance.

Payment and Performance Bond Contact Sheet

(1) Claims:

All notices of claims shall be sent to the surety at the following address:

_____
(Name of surety)

_____
(Mailing address)

_____
(Physical address)

_____
(Phone number)

(2) Texas Department of Insurance Contact Number:

The address and contact information of the surety may otherwise be obtained by contacting the Texas Department of Insurance at the following toll free telephone number:

1-800-252-3439.

SECTION PyB

PAYMENT BOND

PAYMENT BOND

STATE OF TEXAS }
COUNTY OF DALLAS }

WHEREAS, _____, as principal ("Contractor") and _____, a corporation organized under the laws of _____ and being duly authorized to do business in the State of Texas, as surety ("Surety")(whether one or more), do hereby expressly acknowledge themselves to he held and bound to pay to the Town of Addison, Texas, a home-rule municipality organized and operating under the Constitution and laws of the State of Texas (the "Town"), its successors and assigns, and to all persons, firms, subcontractors and corporations who may furnish materials or labor under the contract as more fully described below, the sum of _____ Dollars in the lawful currency of the United States of America ($) for the payment of which Contractor and Surety are liable to the Town, jointly and severally; and

WHEREAS, Contractor has this day entered into a written contract with the Town to build and construct _____
_____

which contract and the plans and specifications therein mentioned (collectively referred to hereinafter as the "Contract") are hereby expressly incorporated into and made a part hereof as though set forth at length; and

WHEREAS, this bond is given pursuant to Chapter 2253 of the Texas Government Code;

NOW, THEREFORE, if Contractor shall promptly make payment to all persons, firms, subcontractors and corporations who may furnish materials or labor under the Contract, then this obligation shall be void; otherwise to remain in full force and effect. The obligations of Contractor and Surety under this bond apply both to the original Contract and to any extension of time or modification of the Contract and Surety agrees that no change, extension of time, addition, expansion or other modification of the Contract, the work to be done under the Contract, or the plans and specifications which are a part of the Contract shall in any manner affect the obligations of Surety under this bond, and Surety waives notice of any such change, extension of time, addition, expansion or other modification. The obligations of Contractor and Surety under this bond are performable and payable in Dallas County, Texas such that exclusive venue for any legal action pertaining to this bond shall lie in Dallas County, Texas. By their signatures below, the persons signing this bond warrant and represent that they are, respectively, duly authorized to sign on behalf of Contractor and Surety.

EXECUTED this the _____ day of _____, 2_____.

CONTRACTOR: SURETY: 1

By:_____ By:_____

Title:_____ Title:_____

ACKNOWLEDGMENTS
[Contractor]

STATE OF TEXAS }
COUNTY OF DALLAS }

Before me _____ (insert the name of the officer) on this day _____ personally appeared _____ known to me (or proved to me on the oath of _____) or through _____ (description of identity card or other document) to be the person whose name is subscribed to the forgoing instrument and acknowledged to me that he/she executed the same for the purpose and consideration therein expressed.

Given under my hand and seal of office this _____ day of _____, 2_____.

_____ _____
Notary Public in and for the State of Texas Typed or Printed Name of Notary
My Commission Expires:_____

[Surety]

STATE OF TEXAS }
COUNTY OF DALLAS }

This instrument was acknowledged before me on the _____ day of _____, 2_____ by _____ who is the _____ of the Surety, on behalf of Surety.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this the _____ day of _____, 2_____.

_____ _____
Notary Public in and for the State of Texas Typed or Printed Name of Notary

My Commission Expires:_____

[1] Please see attached contact sheet for Surety and the Texas Department of Insurance

Payment and Performance Bond Contact Sheet

(1) Claims:

All notices of claims shall be sent to the surety at the following address:

_____
(Name of surety)

_____
(Mailing address)

_____
(Physical address)

_____
(Phone number)

(2) Texas Department of Insurance Contact Number:

The address and contact information of the surety may otherwise be obtained by contacting the Texas Department of Insurance at the following toll free telephone number:

1-800-252-3439.

SECTION MB

MAINTENANCE BOND

MAINTENANCE BOND – TWO YEAR

STATE OF TEXAS '

COUNTY OF DALLAS '

WHEREAS,_____, as principal ("Contractor") and _____, a corporation organized under the laws of _____ and being duly authorized to do business in the State of Texas, as surety ("Surety")(whether one or more), do hereby expressly acknowledge themselves to he held and bound to pay to the Town of Addison, Texas, a home-rule municipality organized and operating under the Constitution and laws of the State of Texas (the "Town"), its successors and assigns the sum of _____ Dollars in the lawful currency of the United States of America ($) for the payment of which Contractor and Surety are liable to the Town, jointly and severally; and

WHEREAS, Contractor has this day entered into a written contract with the Town to build and construct which contract and the plans and specifications therein mentioned (collectively referred to hereinafter as the "Contract") are hereby expressly incorporated into and made a part hereof as though set forth at length; and

WHEREAS, under the Contract it is provided that the Contractor will maintain and keep in good repair all work to be performed and done under the Contract for a period of **one (1) year** from the date of acceptance of the completed work by the Town, and to do and perform all necessary work and repair any defective condition, it being understood that the purpose of this maintenance bond is to insure all warranties, express or implied, made or given by the Contractor to the Town and to cover all defective, inadequate or non-conforming conditions arising by reason of any materials or labor installed, provided, constructed or performed by the Contractor and in case the Contractor shall fail to correct any such conditions it is agreed that the Town may make such corrections and charge the cost of making those corrections against the Contractor and the Surety on this obligation, and the Contractor and Surety shall be subject to the liquidated damages provided in the contract, the plans and the specifications for each day's failure on its part to comply with the terms and provisions of the Contract;

NOW, THEREFORE, if the Contractor shall keep and perform its obligation to maintain the work and keep the work in repair for the full maintenance period of two (2) year as herein provided, then these presents shall be null and void and have no further effect, but if default shall be made by Contractor in the performance of its obligations, then these presents shall have full force and effect, and the Town shall have and recover from the Contractor and its Surety damages in the premises as provided and it is further understood and agreed that this obligation shall be a continuing one against the Contractor and the Surety and that successive recoveries may be had hereon for successive breaches until the full amount of this bond shall have been exhausted; and it is further understood that the obligation under this bond to maintain the work shall continue throughout the maintenance period and shall not be changed, diminished, or in any other manner affected during the term of this bond. The obligations of Contractor and Surety under this bond apply both to the original Contract and to any extension or modification of the Contract and Surety agrees that no change, extension of time, addition, expansion or other modification of the Contract, the work to be done under the Contract, or the plans and specifications which are a part of the Contract shall in any manner affect the obligations of Surety under this bond, and Surety waives notice of any such change, extension of time, addition, expansion or other modification. The obligations of Contractor and Surety under this bond are performable and payable in Dallas County, Texas such that exclusive venue for any legal action pertaining to this bond shall lie in Dallas County, Texas. By their signatures below, the persons signing this bond warrant and represent that they are, respectively, duly authorized to sign on behalf of Contractor and Surety.

EXECUTED this the _____ day of _____, 2_____.

CONTRACTOR:	SURETY:
By:_____	By:_____
Printed Name:_____	Printed Name:_____
Title:_____	Title:_____
Address of Principal:	Address of Surety:
_____	_____
_____	_____
_____	_____

ACKNOWLEDGMENTS

[Contractor]

STATE OF TEXAS '
COUNTY OF DALLAS '

Before me _____(insert the name of the officer) on this day _____ personally appeared _____ known to me (or proved to me on the oath of _____) or through _____ (description of identity card or other document) to be the person whose name is subscribed to the forgoing instrument and acknowledged to me that he/she executed the same for the purpose and consideration therein expressed.

Given under my hand and seal of office this _____ day of _____, 2_____.

_____ _____
Notary Public in and for the State of Texas Typed or Printed Name of Notary
My Commission Expires:_____

[Surety]

STATE OF TEXAS '
COUNTY OF DALLAS '

This instrument was acknowledged before me on the ___ day of _____, 2_____ by _____ who is the _____ of the Surety, on behalf of Surety.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this the _____ day of _____, 2_____.

_____ _____
Notary Public in and for the State of Texas Typed or Printed Name of Notary
2-4-13 2 yr

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

ADDISON SURVEYOR PUMP STATION IMPROVEMENTS
INFRASTRUCTURE AND DEVELOPMENT SERVICES BID NUMBER 18-215

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 _____, 201_.

_____
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, 4th Edition (2004)*, under Division 100, "General Provisions," Items 101.1 through 109.6 inclusive, as amended or supplemented and except as modified by the Special Provisions or Instructions to Bidders.

SECTION SP

SPECIAL PROVISIONS

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: Addison Surveyor Pump Station Improvements ("Project").

2. **GENERAL:** This Work shall conform to the requirements of the Specifications and the details as shown on the Plans. These Contract Documents are intended to be complementary. The Contractor shall do all work as provided in the plans, specifications, special provisions, bid and contract, and shall do such additional Extra work as may be considered necessary to complete the work in a satisfactory and acceptable manner. The Contractor shall furnish all labor, tools, materials, machinery, equipment, and incidentals necessary to the satisfactory prosecution and completion of the Work. Requirements of any of the Contract Documents are as binding as if called for by all. In the event of conflict between the Plans 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 Provisions 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 itself 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 Construction Details;

The specifications included in this document;

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 referenced specifications are hereby made a part of the Project Specifications.

5. **SUBSURFACE INVESTIGATION:** Subsurface exploration is not anticipated for this project.

6. **HISTORICAL, SCIENTIFIC AND ARCHAEOLOGICAL DISCOVERIES:** Contractor shall immediately give an oral and written report to the Town of Addison of the discovery of any articles of historical, scientific, or archaeological significance. Contractor shall take all necessary steps to preserve the article and shall cease operations, which would affect the find until otherwise directed by the Town of Addison but continue with all other unaffected operations. The future operations of Contractor with respect to the discovery, including disposition of the articles, shall be decided by the Town of Addison. The Town of Addison shall have sole and exclusive title to any discovered articles.

The Town of Addison shall investigate the site conditions promptly after receiving the notice. If the conditions do materially so differ and cause an increase or decrease in Contractor's cost of, or the time required for performing any part of the work under the Contract, whether or not changed as a result of conditions, an equitable adjustment will be made and the Contract modified in writing accordingly.

No request by Contractor for an equitable adjustment to the Contract under this Section shall be allowed unless Contractor has given the written notice required. No request by Contractor for an equitable adjustment of the Contract for differing site conditions will be allowed or shall be made after final payment under the Contract.

ENVIRONMENTAL REQUIREMENTS: In addition to requirements set forth in other sections of the Contract, including the Plans and Specifications, Contractor shall ensure that the requirements of this Section are fulfilled and incorporated into its procedures and processes as well as those of any Subcontractors. All materials utilized by Contractor on the Project shall comply with all applicable local, state and federal laws and regulations.

A. Contractor is responsible for compliance with any requirements included in the Contract Documents regarding Hazardous Materials. If Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by Contractor, Contractor shall,

upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Town of Addison in writing.

1. The term "Hazardous Materials" means any substance or compound, whether solid, liquid or gaseous: (i) which is listed, defined or regulated as a "hazardous substance", "hazardous waste", "extremely hazardous waste", "solid waste", "toxic substance", "hazardous substance", "hazardous material" or "regulated substance" or otherwise classified as hazardous or toxic, in or pursuant to any Environmental Law; or (ii) which is or contains asbestos, radon, any polychlorinated biphenyl, urea formaldehyde foam insulation, explosive or radioactive material, lead, or motor fuel or other volatile organic compounds; or (iii) which causes or poses a threat to cause a contamination or nuisance on the Project Site or any adjacent property, or (iv) which causes or poses a threat to cause a hazard to the environment or to the health, safety or welfare of persons on or about the Project Site.

2. The term "Environmental Law" means any federal, state or local law, statute, guidance or policy statement, ordinance, code, rule, regulation, license, authorization, decision, order, injunction or decree, which pertains to health, safety or the environment (including, but not limited to, ground, air, water or noise pollution or contamination, and underground or aboveground tanks) and shall include without limitation, the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, the Resource Conservation and Recovery Act of 1976, as amended, the Occupational Health and Safety Act, the Toxic Substances Control Act, the Texas Water Code and the Texas Solid Waste Disposal Act and any other state or federal environmental statutes.

B. If the material or substance was on the site prior to the issuance of the Notice to Proceed, the Town of Addison shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by Contractor and, in the event such material or substance is found to be present, to verify that it has been remediated to levels required by the Texas Commission on Environmental Quality. When the material or substance has been remediated, Work in the affected area shall resume upon written direction of the Town of Addison.

C. Except as provided in Subparagraph B., Contractor (with the Town of Addison's prior written approval of the laboratory) shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by Contractor and, in the event such material or substance is found to be present, the Town of Addison shall determine whether Contractor or the Town of Addison shall have the substance remediated to levels required by the Texas Commission on Environmental Quality. When the material or substance has been remediated, Work in the affected area shall resume upon written direction of the Town of Addison. The Contract time shall be not be extended and the Contract Price shall not be increased, unless the material or substance to be remediated were not introduced to the Work Site by Contractor, and Contractor shall then pay for (or reimburse the Town of Addison for) the testing and remediation.

D. The Town of Addison shall not be responsible under this Section for materials or substances Contractor brings or introduces to the Project Site. Contractor shall be responsible for the fault or negligence in the use and handling of materials or substances of Contractor, Subcontractor, Sub-subcontractor, or anyone directly or indirectly employed by any of them.

E. Contractor shall indemnify the Town of Addison and its affiliates for any and all damages incurred by the Town of Addison as a result of Contractor's actions with respect to all applicable state and federal environmental laws related to materials or substances Contractor brings to the Project Site, including but not limited to fines, penalties, costs of remediation and reasonable attorney's fees. No time extension shall be granted for breach of this provision.

F. Contractor agrees that it shall not transport to, use, generate, dispose of, or install at the Project Site any Hazardous Materials, except in accordance with applicable environmental laws. Further, in performing the Work, Contractor shall not cause any release of Hazardous Materials into, or contamination of, the environment, including the soil, the atmosphere, any water course or ground water unless required by the Contract Documents. In the event Contractor engages in any of the activities prohibited in this Section or fails to stop Work as provided in this Section, to the fullest extent permitted by law, Contractor hereby indemnifies and holds the Town of Addison, its affiliates and their respective officers, agents, employees and tenants harmless from and against any and all claims, damages, losses, causes of action, suits and liabilities of every kind, including but not limited to, expenses of litigation, court costs, punitive damages and attorneys' fees, arising out of, incidental to or resulting from the activities prohibited in this Section or Contractor's failure to stop Work as required. Contractor shall obtain from manufacturers and furnish to the Town of Addison Materials Safety Data Sheets (OSHA Form 20) for all materials incorporated into the Project by Contractor. The Town of Addison hereby agrees that, as between the Town of Addison and Contractor, the Town of Addison will be responsible for Hazardous Materials on site which existed prior to Contractor performing Work on the Project Site or which are introduced to the Project Site by the Town of Addison, except as provided in this Section. Contractor will not be considered the generator of Hazardous Materials on site which existed prior to Contractor performing Work on the Work Site or which are introduced to the Project Site by the Town of Addison. If the Hazardous Materials were on the Project Site prior to Contractor's presence on the Project Site or were introduced to the Project Site by the Town of Addison, then, if appropriate, the Town of Addison will make an equitable adjustment to the Contract.

G. Include in all construction subcontracts exceeding $100,000, the following requirement: "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."

H. No request by Contractor for an equitable adjustment to the Contract under this Section shall be allowed unless Contractor has given the written notice required.

I. No request by Contractor for an equitable adjustment of the Contract for Hazardous Materials will be allowed or shall be made after final payment under the Contract.

7. **COMPLIANCE WITH LAWS:** The Contractor shall familiarize himself with the nature and extent of the Specifications, Plans, Project 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 and the Engineer harmless therefrom. No plea of ignorance or misunderstanding thereof will be considered.

8. **PERMITS, LICENSES. AND REGULATIONS:** Permits and licenses for the prosecution of the Work shall be secured and paid for by the Contractor. Any required permit fees will still be paid 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.**

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."

It is in the interest of the public safety and convenience for the Work under this Project to occur outside the standard Work hours. However, the contractor will must present a detailed Work schedule and obtain written approval from the Town.

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 and 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 Project, or any errors or omissions in Plans 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. **PREPARATION OF STORM WATER POLLUTION PREVENTION PLAN:** A Storm Water Pollution Prevention Plan (SW3P) will not be required for this project.

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 four (4) working days prior to the date set for the Bid opening. The ability to ask questions will close at **5:00 PM, Tuesday, September 25th, 2018**. Answers to all such requests will be issued in the form of Addenda and a copy of such Addenda will be released through www.bidsync.com. It will be the responsibility of each person who has been issued as set of Bidding Documents to secure all Addenda from www.bidsync.com. 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 it be in doubt as to their meaning, it 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.

See bid item descriptions/reference specifications for details.

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. Any repairs or replacement of items damaged during demolition or as a result of new construction will be considered subsidiary. Limits of all Work requiring repair will be determined by the Town of Addison staff or the inspector. Extreme care should be taken during all demolition and construction operations.

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.

To be considered responsive, the apparent three lowest Bidders are required to submit the Statement of Experience per Section BQS "Bidder Qualification Statement" within 5 days.

The apparent low three Bidders will be notified by the Engineer to request the information.

AWARD AND EXECUTION OF CONTRACT: For the purpose of award, each bid submitted shall consist of two whereby the correct summation of the products of the estimated quantities shown in the proposal, multiplied by their bid unit prices for the following parts:

- **Base Bid**

Bidders must fill bid proposal for all base bids and all additive alternates. The method of Award will be based on the lowest qualified bidder for base bid.

The Town reserves the right to accept whichever bid is determined to be in the best interest of the public and to reject all bids.

All payments will be based on actual quantities and bid unit prices.

21. **EXPLANATION OF CONTRACT TIME:** The term "Contract Time" as used in this Provision will mean the **210 calendar days, *regardless of the base bid schedule awarded***, 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.

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 Contract Time. In the event the Contractor and Town are unable to agree to the number of calendar days to extend the Contract Time, the Town shall unilaterally determine the number of calendar days to extend the 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.

Should the Contractor fail to complete the Contract on or before expiration of the Allowable Contract Time, as adjusted in accordance with the provisions above, the Town shall deduct from the moneys due the Contractor the Daily Value as shown in provision 99 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 pursuant to the statements above. This deduction shall be the disincentive for the Contractor's failing to timely complete the Contract. **This shall be strictly enforced.**

22. **COPIES OF PLANS FURNISHED:** One (1) electronic copy of the Plans shall be furnished to the successful Contractor, at no charge, for construction purposes. Additional copies may be obtained at cost of $50.00 per set upon request.

23. **PRE-CONSTRUCTION CONFERENCE:** The successful Contractor, Engineer, and Town of Addison shall meet for a pre-construction 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.

24. **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 (CPM) and submit to the Town of Addison and Engineer for approval. The CPM shall reflect all definable features of Work and activities that shall cause minimum interference with water operations during construction. If the schedule or sequence becomes unworkable or unsatisfactory as Work proceeds, adjustments shall be made. During all phases of construction access to all existing businesses must be maintained at all times unless otherwise authorized in writing by the Town of Addison.

The Contractor must comply with all work area restrictions as indicated in the Plans unless specifically authorized in writing by the Town of Addison.

25. **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. The Contractor's representative must be available to meet and discuss construction related issues on site or at the Town's offices within 20 minutes of a request during working hours and throughout the entire construction period. Upon repeated failure of attendance at requested meetings, Contractor will be required to have a Project representative on-site at all times.

26. **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.

27. **INSURANCE:** Each insurance policy that the Contractor must furnish in accordance with these contract documents shall name the Town of Addison 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

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 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 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 or emailed to purchasing@addisontx.gov.

2.7 All insurance policies, which name the Town 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-" VII 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.

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."

28. **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 Contract, 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 or other mutually agreeable mediator or arbitrator. 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.

29. **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) – Garver

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 but not limited to:

- High Service Pump, Motor, and Baseplate

30. **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.

31. **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.

32. **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.

33. **PROPERTY ACCESS:** Access to the lift station shall be maintained at all times unless otherwise directed by the Engineer and/or Town of Addison.

34. **PLANT, PROCEDURES, 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 Contract. 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.**

35. **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. 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.

36. **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.

37. **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.

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 Town of Addison's acceptance of the Work. 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.

38. **HAULING ON TOWN OF ADDISON STREETS:** The Contractor shall receive approval of its 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.

39. **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 Work on this Project prior to beginning its 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.

40. **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.

41. **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 its 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 its 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.

42. **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 its operations to all existing utility lines, public property, and private property, whether it is below ground or above ground, and he shall defend and settle in total the cost of all lawsuits which may arise as a result of its 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.

43. **MAINTENANCE AND REPAIRS:** The Contractor shall maintain and keep in good repair all Work contemplated under these Plans, Specifications, and Plans 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 its 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.

44. **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.

45. **PUBLIC CONVENIENCE AND SAFETY:** In accordance with generally accepted construction practices, the Contractor shall be solely and completely responsible for conditions of the Project site, including safety of all persons and property during performance of the Work. This requirement shall apply continuously and not be limited to normal Work 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, its employees, agents or Subcontractors, or at any time due to defective Work or materials, or due to its 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 its 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 its surety shall reimburse the Town of Addison for all such costs.

46. **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 the Work and 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 protective measures, 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 its 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.

47. **SUSPENSION OF WORK RELATED TO DANGER:** In addition to the other remedies for suspension of the Work as provided for in the General Provisions and Special Provisions, the Town of Addison has the authority to suspend all work immediately if, in the Town of Addison's opinion, there is imminent danger to workers or the general public. If there is no imminent danger to workmen or the general public, but trench conditions are not in compliance with Federal Regulations 29 C.F.R. 1926.650-1926.652, the Town of Addison shall warn the Contractor who shall then immediately order all workmen in and adjacent to the trench away from the area. The Contractor must then bring the trench into compliance with the regulations. If the Contractor does not make the required corrections, all work on the Contract shall cease and the Town of Addison will issue a letter of Temporary Suspension of Work. The only work authorized after issuance of this letter is work approved by the regulations. Other work shall not be permitted until the Town of Addison issues a letter of Release of Temporary Suspension of Work. The Contractor shall not be entitled to additional compensation, an extension of time or payment of damages as a result of a temporary suspension of work under this provision.

48. **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.

49. **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 its contract; or where sufficient contract funds are unavailable for this purpose, the Contractor or its surety shall reimburse the Town of Addison for all such costs.

50. **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.

51. **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 its own cost.

52. **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 Plans 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.

53. **DISPOSITION AND DISPOSAL OF MATERIALS:** The Town will have first rights of refusal for all existing property. Any items which the Town does not wish to keep 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.

54. **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.

55. **STARTUP TESTING REQUIREMENTS:** Testing shall be conducted in accordance with Town of Addison Specifications except as modified in the Special Provisions, Technical Specifications, or as on the plans.

56. **CLAIMS FOR DAMAGES OR INJURY:** General Provision Item 1.24.3 - SMALL CLAIMS FOR DAMAGE OR INJURY is amended to read as follows: "If any person files a claim against the Town of Addison 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 its 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 109.4. 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.

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."

57. **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.

58. **MECHANICS AND MATERIALMEN'S LIEN:** The Contractor shall be required to execute a release of mechanics and materialmen's liens upon receipt of payment and shall ensure that the Project remains free and clear of all liens related to the Work. The Contractor shall have all liens removed by obtaining releases acceptable to the Town of Addison or shall bond around such liens by obtaining a discharge of all liens.

59. **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.

60. **PRODUCT RECORD DOCUMENTS:** The Contractor shall maintain record Plans 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 Plans, 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 Plans: 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 Plans.

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 Plans 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 its authorized representative.

61. OWNERSHIP OF WORK AND MATERIALS: All Work performed by Contractor pursuant to the Contract shall be the property of the Town of Addison. The Town of Addison shall own all construction, and any data, documents, plans, specifications, working papers, computer programs, photographs, or other material produced by Contractor pursuant to the Contract, and Contractor hereby assigns and transfers to the Town of Addison any and all copyrights for such material. To the extent that such programs used are internal, proprietary programs used by Contractor in the performance of the Work, Contractor will provide the Town of Addison such access to the programs as is necessary for the Town of Addison to be able to use the products and documents generated by the program, but Contractor is not required to transfer the copyrights or other intellectual property rights to the program to the Town of Addison. As security for partial, progress, or other payments, title to work for which such payments are made shall pass to the Town of Addison at the time of the payment. To the extent that title has not previously been vested in the Town of Addison by reason of payments, full title shall pass to the Town of Addison at delivery of the Work at the location specified in the Contract.

Unincorporated Work to which the Town of Addison has received title by reason of progress, partial or other payments shall be segregated from other Contractor or Subcontractor materials and clearly identified as the Town of Addison property. The Contractor shall be responsible for all materials until they have been incorporated into the Work and the Work has been finally accepted by the Town of Addison. The title transferred as above shall in each case be good, and free and clear of any and all security interests, liens, or other encumbrances. The Contractor promises and agrees that it will not pledge, hypothecate, or otherwise encumber the items in any way that would result in any lien, security interest, charge, or claim upon or against said items. The transfer of title as provided above shall not imply acceptance by the Town of Addison, nor relieve Contractor from the responsibility to strictly comply with the Contract, and shall not relieve Contractor of responsibility for any loss of or damage to such items.

The Contractor shall insert provisions in its subcontracts sufficient to ensure compliance with the content of this Section.

62. **DRAWINGS AND OTHER DATA:** All documents developed by Contractor in the performance of the Contract shall become the sole property of the Town of Addison and may be used by the Town of Addison on any other project without additional compensation to Contractor. Use by the Town of Addison of these documents on other projects does not confer any liability on Contractor.

The Town of Addison shall be considered the "person for whom the work was prepared" for the purpose of authorship in any copyrightable work under 17 U.S.C. § 201(b). With respect thereto, Contractor agrees not to assert or authorize others to assert any rights or establish any claim under the design related patent and copyright laws. All design drawings, as-built drawings and specifications, in any form, shall contain a copyright mark of the Town of Addison.

63. **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 Plans are given to the Town of Addison.

64. **USE OF EXPLOSIVES:** The use of explosives by the Contractor to complete the Work shall be prohibited.

65. **POWER FOR CONSTRUCTION:** The Contractor shall contract with the local power provider and make the necessary arrangements for securing power required for the construction, including power required for temporary offices. There will be no separated pay item for connection into the existing power system or for the power required for construction purposes.

66. **LIQUIDATED DAMAGES:** If the Contractor fails to complete the Work within the time specified in the contract, the Contractor shall pay liquidated damages to the Town of Addison in the amount of $ 500 for each calendar day of delay until the Work is completed or accepted.

67. **CONTRACT DELAY:** 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 subcontractors, suppliers, or other contractors, actions by third parties, weather, weekends, holidays, or other such events, forces or factors sometimes experienced in 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 Contract time for completion. Further, any and all costs or impacts whatsoever incurred by the Contractor in accelerating the Work to overcome or absorb such delays or events in an effort to complete the Contract prior to expiration of the Contract time to complete, regardless of whether the Contractor does so or not, shall be the sole responsibility of the Contractor in every instance.

68. **SUBCONTRACTORS:** No subcontract shall relieve Contractor of any of Contractor's obligations or liabilities under the Contract. Contractor shall be fully responsible and liable for the acts or omissions of all Subcontractors, including persons directly or indirectly employed by them, their guests and invitees. Contractor shall have sole responsibility for managing and coordinating the operations of its Subcontractors, including the settlement of disputes with or between them. Nothing contained in the Contract shall be deemed to create a contractual relationship between any Subcontractor, and the Town of Addison.

Contractor shall provide to the Town of Addison one (1) copy of all executed subcontracts associated with the Contract, including any changes or modifications to the subcontracts, within three (3) days of their execution. No Subcontractor shall be permitted to perform work associated with the subcontract until the Subcontractor (or Contractor on the Subcontractor's behalf) is in compliance with the insurance requirements specified elsewhere in the Contract, and has furnished satisfactory evidence of insurance to the Town of Addison.

69. **PAYMENTS TO SUBCONTRACTORS:** Contractor shall comply with the provisions of applicable laws and regulations relating to Contractor's relations with Subcontractors. Payments by Contractor to Subcontractors associated with the Town of Addison Contracts are subject to the time periods established in the Texas "Prompt Payment Act", contained in Chapter 2251 of the Texas Government Code.

All persons employed in the performance of the Work under the Contract, or any subcontracts hereunder, shall be paid not less than the general rates of per diem, holiday, and overtime wages prevailing in the locality of the Work of a similar character as detailed in the Special Provisions. Failure to comply with this provision shall subject Contractor to the penalties prescribed in Chapter 2258 of the Texas Government Code, as amended.

Contractor will include in each subcontract for property or services entered into by Contractor and a Subcontractor, including a supplier, for purposes of performing the Work under the Contract a payment clause that obligates Contractor to pay the Subcontractor for satisfactory performance under its subcontract within seven (7) days

out of such amounts as are paid to Contractor by the Town of Addison under the Contract. A false certification to the Town of Addison under the provisions of the Payments clause may be a principal offense in violation of Section 37.10 of the Texas Penal Code.

70. **USE OF COMPLETED PORTIONS OF THE WORK:** Whenever, as determined by the Town of Addison, any portion of the Work performed by Contractor is in a condition suitable for use, and the best interests of the Town of Addison requires such use the Town of Addison may take possession of or use such portion of the Work. Such use by the Town of Addison shall in no case be construed as final acceptance, and shall neither relieve Contractor of any of its responsibilities under the Contract, nor act as a waiver by the Town of Addison of any of the conditions thereof. Contractor shall not be liable for the cost of repairs, rework, or renewals, which may be required due to ordinary wear and tear resulting from such use. However, if such use increases the cost or delays the completion of remaining portions of the Work, Contractor shall notify the Town of Addison in writing as required by the Contract and shall be entitled to such additional compensation or extension of time, or both, as determined in accordance with the Contract.

If in the course of such use, the Work proves to not be in compliance with the Contract, the Town of Addison shall have the right to continue such use until such portion of the Work can, without injury to the Town of Addison, be taken out of service for correction of defects, errors, omissions, or replacement of unsatisfactory materials, as necessary for such portions of the Work to comply with the Contract. Contractor shall correct the Work as soon as practical, but not later than one (1) month after notification by the Town of Addison.

Contractor shall not use any permanently incorporated materials unless such use is approved in writing by the Town of Addison. Where Contractor's request is granted for the use of certain materials, Contractor shall properly use and maintain and, upon completion of its use and at its own expense, recondition such materials to the satisfaction of the Town of Addison.

71. **COMPLETE AGREEMENT:** The Contract (including Attachments, the Special Provisions, other documents and manuals incorporated herein) is the full and complete agreement between the Town of Addison and Contractor with respect to the subject matter herein and supersedes any and all prior agreements between the parties hereto.

72. **WAIVER:** The waiver by the Town of Addison of the breach of any provision of the Contract by Contractor shall in no way impair the right of the Town of Addison to enforce the provision for any subsequent breach thereof. All remedies provided hereunder are cumulative and are in addition to all other remedies available at law or in equity.

73. **EXECUTION OF THE CONTRACT:** The Contract may be executed in multiple counterparts, each of which shall, for all purposes, be deemed an original but which together shall constitute one and the same instrument, and the signature pages from any

counterpart may be appended to any other counterpart to assemble fully executed documents, and counterparts of the Contract may also be exchanged via electronic facsimile machines and any electronic facsimile of any party's signature shall be deemed to be an original signature for all purposes.

74. **DEFINITIONS:** The following definitions are added to the General Provisions and Special Provisions:

BIDDER: Any person, persons, partnership, company, firm, association, or corporation acting directly or through a duly authorized representative submitting a bid for the work contemplated.

PROJECT: The Town of Addison's overall objective and endeavor of which the Contract forms a part and ultimately creates, which encompasses all Contact Documents constructed to final completion and final acceptance.

WORKING DAY: A working day is defined as a calendar day not including Saturdays, Sundays, or legal holidays authorized in the list prepared by the City of Dallas for contract purposes, in which weather or other conditions not under the control of the Contractor shall permit the performance of the principal units of work underway for a continuous period of not less than 7 hours between 7 A.M. and 6 PM. A principle unit of work shall be that unit which controls completion time of the contract. Nothing in this definition shall be construed as prohibiting the Contractor from working on Saturdays, if the Contractor so desires and permission of the Town of Addison has been granted. Work on Sundays shall not be permitted except in cases of extreme emergency and then only with the written permission of the Town of Addison. If Saturday or Sunday work is permitted, working time shall be charged on the same basis as weekdays. Where the working time is expressed as calendar days or a specific date, the concept of working days shall no longer be relevant to the contract.

75. **MODIFICATIONS TO THE LANGUAGE OF THE GENERAL PROVISIONS:** The General Provisions are modified as follows:

A. Add the following words to the General Provisions before the word "Certificates" found on the fourth line of Section 103.4.1:

"When permitted by law,"

B. Delete the sentence "A model Certificate of Insurance is illustrated in Model Form A.6 in Appendix A." beginning on the ninth line of Section 103.4.1 of the General Provisions and replace with the following:

"Certificates of Insurance shall be provided on a state approved form."

C. Delete the following sentence beginning on the second line of the fifth subparagraph of Section 104.2.1 of the General Provisions:

"The foregoing notwithstanding, the total original Contract amount shall not be increased more than 25 percent; the CONTRACTOR, by submission of a bid and execution of the Contract, is deemed to consent to the OWNER'S right to reduce the total original Contract amount by more than 25 percent."

D. Add the following word before the word "decide" found on the second line of Section 105.7.1 of the General Provisions:

"initially"

E. Add the following word after the word "work" found on the fifth line of Section 105.7.1 of the General Provisions:

", subject to the agreement of the Owner"

F. Delete the following sentence beginning on the sixth line of Section 105.7.1 of the General Provisions:

"Engineer shall determine the amount and quality of work performed and materials furnished, and Engineer's decision and estimates shall be final."

G. Delete Section 105.9.3 of the General Provisions titled "Inspection Overtime" in its entirety.

H. Delete Section 107.2 of the General Provisions titled "Indemnification" in its entirety and replace with the following:

"THE CONTRACTOR AGREES TO INDEMNIFY, SAVE, PROTECT, DEFEND, AND HOLD HARMLESS THE OWNER, ITS AFFILIATES AND THEIR OFFICERS, DIRECTORS, AGENTS, INVITEES, AND EMPLOYEES ("INDEMNIFIED PARTIES") FROM AND AGAINST ANY AND ALL LIABILITY, COST, DAMAGE, EXPENSES, FINES AND ALL REASONABLE LEGAL FEES AND COURT COSTS, CLAIMS, LOSSES, CAUSES OF ACTION, SUITS, AND LIABILITY OF ANY KIND, INCLUDING ALL EXPENSES OF LITIGATION AGAINST THE INDEMNIFIED PARTIES, WHETHER OR NOT CAUSED IN PART BY ANY ACT OR OMISSION OF A PERSON OR ENTITY INDEMNIFIED HEREUNDER, OR WHETHER LIABILITY IS IMPOSED UPON SUCH PERSON OR ENTITY, FOR ANY LOSS, INJURY, DAMAGE OR DEATH ARISING FROM OR OUT OF THE CONTRACTOR'S ACTS OR OMISSIONS, INCLUDING, BUT NOT LIMITED TO CONTRACTOR'S NEGLIGENT OR GROSSLY NEGLIGENT PERFORMANCE OF THE WORK;

NEGLIGENT OR GROSSLY NEGLIGENT USE OR MISUSE OF OWNER'S PROPERTY; NEGLIGENT OR INTENTIONAL ACTIONS, ERRORS OR OMISSIONS AND THOSE OF ITS EMPLOYEES, OFFICERS, DIRECTORS, AGENTS OR SUBCONTRACTORS; VIOLATION OF ANY FEDERAL, STATE OR MUNICIPAL LAWS, REGULATIONS AND/OR ORDINANCES; CONTRACTOR'S OR ITS SUBCONTRACTOR'S USE OF PROPERTY, EQUIPMENT, VEHICLES, OR MATERIALS; DEFECTIVE WORKMANSHIP; NEGLIGENT OR GROSSLY NEGLIGENT USE OR MISUSE OF UTILITIES; OR SUBCONTRACTORS', EMPLOYEES', AGENTS', OFFICERS', OR DIRECTORS' NEGLIGENCE OR INTENTIONAL TORTS. IT IS THE EXPRESS INTENT OF CONTRACTOR TO INDEMNIFY THE INDEMNIFIED PARTIES FROM THE CONSEQUENCES OF THEIR JOINT AND/OR CONCURRENT NEGLIGENCE AND/OR SOLE NEGLIGENCE. IN THE EVENT OF FAILURE BY THE CONTRACTOR TO FULLY PERFORM IN ACCORDANCE WITH THIS INDEMNIFICATION PARAGRAPH, EACH OF THE INDEMNIFIED PARTIES, AT ITS OPTION, AND WITHOUT RELIEVING CONTRACTOR OF ITS OBLIGATIONS HEREUNDER, MAY SO PERFORM, BUT ALL COSTS AND EXPENSES SO INCURRED BY ANY OF THE INDEMNIFIED PARTIES IN THAT EVENT SHALL BE REIMBURSED BY CONTRACTOR TO THE INDEMNIFIED PARTIES, OR ANY OF THEM, AND UNTIL REIMBURSED BY CONTRACTOR SHALL BEAR INTEREST, AT THE RATE OF INTEREST PROVIDED TO BE PAID ON JUDGMENT UNDER THE LAWS OF THE STATE OF TEXAS. THIS INDEMNIFICATION SHALL NOT BE LIMITED TO DAMAGES, COMPENSATION OR BENEFITS PAYABLE UNDER INSURANCE POLICIES, WORKERS' COMPENSATION ACTS, DISABILITY BENEFIT ACTS OR OTHER EMPLOYEE BENEFIT ACTS.

IN THE EVENT THIS CONTRACT RELATES TO A PROJECT OTHER THAN A SINGLE FAMILY HOUSE, TOWNHOUSE, DUPLEX, OR LAND DEVELOPMENT DIRECTLY RELATED THERETO OR A PUBLIC WORKS PROJECT OF A MUNICIPALITY THEN THE INDEMNITY PROVISIONS INCLUDED HEREIN SHALL BE LIMITED SUCH THAT SUBCONTRACTOR SHALL NOT BE REQUIRED TO INDEMNIFY, HOLD HARMLESS OR DEFEND CONTRACTOR OR ANY THIRD PARTIES AGAINST A CLAIM CAUSED BY THE NEGLIGENCE OR FAULT, THE BREACH OR VIOLATION OF A STATUTE,

ORDINANCE, GOVERNMENTAL REGULATION, STANDARD, OR RULE, OR THE BREACH OF CONTRACT OF AN INDEMNIFIED PARTY, ITS AGENT OR EMPLOYEE, OR ANY THIRD PARTY UNDER THE CONTROL OR SUPERVISION OF THE INDEMNIFIED PARTY, OTHER THAN SUBCONTRACTOR OR ITS AGENT, EMPLOYEE, OR SUBCONTRACTOR OF ANY TIER EXCEPT THAT SUBCONTRACTOR SHALL INDEMNIFY, HOLD HARMLESS AND DEFEND THE INDEMNIFIED PARTY AGAINST ANY CLAIMS FOR THE BODILY INJURY OR DEATH OF AN EMPLOYEE OF SUBCONTRACTOR, ITS AGENTS, OR ITS SUBCONTRACTORS OF ANY TIER.

NOTWITHSTANDING ANYTHING HEREIN TO THE CONTRARY, THE INDEMNITY PROVISIONS INCLUDED HEREIN SHALL BE LIMITED SUCH THAT CONTRACTOR SHALL NOT BE REQUIRED TO INDEMNIFY, HOLD HARMLESS OR DEFEND OWNER OR ANY THIRD PARTIES AGAINST A CLAIM CAUSED BY THE NEGLIGENCE OR FAULT, THE BREACH OR VIOLATION OF A STATUTE, ORDINANCE, GOVERNMENTAL REGULATION, STANDARD, OR RULE, OR THE BREACH OF CONTRACT OF THE INDEMNIFIED PARTIES, ITS AGENT OR EMPLOYEE, OR ANY THIRD PARTY UNDER THE CONTROL OR SUPERVISION OF THE INDEMNIFIED PARTIES, OTHER THAN CONTRACTOR OR ITS AGENT, EMPLOYEE, OR SUBCONTRACTOR OF ANY TIER EXCEPT THAT CONTRACTOR SHALL INDEMNIFY, HOLD HARMLESS AND DEFEND THE INDEMNIFIED PARTIES AGAINST ANY CLAIMS FOR THE BODILY INJURY OR DEATH OF AN EMPLOYEE OF CONTRACTOR, ITS AGENTS, OR ITS SUBCONTRACTORS OF ANY TIER."

I. Add the following language after Section 103.3.1.4 of the General Provisions:

"**103.3.1.5. Maintenance Bond**. A good and sufficient bond in an amount not less than 10-percent of the approximate total of the Contract, as evidenced by the proposed tabulation, or conditioned on the full and proper maintenance and repair of the Work to be done and performed for a period of one year from the date of final acceptance of the Work and the Contractor will do all necessary backfilling that may arise on account of sunken conditions in ditches, or otherwise, and do and perform the necessary Work and repair any defective condition growing out of or arising from the improper laying or construction of same, or on account of any breaking of same caused by the Contractor in construction of same, or on account of any defect arising in any of the Work laid or constructed by the

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 Contractor."

J. Add the following language after Section 104.2.5. of the General Provisions:

> "**104.2.6. Change Orders**. A Change Order is a written instrument and signed by the Owner, Contractor and Engineer stating their agreement upon all of the following:
>
> (1) the change in the Work;
>
> (2) the amount of the adjustment, if any, in the Contract Sum; and
>
> (3) the extent of the adjustment, if any, in the Contract Time.
>
> In the event the Contractor proposes a Change Order, the Contractor shall provide sufficient detail for such Change Order to allow analysis and review by the Engineer.
>
> Agreement on any Change Order shall constitute final agreement on the Work which is the subject of the Change Order, including, but not limited to, all direct and indirect costs associated with such change and any and all adjustments to the Contract Sum and the Contract Time. In the event a Change Order increases the Contract Sum, the Contractor shall include the Work covered by such Change Orders in Applications for Payment as if such Work were originally part of the Contract Documents.
>
> The Contractor, upon receipt of written notification by the Owner or the Engineer of a proposed item or change in Work, shall prepare as soon as possible a Change Order on the form provided by the Owner. If the Change Order is returned to the Contractor for additional information or if the scope of the proposed change in the Work is modified by additions, deletions or other revisions, the Contractor shall revise the Change Order accordingly and resubmit the revised Change Order to the Owner and Engineer."

K. Delete the language in Section 105.2.1 of the General Provisions and replace it with the following language:

> **"105.2.1. WORKMANSHIP**: If the OWNER notifies the CONTRACTOR in writing of defective work, the CONTRACTOR shall correct the deficiencies within five (5) calendar days of the Notice at no additional cost to the OWNER. If the defective work is not corrected within five (5) calendar days, or the

CONTRACTOR is not making satisfactory progress (in the opinion of the OWNER) to correct the deficiencies, the OWNER may withhold future payments for All Work until the defective work has been corrected to the satisfaction of the OWNER."

L. Add the following language after Section 105.10 of the General Provisions:

"**105.10.2. GUARANTEE AFTER COMPLETION**: Unless otherwise specified in the technical section of these specifications, the CONTRACTOR shall, after test and acceptance, and for a period of one year from date of final written acceptance by the OWNER or within such longer or shorter period of time as may be prescribed by law or by the terms of any other applicable special warranty on designated equipment or portions of work as required by the Contract Documents, rebuild, repair, or replace any and all items which have proven defective due to unsatisfactory material and/or workmanship. Upon written notice from the OWNER, the CONTRACTOR shall immediately make any repairs that may be ordered, or such repairs will be made by the Owner at the expense of the CONTRACTOR or the CONTRACTOR'S Surety. In case of an emergency where delay would cause serious loss or damage, the Owner may undertake to have the defects repaired without previous notice. The expense of all repairs, including all emergency repairs, shall be borne by the CONTRACTOR or the CONTRACTOR'S Surety, at no cost to the Owner. This obligation shall survive termination of the Contract.

105.10.3. OFFSET PROGRESS PAYMENTS: OWNER may, at its option, offset any progress payment or final payment under the Contract Documents against any debt (including taxes) lawfully due to OWNER from Contractor, regardless of whether the amount due arises pursuant to the terms of the Contract Documents or otherwise and regardless of whether or not the debt due to OWNER has been reduced to judgment by a court.

105.10.4. FINAL ACCEPTANCE AND PAYMENT: This Project is subject to final inspection and final acceptance by the Owner. Whenever the Work provided for by the Contract shall have been completely performed on the part of the CONTRACTOR, including, but not limited to compliance with North Central Texas Council of Governments Standard Specifications for Public Works Construction, October 2004 Section 202.6.4.6., the CONTRACTOR shall notify the OWNER that the Work is ready for final inspection. The OWNER will then make such final inspection and if the work is satisfactory and in accordance with the specifications and contract documents, the OWNER shall issue a certificate of acceptance to the

CONTRACTOR and submit a request to accept the Work performed by the CONTRACTOR and payment of a final estimate under the terms of which the OWNER will release 100% of the retainage, plus the unpaid portions of the final estimate as the OWNER deems advisable.

Whenever the improvements provided for by the Contract shall have been completely performed on the part of the Contractor, as evidenced in the certificate of acceptance, and all required submissions provided to the OWNER, a final estimate showing the value of the Work shall be prepared by the OWNER as soon as the necessary measurements and computations can be made. All prior estimates upon which payments have been made are subject to necessary corrections or revisions in the final payment. The amount of this final estimate, less any sums that have been previously paid, deducted or retained under the provisions of the contract, shall be paid the CONTRACTOR within 30 days after the final acceptance by the OWNER, provided the CONTRACTOR has furnished to the OWNER a consent of Surety and satisfactory evidence that all indebtedness connected with the Work and all sums of money due for any labor, materials, apparatus, fixtures, or machinery furnished for and used in the performance of the Work have been paid or otherwise satisfied, or that the person or persons to whom the same may respectively be due have consented to such final payment This requirement it not intended and shall not be construed to recognize subcontractors for the purpose of privity of contract, and no third party benefit rights shall be obtained through these provisions for final payment. The acceptance by the CONTRACTOR of the final payment as aforesaid shall operate as and shall be a release to the OWNER from all claims or liabilities under the Contract, including all subcontractor claims, for anything done or furnished or relating to the Work under the Contract or for any act or neglect of said OWNER relating to or connected with the Contract.

All warranties and guarantees shall commence from the date of the certificate of acceptance. No interest shall be due the CONTRACTOR on any partial or final payment, or on the retainage.

105.10.5. RIGHT TO AUDIT CONTRACTOR'S RECORDS: By execution of the Contract, CONTRACTOR grants the OWNER the right to audit, at Owner's election, all of CONTRACTOR'S records and billings relating to the performance of the Work under the Contract. CONTRACTOR agrees to retain such records for a minimum of three (3) years following completion of the Work

under this Contract. OWNER agrees that it will exercise the right to audit only at reasonable hours."

M. Add the following language after Section 107.5 of the General Provisions:

"**107.5.1. COMPENSATION AND ACKNOWLEDGEMENT OF WORK**: The CONTRACTOR shall receive and accept compensation, as herein provided, as full payment for furnishing all labor, tools, material, equipment and incidentals; for performing all Work contemplated and embraced under the Contract; for all loss or damage arising out of the nature of the Work, or from the action of the elements; for any unforeseen defects or obstruction which may arise or be encountered during the prosecution of the Work and before its final acceptance by the OWNER; for all risks of whatever description connected with the prosecution of the Work; for all expense incurred by or in consequence of suspension or discontinuance of such prosecution of the Work as herein specified; for any infringement of patents, trademarks or copyrights; and for completing the Work in an acceptable manner according to the Plans and Specifications."

N. Add the following language after Section 107.11 of the General Provisions:

"**107.11.1. COOPERATION OF THE CONTRACTOR**: The CONTRACTOR shall give to the work the consistent attention necessary to facilitate the progress thereof, and the CONTRACTOR shall cooperate with the OWNER, and with other CONTRACTORS in every way possible.

The OWNER and the OWNER'S representatives shall at all times have free access to the Work whenever it is in preparation or progress and the contractor shall provide safe, convenient and proper facilities for such access and inspection."

O. Delete Section 107.4 of the General Provisions and replace it with the following:

"**107.4. VENUE AND CHOICE OF LAW**

The Owner, the Contractor, and the Contractor's sureties agree that this Contract shall be performed in Dallas, Dallas County, Texas, and if legal action is necessary in connection therewith, exclusive venue shall lie in Dallas County, Texas. The terms and provisions of the Contract Documents shall be construed in accordance with the laws and court decisions of the State of Texas."

P. Delete the following language (which is the first paragraph) from Section 109.5.1. of the General Provisions:

"Between the 25th day and the last day of each month, the Owner shall make an approximate estimate of the value of the work done during the month under the specifications. Whenever the said estimate or estimates of work done since the last previous estimate exceeds $100 in amount, a percentage of such estimate sum shall be paid the Contractor on or before the 15th day of the month next following. The monthly estimate may include acceptable nonperishable materials delivered to the work; such payment shall be allowed on the same percentage basis of the net invoice value as provided hereinafter. The percent retained by the owner shall normally be up to 10 percent at completion, unless otherwise stated. At the midpoint, or at any subsequent time, if the owner determines that the progress of the Contract is satisfactory in all respects, it may at its discretion cease to retain additional funds until the completion of the project, or until progress ceases to be satisfactory. The owner shall make the sole determination in this matter."

Q. Add the following language after Section 109.5.1. of the General Provisions:

"**109.5.1.1. Applications for Payment.** Applications for progress payment ("Application for Payment") will be submitted no more often than monthly and shall be submitted on the dates set forth in the Agreement. Each Application for Payment shall be (1) sworn to and notarized, (2) supported by such data substantiating the Contractor's right to payment as the Owner or Engineer may require, such as copies of requisitions from Subcontractors and material suppliers, and reflecting retainage if provided for in the Contract Documents, and (3) submitted by the Contractor for review to the Engineer in form and substance as mandated by the Owner. The Contractor's Application for Payment shall be segregated and detailed in a manner satisfactory to the Owner.

In each Application for Payment, the Contractor shall certify that such Application for Payment represents a just estimate of portion of the Work that is complete as of the last day covered by the Application for Payment and shall also certify by sworn affidavit as follows:

'There are no known mechanics' or materialmen's liens outstanding at the date of this Application, all due and payable bills with respect to the Work have been paid to date or shall be paid from the proceeds of this Application for Payment, there is no known basis for filing of any mechanics' or materialmen's liens on the Work, and waivers from all subcontractors and materialmen have been or, at the time of payment, will be obtained in such form as

to constitute an effective waiver of lien under the applicable laws of the State of Texas.'

109.5.1.2. Lien Waivers. Concurrent with each Application for Payment, the Contractor shall execute and furnish a waiver and release of its lien rights current through the effective date of such Application for Payment conditioned upon receipt of the payment that is the subject of the application. Beginning with the second Application for Payment, the Contractor shall also deliver with each such Application as a condition precedent to payment thereof, waivers of lien from each of the Subcontractors, Sub-subcontractors, and suppliers current through the effective date of the previous Application of Payment. The Contractor shall also execute and obtain any other reasonable forms as the Owner may require in order to assure an effective waiver and release of mechanics' and materialmen's liens in compliance with the laws of the State of Texas. The Contractor shall, if any Subcontractor, Sub-subcontractor or supplier refuses to furnish a release in full, furnish a bond satisfactory to the Owner to indemnify against any lien."

R. Delete Section 109.5.2 of the General Provisions and replace with the following:

"Ten-percent (10%) retainage shall be withheld until 40 days after Final Completion."

76. <u>CONTRACTOR REPRESENTATIONS</u>: By entering into the Contract, the Contractor makes the following representations to the Town of Addison:

A. Contractor has examined and carefully studied the Bidding Documents and the related data identified in the Bidding Documents.

B. The Contractor has visited the Project site where the goods are to be installed or services will be provided and become familiar with and is satisfied as to the observable local conditions that may affect cost, progress, or the furnishing of goods and services, if required to do so by the Bidding Documents, or if, in the Contractor's judgment, any local condition may affect cost, progress, or the furnishing of goods and services.

C. The Contractor is familiar with and is satisfied as to all Laws and Regulations in effect as of the date of the bid that may affect cost, progress, and the furnishing of goods and services.

D. The Contractor has carefully studied, considered, and correlated the information known to the Contractor; information commonly known to sellers of similar goods doing business in the locality of the Project site where the goods will be installed or where services will be provided; information and observations obtained from the Contractor's visits, if any, to the Project site where the goods

will be installed or services will be provided; and any reports and drawings identified in the Bidding Documents regarding the Project site where the goods will be installed or where services will be provided, with respect to the effect of such information, observations, and documents on the cost, progress, and performance of the Contractor's obligations under the Bidding Documents.

E. The Contractor has given the Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that the Contractor has discovered in the Bidding Documents, and the written resolution (if any) thereof by the Engineer is acceptable to the Contractor.

F. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for furnishing the goods and services for which the bid is submitted

G. The Contractor acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of bids, and final payment for all unit price bid items will be based on actual quantities, determined as provided in the Contract Documents. The Contractor also acknowledges that each unit price includes an amount considered by the Contractor to be adequate to cover the Contractor's overhead and profit for each separately identified item.

77. <u>PREVAILING WAGE RATES</u>: Wage rates paid on this Project shall not be less than specified in the schedule of general prevailing rates of per diem wages as set forth below in the Davis Bacon Act General Decision No. TX170028:

General Decision Number: TX180028 01/05/2018 TX28

Superseded General Decision Number: TX20170028

State: Texas

Construction Type: Heavy

Counties: Collin, Dallas, Denton, Ellis, Kaufman and Rockwall
Counties in Texas.

Water and Sewer Lines/Utilities (Including Related Tunneling
Where the Tunnel is 48" or Less in Diameter)

Note: Under Executive Order (EO) 13658, an hourly minimum wage of $10.35 for calendar year 2018 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.35 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2018. The EO minimum

wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number Publication Date
0 01/05/2018

* PLUM0100-002 11/01/2017

	Rates	Fringes
Plumbers and Pipefitters	$ 30.84	11.51

SUTX1991-004 09/23/1991

	Rates
Laborers:	
Common	$ 7.25
Utility	$ 7.467
Pipelayer	$ 7.828
Power equipment operators:	
Backhoe	$ 10.804
Crane	$ 10.942
Front End Loader	$ 9.163
Tunneling Machine (48" or less)	$ 9.163
TRUCK DRIVER	$ 8.528

WELDERS - Receive rate prescribed for craft performingoperation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work,

up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or
"UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union, which prevailed in the survey for this classification, which in this example would be Plumbers. 0198n indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates

the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour
Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor

200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

78. **<u>BID ITEMS/REFERENCE SPECIFICATIONS:</u>** The requirements of NCTCOG standard specifications for Public Works construction 4th Edition dated 2004.

SPECIAL PROVISIONS

Note: The series of numbers shown after the description are for the North Central Texas Council of Governments (NCTCOG) Standard Specifications for Public Works Construction, Fourth Edition (October 2004), or technical specifications number provided with this document.

SP.1 PROJECT

The project covered by these specifications consists of the furnishing and installation of all material, supplies, appurtenances, equipment and labor and any other necessary items required to construct, test and complete, ready for use and operation by the Owner. Final clean up before acceptance by the Owner is included as a part of the project.

SP.2 NCTCOG CONSTRUCTION SPECIFICATIONS

NCTCOG shall be utilized for these areas:

- **Site Protection & Preparation** Division 200
- **Roadway Construction** Division 300
- **Roadway Maintenance & Rehabilitation** Division 400
- **Structures** Division 700
- **Misc. Construction & Materials** Division 800

The specifications included with this document govern if there are any discrepancies between them and the listed specifications.

SP.3 DISPOSAL OF SURPLUS MATERIAL

The Town will have first rights-of-refusal for existing equipment that will be disposed. Surplus material not required for other parts of the work and not otherwise specifically covered by the drawings or specifications shall become the property of the Contractor for proper disposal by him.

SECTION IS

ADDITIONAL INSURANCE REQUIREMENTS

REQUIREMENTS

Contractors performing work on TOWN OF ADDISON property or public right-of-way shall provide the TOWN OF ADDISON a certificate of insurance or a copy of their insurance policy(s) (and including a copy of the endorsements necessary to meet the requirements and instructions contained herein) evidencing the coverages and coverage provisions identified herein within ten (10) days of request from TOWN OF ADDISON. Contractors shall provide TOWN OF ADDISON evidence that all subcontractors performing work on the project have the same types and amounts of coverages as required herein or that the subcontractors are included under the contractor's policy. Work shall not commence until insurance has been approved by TOWN OF ADDISON.

All insurance companies and coverages must be authorized by the Texas Department of Insurance to transact business in the State of Texas and must have a A.M. Best's rating A-:VII or greater.

Listed below are the types and minimum amounts of insurances required and which must be maintained during the term of the contract. TOWN OF ADDISON reserves the right to amend or require additional types and amounts of coverages or provisions depending on the nature of the work.

TYPE OF INSURANCE	AMOUNT OF INSURANCE	PROVISIONS
1. **Workers' Compensation Employers' Liability** to include: (a) each accident (b) Disease Policy Limits (c) Disease each employee	Statutory Limits per occurrence Each accident $1,000,000 Disease Policy Limits $1,000,000 Disease each employee$1,000,000	**TOWN OF ADDISON, and Garver, LLC to be provided a *WAIVER OF SUBROGATION AND 30 DAY NOTICE OF CANCELLATION or*** material change in coverage. **Insurance company must be A-:VII rated or above.**
2. **Commercial General (Public) Liability** to include coverage for: a) Bodily Injury b) Property damage c) Independent Contractors d) Personal Injury e) Contractual Liability	Bodily Injury/Property Damage per occurrence $1,000,000, General Aggregate $2,000,000 Products/Completed Aggregate $2,000,000, Personal Advertising Injury per occurrence $1,000,000, Medical Expense 5,000	**TOWN OF ADDISON, and Garver, LLC *to be listed as ADDITIONAL INSURED and provided 30 DAY NOTICE OF CANCELLATION* or material change in coverage.** **Insurance company must be A-:VII rated or above.**
3. **Business Auto Liability** to include coverage for: a) Owned/Leased vehicles b) Non-owned vehicles c) Hired vehicles	Combined Single Limit $1,000,000 per occurrence for bodily injury and property damage	**TOWN OF ADDISON, and Garver, LLC *to be listed as ADDITIONAL INSURED and provided 30 DAY NOTICE OF CANCELLATION* or material change in coverage.** **Insurance company must be A:VII- rated or above.**
4. **Umbrella or Excess Liability Policy over Commercial General Liability and Automobile Liability limits of $1 million per occurrence**	Minimum $4 million per occurrence excess $1 million underlying per occurrence	**TOWN OF ADDISON, and Garver, LLC *to be listed as ADDITIONAL INSURED and provided 30 DAY NOTICE OF CANCELLATION* or material change in coverage.** **Insurance company must be A:VII- rated or above.**

Certificate of Liability Insurance forms (together with the endorsements necessary to meet the requirements and instructions contained herein)may be **faxed** to the Purchasing Department: **972-450-7074 or emailed to: purchasing@addisontx.gov.** Questions regarding required insurance should be directed to the Purchasing Manager.

With respect to the foregoing insurance,

1. All liability policies shall contain no cross liability exclusions or insured versus insured restrictions applicable to the claims of the Town of Addison.

2. All insurance policies shall be endorsed to require the insurer to immediately notify the Town of Addison, Texas of any material change in the insurance coverage.

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

4. All insurance policies, which name the Town of Addison and Garver, LLC, Inc. as an additional insured, must be endorsed to read as primary coverage regardless of the application of other insurance.

5. Insurance must be purchased from insurers that are financially acceptable to the Town of Addison and licensed to do business in the State of Texas.

All insurance must be written on forms filed with and approved by the Texas Department of Insurance. Upon request, Contractor shall furnish the Town of Addison with complete copies of all insurance policies certified to be true and correct by the insurance carrier.

This form must be signed and returned with your quotation. You are stating that you do have the required insurance and if selected to perform work for TOWN OF ADDISON, will provide the certificates of insurance (and endorsements) with the above requirements to TOWN OF ADDISON within 10 working days.

A CONTRACT/PURCHASE ORDER WILL NOT BE ISSUED WITHOUT EVIDENCE AND APPROVAL OF INSURANCE.

AGREEMENT

I agree to provide the above described insurance coverages within 10 working days if selected to perform work for TOWN OF ADDISON. I also agree to require any subcontractor(s) to 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.

Project/Bid#_____

Company:_____

Printed Name: _____

Signature:_____ **Date:** _____

DIVISION 1

GENERAL REQUIREMENTS

SECTION 01 11 00 - SUMMARY OF WORK

PART 1 - GENERAL

1.1 WORK COVERED BY CONTRACT DOCUMENTS

The completed Work will provide the Owner with removal and replacement of existing pumps, rails, electrical control panel, and discharge piping at the existing Addison Surveyor Pump Station. More specifically, the Project includes, but is not limited to the following:

Base Bid:

1. Replacement of one existing high service pump and motor, associated drain piping, and pump baseplate.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 26 00 – CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes description and requirements of:
   1. Proposal Requests.
   2. Claims.
   3. Change Orders and Written Amendments.
   4. Field Order Procedures.

1.2 PROPOSAL REQUEST

A. Owner may, in anticipation of ordering an addition, deletion, or revision to the Work, request Contractor to prepare a detailed proposal of cost and times to perform contemplated change.

B. Proposal request will include reference number for tracking purposes and detailed description of and reason for proposed change, and such additional information as appropriate and as may be required for Contractor to accurately estimate cost and time impact on the Project.

C. Proposal request is for information only; Contractor is neither authorized to execute proposed change nor to stop Work in progress as result of such request.

D. Contractor's written proposal shall be transmitted to Engineer promptly, but not later than 14 days after Contractor's receipt of Owner's written request. Proposal shall remain firm for a maximum period of 90 days after receipt by Engineer.

E. Owner's request for proposal or Contractor's failure to submit such proposal within the required time period will not justify a claim for an adjustment in Contract Price or Contract Times (or Milestones).

1.3 CLAIMS

A. Include, at a minimum:
   1. Specific references including:
      a. Drawing numbers.
      b. Specification section and article/paragraph number.
      c. Submittal type, Submittal number, date reviewed, Engineer's comment, as applicable, with appropriate attachments.
   2. Stipulated facts and pertinent documents, including photographs and statements.
   3. Interpretations relied upon.
   4. Description of:
      a. Nature and extent of claim.
      b. Who or what caused the situation.
      c. Impact to the Work and work of others.
      d. Discussion of claimant's justification for requesting a change to price or times or both.
   5. Estimated adjustment in price claimant believes it is entitled to with documentation and justification.
   6. Requested Change in Contract Times: Include at least;
      a. Progress schedule documentation showing logic diagram for request.
      b. Documentation that float times available for Work have been used.
      c. Revised activity logic with durations including sub-network logic revisions, duration changes, and other interrelated schedule impacts, as appropriate.

7. Documentation as may be necessary as set forth below for Work Change Directive, and as Engineer may otherwise require.

1.4 WORK CHANGE DIRECTIVES

A. Procedures:
1. Upon completion of Work covered by the Work Change Directive or when final Contract Times and Contract Price is determined, Contractor shall submit documentation for inclusion in a Change Order via email.
2. Engineer will:
   a. Initiate, including a description of the Work involved and any attachments.
   b. Affix signature, demonstrating Engineer's recommendation.
   c. Engineer will update Owner monthly on the status of the Work Change Directives.
3. Owner will:
   a. Affix signature, demonstrating approval of the changes involved.
   b. Return one electronic copy to Engineer. Engineer will retain one electronic copy, send one electronic copy to the Resident Project Representative or other field representative, and forward one electronic copy to Contractor.
4. Contractor's documentation shall include but not be limited to:
   a. Appropriately detailed records of Work performed to enable determination of value of the Work.
   b. Full information required to substantiate resulting change in Contract Times and Contract Price for Work. On request of Engineer, provide additional data necessary to support documentation.
   c. Support data for Work performed on a unit price or Cost of the Work basis with additional information such as:
      1). Dates Work was performed, and by whom.
      2). Time records, wage rates paid, and equipment rental rates.
      3). Invoices and receipts for materials, equipment, and subcontracts, all similarly documented.
   d. Claim for additional cost must be made within 10 days of the directive by the Engineer. Claims on work made after 10 days will not be considered.

B. Effective Date of Work Change Directive: Date of signature by Owner, unless otherwise indicated thereon.

1.5 CHANGE ORDERS OR WRITTEN AMENDMENTS

A. Procedure:
1. Engineer will prepare the proposed Change Order or Written Amendment and transmit an electronic copy of such with Engineer's written recommendation (Change Order only) and request to Contractor for signature.
2. Contractor shall, upon receipt, either:
   a. Promptly execute the document, retaining one electronic copy for its file, and return one electronic copy to Engineer for Owner's signature, or
   b. Return unsigned one electronic copy with written justification for not executing Change Order or Written Amendment.
3. Engineer will, upon receipt of Contractor-executed copy, promptly forward Engineer's written recommendation and partially executed copy for Owner's signature, or if Contractor fails to execute the Change Order or Written Amendment, Engineer will promptly so notify Owner and transmit Contractor's justification to Owner.
4. Upon receipt of Contractor-executed Change Order or Written Amendment, Owner will promptly either:
   a. Execute Change Order or Written Amendment, retaining one copy for its file and returning one electronic copy to Engineer, or

b. Return to Engineer unsigned copy with written justification for not executing Change Order or Written Amendment.

5. Upon receipt of Owner-executed Change Order or Written Amendment, Engineer will transmit one electronic copy to Contractor, one copy to Resident Project Representative or other field representative, and retain one electronic copy, or if Owner fails to execute the Change Order or Written Amendment, Engineer will promptly so notify Contractor and transmit Owner's justification to Contractor.
6. Upon receipt of Owner-executed Change Order, Contractor shall:
   a. Perform Work covered by Change Order or Written Amendment.
   b. Revise Schedule of Values to adjust Contract Price and submit with next Application for Payment.
   c. Revise progress schedule to reflect changes in Contract Times, if any, and to adjust times for other items of Work affected by change.
   d. Enter changes in Project record documents after completion of change related Work.

B. In signing a Change Order or Written Amendment, Owner and Contractor acknowledge and agree that:
1. Stipulated compensation (Contract Price or Contract Times, or both) set forth includes payment for:
   a. The Cost of the Work covered by the Change Order or Written Amendment.
   b. Contractor's fee for overhead and profit.
   c. Interruption of progress schedule.
   d. Delay and impact, including cumulative impact, on other Work under the Contract Documents, and
   e. Extended overheads.
2. Change Order or Written Amendment constitutes full mutual accord and satisfaction for the change to the Work.
3. Unless otherwise stated in the Change Order or Written Amendment, all requirements of the original Contract Documents apply to the Work covered by the Change Order or Written Amendment.

1.6 FIELD ORDER PROCEDURES

A. Engineer will issue Field Orders, with one electronic copy to Contractor.

B. Effective date of the Field Order shall be the date of signature by Engineer, unless otherwise indicated thereon.

C. Contractor shall acknowledge receipt by signing and returning one electronic copy to Engineer.

D. Field Orders will be incorporated into subsequent Change Orders, as a no-cost change to the Contract.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 29 00 – PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUBMITTALS

A. Informational Submittals:
   1. Schedule of Values: Submit on Contractor's standard form.
   2. Schedule of Estimated Progress Payments:
      a. Submit with initially acceptable Schedule of Values.
      b. Submit adjustments thereto with Application for Payment.
   3. Application for Payment.
   4. Final Application for Payment.

1.2 CASH ALLOWANCES

A. Consult with Engineer in selection of products or services. Obtain proposals from Suppliers and installers and offer recommendations.

B. Cash allowances will be administered in accordance with the General Conditions and as specified herein.

C. Contractor Agrees:
   1. The Lump Sum Work includes the allowances specified and includes all Work to perform such items covered by the Cash Allowance as approved by Owner and Engineer.
   2. The Allowances include the cost of material and equipment required by the allowances to be delivered to the Site and applicable taxes.
   3. Contractor's cost for unloading, handling, labor, installation cost, overhead, profit, and other expenses for the allowance have been included in the Lump Sum Work and not in the allowance.
   4. Accept payment equal to the amount of the actual invoices for services and products without markup.

D. Expenditure of any portion of Cash Allowances shall only be done with authorization by Owner and Engineer. Cash Allowances are estimated amounts and final payment shall be based on actual costs as authorized by Change Order and the Contract Price shall be correspondingly adjusted. The Cash Allowances are specifically for the purpose of the following items:

E. Work Change Directive Cash Allowance: The purpose of this allowance is to cover cost of unknown items that cannot be foreseen at this time. Authorization for expenditure of any portion of this allowance shall be for specifically approved work change directives and issuance of a Change Order.

F. Submit, with application for payment, invoice showing date of purchase, from which the purchase was made, the date of delivery of the product or service, and the price, including delivery to the Site and applicable taxes.

1.3 SCHEDULE OF VALUES

A. Prepare a separate Schedule of Values for each schedule of the Work under the Agreement.

B. Upon request of Engineer, provide support documentation to support the accuracy of the Schedule of Values.

C. Unit Price Work: Reflect unit price quantity and price breakdown from conformed Bid Form.

D. Lump Sum Work:
   1. Reflect Schedule of Values format included in conformed Bid Form, specified allowances, alternates, and equipment selected by Owner, as applicable.
   2. List bonds and insurance premiums, mobilization, demobilization, preliminary and detailed progress schedule preparation, facility startup, and contract closeout separately.
   3. Break down by Division 2 through 44 with appropriate subdivision of each Specification for each Project facility. The apparent “low bidder” is required to deliver a Bid breakdown by specification within 2 working days after Bid opening.

E. An unbalanced or front-end loaded schedule will not be acceptable.

F. Summation of the complete Schedule of Values representing all the Work shall equal the Contract Price.

G. Submit Schedule of Values in a spreadsheet format compatible with latest version of Excel.

1.4 SCHEDULE OF ESTIMATED PROGRESS PAYMENTS

A. Show estimated payment requests throughout Contract Times aggregating initial Contract Price.

B. Base estimated progress payments on initially acceptable progress schedule. Adjust to reflect subsequent adjustments in progress schedule and Contract Price as reflected by modifications to the Contract Documents.

1.5 APPLICATION FOR PAYMENT

A. Transmittal Summary Form: Attach one Summary Form with each detailed Application for Payment for each schedule and include Request for Payment of Materials and Equipment on Hand as applicable. Execute certification by authorized officer of Contractor.

B. Use detailed Application for Payment Form suitable to Engineer.

C. Provide separate form for each schedule as applicable.

D. Include accepted Schedule of Values for each schedule or portion of Work, the unit price breakdown for the Work to be paid on unit price basis, a listing of Owner-selected equipment, if applicable, and allowances, as appropriate.

E. Preparation:
   1. Round values to nearest dollar.
   2. List each Change Order executed prior to date of submission as separate line item. The totals will equal those shown on the Transmittal Summary Form for each schedule as applicable.
   3. Submit Application for Payment, including a Transmittal Summary Form and detailed Application for Payment Form(s) for each schedule as applicable, a listing of materials on hand for each schedule as applicable, and such supporting data as may be requested by Engineer.

1.6 PAYMENT

A. General:
   1. Progress payments will be made monthly.
   2. The date for Contractor’s submission of monthly Application for Payment shall be established at the Preconstruction Conference.

B. Payment for all the Work shown or specified in Contract Documents is included in the Contract Price. No measurement or payment will be made for individual items.

C. Payment for Lump Sum Work covers all Work specified or shown in the Contract Documents.

1.7 NONPAYMENT FOR REJECTED OR UNUSED PRODUCTS

A. Payment will not be made for following:
   1. Loading, hauling, and disposing of rejected material.
   2. Quantities of material wasted or disposed of in manner not called for under Contract Documents.
   3. Rejected loads of material, including material rejected after it has been placed by reason of failure of Contractor to conform to provisions of Contract Documents.
   4. Material not unloaded from transporting vehicle.
   5. Defective Work not accepted by Owner.
   6. Material remaining on hand after completion of Work.

1.8 PARTIAL PAYMENT FOR STORED MATERIALS AND EQUIPMENT

A. Partial Payment: No partial payments will be made for materials and equipment delivered or stored unless Shop Drawings and preliminary operation and maintenance manuals are accepted by Engineer. Thereafter, partial payment for materials and equipment delivered and stored, but not yet incorporated in work, shall not exceed 90% of the equipment or material value.

B. Final Payment: Will be made only for products incorporated in Work and following approval of final operations and maintenance manuals; remaining products, for which partial payments have been made, shall revert to Contractor unless otherwise agreed, and partial payments made for those items will be deducted from final payment.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 31 00 – PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes description and requirements of:
   1. Submittals Related to Project Management and Coordination.
   2. Utility Notification and Coordination.
   3. Work Sequencing /Constraints.
   4. Facility Operations.
   5. Adjacent Facilities and Properties.
   6. Owner's Occupancy.
   7. Partial Utilization by the Owner.
   8. Physical Conditions.
   9. Construction Photographs.
   10. Audio-Video Recordings.
   11. Cutting, Fitting and Patching.

1.2 SUBMITTALS

A. Informational:
   1. Photographs and other records of examination.
   2. Video Recordings: Submit one copy, including updated copy of project video log, within 5 days of being taken.

1.3 UTILITY NOTIFICATION AND COORDINATION

A. Coordinate the Work with various utilities within Project limits. Notify applicable utilities prior to commencing Work, if damage occurs, or if conflicts or emergencies arise during Work.
   1. Electric Company: ONCOR Electric, LLC, ph. 972-569-1205
   2. Public Works Department, Jason Sutton, ph. 214-263-0033

B. Before excavation, contact Texas One Call System, Inc., ph 811 to arrange for field location of known utilities.

1.4 WORK SEQUENCING/CONSTRAINTS

A. Include the following work sequences in the Progress Schedule.

B. This Section identifies several construction constraints that must be reflected in the Contractor project coordination. An overall outline is presented in this Section for the Construction coordination, demolition, and seasonal/process constraints that shall be considered during construction. The sequence of Work for this Project must reflect the constraints identified herein.

C. Definitions:
   1. Minor Shutdown: Any shutdown requiring less than 8 hours.
   2. Major Shutdown: Any shutdown other than a minor shutdown.

D. Shutdown of Operations:
   1. Provide 14 days advance notice to Engineer and Owner of need for a minor shutdown.
   2. Provide 30 days advance notice to Engineer and Owner of need for a major shutdown.
   3. Contractor shall schedule a shutdown coordination meeting with Owner and Engineer one week prior to each shutdown.

4. Do not proceed with work affecting a facility's operation without obtaining Owner and Engineer advance approval of the need for, and duration of, such work. The Owner will endeavor to grant Contractor requests where possible. However, because Owner's primary responsibility is to deliver potable water, the requested timing may not be possible.
5. Any shutdowns shall require a shutdown plan, including detailed schedule, backup tools and equipment, personnel involved, contingency plan, and any procedures involved in restarting the process or facility. Owner's approval of the Shutdown Plan is required prior to any shutdowns.
6. Shutdowns will be allowed, but may be limited to low demand periods.
7. No minor or major shutdowns allowed within 7 days of a previous shutdown.

1.5 FACILITY OPERATIONS

A. Continuous operation of Owner's facilities is of critical importance. Schedule and conduct activities to enable existing facilities to operate continuously, unless otherwise specified, and to minimize the number of shutdowns of the plant and existing unit processes.

B. Perform Work continuously during critical connections and changeovers, as required, to prevent interruption of Owner's operations.

C. Conduct Work outside regular working hours on prior written consent of Owner to meet Project schedule and avoid undesirable conditions.

D. Be responsible for planning, designing, and providing various temporary services, utilities, connections, temporary piping, bypass facilities and temporary connections, and similar items to maintain continuous operations of Owner's facility. Sequences other than those specified will be considered upon written request to Owner and Engineer, provided they afford equivalent continuity of operations.

E. Do not close lines, open or close valves, or take other action which would affect the operation of existing systems, except as specifically required by the Contract Documents and after authorization by Owner and Engineer. Such authorization will be considered within 48 hours after receipt of Contractor's written request.

F. Any tanks or pipelines requiring drainage prior to construction will be drained by the Owner's staff to the maximum extent possible utilizing existing piping and drains where they exist. Contractor shall provide temporary pumping and effort to complete drainage of tank or pipeline as required. Provide minimum 7 days' notice to Engineer and Owner of need to drain a facility, unless otherwise specified.

G. Power outages will be considered upon 48 hours written request to Owner and Engineer. Describe the reason, anticipated length of time, and areas affected by the outage in the written request. Provide temporary provisions for continuous power supply to critical existing facility components, is requested by Owner.

H. Coordinate proposed work with Engineer and Owner before implementing unit shutdowns. Under no circumstances shall Work end if such actions may inadvertently cause a cessation of any facility operation. In such cases, remain onsite until necessary repairs are complete and facility is brought back online.

1.6 ADJACENT FACILITIES AND PROPERTIES

A. Examination:

1. After Effective Date of the Agreement and before Work at Site is started Contractor, Engineer, and affected property owners and utility owners shall make a thorough examination of pre-existing conditions including existing buildings, structures, and other improvements in vicinity of Work, as applicable, which could be damaged by construction operations.
2. Periodic reexamination shall be jointly performed to include, but not limited to, cracks in structures, settlement, leakage, and similar conditions.

B. Documentation:
1. Record and submit documentation of observations made on examination inspections for signature of Engineer and Contractor and in accordance with paragraph Construction Photographs and Audio-Video Recordings.
2. Upon receipt, Engineer will review, sign, and return one record copy of documentation to Contractor to be kept on file in field office. Such documentation shall be used as indisputable evidence in ascertaining whether and to what extent damage occurred as a result of Contractor's operations, and is for the protection of adjacent property owners, Contractor, and Owner.

1.7 OWNER'S OCCUPANCY

A. Owner will occupy the premises during the period of construction for the conduct of its normal operations. Cooperate with Owner in all construction operations to minimize conflict and to facilitate Owner usage.

1.8 PARTIAL UTILIZATION BY THE OWNER

A. Schedule operations for completion of portions of the Work, as designated under Work Sequence/Constraints, herein, for Owner's occupancy or separate operation prior to Substantial Completion of the entire Work.

B. Unless agreed in writing prior to Owner's use, the following conditions shall apply:
1. Contractor's Responsibilities:
a. Allow access for Owner's personnel.
b. Allow operation of ventilation and electrical systems.
c. All other responsibilities as specified in the General Conditions.
2. Owner's Responsibilities:
a. Operate ventilating systems and pay cost of same.
b. Assume responsibility of power requirements.
c. Assume responsibility for security and fire protection in utilized areas, but not extending to Contractor's materials and equipment in utilized areas.
d. Assume responsibility for property insurance of utilized areas.
3. Other Conditions of Owner's Use: The correction period for the occupied or separately operated portion of Work shall commence at the date of Substantial Completion for that separate part.

1.9 PHYSICAL CONDITIONS

A. Exercise reasonable care to verify locations of existing subsurface facilities and utilities.

B. Areas immediate and adjacent to planned excavations shall be thoroughly checked by means of visual examination and with electronic metal and pipe detection equipment for indications of underground utilities and facilities.

C. Make exploratory excavation where existing underground facilities or utilities may potentially conflict with proposed excavations and facilities or where there is reasonable cause to verify the

presence or absence of, or to obtain physical information regarding underground facilities or utilities. Conduct exploratory excavations as acceptable to and in the presence of Engineer prior to proceeding with major excavation in the area and sufficiently in advance of construction to avoid possible delays to Contractor's Work. Promptly take measurements, photographs, and obtain survey data.

1.10 CONSTRUCTION PHOTOGRAPHS

A. Photographically document all phases of the project including preconstruction, construction progress, and post-construction.

B. Engineer shall have the right to select the subject matter and vantage point from which photographs are to be taken.

C. Preconstruction and Post-Construction:
   1. After Effective Date of the Agreement and before Work at Site is started, and again upon issuance of Substantial Completion, take photographs of all areas of the Construction Site and property adjacent to perimeter of Construction Site.
   2. Particular emphasis shall be directed to structures both inside and outside the Site.

D. Construction Progress Photos:
   1. Photographically demonstrate progress of construction, showing every aspect of Site and adjacent properties as well as interior and exterior of new or impacted structures.
   2. Take photos as frequent as required to document all major aspects of construction. Coordinate with Engineer.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 CUTTING, FITTING, AND PATCHING

A. Cut, fit, adjust, or patch Work and work of others, including excavation and backfill as required, to make Work complete.

B. Obtain prior written authorization of Engineer and Owner before commencing work to cut or otherwise alter:
   1. Structural or reinforcing steel, structural column or beam, elevated slab, trusses, or other structural member.
   2. Weather- or moisture-resistant elements.
   3. Efficiency, maintenance, or safety of element.
   4. Work of others.

C. Refinish surfaces to provide an even finish.
   1. Refinish continuous surfaces to nearest intersection.
   2. Refinish entire assemblies.
   3. Finish restored surfaces to such planes, shapes, and textures that no transition between existing work and Work is evident in finished surfaces.

D. Restore existing work, Underground Facilities, and surfaces that are to remain in completed Work including concrete-embedded piping, conduit, and other utilities as specified and as shown.

E. Make restorations with new materials and appropriate methods as specified for new Work of similar nature; if not specified, use recommended practice of manufacturer or appropriate trade association.

F. Fit Work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces and fill voids.

G. Remove specimens of installed Work for testing when requested by Engineer.

END OF SECTION

SECTION 01 31 19 - PROJECT MEETINGS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes: Requirements for conducting conferences and meetings for the purposes of addressing issues related to the Work, reviewing and coordinating progress of the Work and other matters of common interest, and includes the following:
   1. General Requirements.
   2. Qualifications of Meeting Participants.
   3. Preconstruction Conference.
   4. Progress Meetings.
   5. Pre-Installation Meetings.
   6. Post Construction Meeting.

1.2 GENERAL REQUIREMENTS

A. Contractor will schedule physical arrangements for meetings throughout progress of Work, prepare meeting agenda with regular participant input and distribute with written notice of each meeting, preside at meetings, record minutes to include significant proceedings and decisions, and reproduce and distribute copies of minutes within 5 days after each meeting to participants and parties affected by meeting decisions.

1.3 QUALIFICATIONS OF MEETING PARTICIPANTS

A. Representatives of entities participating in meetings shall be qualified and authorized to act on behalf of entity each represents.

1.4 PRECONSTRUCTION CONFERENCE

A. Contractor shall be prepared to discuss the following subjects, as a minimum:
   1. Required schedules.
   2. Status of Bonds and insurance.
   3. Sequencing of critical path work items.
   4. Progress payment procedures.
   5. Project changes and clarification procedures.
   6. Use of site, access, office and storage areas, security and temporary facilities.
   7. Major product delivery and priorities.
   8. Contractor’s safety plan and representative.

B. Attendees will include:
   1. Owner’s representatives.
   2. Contractor’s representative.
   3. Subcontractor’s representatives whom Contractor may desire or Engineer may request to attend.
   4. Engineer’s representatives.
   5. Others as appropriate.

C. Upon issuance of Notice to Proceed, or earlier when mutually agreeable, Contracor will arrange a preconstruction conference in a convenient place for most persons invited, in accordance with the General Conditions.

D. Attending Preconstruction Conference: Contractor’s superintendent, Owner, Engineer, representatives of utilities, major subcontractors and others involved in performance of the Work, and others necessary to agenda.

E. Contractor will preside at conference.

F. Purpose of conference: To establish working understanding between parties and to discuss Construction Schedule, shop drawing and other submittals, cost breakdown of major lump sum items, processing of submittals and applications for payment, and other subjects pertinent to execution of the Work.

G. Agenda will include:
1. Adequacy of distribution of Contract Documents.
2. Distribution and discussion of list of major subcontractors and suppliers.
3. Proposed progress schedules and critical construction sequencing.
4. Major equipment deliveries and priorities.
5. Project coordination.
6. Designation of responsible personnel.
7. Procedures and processing of:
    a. Field decisions.
    b. Proposal requests.
    c. Submittals.
    d. Change Orders.
    e. Applications for Payment.
    f. Record Documents.
8. Use of premises:
    a. Office, construction, and storage areas.
    b. Owner's requirements.
9. Construction facilities, controls, and construction aids.
10. Shoring requirements and submittal of Contractor’s geotechnical report.
11. Temporary utilities.
12. Safety and first aid procedures.
13. Security procedures.
14. Housekeeping procedures.

H. Engineer will record minutes of meeting and distribute copies of minutes within 5 days of meeting to participants and interested parties.

1.5 PROGRESS MEETINGS

A. Contractor will schedule regular progress meetings at site, conducted weekly, to review the Work progress, progress schedule, Shop Drawing and Sample submissions schedule, Application for Payment, contract modifications, and other matters needing discussion and resolution. At one meeting each month the Contractor’s updated narrative progress report and overall schedule will be a topic of discussion.

B. Attendees will include:
1. Owner’s representative(s), as appropriate.
2. Contractor, Subcontractors, and Suppliers, as appropriate.
3. Engineer’s representative(s).
4. Others as appropriate.

C. Contractor shall:
1. Conduct progress meetings at least once every week in Contractor's field office or other mutually agreed upon place.

2. Distribute to each anticipated participant written notice and agenda of each meeting at least 2 days before meeting.
3. Require attendance of Contractor's superintendent and subcontractors who are or are proximate to be actively involved in the Work, or who are necessary to agenda.
4. Invite Owner, Engineer, utility companies when the Work affects their interests, and others necessary to agenda.
5. Complete and bring Application for Payment and Progress Schedule to progress meeting.
6. Prepare and distribute agenda.

D. Purpose of progress meetings:
1. To expedite work of subcontractors or other organizations that are not meeting scheduled progress, resolve conflicts, and coordinate and expedite execution of the Work.
2. Review progress of the Work, Progress Schedule, narrative report, Application for Payment, record documents, and additional items of current interest that are pertinent to execution of the Work.
3. Verify:
   a. Actual start and finish dates of completed activities since last progress meeting.
   b. Durations and progress of activities not completed.
   c. Reason, time, and cost data for Change Order Work that will be incorporated into Progress Schedule and application for payment.
   d. Percentage completion of items on Application for Payment.
   e. Reasons for required revisions to Progress Schedule and their effect on Contract Time and Contract Price.

E. Discuss potential problems that may impede scheduled progress and corrective measures.

F. Contractor will record minutes of meeting and distribute copies of minutes within 7 days of meeting to participants and interested parties.

1.6 QUALITY CONTROL AND COORDINATION MEETINGS

A. Scheduled by Engineer on regular basis and as necessary to review test and inspection reports, and other matters relating to quality control of Work and work of other contractors.

B. Attendees will include:
1. Contractor.
2. Contractor’s designated quality control representative.
3. Subcontractors and Suppliers, as necessary.
4. Engineer’s representatives.

1.7 FACILITY STARTUP MEETINGS

A. Schedule and attend a minimum of 1facility startup meeting.

B. Agenda items shall include, but not be limited to, content of Facility Startup Plan, coordination needed between various parties in attendance, and potential problems associated with startup.

C. Attendees will include:
1. Contractor.
2. Contractor’s designated quality control representative.
3. Subcontractors and equipment Manufacturer’s representatives whom Contractor deems to be directly involved in facility startup.
4. Engineer’s representatives.
5. Owner’s operations personnel.

6. Others as required by Contract Documents or as deemed necessary by Contractor.

1.8 POST CONSTRUCTION MEETING

A. Meet with and inspect the Work at 11 months after date of Substantial Completion with Owner and Engineer.

B. Arrange meeting at least 7 days before meeting.

C. Meet in Owner's office or other mutually agreed upon place.

D. Inspect the Work and draft list of items to be completed or corrected.

E. Review service and maintenance contracts, and take appropriate corrective action when necessary.

F. Complete or correct defective work and extend correction period accordingly.

G. Require attendance of Superintendent, appropriate manufacturers and installers of major units of constructions, and affected subcontractors.

1.9 OTHER MEETINGS

A. In accordance with Contract Documents and as may be required by Owner and Engineer.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 32 90 – SAFETY PLAN

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Development and maintenance of a Construction Safety Plan.

1.2 REFERENCES

A. OSHA.

1.3 CONSTRUCTION SAFETY PLAN

A. Detail the Methods and Procedures to comply with Federal, and Local Health and Safety Laws, Rules and Requirements for the duration of the Contract Times. Include the following:
   1. Identification of the Certified or Licensed Safety Consultant, who will prepare, initiate, maintain and supervise safety programs, and procedures.
   2. Procedures for providing workers with an awareness of safety and health hazards expected to be encountered in the course of construction.
   3. Safety equipment appropriate to the safety and health hazards expected to be encountered during construction. Include warning devices, barricades, safety equipment in public right-of-way and protected areas, and safety equipment used in multi-level structures.
   4. Methods for minimizing employees' exposure to safety and health hazards expected during construction.
   5. Procedures for reporting safety or health hazards.
   6. Procedures to follow to correct a recognized safety and health hazard.
   7. Procedures for investigation of accidents, injuries, illnesses and unusual events that have occurred at the construction site.
   8. Periodic and scheduled inspections of general work areas and specific work stations.
   9. Training for employees and workers at the jobsite.
   10. Methods of communication of safe working conditions, work practices and required personal protection equipment.

B. Assume responsibility for every aspect of Health and Safety on the jobsite, including the health and safety of subcontractors, suppliers, and other persons on the jobsite:
   1. Forward available information and reports to the Safety Consultant who shall make the necessary recommendations concerning worker health and safety at the jobsite.
   2. Employ additional health and safety measures specified by the Safety Consultant, as necessary, for workers in accordance with OSHA guidelines.

C. Transmit to OWNER and ENGINEER copies of reports and other documents related to accidents or injuries encountered during construction.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 33 00 – SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes description and requirements of:
   1. Submittals Related to Project Submittals as related to:
      a. Action Submittals
      b. Informational Submittals

B. Related sections:
   1. 01 29 00 – Payment Procedures.
   2. 01 31 00 – Project Management and Coordination.
   3. 01 77 00 – Closeout Procedures.
   4. 01 78 23 – Operation and Maintenance Data.
   5. 01 79 00 – Demonstration and Training.

1.2 DEFINITIONS

A. Action Submittal: Written and graphic information submitted by Contractor that requires Engineer's approval.

B. Informational Submittal: Information submitted by Contractor that does not require Engineer's approval.

1.3 PROCEDURES

A. Direct Submittals to Engineer.

B. Contractor will submit all submittals electronically using the ***Info Exchange*** project website to facilitate the transfer of submittals and related files.

C. Transmittal of Submittal:
   1. Contractor shall:
      a. Review each submittal and check for compliance with Contract Documents.
      b. Stamp each submittal with uniform approval stamp before submitting to Engineer.
         1). Stamp to include Project name, submittal number, Specification number, Contractor's reviewer name, date of Contractor's approval and statement certifying that submittal has been reviewed, checked, and approved for compliance with Contract Documents.
         2). Engineer will not review submittals that do not bear Contractor's approval stamp and will return them without action.
   2. Complete, sign, and transmit with each submittal package, one Transmittal of Contractor's Submittal form. A blank Transmittal of Contractor's Submittal form may be provided by Engineer.
   3. Identify Each Submittal with the Following:
      a. Numbering and Tracking System:
         1) Submittal No. 8300-001, etc.
      b. Sequentially number each submittal.
      c. Resubmission of submittal shall have original number with sequential alphabetic suffix (ie: Resubmittal No. 8300-001-A).
         1). Specification section and paragraph to which submittal applies.
         2). Project title and Engineer's project number.
         3). Date of transmittal.

4). Names of Contractor, subcontractor or Supplier and Manufacturer as appropriate.

4. Identify and describe each deviation or variation from Contract Documents.

D. Format:
1. Do not base Shop Drawings on reproductions of Contract Documents.
2. Package submittal information by individual Specification section. Do not combine different Specification sections together in submittal package, unless otherwise directed in Specification.
3. Present in a clear and thorough manner and in sufficient detail to show kind, size, arrangement, and function of components, materials, and devices, and compliance with Contract Documents.
4. Index with labeled tab dividers in orderly manner.

E. Timeliness: Schedule and submit in accordance Schedule of Submittals, and requirements of individual Specification sections.

F. Processing Time:
1. Time for review shall commence on Engineer's receipt of submittal.
2. Engineer will act upon Contractor's submittal and transmit response to Contractor not later than 30 days after receipt, unless otherwise specified.
3. Re-submittals will be subject to same review time.
4. No adjustment of Contract Times or Price will be allowed due to delays in progress of Work caused by rejection and subsequent re-submittals.

G. Re-submittals: Clearly identify each correction or change made.

H. Incomplete Submittals:
1. Engineer will return entire submittal for Contractor's revision if preliminary review deems it incomplete.
2. When any of the following are missing, submittal will be deemed incomplete:
   a. Contractor's review stamp completed and signed.
   b. Transmittal of Contractor's Submittal completed and signed.
3. Submittals not required by Contract Documents will not be reviewed and will be returned stamped "Not Reviewed."
4. Engineer will keep one electronic copy and return one electronic copy to Contractor.

I. Coordination with Project:
1. It is the Contractor's responsibility to coordinate all equipment furnished with project elevations and dimensions. Approval of the submittal does not relieve the Contractor of the responsibility.
2. Contractor shall be responsible for coordinating all project aspects and project changes with all submittals.

1.4 ACTION SUBMITTALS

A. Prepare and submit Action Submittals required by individual Specification sections.

B. Contractor will submit all submittals electronically using the ***Info Exchange*** project website to facilitate the transfer of submittals and related files.

C. Shop Drawings:
1. Identify and Indicate:
   a. Applicable Contract Drawing and Detail number, products, units and assemblies, and system or equipment identification or tag numbers.

b. Equipment and Component Title: Identical to title shown on Drawings.
c. Critical field dimensions and relationships to other critical features of Work. Note dimensions established by field measurement.
d. Project-specific information drawn accurately to scale.

2. Manufacturer's standard schematic drawings and diagrams as follows:
   a. Modify to delete information that is not applicable to the Work.
   b. Supplement standard information to provide information specifically applicable to the Work.
3. Product Data: Provide as specified in individual Specifications.
4. Foreign Manufacturers: When proposed, include following additional information:
   a. Names and addresses of at least two companies that maintain technical service representatives close to Project.
   b. Complete list of spare parts and accessories for each piece of equipment.

D. Samples:
1. Copies: One, unless otherwise specified in individual Specifications.
2. Preparation: Mount, display, or package Samples in manner specified to facilitate review of quality. Attach label on unexposed side that includes the following:
   a. Manufacturer name.
   b. Model number.
   c. Material.
   d. Sample source.
3. Manufacturer's Color Chart: Units or sections of units showing full range of colors, textures, and patterns available.
4. Full-size Samples:
   a. Size as indicated in individual Specification section.
   b. Prepared from same materials to be used for the Work.
   c. Cured and finished in manner specified.
   d. Physically identical with product proposed for use.

E. Action Submittal Dispositions: Engineer will review, mark, and stamp as appropriate, and distribute marked-up copies as noted:
1. Furnish as Submitted:
   a. Contractor may incorporate product(s) or implement Work covered by submittal.
   b. Distribution
      1). One electronic copy furnished to Resident Project Representative.
      2). One electronic copy retained in Engineer's file.
      3). One electronic copy returned to Contractor appropriately annotated.
2. Furnish as Corrected or Noted:
   a. Contractor may incorporate product(s) or implement Work covered by submittal, in accordance with Engineer's notations.
   b. Distribution:
      1). One electronic copy furnished to Resident Project Representative.
      2). One electronic copy retained in Engineer's file.
      3). One electronic copy to Contractor appropriately annotated.
3. Revise and Resubmit:
   a. Make corrections or obtain missing portions, and resubmit.
   b. Except for portions indicated, Contractor may begin to incorporate product(s) or implement Work covered by submittal, in accordance with Engineer's notations.
   c. Distribution:
      1). One electronic copy furnished to Resident Project Representative.
      2). One electronic copy retained in Engineer's file.
      3). One electronic copy to Contractor appropriately annotated.
4. Rejected:
   a. Contractor may not incorporate product(s) or implement Work covered by submittal.
   b. Distribution:

1). One electronic copy furnished to Resident Project Representative.
2). One electronic copy retained in Engineer's file.
3). One electronic copy returned to Contractor appropriately annotated.

1.5 INFORMATIONAL SUBMITTALS

A. General:
1. Contractor will submit all submittals to facilitate the transfer of submittals and related files.
2. Refer to individual Specification sections for specific submittal requirements.
3. Engineer will review each submittal. If submittal meets conditions of the Contract, Engineer will forward electronic copies to appropriate parties. If Engineer determines submittal does not meet conditions of the Contract and is therefore considered unacceptable, Engineer will retain one electronic copy and return one electronic copy with review comments to Contractor, and require that submittal be corrected and resubmitted.
4. Application for Payment: In accordance with Section 01 29 00, PAYMENT PROCEDURES.
5. Certificates:
a. General:
1). Provide notarized statement that includes signature of entity responsible for preparing certification.
2). Signed by officer or other individual authorized to sign documents on behalf of that entity.
6. Welding: In accordance with individual Specification sections.
7. Installer: Prepare written statements on Manufacturer's letterhead certifying that installer complies with requirements as specified in individual Specification sections.
8. Material Test: Prepared by qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.
9. Certificates of Successful Testing or Inspection: Submit when testing or inspection is required by Laws and Regulations or governing agency or specified in individual Specification sections.
10. Manufacturer's Certificate of Compliance: In accordance with Section 01 79 00, DEMONSTRATION AND TRAINING.
11. Manufacturer's Certificate of Proper Installation: In accordance with Section 01 79 00, DEMONSTRATION AND TRAINING.

B. Construction Photographs and Video: In accordance with Section 01 31 00, PROJECT MANAGEMENT AND COORDINATION, and as may otherwise be required in Contract Documents.

C. Contract Closeout Submittals: In accordance with Section 01 77 00, CLOSEOUT PROCEDURES.

D. Contractor-Design Data:
1. Written and graphic information.
2. List of assumptions.
3. List of performance and design criteria.
4. Summary of loads or load diagram, if applicable.
5. Calculations.
6. List of applicable codes and regulations.
7. Name and version of software.
8. Information requested in individual Specification section.

E. Manufacturer's Instructions: Written or published information that documents Manufacturer's recommendations, guidelines, and procedures in accordance with individual Specification sections.

F. Operation and Maintenance Data: As required in Section 01 78 23, OPERATION AND MAINTENANCE DATA.

G. Schedules:
   1. Schedule of Submittals: Prepare separately or in combination with Progress Schedule as specified in Section 01 32 00, CONSTRUCTION PROGRESS DOCUMENTATION.
      a. Show for Each, at a Minimum, the Following:
         1). Specification section number.
         2). Identification by numbering and tracking system as specified under Paragraph "Transmittal of Submittal".
         3). Estimated date of submission to Engineer, including reviewing and processing time.
      b. On a monthly basis, submit updated schedule to Engineer if changes have occurred or re-submittals are required.
   2. Schedule of Values: In accordance with Section 01 29 00, PAYMENT PROCEDURES.
   3. Schedule of Estimated Progress Payments.
   4. Progress Schedules.

H. Special Guarantee: Supplier's written guarantee as required in individual Specification sections.

I. Statement of Qualification: Evidence of qualification, certification, or registration as required in Contract Documents to verify qualifications of professional land surveyor, engineer, materials testing laboratory, specialty Subcontractor, trade, Specialist, consultant, installer, and other professionals.

J. Submittals Required by Laws, Regulations, and Governing Agencies:
   1. Submit promptly notifications, reports, certifications, payrolls, and otherwise as may be required, directly to the applicable Federal, State, or local governing agency or their representative.
   2. Transmit to Engineer for Owner's records one electronic copy of correspondence and transmittals (to include enclosures and attachments) between Contractor and governing agency.

K. Test and Inspection Reports:
   1. General: Shall contain signature of person responsible for test or report.
   2. Factory:
      a. Identification of product and Specification section, type of inspection or test with referenced standard or code.
      b. Date of test, Project title and number, and name and signature of authorized person.
      c. Test results.
      d. If test or inspection deems material or equipment not in compliance with Contract Documents, identify corrective action necessary to bring into compliance.
      e. Provide interpretation of test results, when requested by Engineer.
      f. Other items as identified in individual Specification sections.
   3. Field: As a minimum, include the following:
      a. Project title and number.
      b. Date and time.
      c. Record of temperature and weather conditions.
      d. Identification of product and Specification section.
      e. Type and location of test, Sample, or inspection, including referenced standard or code.
      f. Date issued, testing laboratory name, address, and telephone number, and name and signature of laboratory inspector.
      g. If test or inspection deems material or equipment not in compliance with Contract Documents, identify corrective action necessary to bring into compliance.
      h. Provide interpretation of test results, when requested by Engineer.

i. Other items as identified in individual Specification sections.

4. Testing and Startup Data: In accordance with Section 01 79 00, DEMONSTRATION AND TRAINING.
5. Training Data: In accordance with Section 01 79 00, DEMONSTRATION AND TRAINING.

1.6 FINAL SUBMITTALS

A. Submit final copy of all submitted information to OWNER as component of Final Close Out. Prepare final data in electronic media format.

B. Organizational Format:
1. Identify electronic files with title “FINAL PROJECT SUBMITTALS” and list each submittal with the following information on each file’s cover sheet:
a. Project title.
b. Designate applicable system, equipment, material, or finish.
c. Identity of separate structure as applicable.
d. Identity of general subject matter covered in manual.
e. Identity of equipment number and Specification section.
2. Provide Title Page file with the following:
a. Contractor name, address, and telephone number.
b. Subcontractor, Supplier, installer, or maintenance contractor’s name, address, and telephone number, as appropriate.
1) Identify area of responsibility of each.
2) Provide name and telephone number of local source of supply for parts and replacement.
3. Provide electronic searchable Table of Contents for all files:
a. Arranged in systematic order with consecutive page numbers.
b. Identify each product by product name and other identifying numbers or symbols as set forth in Contract Documents.
4. Text: Manufacturer’s printed data, or neatly identified
5. Material shall be suitable for reproduction, with quality equal to original.
6. All drawings and oversized figures shall be presented electronically in 11x 17 format.

C. Electronic Media Format:
1. Portable Document Format (PDF):
a. After all preliminary data has been found to be acceptable to Engineer, submit Operation and Maintenance data in PDF format on CD.
b. Files to be exact duplicates of Engineer-accepted preliminary data. Arrange by specification number and name.
c. Files to be fully functional, fully viewable and fully searchable in most recent version of Adobe Acrobat.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 41 00 – REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes: Regulatory requirements:
   1. Building code.
   2. Electrical code.
   3. Energy code.
   4. Fire code.
   5. Mechanical code.
   6. Plumbing code.

1.2 REFERENCES

A. International Code Council (ICC):
   1. International Building Code (IBC), 2009.
   2. International Existing Building Code (IEBC), 2009.
   3. International Energy Conservation Code (IECC), 2009.
   4. International Fire Code (IFC), 2009.
   5. International Mechanical Code (IMC), 2009.
   6. International Plumbing Code (IPC), 2009.

B. National Fire Protection Association (NFPA):
   1. NFPA 70: National Electrical Code, 2011.

C. National Electric Code Council:
   1. National Electric Code (NEC), NFPA 70, 2011

1.3 SYSTEM DESCRIPTION

A. Design Requirements:
   1. Building code:
      a. International Building Code.
   2. Electrical code:
      a. NFPA 70: National Electric Code.
   3. Energy conservation code:
      a. International Energy Conservation Code.
   4. Fire code:
      a. International Fire Prevention Code.
   5. Mechanical codes:
      a. International Mechanical Code.
   6. Plumbing code:
      a. International Plumbing Code.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 42 00 - REFERENCES

PART 1 - GENERAL

1.1 REFERENCE TO STANDARDS AND SPECIFICATIONS OF TECHNICAL SOCIETIES

A. Reference to standards and specifications of technical societies and reporting and resolving discrepancies associated therewith shall be as provided in the General Conditions, and as may otherwise be required herein and in the individual Specification sections.

B. Work specified by reference to published standard or specification of government agency, technical association or trade association, professional society or institute, testing agency, or other organization shall meet requirements or surpass minimum standards of quality for materials and workmanship established by designated standard or specification.

C. Where so specified, products or workmanship shall also meet or exceed additional prescriptive or performance requirements included within Contract Documents to establish a higher or more stringent standard of quality than required by referenced standard.

D. Where two or more standards are specified to establish quality, product and workmanship shall meet or exceed requirements of most stringent.

E. Where both a standard and a brand name are specified for a product in Contract Documents, proprietary product named shall meet or exceed requirements of specified reference standard.

F. Copies of Standards and Specifications of Technical Societies:
   1. Copies of applicable referenced standards have not been bound in these Contract Documents.
   2. Where copies of standards are needed by Contractor, obtain a copy or copies directly from publication source and maintain in an orderly manner at the Site as Work Site records, available to Contractor's personnel, Subcontractors, Owner, and Engineer.

1.2 ABBREVIATIONS

A. Abbreviations for trade organizations and government agencies: Following is a list of construction industry organizations and government agencies to which references may be made in the Contract Documents, with abbreviations used.

1.	AA	Aluminum Association
2.	AABC	Associated Air Balance Council
3.	AAMA	American Architectural Manufacturers Association
4.	AASHTO	American Association of State Highway and Transportation Officials
5.	ABMA	American Bearing Manufacturers' Association
6.	ACI	American Concrete Institute
7.	AEIC	Association of Edison Illuminating Companies
8.	AGA	American Gas Association
9.	AGMA	American Gear Manufacturers' Association
10.	AI	Asphalt Institute
11.	AISC	American Institute of Steel Construction
12.	AISI	American Iron and Steel Institute
13.	AITC	American Institute of Timber Construction
14.	ALS	American Lumber Standards
15.	AMCA	Air Movement and Control Association
16.	ANSI	American National Standards Institute
17.	APA	The Engineered Wood Association
18.	API	American Petroleum Institute

19. APWA American Public Works Association
20. ARI Air-Conditioning and Refrigeration Institute
21. ASAE American Society of Agricultural Engineers
22. ASCE American Society of Civil Engineers
23. ASHRAE American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.
24. ASME American Society of Mechanical Engineers
25. ASNT American Society for Nondestructive Testing
26. ASTM ASTM International
27. AWI Architectural Woodwork Institute
28. AWPA American Wood Preservers' Association
29. AWPI American Wood Preservers' Institute
30. AWS American Welding Society
31. AWWA American Water Works Association
32. BHMA Builders Hardware Manufacturers' Association
33. CBM Certified Ballast Manufacturer
34. CDA Copper Development Association
35. CGA Compressed Gas Association
36. CIS PI Cast Iron Soil Pipe Institute
37. CMAA Crane Manufacturers' Association of America
38. CRSI Concrete Reinforcing Steel Institute
39. CS Commercial Standard
40. CSA Canadian Standards Association
41. CSI Construction Specifications Institute
42. DIN Deutsches Institute für Normung e.V.
43. DIPRA Ductile Iron Pipe Research Association
44. EIA Electronic Industries Alliance
45. EJCDC Engineers Joint Contract Documents' Committee
46. ETL Electrical Test Laboratories
47. FAA Federal Aviation Administration
48. FCC Federal Communications Commission
49. FDA Food and Drug Administration
50. FEMA Federal Emergency Management Agency
51. FIPS Federal Information Processing Standards
52. PM Factory Mutual
53. Fed. Spec. Federal Specifications (FAA Specifications)
54. FS Federal Specifications and Standards (Technical Specifications)
55. GA Gypsum Association
56. GANA Glass Association of North America
57. ID Hydraulic Institute
58. HMI Hoist Manufacturers' Institute
59. IBC International Building Code
60. ICBO International Conference of Building Officials
61. ICC International Code Council
62. ICEA Insulated Cable Engineers' Association
63. IFC International Fire Code
64. IEEE Institute of Electrical and Electronics Engineers, Inc.
65. IESNA Illuminating Engineering Society of North America
66. IFI Industrial Fasteners Institute
67. IGMA Insulating Glass Manufacturer's Alliance
68. IMC International Mechanical Code
69. INDA Association of the Non-woven Fabrics Industry
70. IPC International Plumbing Code
71. ISA Instrumentation, Systems, and Automation
72. ISO International Organization for Standardization
73. ITL Independent Testing Laboratory

74. JIC Joint Industry Conferences of Hydraulic Manufacturers
75. MIA Marble Institute of America
76. Mil. Military Specifications
77. MMA Monorail Manufacturers' Association
78. NAAMM National Association of Architectural Metal Manufacturers
79. NACE NACE International
80. NEBB National Environmental Balancing Bureau
81. NEC National Electrical Code
82. NECA National Electrical Contractors Association
83. NEMA National Electrical Manufacturers' Association
84. NESC National Electrical Safety Code
85. NETA International Electrical Testing Association
86. NFPA National Fire Protection Association
87. NHLA National Hardwood Lumber Association
88. NICET National Institute for Certification in Engineering Technologies
89. NIST National Institute of Standards and Technology
90. NRCA National Roofing Contractors Association
91. NRTL Nationally Recognized Testing Laboratories
92. NSF NSF International
93. NSPE National Society of Professional Engineers
94. NTMA National Terrazzo and Mosaic Association
95. NWWDA National Wood Window and Door Association
96. OSHA Occupational Safety and Health Act (both Federal and State)
97. PCI Pre-cast/Pre-stressed Concrete Institute
98. PEI Porcelain Enamel Institute
99. PPI Plastic Pipe Institute
100. PS Product Standards Section-U.S. Department of Commerce
101. RMA Rubber Manufacturers' Association
102. RUS Rural Utilities Service
103. SAE Society of Automotive Engineers
104. SDI Steel Deck Institute
105. SDI Steel Door Institute
106. SJI Steel Joist Institute
107. SMACNA Sheet Metal and Air Conditioning Contractors National Association
108. SPI Society of the Plastics Industry
109. SSPC The Society for Protective Coatings
110. SWI Steel Window Institute
111. TEMA Tubular Exchanger Manufacturers' Association
112. TCA Tile Council of North America
113. TIA Telecommunications Industry Association
114. UBC Uniform Building Code
115. UFC Uniform Fire Code
116. UL Underwriters Laboratories Inc.
117. UMC Uniform Mechanical Code
118. USBR U.S. Bureau of Reclamation
119. WCLIB West Coast Lumber Inspection Bureau
120. WWPA Western Wood Products Association

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 45 00 – QUALITY CONTROL

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:
   1. Quality control and control of installation.
   2. Tolerances.
   3. References.
   4. Mock-up requirements.
   5. Authority and duties of Owner’s representative or inspector.
   6. Sampling and testing.
   7. Testing and inspection services.
   8. Contractor’s responsibilities.

1.2 QUALITY CONTROL AND CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.

B. Comply with manufacturers' instructions, including each step in sequence.

C. When manufacturers' instructions conflict with Contract Documents, request clarification from Engineer before proceeding.

D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Perform Work by persons qualified to produce required and specified quality.

F. Verify field measurements are as indicated on Shop Drawings or as instructed by manufacturer.

G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

H. When specified, products will be tested and inspected either at point of origin or at Work site:
   1. Notify Engineer in writing well in advance of when products will be ready for testing and inspection at point of origin.
   2. Do not construe that satisfactory tests and inspections at point of origin is final acceptance of products. Satisfactory tests or inspections at point of origin do not preclude retesting or re-inspection at Work site.

I. Do not ship products which require testing and inspection at point of origin prior to testing and inspection.

1.3 TOLERANCES

A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.

B. Comply with manufacturers' tolerances. When Manufacturers' tolerances conflict with Contract Documents, request clarification from Engineer before proceeding.

C. Adjust products to appropriate dimensions; position before securing products in place.

1.4 REFERENCES

A. American Society for Testing and Materials (ASTM): E 329 - Standard for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction.

B. For products or workmanship specified by association, trade, or other consensus standards, comply with requirements of standard, except when more rigid requirements are specified or are required by applicable codes.

C. Conform to reference standard by date of issue current on date of Contract Documents, except where specific date is established by code.

D. Obtain copies of standards where required by product specification sections.

E. When specified reference standards conflict with Contract Documents, request clarification from Engineer before proceeding.

1.5 MOCK-UP REQUIREMENTS

A. Tests will be performed under provisions identified in this Section and identified in respective product specification sections.

B. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.

C. Accepted mock-ups shall be comparison standard for remaining Work.

D. Where mock-up has been accepted by Engineer and is specified in product specification sections to be removed; remove mock-up and clear area when directed to do so by Engineer.

1.6 AUTHORITY AND DUTIES OF OWNER'S REPRESENTATIVE OR INSPECTOR

A. Owner’s Project Representative employed or retained by Owner is authorized to inspect the Work.

B. Inspections may extend to entire or part of the Work and to preparation, fabrication, and manufacture of products for the Work.

C. Deficiencies or defects in the Work which have been observed will be called to Contractor’s attention.

D. Inspector will not:
1. Alter or waive provisions of Contract Documents.
2. Inspect Contractor’s means, methods, techniques, sequences, or procedures for construction.
3. Accept portions of the Work, issue instructions contrary to intent of Contract Documents, or act as foreman for Contractor.
4. Supervise, control, or direct Contractor’s safety precautions or programs; or inspect for safety conditions on Work site, or of persons thereon, whether Contractor’s employees or others.

E. Inspector will:
1. Conduct on-site observations of the Work in progress to assist Engineer in determining when the Work is, in general, proceeding in accordance with Contract Documents.

2. Report to Engineer whenever Inspector believes that Work is faulty, defective, does not conform to Contract Documents, or has been damaged; or whenever there is defective material or equipment; or whenever Inspector believes the Work should be uncovered for observation or requires special procedures.

1.7 SAMPLING AND TESTING

A. General:
   1. Prior to delivery and incorporation in the Work, submit listing of sources of materials, when specified in sections where materials are specified.
   2. When specified in sections where products are specified:
      a. Submit sufficient quantities of representative samples of character and quality required of materials to be used in the Work for testing or examination.
      b. Test materials in accordance with standards of national technical organizations.

B. Sampling:
   1. Furnish specimens of materials when requested.
   2. Do not use materials which are required to be tested until testing indicates satisfactory compliance with specified requirements.
   3. Specimens of materials will be taken for testing whenever necessary to determine quality of material.
   4. Assist Engineer in preparation of test specimens at site of work, such as soil samples and concrete test cylinders.

C. Testing:
   1. Owner will employ and pay for services of independent testing laboratory to perform routine tests of materials to confirm compliance with requirements of Contract Documents:
      a. Mill tests, soil compaction test, and other specified tests shall be paid for by Contractor.

   2. When protesting failed tests of material in place or to be used, take additional specimens and have specimens tested:
      a. When original test proves to have been in error, file claim for reimbursement of direct costs for sampling and testing.

D. Test standards:
   1. Perform sampling, specimen preparation, and testing of materials in accordance with specified standards, and when no standard is specified, in accordance with standard of nationally recognized technical organization.
   2. Physical characteristics of materials not particularly specified shall conform to standards published by ASTM, where applicable.
   3. Standards and publication references in Contract Documents shall be edition or revision in effect on date stipulated in the Contract Documents.

1.8 TESTING AND INSPECTION SERVICES

A. Contractor will employ and pay for specified services of an independent firm; known as Contractor’s independent testing firm, to perform Contractor quality control testing as required in the technical specifications for various work and materials.

B. Owner will employ and pay for specified services of an “Owner’s independent testing firm” to perform testing and inspection as required in the technical specifications for various work and materials to confirm Contractor’s compliance with Contract Documents. If Engineer or Owner’s independent testing firm is not properly certified to perform specialty inspections required by the

building department, Owner will employ and pay for a quality specialty inspection firm to perform required testing and inspection.

C. The Contractor's independent testing firm will perform tests, inspections and other services specified in individual specification sections and as required by Owner and requested by the Engineer.

D. The qualifications of laboratory that will perform the testing, contracted by the Owner or by the Contractor, shall be as follows:
   1. Has authorization to operate in the state where the project is located.
   2. Meets "Recommended Requirements for Independent Laboratory Qualification," published by American Council of Independent Laboratories.
   3. Meets requirements of ASTM E 329.
   4. Laboratory Staff: Maintain full time specialist on staff to review services.
   5. Testing Equipment: Calibrated at reasonable intervals with devices of accuracy traceable to National Bureau of Standards (NBS) or accepted values of natural physical constants.
   6. Will submit copy of report of inspection of facilities made by Materials Reference Laboratory of NBS during most recent tour of inspection, with memorandum of remedies of deficiencies reported by inspection.

E. Testing, inspections and source quality control may occur on or off project site. Perform off-site testing inspections and source quality control as required by Engineer or Owner.

F. Reports will be submitted by Contractor's independent testing firm and by Owner's independent testing firm to Engineer, Contractor, and Owner in triplicate, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents. Each report shall include:
   1. Date issued.
   2. Project title and number.
   3. Testing laboratory name, address, and telephone number.
   4. Name and signature of laboratory inspector.
   5. Date and time of sampling or inspection.
   6. Record of temperature and weather conditions.
   7. Date of test.
   8. Identification of product and specification section.
   9. Location of sample or test in Project.
   10. Type of inspection or test.
   11. Results of tests and compliance with Contract Documents.
   12. Interpretation of test results, when requested by Engineer.

G. Contractor shall cooperate with Owner's independent testing firm, furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.
   1. Notify Engineer and Owner's independent testing firm 48 hours prior to expected time for operations requiring testing.
   2. Make arrangements with Owner's independent testing firm and pay for additional samples and tests required for Contractor's use.

H. Limitations of authority of testing Laboratory: Owner's independent testing firm or Laboratory is not authorized to:
   1. Agency or laboratory may not release, revoke, alter, or enlarge on requirements of Contract Documents.
   2. Agency or laboratory may not approve or accept any portion of the Work.
   3. Agency or laboratory may not assume duties of Contractor.
   4. Agency or laboratory has no authority to stop the Work.

I. Testing and employment of an Owner's independent testing firm or laboratory shall not relieve Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

J. Re-testing or re-inspection required because of non-conformance to specified requirements shall be performed by same Owner's independent testing firm on instructions by Engineer. Payment for re-testing or re-inspection will be charged to Contractor by deducting testing charges from Contract Sum/Price.

K. The Owner's independent testing firm responsibilities will include:
1. Test samples of mixes submitted by Contractor.
2. Provide qualified personnel at site. Cooperate with Engineer and Contractor in performance of services.
3. Perform specified sampling and testing of products in accordance with specified standards.
4. Ascertain compliance of materials and mixes with requirements of Contract Documents.
5. Promptly notify Engineer and Contractor of observed irregularities or non-conformance of Work or products.
6. Perform additional tests required by Engineer.
7. Attend preconstruction meetings and progress meetings.

L. Owner's independent testing firm individual test reports: After each test, Owner's independent testing firm will promptly submit electronically and three hard copies of report to Engineer and to Contractor. When requested by Engineer, the Owner's independent testing firm will provide interpretation of test results. Include the following:
1. Date issued.
2. Project title and number.
3. Name of inspector.
4. Date and time of sampling or inspection.
5. Identification of product and specifications section.
6. Location in Project.
7. Type of inspection or test.
8. Date of test.
9. Certified test results stamped and signed by a registered Engineer in the state that the project is located.
10. Summary of conformance with Contract Documents.

M. Owner's independent testing firm will provide monthly report of certification to identify all work performed for special inspections and other contract requirements on this project. The following certified monthly report at a minimum will include but not limited to:
1. Results of testing.
2. Testing logs.
3. Outstanding deficiencies.
4. Various statistical data.
5. Testing curves (up to 4 types) as required by the Engineer.

1.9 CONTRACTOR'S RESPONSIBILITIES

A. Cooperate with Owner's independent testing firm or laboratory personnel and provide access to construction and manufacturing operations.

B. Secure and deliver to Owner's independent testing firm or laboratory adequate quantities of representative samples of materials proposed to be used and which require testing.

C. Provide to Owner's independent testing firm or laboratory and Engineer preliminary mix design proposed to be used for concrete, and other materials mixes which require control by testing laboratory.

D. Furnish electronically and 5 hard copies of product test reports.

E. Furnish incidental labor and facilities:
   1. To provide access to construction to be tested.
   2. To obtain and handle samples at Work site or at source of product to be tested.
   3. To facilitate inspections and tests.
   4. For storage and curing of test samples.

F. Notify Owner's independent testing firm or laboratory 48 hours in advance of when observations, inspections and testing is needed for laboratory to schedule and perform in accordance with their notice of response time.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 50 00 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Furnishing, maintaining, and removing construction facilities and temporary controls, including temporary utilities, construction aids, barriers and enclosures, security, access roads, temporary controls, project sign, field offices and sheds, and removal after construction.

B. Related sections:
   1. Section 01 33 00 – Submittal Procedures

1.2 REFERENCES

A. The following is a list of standards which may be referenced in this section:
   1. American Association of Nurserymen: American Standards for Nursery Stock.
   2. Federal Emergency Management Agency.
   3. NFPA, National Fire Prevention Standard for Safeguarding Building Construction Operations.
   4. Telecommunications Industry Association (TIA); Electronic Industries Alliance (EIA): 568B, Commercial Building Telecommunications Cabling Standard.
   5. U.S. Department of Agriculture: Urban Hydrology for Small Watersheds.
   6. U.S. Weather Bureau: Rainfall-Frequency Atlas of the U.S. for Durations from 30 Minutes to 24 Hours and Return Periods from 1 to 100 Years.

1.3 SUBMITTALS

A. Informational Submittals:
   1. General: For products specified to be furnished under this Section, submit product data in accordance with Section 01 33 00.
   2. Copies of permits and approvals for construction as required by Laws and Regulations and governing agencies.
   3. Temporary Utility Submittals:
      a. Electric power supply and distribution plans.
      b. Sanitary sewer.
   4. Temporary Construction Submittals:
      a. Access Roads: Routes, cross-sections, and drainage facilities.
      b. Parking area plans.
      c. Contractor’s field office, storage yard, and storage building plans, including gravel surfaced area.
      d. Fencing and protective barrier locations and details.
   5. Temporary Control Submittals:
      a. Noise control plan.
      b. Plan for disposal of waste materials and intended haul routes.

1.4 MOBILIZATION

A. Mobilization shall Include, but Not be Limited to, these Principal Items:
   1. Obtaining required permits.
   2. Moving Contractor’s field office and equipment required for first month operations onto Site.
   3. Installing temporary construction power, wiring, and lighting facilities.
   4. Providing onsite communication facilities, including telephones.

5. Posting OSHA required notices and establishing safety programs and procedures.
6. Have Contractor's superintendent at Site full time.

B. Use area designated for Contractor's temporary facilities as shown on Drawings.

1.5 PROTECTION OF WORK AND PROPERTY

A. Comply with Owner's safety rules while on Owner's property.

B. Keep Owner informed of serious onsite accidents and related claims.

C. Use of Explosives: No blasting or use of explosives will be allowed onsite.

1.6 TEMPORARY UTILITIES

A. Temporary Electrical Power:
1. Arrange with local utility to provide adequate temporary electrical service.
2. Provide and maintain adequate jobsite power distribution facilities conforming to applicable Laws and Regulations.
3. Provide, maintain, and pay for electric power for performance of the Work except for power required for the final 7-day operational test:
   a. When using permanent facilities, provide separate meter and reimburse OWNER for power used in connection with performance of the Work.

B. Temporary Electrical Lighting:
1. In work areas, provide temporary lighting sufficient to maintain lighting levels during working hours not less than lighting levels required by Occupational Safety and Health Administration (OSHA) and state agency which administers OSHA regulations where Project is located.
2. When available, permanent lighting facilities may be used in lieu of temporary facilities:
   a. Prior to Substantial Completion of the Work, replace bulbs, lamps, or tubes used by CONTRACTOR for lighting.

C. Temporary Heating, Cooling, and Ventilating:
1. Heat and ventilate work areas to protect the Work from damage by freezing, high temperatures, weather, and to provide safe environment for workers.
2. Permanent heating system may be utilized when sufficiently completed to allow safe operation.

D. Temporary Water:
1. Pay for and construct facilities necessary to furnish potable water for human consumption and non-potable water for use during construction.
2. Remove temporary piping and connections and restore affected portions of the facility to original condition before Substantial Completion.
3. Pay for water used for construction prior to Substantial Completion. OWNER will provide water for 7-day final test.

E. Temporary Sanitary Facilities:
1. Provide suitable and adequate sanitary facilities that are in compliance with applicable Laws and Regulations.
2. At completion of the Work, remove sanitary facilities and leave site in neat and sanitary condition.

F. Temporary Fire Protection: Provide sufficient number of fire extinguishers of type and capacity required to protect the Work and ancillary facilities.

G. First Aid: Post first aid facilities and information posters conforming to requirements of OSHA and other applicable Laws and Regulations in readily accessible locations.

H. Utilities in Existing Facilities.

1.7 CONSTRUCTION AIDS

A. Provide railings, kick plates, enclosures, safety devices, and controls required by Laws and Regulations and as required for adequate protection of life and property.

B. Use construction hoists, elevators, scaffolds, stages, shoring, and similar temporary facilities of ample size and capacity to adequately support and move loads.

C. Design temporary supports with adequate safety factor to assure adequate load bearing capability:
   1. When requested, submit design calculations by professional registered engineer prior to application of loads.
   2. Submitted design calculations are for information and record purposes only.

D. Accident Prevention:
   1. Exercise precautions throughout construction for protection of persons and property.
   2. Observe safety provisions of applicable Laws and Regulations.
   3. Guard machinery and equipment, and eliminate other hazards.
   4. Make reports required by authorities having jurisdiction, and permit safety inspections of the Work.
   5. Before commencing construction work, take necessary action to comply with provisions for safety and accident prevention.

E. Barricades:
   1. Place barriers at ends of excavations and along excavations to warn pedestrian and vehicular traffic of excavations.
   2. Provide barriers with flashing lights after dark.
   3. Keep barriers in place until excavations are entirely backfilled and compacted.
   4. Barricade excavations to prevent persons from entering excavated areas in streets, roadways, parking lots, treatment plants, or other public or private areas.

F. Warning Devices and Barricades: Adequately identify and guard hazardous areas and conditions by visual warning devices and, where necessary, physical barriers:
   1. Devices shall conform to minimum requirements of OSHA and State agency which administers OSHA regulations where Project is located.

G. Hazards in Public Right-of-Way:
   1. Mark at reasonable intervals, trenches and other continuous excavations in public right-of-way, running parallel to general flow of traffic, with traffic cones, barricades, or other suitable visual markers during daylight hours:
      a. During hours of darkness, provide markers with torches, flashers, or other adequate lights.
   2. At intersections or for pits and similar excavations, where traffic may reasonably be expected to approach head on, protect excavations by continuous barricades:
      a. During hours of darkness, provide warning lights at close intervals.

H. Hazards in Protected Areas: Mark or guard excavations in areas from which public is excluded, in manner appropriate for hazard.

I. Above Grade Protection: On multi-level structures, provide safety protection that meets requirements of OSHA and State agency which administers OSHA regulations where Project is located.

J. Protect existing structures, trees, shrubs, and other items to be preserved on Project site from injury, damage or destruction by vehicles, equipment, worker or other agents with substantial barricades or other devices commensurate with hazards.

K. Fences:
1. Enclose site of the Work with fence adequate to protect the Work against acts of theft, violence and vandalism.
2. Enclose temporary offices and storage areas with fence adequate to protect temporary facilities against acts of theft, violence and vandalism.
3. When entire or part of site is to be permanently fenced, permanent fence may be built to serve for both permanent and temporary protection of the work site, provided that damaged or defaced fencing is replaced prior to Substantial Completion.
4. Protect temporary and permanent openings and close openings in existing fences to prevent intrusion by unauthorized persons. Bear responsibility for protection of plant and material on site of the Work when openings in existing fences are not closed.
5. During night hours, weekends, holidays, and other times when no work is performed at site, provide temporary closures or enlist services of security guards to protect temporary openings.
6. Fence temporary openings when openings are no longer necessary.

1.8 SECURITY

A. Make adequate provision for protection of the work area against fire, theft, and vandalism, and for protection of public against exposure to injury.

1.9 ACCESS ROADS

A. On-Site Access Roads:
1. Maintain access roads to storage areas and other areas to which frequent access is required.
2. Maintain similar roads to existing facilities on site of the Work to provide access for maintenance and operation.
3. Protect buried vulnerable utilities under temporary roads with steel plates, wood planking, or bridges.
4. Maintain on-site access roads free of mud. Under no circumstances shall vehicles leaving the site track mud off the site onto the public right-of-way.

1.10 TEMPORARY CONTROLS

A. Noise Control:
1. In inhabited areas, particularly residential, perform operations in manner to minimize noise.
2. In residential areas, take special measures to suppress noise during night hours.

1.11 REMOVAL

A. Clean and repair damage caused by installation or use of temporary facilities.

B. Remove underground installations to minimum depth of 24 inches and grade to match surrounding conditions.

C. Restore existing facilities used during construction to specified or original condition.

PART 2 - PRODUCTS [NOT USED]

PART 3 - EXECUTION

3.1 PROTECTION OF WORK AND PROPERTY

A. General:
1. Perform Work within right-of-way and easements in a systematic manner that minimizes inconvenience to property owners and the public.
2. Schedule the Work so construction will not interfere with irrigation of cultivated lands or pasturelands. Construction may proceed during irrigation season, provided Contractor constructs temporary irrigation ditches, turnouts, and miscellaneous structures acceptable to property owners.
3. Provide continuous access for livestock through farm areas. Do not cut off ready access to portions of farmlands in which livestock are pastured. Maintain existing fences required to restrain livestock. Keep gates closed and secure.
4. Maintain in continuous service all existing oil and gas pipelines, underground power, telephone or communication cable, water mains, irrigation lines, sewers, poles and overhead power, and all other utilities encountered along line of the Work, unless other arrangements satisfactory to owners of said utilities have been made.
5. Where completion of the Work requires temporary or permanent removal or relocation of existing utility, coordinate all activities with owner of said utility and perform all work to their satisfaction.
6. Protect, shore, brace, support, and maintain underground pipes, conduits, drains, and other underground utility construction uncovered or otherwise affected by construction operations.
7. In areas where Contractor's operations are adjacent to or near a utility, such as gas, telephone, television, electric power, water, sewer, or irrigation system, and such operations may cause damage or inconvenience, suspend operations until arrangements necessary for protection have been made by Contractor.
8. Notify property owners and utility offices that may be affected by construction operation at least 2 days in advance: Before exposing a utility, obtain utility owner's permission. Should service of a utility become interrupted due to Contractor's operation, notify proper authority immediately. Cooperate with said authority in restoring service as promptly as possible and bear costs incurred.
9. Do not impair operation of existing sewer system. Prevent construction material, pavement, concrete, earth, volatile and corrosive wastes, and other debris from entering sewers, pump stations, or other sewer structures.
10. Maintain original Site drainage wherever possible.

B. Site Security:
1. Erect a temporary security fence for protection of existing facilities. Maintain fence throughout construction period. Obtain Engineer's written permission before removal of temporary security fencing.
2. Provide and maintain additional temporary security fences as necessary to protect the Work and Contractor-furnished products not yet installed.

C. Trees and Plantings:
1. Protect from damage and preserve trees, shrubs, and other plants outside limits of the Work and within limits of the Work, which are designated on the Drawings to remain undisturbed.

D. Existing Structures:
1. Where Contractor contemplates removal of small structures such as mailboxes, signposts, and culverts that interfere with Contractor's operations, obtain approval of property owner and Engineer.

2. Move mailboxes to temporary locations accessible to postal service.
3. Replace items removed in their original location and a condition equal to or better than original.

E. Finished Construction: Protect finished floors and concrete floors exposed as well as those covered with composition tile or other applied surfacing.

F. Waterways: Keep ditches, culverts, and natural drainages continuously free of construction materials and debris.

3.2 TEMPORARY CONTROLS

A. Air Pollution Control:
1. Minimize air pollution from construction operations.
2. Burning: Of waste materials, rubbish, or other debris will not be permitted on or adjacent to Site.
3. Conduct operations of dumping rock and of carrying rock away in trucks to cause a minimum of dust. Give unpaved streets, roads, detours, or haul roads used in construction area a dust-preventive treatment or periodically water to prevent dust. Strictly adhere to applicable environmental regulations for dust prevention.
4. Provide and maintain temporary dust-tight partitions, bulkheads, or other protective devices during construction to permit normal operation of existing facilities. Construct partitions of plywood, insulating board, plastic sheets, or similar material. Construct partitions in such a manner that dust and dirt from demolition and cutting will not enter other parts of existing building or facilities. Remove temporary partitions as soon as need no longer exists.

B. Noise Control:
1. Noise Control Plan: Propose plan to mitigate construction noise and to comply with noise control ordinances, including method of construction, equipment to be used, and acoustical treatments.

C. Water Pollution Control:
1. Divert sanitary sewage and non-storm waste flow interfering with construction and requiring diversion to sanitary sewers. Do not cause or permit action to occur which would cause an overflow to existing waterway.
2. Prior to commencing excavation and construction, obtain Engineer's agreement with detailed plans showing procedures intended to handle and dispose of sewage, groundwater, and storm water flow, including dewatering pump discharges.
3. Comply with procedures outlined in U.S. Environmental Protection Agency manuals entitled, "Guidelines for Erosion and Sedimentation Control Planning," "Implementation, Processes, Procedures, and Methods to Control Pollution Resulting from All Construction Activity," and "Erosion and Sediment Control- Surface Mining in Eastern United States."
4. Do not dispose of volatile wastes such as mineral spirits, oil, chemicals, or paint thinner in storm or sanitary drains. Disposal of wastes into streams or waterways is prohibited. Provide acceptable containers for collection and disposal of waste materials, debris, and rubbish.

D. Erosion, Sediment, and Flood Control: Provide, maintain, and operate temporary facilities to control erosion and sediment releases, and to protect the Work and existing facilities from flooding during construction period.

3.3 PARKING AREAS

A. Control vehicular parking to preclude interference with public traffic or parking, access by emergency vehicles, Owner's operations, or construction operations.

B. Provide parking facilities for personnel working on the Project. No employee or equipment parking will be permitted on Owner's existing parking areas, except as specifically designated for Contractor's use.

3.4 VEHICULAR TRAFFIC

A. Comply with Laws and Regulations regarding closing or restricting use of public streets or highways. No public or private road shall be closed, except by written permission of proper authority. Assure the least possible obstruction to traffic and normal commercial pursuits.

B. Conduct the Work to interfere as little as possible with public travel, whether vehicular or pedestrian.

C. Whenever it is necessary to cross, close, or obstruct roads, driveways, and walks, whether public or private, provide and maintain suitable and safe bridges, detours, or other temporary expedients for accommodation of public and private travel.

D. Coordinate traffic routing with that of others working in same or adjacent areas.

3.5 CLEANING DURING CONSTRUCTION

A. In accordance with General Conditions, as may be specified in other Specification sections, and as required herein.

B. Wet down exterior surfaces prior to sweeping to prevent blowing of dust and debris. At least weekly, sweep all floors (basins, tunnels, platforms, walkways, roof surfaces), and pick up all debris and dispose.

C. Provide approved containers for collection and disposal of waste materials, debris, and rubbish. At least at weekly intervals, dispose of such waste materials, debris, and rubbish offsite.

D. At least weekly, brush sweep entry drive and roadways, and all other streets and walkways affected by the Work and where adjacent to the Work.

END OF SECTION

SECTION 01 60 00 – PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 DEFINITIONS

A. Products:
   1. New items for incorporation in the Work whether purchased by Contractor or Owner for the Project, or taken from previously purchased stock and may also include existing materials or components required for reuse.
   2. Includes the terms material, equipment, machinery, components, subsystem, system, hardware, software, and terms of similar intent and is not intended to change meaning of such other terms used in Contract Documents, as those terms are self-explanatory and have well recognized meanings in construction industry.
   3. Items identified by Manufacturer's product name, including make or model designation, indicated in Manufacturer's published product literature, that is current as of the date of the Contract Documents.

1.2 DESIGN REQUIREMENTS

A. Where Contractor design is specified, design of installation, systems, equipment, and components, including supports and anchorage, shall be in accordance with provisions of latest edition of International Building Code (IBC) by International Code Council.

1.3 ENVIRONMENTAL REQUIREMENTS

A. Altitude: Provide materials and equipment suitable for installation and operation under rated conditions at elevations shown on Drawings.

B. Provide equipment and devices installed outdoors or in unheated enclosures capable of continuous operation within an ambient temperature range of 0 °F to 104 °F.

1.4 PREPARATION FOR SHIPMENT

A. When practical, have the factory assemble products, mark or tag separate parts and assemblies to facilitate field assembly. Cover machined and unpainted parts that may be damaged by the elements with strippable protective coating.

B. Package products to facilitate handling and protect from damage during shipping, handling, and storage. Mark or tag outside of each package or crate to indicate its purchase order number, bill of lading number, contents by name, name of Project and Contractor, equipment number, and approximate weight. Include complete packing list and bill of materials with each shipment.

C. Extra Materials, Special Tools, Test Equipment, and Expendables:
   1. Furnish as Required by Individual Specifications.
   2. Schedule:
      a. Ensure that shipment and delivery occur concurrently with shipment of associated equipment.
      b. Transfer to Owner shall occur immediately subsequent to Contractor's acceptance of equipment from Supplier.
   3. Packaging and Shipment:
      a. Package and ship extra materials and special tools to avoid damage during long term storage in original cartons insofar as possible, or in appropriately sized, hinged-cover, wood, plastic, or metal box.
      b. Prominently Displayed on Each Package, the Following:

1). Manufacturer's part nomenclature and number, consistent with Operation and Maintenance Manual identification system.
2). Applicable equipment description.
3). Quantity of parts in package.
4). Equipment manufacturer.

4. Deliver materials to the site.
5. Notify Engineer upon arrival for transfer of materials.
6. Replace extra materials and special tools found to be damaged or otherwise inoperable at time of transfer to Owner.

D. Request a minimum 7-day advance notice of shipment from manufacturer. Upon receipt of Manufacturer's advance notice of shipment, promptly notify Engineer of anticipated date of equipment arrival.

E. Factory Test Results: Reviewed and accepted by Engineer before product shipment as required in individual Specification sections.

1.5 DELIVERY AND INSPECTION

A. Deliver products in accordance with accepted current Progress Schedule and coordinate to avoid conflict with the Work and conditions at Site. Deliver anchor bolts and templates sufficiently early to permit setting prior to placement of structural concrete.

B. Deliver products in undamaged condition, in Manufacturer's original container or packaging, with identifying labels intact and legible. Include on label, date of manufacture and shelf life, where applicable.

C. Unload products in accordance with Manufacturer's instructions for unloading or as specified, and record receipt of products at Site. Promptly inspect for completeness and evidence of damage during shipment.

D. Remove damaged products from Site, and expedite delivery of identical new undamaged products, and remedy incomplete or lost products to provide that specified, so as not to delay progress of the Work.

1.6 HANDLING, STORAGE, AND PROTECTION

A. Handle and store products in accordance with Manufacturer's written instructions and in a manner to prevent damage. Store in approved storage yards or sheds provided in accordance with Section 01 50 00, TEMPORARY FACILITIES AND CONTROLS. Provide Manufacturer's recommended maintenance during storage, installation, and until products are accepted for use by Owner.

B. Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored products to assure that products are maintained under specified conditions, and free from damage or deterioration. Keep running account of products in. storage to facilitate inspection and to estimate progress payments for products delivered, but not installed in the Work.

C. Store electrical, instrumentation, and control products, and equipment with bearings in weather-tight structures maintained above 60 °F. Protect electrical, instrumentation, and control products, and insulation against moisture, water, and dust damage. Connect and operate continuously all space heaters furnished in electrical equipment.

D. Store fabricated products above ground on blocking or skids, prevent soiling or staining, and store loose granular materials in well-drained area on solid surface to prevent mixing with foreign matter. Cover products that are subject to deterioration with impervious sheet coverings; provide adequate ventilation to avoid condensation.

E. Store finished products that are ready for installation in dry and well-ventilated areas. Do not subject to extreme changes in temperature or humidity.

F. After installation, provide coverings to protect products from damage due to traffic and construction operations. Remove coverings when no longer needed.

G. Hazardous Materials: Prevent contamination of personnel, storage building, and Site. Meet requirements of product specification, codes, and manufacturer's instructions.

PART 2 - PRODUCTS

2.1 GENERAL

A. Provide the Manufacturers standard materials suitable for service conditions unless otherwise specified in the individual Specifications.

B. Where product specifications include a named Manufacturer, with or without model number, and also include performance requirements, named Manufacturer's products must meet the performance specifications.

C. Like items of products furnished and installed in the Work shall be end products of one Manufacturer and of the same series or family of models to achieve standardization for appearance, operation and maintenance, spare parts and replacement, Manufacturer's services, and implement same or similar process instrumentation and control functions in same or similar manner.

D. Do not use materials and equipment removed from existing premises, except as specifically permitted by Contract Documents.

E. Provide interchangeable components of the same Manufacturer, for similar components, unless otherwise specified.

F. Equipment, components, systems, sub-systems: Design and manufacture with due regard for health and safety of operation, maintenance, and accessibility, durability of parts, and shall comply with applicable OSHA, State, and local health and safety regulations.

G. Regulatory Requirement: Coating materials shall meet Federal, State, and local requirements limiting the emission of volatile organic compounds and for worker exposure.

H. Safety Guards: Provide for all belt or chain drives, fan blades, couplings, or other moving or rotary parts. Cover rotating part on all sides. Design for easy installation and removal. Use 16-gauge or heavier; galvanized steel, aluminum coated steel, or galvanized or aluminum coated ½" mesh expanded steel. Provide galvanized steel accessories and supports, including bolts. For outdoors application, prevent entrance of rain and dripping water.

I. Authority Having Jurisdiction (AHJ):
   1. Provide the Work in accordance with the Texas Fire Code that incorporates 2015 International Building Code [with Texas Amendments]. Where required by the AHJ, material and equipment shall be labeled or listed by a nationally recognized testing

laboratory or other organization acceptable to the AHJ in order to provide a basis for approval under NEC.

2. Materials and equipment manufactured within the scope of standards published by Underwriters Laboratories, Inc. shall conform to those standards and shall have an applied UL listing mark.

J. Equipment Finish:
   1. Provide Manufacturer's standard finish and color, except where specific color is indicated.
   2. If Manufacturer has no standard color, provide equipment with gray finish as approved by Engineer.

K. Special Tools and Accessories: Furnish to Owner, upon acceptance of equipment, all accessories required to place each item of equipment in full operation. These accessory items include, but are not limited to, adequate oil and grease (as required for first lubrication of equipment after field testing), light bulbs, fuses, hydrant wrenches, valve keys, hand wheels, chain operators, special tools, and other spare parts as required for maintenance.

L. Lubricant: Provide initial lubricant recommended by equipment Manufacturer in sufficient quantity to fill lubricant reservoirs and to replace consumption during testing, startup, and operation until final acceptance by Owner.

2.2 FABRICATION AND MANUFACTURE

A. General:
   1. Manufacture parts to U.S.A. standard sizes and gauges.
   2. Two or more items of the same type shall be identical, by the same Manufacturer, and interchangeable.
   3. Design structural members for anticipated shock and vibratory loads.
   4. Use 1/4" minimum thickness for steel that will be submerged, wholly or partially, during normal operation.
   5. Modify standard products as necessary to meet performance Specifications.

B. Lubrication System:
   1. Require no more than weekly attention during continuous operation.
   2. Convenient and accessible. Oil drains with bronze or stainless steel valves and fill-plugs easily accessible from the normal operating area or platform.
   3. Locate drains to allow convenient collection of oil during oil changes without removing equipment from its installed position.
   4. Provide constant-level oilers or oil level indicators for oil lubrication systems.
   5. For grease type bearings, which are not easily accessible, provide and install stainless steel tubing; protect and extend tubing to convenient location with suitable grease fitting.

2.3 SOURCE QUALITY CONTROL

A. Where Specifications call for factory testing to be witnessed by Engineer, notify Engineer not less than 21 days prior to scheduled test date, unless otherwise specified.

B. Calibration Instruments: Bear the seal of a reputable laboratory certifying instrument has been calibrated within the previous 12 months to a standard endorsed by the National Institute of Standards and Technology (NIST).

C. Factory Tests: Perform in accordance with accepted test procedures and document successful completion.

PART 3 - EXECUTION

3.1 INSPECTION

A. Inspect materials and equipment for signs of pitting, rust decay, or other deleterious effects of storage. Do not install material or equipment showing such effects. Remove damaged material or equipment from the Site and expedite delivery of identical new material or equipment. Delays to the Work resulting from material or equipment damage that necessitates procurement of new products will be considered delays within Contractor's control.

3.2 INSTALLATION

A. Equipment Drawings show general locations of equipment, devices, and raceway, unless specifically dimensioned.

B. No shimming between machined surfaces is allowed.

C. Install the Work in accordance with NECA Standard of Installation, unless otherwise specified.

D. Repaint painted surfaces that are damaged prior to equipment acceptance.

E. Do not cut or notch any structural member or building surface without specific approval of Engineer.

F. Handle, install, connect, clean, condition, and adjust products in accordance with Manufacturer's instructions, and as may be specified. Retain a copy of Manufacturers' instruction at Site, available for review at all times.

G. For material and equipment specifically indicated or specified to be reused in the Work:
   1. Use special care in removal, handling, storage, and reinstallation to assure proper function in the completed Work.
   2. Arrange for transportation, storage, and handling of products that require offsite storage, restoration, or renovation. Include costs for such Work in the Contract Price.

3.3 FIELD FINISHING

A. In accordance with Section 09 90 00, PAINTING AND PROTECTIVE COATINGS and individual Specification sections.

3.4 ADJUSTMENT AND CLEANING

A. Perform required adjustments, tests, operation checks, and other startup activities.

3.5 LUBRICANTS

A. Fill lubricant reservoirs and replace consumption during testing, startup, and operation prior to acceptance of equipment by Owner.

END OF SECTION

SECTION 01 73 20 – CUTTING AND PATCHING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Cutting and patching existing and new construction.

B. Related sections:
   1. Section 01 33 00 – Submittal Procedures.
   2. Section 01 60 00 – Product Requirements.

1.2 SUBMITTALS

A. Submit in accordance with Section 01 33 00.

B. Cutting and Patching Plan:
   1. Submit details of proposed construction before cutting and patching construction commences affecting:
      a. Work of OWNER or of others.
      b. Structural integrity of element of Project.
   2. Cutting and Patching Plan shall Include the Following:
      a. Identification of Work.
      b. Description of affected construction.
      c. Necessity for cutting, patching, alteration, or excavation.
      d. Description of proposed construction.
      e. Scope of cutting, patching, alteration, or excavation. Verify locations of utilities and facilities which may exist by consulting with the OWNER, utility companies, and the Arkansas One Call System or other service available in area of Project (see dig/call information on the Drawings):

PART 2 - PRODUCTS

2.1 MATERIALS

A. Comply with specifications and standards for products involved.

PART 3 - EXECUTION

3.1 PREPARATION

A. Provide adequate temporary support as necessary to ensure structural integrity of affected portion of Work.

B. Provide devices and methods to protect other portions of Project from damage and persons from injury.

C. Provide protection from elements for that portion of Project which may be exposed by cutting and patching, and maintain excavations free from water.

3.2 CUTTING AND PATCHING

A. Cut, Fit, and Patch when Required to:
   1. Make its several parts fit together properly.
   2. Remove and replace construction not conforming to Contract Documents.

3. Remove samples of installed construction as specified for testing.
4. Provide routine penetrations of nonstructural surfaces for installation of piping and electrical conduit.

B. Execute cutting and demolition by methods which will prevent damage and will provide proper surfaces to receive installation of repairs.

C. Openings in Existing Concrete and Masonry:
1. Create Openings by:
   a. Saw cutting completely through concrete or masonry, or
   b. Scoring edges of opening with saw to at least 1 inch depth on both surfaces (when accessible) and removing concrete or masonry by chipping.
2. Do not allow saw cuts to extend beyond limits of opening.
3. Make corners square and true by combination of core drilling and grinding or chipping.
4. Prevent debris from falling into adjacent tanks or channels in service or from damaging existing equipment and other facilities.

D. Sizing of Openings in Existing Concrete or Masonry:
1. Make openings sufficiently large to permit final alignment of pipe and fittings without deflections.
2. Allow adequate space for packing around pipes and conduit to ensure watertightness.

E. Grouting Pipes in Place:
1. Sandblast concrete surfaces and thoroughly clean sand and other foreign material from surfaces prior to placing grout.
2. Grout pipes, sleeves, castings, and conduits in place by pouring grout under a head of at least 4 inches. Vibrate grout into place. Completely fill the spaces occupied by pipes, sleeves, castings, and conduits.
3. Water cure the grout.

F. Connections to Existing Pipes:
1. Cut existing pipe square.
2. Properly prepare the ends for the connection indicated on the Drawings.
3. Repair any damage to existing lining and coating.

G. Rehabilitate all areas affected by removal of existing equipment, equipment pads and bases, piping, supports, electrical panels, electric devices, and conduits such that little or no evidence of the previous installation remains:
1. Fill areas in existing floors, walls, and ceilings from removed piping, conduit and fasteners with non-shrink grout and finish smooth.
2. Remove Concrete Bases for Equipment and Supports by:
   a. Saw cutting clean, straight lines with a depth equal to the concrete cover over reinforcement minus 1/2 inch below finished surface. Do not cut existing reinforcement on floors.
   b. Chip concrete within scored lines and cut exposed reinforcing steel and anchor bolts.
   c. Patch with non-shrink grout to match adjacent grade and finish.
3. Terminate abandoned piping and conduits with blind flanges, caps, or plugs.

H. Treat Existing Concrete Reinforcement as Follows:
1. Where existing reinforcement is to remain, protect, clean, and extend into new concrete.
2. Where Existing Reinforcement is not to be Retained, Cut Off as Follows:
   a. Where new concrete joins existing concrete at the removal line, cut reinforcement flush with concrete surface at the removal line.

b. Where concrete surface at the removal line is the finished surface, cut reinforcement 2 inches below the surface, paint ends with epoxy, and patch holes with dry pack mortar.

END OF SECTION

SECTION 01 77 00 – CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes description and requirements of the required closeout procedures for the project:
   1. Providing and delivering informational submittals.
   2. Preparing, maintaining, providing and delivering Record Documents.
   3. Furnishing Releases from Agreements.
   4. Furnishing Evidence of Compliance with Requirements of Governing Authorities.
   5. Providing Warranties and Bonds.
   6. Providing Certificate of Final Completion.

B. Related sections:
   1. 01 29 00 – Payment Procedures.
   2. 01 78 23 – Operation and Maintenance Data.
   3. 01 79 00 – Demonstration and Training.

1.2 SUBMITTALS

A. Informational Submittals:
   1. Submit Prior to Application for Final Payment.
      a. Record Documents: As required in General Conditions.
      b. Approved Shop Drawings and Samples: As required in the General Conditions.
      c. Operations and Maintenance Manuals: In accordance with Section 01 78 23, and as required in individual Specification sections.
      d. Certificates of Testing and Inspection: As required in the General Conditions, these General Requirements sections, and the individual Specifications sections.
      e. Training Sessions: In accordance with Section 01 79 00, and individual Specifications sections.
      f. Certificate of Substantial Completion.
      g. Special bonds, Special Guarantees, and Service Agreements.
   2. Form of Submittal:
      a. Bind in commercial quality 8-1/2” by 11” three ring, side binders with hardback, cleanable, plastic covers.
         1). Label cover of each binder with typed or printed title Warranties and Bonds, with title of Project; name; address, and telephone number of Contractor and equipment Supplier, and name of responsible principal.
         2). Table of Contents: Neatly typed, in the sequence of the of the Project Manual, with each item identified with the number and title of the Specification section in which specified, and the name of the product or Work item.
         3). Separate each warranty or Bond with index tab sheets keyed to the Table of Contents. Provide full information, using separate typed sheets as necessary. List Subcontractor, Supplier, and Manufacturer, with name, address, and telephone number of responsible contact for service and warranty issues.
   3. Preparation of Submittal:
      a. Obtain notarized warranties and Bonds, executed in duplicate by responsible Subcontractor, Supplier, and Manufacturer, within 10 days after completion of the applicable item or Work, except for items put into use with Owner’s permission, leave date of beginning of time warranty until date of Substantial Completion is determined.
   4. Time of Submission: Submit within 10 days after the date of Date of Substantial Completion and prior to submission of Final Application of Payment.
      a. Spare parts and special tools as required by individual Specification sections.
      b. Consent of Surety to Final Payment: As required in General Conditions.

c. Releases or Waivers of Liens and Claims: As required in General Conditions.
d. Releases from Agreements.
e. Final Application for Payment: Submit in accordance with procedures and requirements stated in Section 01 29 00.
f. Extra Materials: As required by individual Specification sections.

1.3 RECORD DOCUMENTS

A. Quality Assurance:
1. Furnish qualified and experienced person, whose duty and responsibility shall be to maintain record documents.
2. Accuracy of Records:
3. Coordinate changes within record documents, making legible and accurate entries on each sheet of Drawings and other documents where such entry is required to show change.
4. Purpose of Project record documents is to document factual information regarding 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.
5. Make entries within 24 hours after receipt of information that a change in the Work has occurred.
6. Prior to submitting each request for progress payment, request Engineer's review and approval of current status of record documents. Failure to properly maintain, update, and submit record documents may result in a deferral by Engineer to recommend whole or any part of Contractor's Application for Payment, either partial or final.
7. Maintain at Project site, available to OWNER and ENGINEER, 1 copy of the Contract Documents, shop drawings and other submittals, in good order.

1.4 RELEASES FROM AGREEMENTS

A. Furnish Owner written releases from property owners or public agencies where side agreements or special easements have been made, or where Contractor's operations have not been kept within the Owner's construction right-of-way.

B. In the Event Contractor is Unable to Secure Written Releases:
1. Inform Owner of the reasons.
2. Owner or its representatives will examine the Site, and Owner will direct Contractor to complete the Work that may be necessary to satisfy terms of the side agreement or special easement.
3. Should Contractor refuse to perform this Work, Owner reserves right to have it done by separate contract and deduct cost of same from Contract Price, or require Contractor to furnish a satisfactory bond in a sum to cover legal Claims for damages.
4. When Owner is satisfied that the Work has been completed in agreement with Contract Documents and terms of side agreement or special easement, right is reserved to waive requirement for written release if:
5. Contractor's failure to obtain such statement is due to grantor's refusal to sign, and this refusal is not based upon any legitimate Claims that Contractor has failed to fulfill terms of side agreement or special easement, or
6. Contractor is unable to contact or has had undue hardship in contacting grantor.

1.5 EVIDENCE OF COMPLIANCE WITH REQUIREMENTS OF GOVERNING AUTHORITIES

A. Submit the Following:
1. Certificate of Occupancy.
2. Certificates of Inspection:
a. Mechanical.
b. Electrical.

1.6 WARRANTIES AND BONDS

A. Provide executed Warranty or Guaranty Form if required by Contract Documents.

B. Provide specified additional warranties, guarantees, and bonds from manufacturers and suppliers.

1.7 CERTIFICATE OF FINAL COMPLETION

A. When 7-day operational test has been successfully completed, ENGINEER will certify that new facilities are operationally complete. ENGINEER will submit a list of known items (punch list) still to be completed or corrected prior to contract completion.

B. List of items to be completed or corrected will be amended as items are resolved by CONTRACTOR.

C. When all items have been completed or corrected, submit written certification that the entire work is complete in accordance with the Contract Documents and request final inspection.

D. Upon completion of final inspection, ENGINEER will either prepare a written acceptance of the entire work or advise CONTRACTOR of work not complete. If necessary, inspection procedures will be repeated.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 MAINTENANCE OF RECORD DOCUMENTS

A. General:
1. Promptly following commencement of Contract Times, secure from Engineer at no cost to Contractor, one complete set of Contract Documents. Drawings will be full size.
2. Label or stamp each record document with title, “RECORD DOCUMENTS,” in neat large printed letters.
3. Record information concurrently with construction progress and within 24 hours after receipt of information that change has occurred. Do not cover or conceal Work until required information is recorded.

B. Preservation:
1. Maintain documents in a clean, dry, legible condition and in good order. Do not use record documents for construction purposes.
2. Make documents and Samples available at all times for observation by Engineer.

C. Making Entries on Drawings:
1. Use an erasable colored pencil (not ink or indelible pencil), clearly describe change by graphic line and note as required.
a. Make annotations with erasable colored pencil conforming to the following color code:

Additions:	Red
Deletions:	Green
Comments	Blue
Dimensions:	Graphite

2. Date entries.

3. Call attention to entry by “cloud” drawn around area or areas affected.
4. Legibly mark to record actual changes made during construction, including, but not limited to:
5. Depths of various elements of foundation in relation to finished first floor data if not shown or where depth differs from that shown.
6. Horizontal and vertical locations of existing and new Underground Facilities and appurtenances, and other underground structures, equipment, or Work, and Reference to at least two measurements to permanent surface improvements.
7. Location of internal utilities and appurtenances concealed in the construction referenced to visible and accessible features of the structure.
8. Locate existing facilities, piping, equipment, and items critical to the interface between existing physical conditions or construction and new construction.
9. Changes made by Addenda and Field Orders, Work Change Directive, Change Order, and Engineer’s written interpretation and clarification using consistent symbols for each and showing appropriate document tracking number.
10. Dimensions on Schematic Layouts: Show on record drawings, by dimension, the centerline of each run of items that are described in previous subparagraph above.
11. Clearly identify the item by accurate note such as “cast iron drain,” “galv. water,” and the like.
12. Show, by symbol or note, vertical location of item (“under slab,” “in ceiling plenum,” “exposed,” and the like).
13. Make identification so descriptive that it may be related reliably to Specifications.
14. Mark and record field changes and detailed information contained in submittals and change orders.
15. Record actual depths, horizontal and vertical location of underground pipes, duct banks and other buried utilities. Reference dimensions to permanent surface features.
16. Identify specific details of pipe connections, location of existing buried features located during excavation, and the final locations of piping, equipment, electrical conduits, manholes, and pull boxes.
17. Identify location of spare conduits including beginning, ending and routing through pull boxes, and manholes. Record spare conductors, including number and size, within spare conduits, and filled conduits.
18. Provide schedules, lists, layout drawings, and wiring diagrams.

D. Maintain Documents Separate From Those Used for Construction:
   1. Label documents "RECORD DOCUMENTS."

E. Keep Documents Current:
   1. Record required information at the time the material and equipment is installed and before permanently concealing.

F. Deliver record documents with transmittal letter containing date, Project title, CONTRACTOR's name and address, list of documents, and signature of CONTRACTOR.

G. During progress meetings, record documents will be reviewed to ascertain that changes have been recorded.

H. Final Schedule Submittal.

3.2 FINAL CLEANING

A. At completion of the Work or of a part thereof and immediately prior to Contractor’s request for certificate of Substantial Completion; or if no certificate is issued, immediately prior to Contractor’s notice of completion, clean entire Site or parts thereof, as applicable.
   1. Leave the Work and adjacent areas affected in a cleaned condition satisfactory to Owner.

2. Remove grease, dirt, dust, paint or plaster splatter, stains, labels, fingerprints, and other foreign materials from exposed surfaces.
3. Repair, patch, and touch up marred surfaces to specified finish and match adjacent surfaces.
4. Clean all windows.
5. Clean and wax wood, vinyl, or painted floors.
6. Broom clean exterior paved driveways and parking areas.
7. Hose clean sidewalks, loading areas, and others contiguous with principal structures.
8. Rake and clean all other surfaces.
9. Leave water courses, gutters, and ditches open and clean.
10. Perform final cleaning prior to inspections for Final Acceptance.
11. Employ skilled workers who are experienced in cleaning operations.
12. Use cleaning materials which are recommended by manufacturers of surfaces to be cleaned.
13. Prevent scratching, discoloring, and otherwise damaging surfaces being cleaned.
14. Clean roofs, gutters, downspouts, and drainage systems.
15. Broom clean exterior paved surfaces and rake clean other surfaces of site work:
    a. Police yards and grounds to keep clean.
16. Clean grease, mastic, adhesives, dust, dirt, stains, fingerprints, paint, blemishes, sealants, plaster, concrete, and other foreign materials from sight-exposed surfaces, and fixtures and equipment.
17. Remove non-permanent protection and labels.
18. Polish waxed woodwork and finish hardware.
19. Wash tile.
20. Wash and polish glass, inside and outside.
21. Wash and shine mirrors.
22. Polish glossy surfaces to clear shine.
23. Vacuum carpeted and soft surfaces.

B. Use only cleaning materials recommended by Manufacturer of surfaces to be cleaned.

3.3 WASTE DISPOSAL

A. Arrange for and dispose of surplus materials, waste products, and debris off-site:
   1. Prior to making disposal on private property, obtain written permission from OWNER of such property.

B. Do not fill ditches, washes, or drainage ways which may create drainage problems.

C. Do not create unsightly or unsanitary nuisances during disposal operations.

D. Maintain disposal site in safe condition and good appearance.

E. Complete leveling and cleanup prior to Final Acceptance of the Work.

3.4 TOUCH-UP AND REPAIR

A. Touch-up or repair finished surfaces on structures, equipment, fixtures, and installations that have been damaged prior to inspection for Final Acceptance.

B. Refinish or replace entire surfaces which cannot be touched-up or repaired satisfactorily.

3.5 CLOSEOUT DOCUMENTS

A. Submit following Closeout Submittals upon completion of the Work and at least 7 days prior to submitting Application for Final Payment:
   1. Evidence of Compliance with Requirements of Governing Authorities.
   2. Project Record Documents.
   3. Operation and Maintenance Manuals.
   4. Warranties and Bonds.
   5. Evidence of Payment and Release of Stop Payment Notices as outlined in Conditions of the Contract.
   6. Release of claims as outlined in Conditions of the Contract.
   7. Certificate of Final Completion.

END OF SECTION

SECTION 01 78 23 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SUMMARY

A. Summary includes: detailed information for the preparation, submission, and Engineer's review of Operations and Maintenance (O&M) Data, as required by individual Specification sections.

B. Related sections:
   1. Section 01 77 00 – Closeout Procedures.

1.2 DEFINITIONS

A. Preliminary Data: Initial and subsequent submissions for Engineer's review.

B. Final Data: Engineer-accepted data, submitted as specified herein.

C. Maintenance Operation: As used on Maintenance Summary Form is defined to mean any routine operation required to ensure satisfactory performance and longevity of equipment. Examples of typical maintenance operations are lubrication, belt tensioning, adjustment of pump packing glands, and routine adjustments.

1.3 SEQUENCING AND SCHEDULING

A. Equipment and System Data:
   1. Preliminary Data:
      a. Do not submit until Shop Drawing for equipment or system has been reviewed and approved by Engineer.
      b. Submit prior to shipment date.
   2. Final Data:
      a. Submit Instructional Manual Formatted data not less than 30 days prior to equipment or system field functional testing.

B. Materials and Finishes Data:
   1. Preliminary Data: Submit at least 15 days prior to request for final inspection.
   2. Final Data: Submit within 10 days after final inspection.

1.4 DATA FORMAT

A. Prepare preliminary data in the form of an instructional manual. Prepare final data in the form of an instructional manual and in electronic media format.

B. Instructional Manual Format:
   1. Binder: Commercial quality, permanent, three-ring or three-post binders with durable plastic cover.
   2. Size: 8-1/2" x 11" minimum.
   3. Cover: Identify manual with typed or printed title "OPERATION AND MAINTENANCE DATA" and list:
      a. Project title.
      b. Designate applicable system, equipment, material, or finish.
      c. Identity of separate structure as applicable.
      d. Identity of general subject matter covered in manual.
      e. Identity of equipment number and Specification section.
   4. Title Page:

a. Contractor name, address, and telephone number.
b. Subcontractor, Supplier, installer, or maintenance contractor's name, address, and telephone number, as appropriate.
1). Identify area of responsibility of each.
2). Provide name and telephone number of local source of supply for parts and replacement.

5. Table of Contents:
a. Neatly typewritten and arranged in systematic order with consecutive page numbers.
b. Identify each product by product name and other identifying numbers or symbols as set forth in Contract Documents.

6. Paper: 20-pound minimum, white for typed pages.
7. Text: Manufacturer's printed data, or neatly typewritten.
8. Three-hole punched data for binding and composition; arrange printing so that punched holes do not obliterate data.
9. Material shall be suitable for reproduction, with quality equal to original. Photocopying of material will be acceptable, except for material containing photographs.

C. Electronic Media Format:
1. Portable Document Format (PDF):
a. After all preliminary data has been found to be acceptable to Engineer, submit Operation and Maintenance data in PDF format on CD.
b. Files to be exact duplicates of Engineer-accepted preliminary data. Arrange by specification number and name.
c. Files to be fully functional and viewable in most recent version of Adobe Acrobat.

1.5 SUBMITTALS

A. Procedures of Submittal
1. Contractor shall:
a. Submit all submittals electronically to facilitate the transfer of submittals and related files.
b. Submit all required final hard copies and required electronic copies as specified herein.

B. Informational:
1. Data Outline: Submit one electronic copy via email of a detailed outline of proposed organization and contents of Final Data prior to preparation of Preliminary Data.
2. Preliminary Data:
a. Submit one electronic copy for Engineer's review.
b. If data meets conditions of the Contract:
1). One electronic copy will be returned to Contractor.
2). One electronic copy will be forwarded to Resident Project Representative.
3). One electronic copy will be retained in Engineer's file
c. If data does not meet conditions of the Contract:
1). One electronic copy will be returned to Contractor with Engineer's comments (on separate document) for revision.
2). Engineer's comments will be retained in Engineer's file.
3). One electronic copy will be retained in Engineer's file.
4). Re-submit one electronic copy revised in accordance with Engineer's comments.
3. Final Data: Submit two hard copies and one electronic copy in each format specified herein.

1.6 DATA FOR EQUIPMENT AND SYSTEMS

A. Content for Each Unit (or Common Units) and System:
   1. Product Data:
      a. Include only those sheets that are pertinent to specific product.
      b. Clearly annotate each sheet to:
         1). Identify specific product or part installed.
         2). Identify data applicable to installation.
         3). Delete references to inapplicable information.
      c. Function, normal operating characteristics, and limiting conditions.
      d. Performance curves, engineering data, nameplate data, and tests.
      e. Complete nomenclature and commercial number of replaceable parts.
      f. Original Manufacturer's parts list, illustrations, detailed assembly drawings showing each part with part numbers and sequentially numbered parts list, and diagrams required for maintenance.
      g. Spare parts ordering instructions.
      h. Where applicable, identify installed spares and other provisions for future work (e.g., reserved panel space, unused components, wiring, and terminals).
   2. As-installed, color-coded piping diagrams.
   3. Charts of valve tag numbers, with the location and function of each valve.
   4. Drawings: Supplement product data with Drawings as necessary to clearly illustrate:
      a. Format:
         1). Provide reinforced, punched, binder tab; bind in with text.
         2). Reduced to 8-1/2" x 11", or 11" x 17" folded to 8-1/2" x 11".
         3). Where reduction is impractical, fold and place in 8-1/2" x 11" envelopes bound in text.
         4). Identify Specification section and product on Drawings and envelopes.
      b. Relations of component parts of equipment and systems.
      c. Control and flow diagrams.
      d. Coordinate drawings with Project record documents to assure correct illustration of completed installation.
   5. Instructions and Procedures: Within text, as required to supplement product data.
      a. Format:
         1). Organize in consistent format under separate heading for each different procedure.
         2). Provide logical sequence of instructions for each procedure.
         3). Provide information sheet for Owner's personnel, including:
            a). Proper procedures in event of failure.
            b). Instances that might affect validity of guarantee or Bond.
      b. Installation Instructions: Including alignment, adjusting, calibrating, and checking.
      c. Operating Procedures:
         1). Startup, break-in, routine, and normal operating instructions.
         2). Test procedures and results of factory tests where required.
         3). Regulation, control, stopping, and emergency instructions.
         4). Description of operation sequence by control Manufacturer.
         5). Shutdown instructions for both short and extended duration.
         6). Summer and winter operating instructions, as applicable.
         7). Safety precautions.
         8). Special operating instructions.
      d. Maintenance and Overhaul Procedures:
         1). Routine maintenance.
         2). Guide to troubleshooting.
         3). Disassembly, removal, repair, reinstallation, and re-assembly.
   6. Guarantee, Bond, and Service Agreement: In accordance with Section 01 77 00, CLOSEOUT PROCEDURES.

B. Content for Each Electric or Electronic Item or System:
   1. Description of Unit and Component Parts:
      a. Function, normal operating characteristics, and limiting conditions.
      b. Performance curves, engineering data, nameplate data, and tests.
      c. Complete nomenclature and commercial number of replaceable parts.
      d. Interconnection wiring diagrams, including control and lighting systems.
   2. Circuit Directories of Panelboards:
      a. Electrical service.
      b. Controls.
      c. Communications.
   3. List of electrical relay settings, and control and alarm contact settings.
   4. Electrical interconnection wiring diagram, including control and lighting systems.
   5. As-installed control diagrams by control Manufacturer.
   6. Operating Procedures:
      a. Routine and normal operating instructions.
      b. Sequences required.
      c. Safety precautions.
      d. Special operating instructions.
   7. Maintenance Procedures:
      a. Routine maintenance.
      b. Guide to troubleshooting.
      c. Adjustment and checking.
      d. List of relay settings, control and alarm contact settings.
   8. Manufacturer's printed operating and maintenance instructions.
   9. List of original Manufacturer's spare parts, Manufacturer's current prices, and recommended quantities to be maintained in storage.

C. Maintenance Summary:
   1. Compile individual Maintenance Summary for each applicable equipment item, respective unit or system, and for components or sub-units.
   2. Format: Use only 8-1/2" x 11" size paper.
   3. Include detailed lubrication instructions and diagrams showing points to be greased or oiled; recommend type, grade, and temperature range of lubricants and frequency of lubrication.
   4. Recommended Spare Parts:
      a. Data to be consistent with Manufacturer's Bill of Materials/Parts List furnished in O&M manuals.
      b. "Unit" is the unit of measure for ordering the part.
      c. "Quantity" is the number of units recommended.
      d. "Unit Cost" is the current purchase price.

1.7 DATA FOR MATERIALS AND FINISHES

A. Content for Architectural Products, Applied Materials, and Finishes:
   1. Manufacturer's data, giving full information on products:
      a. Catalog number, size, and composition.
      b. Color and texture designations.
      c. Information required for reordering special-manufactured products.
   2. Instructions for Care and Maintenance:
      a. Manufacturer's recommendation for types of cleaning agents and methods.
      b. Cautions against cleaning agents and methods that are detrimental to product.
      c. Recommended schedule for cleaning and maintenance.
   3. Content for Moisture Protection and Weather Exposed Products:
   4. Manufacturer's data, giving full information on products:
      a. Applicable standards.
      b. Chemical composition.

c. Details of installation.

5. Instructions for inspection, maintenance, and repair.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 79 00 – DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes description and requirements of the required demonstration and training for the project:
   1. Providing and delivering informational submittals.
   2. Submitting required qualifications of Manufacturer's Representative.
   3. Preparing, maintaining, providing and delivering Manufacturer's Certificate of Compliance and Manufacturer's Certificate of Proper Installation.
   4. Furnishing required Training.
   5. Furnishing required Equipment Testing, Unit Process and Facility Performance Demonstration.

B. Related Sections
   1. Section 01 31 19 – Project Meetings.
   2. Section 01 78 23 – Operation and Maintenance Data.

1.2 DEFINITIONS

A. Person-Day: One person for 8 hours within regular Contractor working hours.

B. Facility: Entire Project, or an agreed-upon portion including all unit processes.

C. Functional Test: Test or tests in presence of Engineer and Owner to demonstrate that installed equipment meets Manufacturer's installation, calibration, and adjustment requirements and other requirements as specified.

D. Performance Test: Test or tests performed after any required functional test in presence of Engineer and Owner to demonstrate and confirm individual equipment meets performance requirements specified in individual sections.

E. Unit Process: As used in this Section, a unit process is a portion of the facility that performs a specific process function.

F. Facility Performance Demonstration:
   1. A demonstration, conducted by Contractor, with assistance of Owner, to demonstrate and document the performance of the entire operating facility, manually and automatically (if required), based on criteria developed in conjunction with Owner and as accepted by Engineer.
   2. Such demonstration is for the purposes of:
      a. Verifying to Owner entire facility performs as a whole, and
      b. Documenting performance characteristics of completed facility for Owner's records. Neither the demonstration nor the evaluation is intended in any way to make performance of a unit process or entire facility the responsibility of Contractor, unless such performance is otherwise specified.

1.3 SUBMITTALS

A. Informational Submittals:
   1. Training Schedule: Submit not less than 21 days prior to start of equipment installation and revise as necessary for acceptance.

2. Lesson Plan: Submit proposed lesson plan not less than 21 days prior to scheduled training and revise as necessary for acceptance.
3. Training Session Tapes: Furnish Owner with two complete sets of DVDs fully indexed and cataloged with printed label stating session and date taped.
4. Facility Startup and Performance Demonstration Plan.
5. Functional and performance test results.
6. Completed Unit Process Startup Form for each unit process.
7. Completed Facility Performance Demonstration/Certification Form.

1.4 QUALIFICATION OF MANUFACTURER'S REPRESENTATIVE

A. Authorized representative of the Manufacturer, factory trained, and experienced in the technical applications, installation, operation, and maintenance of respective equipment, subsystem, or system, with full authority by the equipment Manufacturer to issue the certifications required of the Manufacturer. Additional qualifications may be specified elsewhere.

B. Representative subject to acceptance by Owner and Engineer. No substitute representatives will be allowed unless prior written approval by such has been given.

1.5 FACILITY STARTUP AND PERFORMANCE DEMONSTRATION PLAN

A. Develop a written plan, in conjunction with Owner's operations personnel; to include the following:
   1. Step-by-step instructions for startup of each unit process and the complete facility.
   2. Unit Process Startup Form (sample attached), to minimally include the following:
      a. Description of the unit process, including equipment numbers/nomenclature of each item of equipment and all included devices.
      b. Detailed procedure for startup of the unit process, including valves to be opened/closed, order of equipment startup, etc.
      c. Startup requirements for each unit process, including water, power, chemicals, etc.
      d. Space for evaluation comments.
   3. Facility Performance Demonstration/Certification Form (sample attached), to minimally include the following:
      a. Description of unit processes included in the facility startup.
      b. Sequence of unit process startup to achieve facility startup.
      c. Description of computerized operations, if any, included in the facility.
      d. Contractor certification facility is capable of performing its intended function(s), including fully automatic operation.
      e. Signature spaces for Contractor and Engineer.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 GENERAL

A. Furnish Manufacturers' services when required by an individual specification section, to meet the requirements of this Section.

B. Where time is necessary in excess of that stated in the Specifications for Manufacturer's services, or when a minimum time is not specified, the time required to perform the specified services shall be considered incidental.

C. Schedule Manufacturer's services to avoid conflict with other onsite testing or other Manufacturer's onsite services.

D. Determine, before scheduling services, that all conditions necessary to allow successful testing have been met.

E. Only those days of service approved by Engineer will be credited to fulfill the specified minimum services.

F. When specified in individual specification sections, Manufacturer's onsite services shall include:
   1. Assistance during product (system, subsystem, or component) installation to include observation, guidance, instruction of Contractor's assembly, erection, installation or application procedures.
   2. Inspection, checking, and adjustment as required for product (system, subsystem, or component) to function as warranted by Manufacturer and necessary to furnish Manufacturer's Certificate of Proper Installation.
   3. Providing, on a daily basis, copies of all Manufacturer's representatives' field notes and data to Engineer.
   4. Revisiting the Site as required to correct problems and until installation and operation are acceptable to Engineer.
   5. Resolution of assembly or installation problems attributable to or associated with, respective Manufacturer's products and systems.
   6. Assistance during functional and performance testing, and facility startup and evaluation.
   7. Training of Owner's personnel in the operation and maintenance of respective product as required.
   8. Additional requirements may be specified elsewhere.

G. Facility Startup Meetings: Schedule, in accordance with requirements of Section 01 31 19, PROJECT MEETINGS, to discuss test schedule, test methods, materials, chemicals and liquids required, facilities operations interface, and Owner involvement.

H. Contractor's Testing and Startup Representative:
   1. Designate and furnish one or more personnel to coordinate and expedite testing and facility startup.
   2. Representative(s) shall be present during startup meetings and shall be available at all times during testing and startup.

I. Provide temporary valves, gauges, piping, test equipment and other materials and equipment required for testing and startup.

J. Provide Subcontractor and equipment Manufacturer's with adequate staff to prevent delays. Schedule ongoing work so as not to interfere with or delay testing and startup.

K. Owner will:
   1. Provide water, power, chemicals, and other items as required for startup, unless otherwise indicated.
   2. Operate process units and facility with support of Contractor.
   3. Provide labor and materials as required for laboratory analyses.

3.2 MANUFACTURER'S CERTIFICATE OF COMPLIANCE

A. When specified in individual Specification section, submit prior to shipment of product or material.

B. Engineer may permit use of certain materials or assemblies prior to sampling and testing if accompanied by accepted certification of compliance.

C. Signed by product Manufacturer certifying that product or material specified conforms to or exceeds specified. Attach supporting reference data, affidavits, and certifications as appropriate.

D. May reflect recent or previous test results on material or product, if acceptable to Engineer.

3.3 MANUFACTURER'S CERTIFICATE OF PROPER INSTALLATION

A. When so specified, a Manufacturer's Certificate of Proper Installation form, a copy of which is attached to this Section, shall be completed and signed by the equipment Manufacturer's representative.

B. Such form shall certify that the signing party is a duly authorized representative of the Manufacturer, is empowered by the Manufacturer to inspect, approve, and operate their equipment and is authorized to make recommendations required to assure that the equipment is complete and operational.

3.4 TRAINING

A. General:
1. Furnish Manufacturer's representatives for detailed classroom and hands-on training to Owner's personnel on operation and maintenance of specified product (system, subsystem, component) and as may be required in applicable Specifications.
2. Furnish trained, articulate personnel to coordinate and expedite training, to be present during training coordination meetings with Owner, and familiar with operation and maintenance manual information specified in Section 01 78 23, OPERATION AND MAINTENANCE DATA.
3. Manufacturer's representative shall be familiar with facility operation and maintenance requirements as well as with specified equipment.
4. Furnish complete training materials, to include operation and maintenance data, to be retained by each trainee.

B. Training Schedule:
1. List specified equipment and systems that require training services and show:
   a. Respective Manufacturer.
   b. Estimated dates for installation completion.
   c. Estimated training dates.
2. Allow for multiple sessions when several shifts are involved.
3. Adjust schedule to ensure training of appropriate personnel as deemed necessary by Owner, and to allow full participation by Manufacturer's representatives. Adjust schedule for interruptions in operability of equipment.

C. Lesson Plan: When Manufacturer or vendor training of Owner personnel is specified, prepare for each required course, containing the following minimum information:
1. Title and objectives.
2. Recommended types of attendees (e.g., managers, engineers, operators, maintenance).
3. Course description and outline of course content.
4. Format (e.g., lecture, self-study, demonstration, hands-on).
5. Instruction materials and equipment requirements.
6. Resumes of instructors providing the training.

D. Pre-startup Training:
1. Coordinate training sessions with Owner's operating personnel and Manufacturer's representatives, and with submission of operation and maintenance manuals in accordance with Section 01 78 23, OPERATIONS AND MAINTENANCE DATA.

2. Complete at least 14 days prior to beginning of facility startup.

E. Post-startup Training: If required in Specifications furnish and coordinate training of Owner's operating personnel by respective Manufacturer's representatives.

F. Taping of Training Sessions:
1. Furnish audio and color video taping of all instruction sessions, including Manufacturer's representatives, hands-on equipment instruction and classroom sessions.
2. Video training DVDs shall be produced by a qualified, professional video specialist approved by Owner.
3. Use DVD format, suitable for playback on standard equipment available commercially in the United States.

3.5 EQUIPMENT TESTING

A. Preparation:
1. Complete installation before testing.
2. Furnish qualified Manufacturer's representatives, when required by individual Specification sections.
3. Obtain and submit from equipment Manufacturer's representative Manufacturer's Certificate of Proper Installation Form when required by individual Specification sections.
4. Equipment Test Report Form: Provide written test report for each item of equipment to be tested, to include the minimum information:
   a. Owner/Project Name.
   b. Equipment or item tested.
   c. Date and time of test.
   d. Type of test performed (Functional or Performance).
   e. Test method.
   f. Test conditions.
   g. Test results.
   h. Signature spaces for Contractor and Engineer as witness.
5. Cleaning and Checking: Prior to beginning functional testing:
   a. Calibrate testing equipment in accordance with Manufacturer's instructions.
   b. Inspect and clean equipment, devices, connected piping, and structures to ensure they are free of foreign material.
   c. Lubricate equipment in accordance with Manufacturer's instructions.
   d. Turn rotating equipment by hand when possible to confirm that equipment is not bound.
   e. Open and close valves by hand and operate other devices to check for binding, interference, or improper functioning.
   f. Check power supply to electric-powered equipment for correct voltage.
   g. Adjust clearances and torque.
   h. Test piping for leaks.
6. Ready-to-test determination will be by Engineer-based at least on the following:
   a. Acceptable Operation and Maintenance Data.
   b. Notification by Contractor of equipment readiness for testing.
   c. Receipt of Manufacturer's Certificate of Proper Installation, if so specified.
   d. Adequate completion of work adjacent to, or interfacing with, equipment to be tested.
   e. Availability and acceptability of Manufacturer's representative, when specified, to assist in testing of respective equipment.
   f. Satisfactory fulfillment of other specified Manufacturer's responsibilities.
   g. Equipment and electrical tagging complete.
   h. Delivery of all spare parts and special tools.

B. Functional Testing:

1. Conduct as specified in individual Specification sections.
2. Notify Owner and Engineer in writing at least 10 days prior to scheduled date of testing.
3. Prepare Equipment Test Report summarizing test method and results.
4. When in Engineer's opinion, equipment meets functional requirements specified such equipment will be accepted for purposes of advancing to performance testing phase, if so required by individual Specification sections. Such acceptance will be evidenced by Engineer/Owner's signature as witness on Equipment Test Report.

C. Performance Testing:
1. Conduct as specified in individual Specification sections.
2. Notify Engineer and Owner in writing at least 10 days prior to scheduled date of test.
3. Performance testing shall not commence until equipment has been accepted by Engineer as having satisfied functional test requirements specified.
4. Type of fluid, gas, or solid for testing shall be as specified.
5. Unless otherwise indicated, furnish labor, materials, and supplies for conducting the test and taking samples and performance measurements.
6. Prepare Equipment Test Report summarizing test method and results.
7. When, in Engineer's opinion, equipment meets performance requirements specified, such equipment will be accepted as to conforming to Contract requirements. Such acceptance will be evidenced by Engineer's signature on Equipment Test Report.

3.6 STARTUP OF UNIT PROCESSES

A. Prior to unit process startup, equipment within unit process shall be accepted by Engineer as having met functional and performance testing requirements specified.

B. Startup sequencing of unit processes shall be as chosen by Contractor to meet schedule requirements.

C. Make adjustments, repairs, and corrections necessary to complete unit process startup.

D. Startup shall be considered complete when, in opinion of Engineer, unit process as operated in manner intended for 5 continuous days without significant interruption. This period is in addition to functional or performance test periods specified elsewhere.

E. Significant Interruption: May include any of the following events:
1. Failure of Contractor to provide and maintain qualified onsite startup personnel as scheduled.
2. Failure to meet specified functional operation for more than 2 consecutive hours.
3. Failure of any critical equipment or unit process that is not satisfactorily corrected within 5 hours after failure.
4. Failure of any non-critical equipment or unit process that is not satisfactorily corrected within 8 hours after failure.
5. As determined by Engineer.

F. A significant interruption will require startup then in progress to be stopped. After corrections are made; start up test period and start from beginning again.

3.7 FACILITY PERFORMANCE DEMONSTRATION

A. When, in the opinion of Engineer, startup of all unit processes has been achieved, sequence each unit process to the point that facility is operational.

B. Demonstrate proper operation of required interfaces within and between individual unit processes.

C. After facility is operating, complete performance testing of equipment and systems not previously tested.

D. Document, as defined in Facility Startup and Performance Demonstration Plan, the performance of the facility.

E. Certify, on the Facility Performance Demonstration/Certification Form, that facility is capable of performing its intended function(s), including fully automatic operation.

3.8 SUPPLEMENTS

A. Supplements listed below, following “End of Section”, are a part of this Specification:
   1. Manufacturer’s Certificate of Proper Installation Form.
   2. Unit Process Startup Form.
   3. Facility Performance Demonstration/Certification Form.

END OF SECTION

MANUFACTURER'S CERTIFICATE OF PROPER INSTALLATION

OWNER: Town of Addison EQUIP. SERIAL NO: _____

EQUIP. TAG NO: _____ EQUIP. SYSTEM: _____

PROJECT NO: _____ SPEC. SECTION: _____

I hereby certify that the above referenced equipment/system has been:

(Check Applicable)

	Installed in accordance with Manufacturer's recommendations.
	Inspected, checked, and adjusted.
	Serviced wit proper initial lubricants.
	Electrical and mechanical connections meet quality and safety standards.
	All applicable safety equipment has been properly installed.
	Functional tests.
	System has been performance tested, and meets or exceeds specified performance requirements. (When complete system of one manufacturer)

Note: Attach any performance test documentation from manufacturer.

Comments:

_____
_____
_____
_____
_____
_____

I, the undersigned Manufacturer's Representative, hereby certify that I am (i) a duly authorized representative of the manufacturer, (ii) empowered by the manufacturer to inspect, approve, and operate its equipment, and (iii) authorized to make recommendations required to assure that the equipment furnished by the manufacturer is complete and operational, except as may be otherwise indicated herein. I further certify that all information contained herein is true and accurate.

Date: _____, 20___.

Manufacturer: _____

By Manufacturer's Authorized Representative: _____
(Authorized Signature)

UNIT PROCESS STARTUP FORM

OWNER: Town of Addison PROJECT: _____

Unit Process Description: (Include description and equipment number of all equipment and devices):

_____

_____

_____

_____

Startup Procedure: (Describe procedure for sequential startup and evaluation, including valves to be opened/closed, order of equipment startup, etc.):

_____

_____

_____

_____

Startup Requirements (Water, power, chemicals, etc.):

_____

_____

_____

Evaluation Comments:

_____

_____

_____

_____

FACILITY PERFORMANCE DEMONSTRATION/CERTIFICATION FORM

OWNER: Town of Addison PROJECT: _____

Unit Process Description: (List unit processes involved in facility startup):

_____

_____

_____

_____

Unit Processes Startup Sequence: (Describe sequence for startup, including computerized operations if any):

_____

_____

_____

_____

Contractor Certification that Facility is capable of performing its intended function(s), including fully automatic operation:

Contractor: _____ Date: _____, 20 ___

Engineer: _____ Date: _____, 20 ___

DIVISION 2

EXISTING CONDITIONS

SECTION 02 41 00 - DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:
   1. Portions of buildings and other areas, equipment and materials selective demolition, and partial demolition work are as shown on Drawings and specified herein.
   2. Equipment and materials to be removed for construction and reinstalled for reuse or continued operation are as shown on the drawings and specified herein.

1.2 SUBMITTALS

A. Shop Drawings: Plans showing all equipment and materials to be removed and reinstalled for reuse on continued operation including interim storage plans for each item.

B. Quality Control Submittals:
   1. Schedule of demolition, as part of and consistent with the progress schedule
   2. Methods of demolition and equipment proposed to demolish each structure.
   3. Copies of any authorizations and permits required to perform Work.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 PREPARATION

A. Utilities:
   1. Notify Owner and appropriate utilities 72 hours prior to turning off affected services before starting demolition or alterations.

B. Removal and Storage of Equipment for Reuse:
   1. Do not remove equipment and materials without approval of Engineer.
   2. Properly store and maintain equipment and materials in same condition as when removed.
   3. Engineer will determine condition of equipment and materials prior to removal.

3.2 DEMOLITION

A. Drawings define minimum portion of equipment to be removed and structures to be modified. Unless otherwise shown, rough cuts or breaks may not be made exceeding limits of demolition shown.

B. Provide all demolition, removal, temporary storage, and reinstallation of existing equipment as required for implementation of the work.

C. Remove all materials associated with existing equipment that is to be removed or relocated.

3.3 DISPOSAL

A. Dispose of debris and other non-salvaged materials offsite in licensed landfills.

3.4 SALVAGE

A. Equipment and materials not reused or reinstalled, including all metals and piping within the limits of demolition, unless otherwise specified, shall be delivered to the Owner for scrap. If Owner refuses the material, contractor is responsible for disposal.

END OF SECTION

DIVISION 9

FINISHES

SECTION 09 90 00 - PAINTING AND PROTECTIVE COATINGS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes: Exposed, buried, and submerged metal, exposed PVC and CPVC, exposed FRP, and aluminum and dissimilar metals, to be protective painted, whether specifically mentioned or not, except as specified otherwise. Prime coat structural steel surfaces. Exterior concrete surfaces will not be protective painted unless specifically indicated. Interior concrete surfaces will be protective painted as specified herein.

1.2 REFERENCES

A. The following is a list of standards which may be referenced in this section:
   1. ASTM International (ASTM):
      a. D 16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications.
      b. D 4541 - Standard Test Method for Pull-off Strength of Coatings Using Portable Adhesion Testers.
   2. NACE International (NACE):
      a. SP0178 - Design, Fabrication, and Surface Finish Practices for Tanks and Vessels to Be Lined for Immersion Service.
      b. SP0188-06 - Discontinuity (Holiday) Testing of Protective Coatings.
   3. National Association of Pipe Fabricators (NAPF):
      a. 500-03 - Surface Preparation Standard for Ductile Iron Pipe and Fittings Receiving Special External Coatings and/or Special Internal Linings.
   4. NSF International (NSF):
      a. 61 - Drinking Water System Components - Health Effects.
   5. Society for Protective Coatings (SSPC):
      a. QP1, Standard Procedure for Evaluating Qualifications of Painting Contractors.
      b. QP2, Standard Procedure for Evaluating the Qualifications of Painting Contractors to Remove Hazardous Paint.
      c. SP COM - Surface Preparation Commentary for Steel and Concrete Substrates.
      d. SP-1 - Solvent Cleaning.
      e. SP-2 - Hand Tool Cleaning.
      f. SP-3 - Power Tool Cleaning.
      g. SP-5 - White Metal Blast Cleaning.
      h. SP-6 - Commercial Blast Cleaning.
      i. SP-7 – Brush-Off Blast Cleaning.
      j. SP 8, Pickling.
      k. SP-10 – Near-White Blast Cleaning.
      l. SP 11-T, Power Tool Cleaning to Bare Metal.
      m. SP 13, Surface Preparation of Concrete.
      n. Guide No. 3, PA, Guide to Safety in Painting Applications.
   6. U.S. Environment Protection Agency (EPA):
      a. Method 24 - Surface Coatings.
   7. NACE International (NACE):
      a. SP0178 - Design, Fabrication, and Surface Finish Practices for Tanks and Vessels to Be Lined for Immersion Service.
      b. SP0188-06 - Discontinuity (Holiday) Testing of Protective Coatings.
   8. National Association of Pipe Fabricators (NAPF):
      a. 500-03 - Surface Preparation Standard for Ductile Iron Pipe and Fittings Receiving Special External Coatings and/or Special Internal Linings.
   9. NSF International (NSF):
      a. 61 - Drinking Water System Components - Health Effects.

10. Society for Protective Coatings (SSPC):
    a. QP1, Standard Procedure for Evaluating Qualifications of Painting Contractors.
    b. QP2, Standard Procedure for Evaluating the Qualifications of Painting Contractors to Remove Hazardous Paint.
    c. SP COM - Surface Preparation Commentary for Steel and Concrete Substrates.
    d. SP-1 - Solvent Cleaning.
    e. SP-2 - Hand Tool Cleaning.
    f. SP-3 - Power Tool Cleaning.
    g. SP-5 - White Metal Blast Cleaning.
    h. SP-6 - Commercial Blast Cleaning.
    i. SP-7 – Brush-Off Blast Cleaning.
    j. SP 8, Pickling.
    k. SP-10 – Near-White Blast Cleaning.
    l. SP 11-T, Power Tool Cleaning to Bare Metal.
    m. SP 13, Surface Preparation of Concrete.
    n. Guide No. 3, PA, Guide to Safety in Painting Applications.
11. U.S. Environment Protection Agency (EPA):
    a. Method 24 - Surface Coatings.

1.3 DEFINITIONS

A. Terms used in this section:
1. Submerged metal: Steel or iron surfaces below tops of channel or structure walls which will contain water even when above expected water level.
2. Submerged concrete and masonry surfaces: Surfaces which are or will be:
3. Underwater.
4. In structures which normally contain water.
5. Below tops of walls of water containing structures.
6. Exposed surface: Any metal or concrete surface, indoors or outdoors that is exposed to view.
7. Dry film thickness (DFT): Thickness of fully cured coating, measured in mils.
8. Volatile organic compound (VOC): Content of air polluting hydrocarbons in uncured coating product measured in units of grams per liter or pounds per gallon, as determined by EPA Method 24.
9. Ferrous: Cast iron, ductile iron, wrought iron, and all steel alloys except stainless steel.
10. Where SSPC surface preparation standards are specified or implied for ductile iron pipe or fittings, the equivalent NAPF surface preparation standard shall be substituted for the SSPC standard.
11. Coverage: Total minimum dry film thickness in mils, or square feet per gallon.
12. FRP: Fiberglass Reinforced Plastic.
13. HCl: Hydrochloric Acid.
14. MDFT: Minimum Dry Film Thickness.
15. MDFTPC: Minimum Dry Film Thickness per Coat.
16. Mil: Thousandth of an inch.
17. Military Specification-Paint.
18. PSDS: Paint System Data Sheet.
19. SFPG: Square Feet per Gallon.
20. SFPGPC: Square Feet per Gallon per Coat.
21. SP: Surface Preparation.

1.4 PERFORMANCE REQUIREMENTS

A. Coating materials shall be especially adapted for use in potable water applications.

B. Coating materials used in contact with potable water supply systems shall be certified to NSF 61.

1.5 SUBMITTALS

A. General: Submit in accordance with Section 01 33 00 SUBMITTAL PROCEDURES.

B. Shop Drawings:
   1. Schedule of proposed coating materials.
   2. Schedule of surfaces to be coated with each coating material.

C. Product Data: Include description of physical properties of coatings including solids content and ingredient analysis, VOC content, temperature resistance, typical exposures and limitations, and manufacturer's standard color chips:
   1. Data Sheets:
      a. For each paint system, furnish a Paint System Data Sheet (PSDS), the Manufacturer’s Technical Data Sheets, and paint colors available (where applicable) for each product used in the paint system. The PSDS form is appended to the end of this section.
      b. Submit required information on a system-by-system basis.
      c. Furnish copies of paint system submittals to the coating applicator.
      d. Indiscriminate submittal of Manufacturer’s literature only is not acceptable.
      e. Regulatory requirements: Submit data concerning the following:
      f. Volatile organic compound limitations.
      g. Coatings containing lead compounds and PCBs.
      h. Abrasives and abrasive blast cleaning techniques, and disposal.
      i. NSF certification of coatings for use in potable water supply systems.

D. Samples: Include 8-inch square drawdowns or brush-outs of topcoat finish when requested. Identify each sample as to finish, formula, color name and number and sheen name and gloss units.

E. Certificates: Submit in accordance with requirements for Product Data.

F. Manufacturer's Instructions: Include the following:
   1. Special requirements for transportation and storage.
   2. Mixing instructions.
   3. Shelf life.
   4. Pot life of material.
   5. Precautions for applications free of defects.
   6. Surface preparation.
   7. Method of application.
   8. Recommended number of coats.
   9. Recommended dry film thickness (DFT) of each coat.
   10. Recommended total dry film thickness (DFT).
   11. Drying time of each coat, including prime coat.
   12. Required prime coat.
   13. Compatible and non-compatible prime coats.
   14. Recommended thinners, when recommended.
   15. Limits of ambient conditions during and after application.
   16. Time allowed between coats (minimum and maximum).
   17. Required protection from sun, wind, and other conditions.
   18. Touch-up requirements and limitations.
   19. Minimum adhesion of each system submitted in accordance with ASTM D 4541.

G. Manufacturer's Representative’s Field Reports.

H. Operations and Maintenance Data: Submit as specified in Section 01 77 00 CLOSEOUT PROCEDURES.

1. Reports on visits to project site to view and approve surface preparation of structures to be coated.
2. Reports on visits to project site to observe and approve coating application procedures.
3. Reports on visits to coating plants to observe and approve surface preparation and coating application on items that are “shop coated.”

1.6 QUALITY ASSURANCE

A. Quality Assurance Submittals:
   1. Quality Assurance plan.
   2. Qualifications of coating applicator including List of Similar Projects and List of References substantiating experience.
   3. Factory Applied Coatings: Manufacturer’s certification stating factory applied coating system meets or exceeds requirements specified.
   4. If the Manufacturer of finish coating differs from that of shop primer, provide both Manufacturers’ written confirmation that materials are compatible.
   5. Manufacturer’s written instructions and special details for applying each type of paint.
   6. Manufacturers’ Certification of Proper Installation.

B. Certifications: All paints and coatings to be used on this project comply with current federal, state, and local VOC regulations

C. Applicator qualifications:
   1. Minimum of 5 years’ experience applying specified type or types of coatings under conditions similar to those of the Work:
   2. Provide qualifications of applicator and references listing 5 similar projects completed in the past 2 years.
   3. Manufacturer approved applicator when manufacturer has approved applicator program.
   4. Approved and licensed by polymorphic polyester resin manufacturer to apply polymorphic polyester resin coating system.
   5. Approved and licensed by elastomeric polyurethane (100 percent solids) manufacturer to apply 100 percent solids elastomeric polyurethane system.
   6. Applicator of off-site application of coal tar epoxy shall have successfully applied coal tar epoxy on similar surfaces in material, size, and complexity as on the Project.

D. Regulatory requirements: Comply with governing agencies regulations by using coatings that do not exceed permissible volatile organic compound limits and do not contain lead:
   1. Do not use coal tar epoxy in contact with drinking water or exposed to ultraviolet radiation.
   2. Perform surface preparation and painting in accordance with recommendations of the following:
   3. Paint Manufacturer’s instructions.
   4. SSPC-PA Guide No. 3, Guide to Safety in Paint Applications.
   5. Federal, state, and local agencies having jurisdiction.

E. Samples:
   1. Reference Panel:
      a. Prior to start of surface preparation, furnish a 4” by 4” steel panel for each grade of sandblast specified herein, prepared to specified requirements.
      b. Provide panel representative of the steel used; prevent deterioration of surface quality.
      c. Upon approval of Engineer, panel to be reference source for inspection.
      d. Unless otherwise specified, before painting work is started, prepare minimum 8” by 10” samples with type of paint and application specified on similar substrate to which paint is to be applied.
      e. Furnish additional samples as required until colors, finishes, and textures are approved.

f. Approved samples to be the quality standard for final finishes.
g. Field samples:
h. Prepare and coat a minimum 100 square foot area between corners or limits such as control or construction joints of each system.
i. Approved field sample may be part of Work.
j. Obtain approval before painting other surfaces.

F. Pre-installation conference: Conduct as specified in Section 01 31 19 PROJECT MEETINGS.

G. Compatibility of coatings: Use products by same manufacturer for prime coats, intermediate coats, and finish coats on same surface, unless specified otherwise.

H. Services of coating manufacturer's representative: Arrange for coating manufacturer's representative to attend pre-installation conferences. Make periodic visits to the project site to provide consultation and inspection services during surface preparation and application of coatings, and to make visits to coating plants to observe and approve surface preparation procedures and coating application of items to be "shop primed and coated".

I. Contract Closeout Submittals: Special guarantee.

1.7 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver, store, and handle products as specified in Section 01 60 00 PRODUCT REQUIREMENTS.

B. Remove unspecified and unapproved paints from Project site immediately.

C. Deliver new unopened containers with labels identifying the manufacturer's name, brand name, product type, batch number, date of manufacturer, expiration date or shelf life, color, and mixing and reducing instructions.
1. Do not deliver materials aged more than 12 months from manufacturing date.

D. Store coatings in well-ventilated facility that provides protection from the sun, weather, and fire hazards. Maintain ambient storage temperature between 45 and 90 degrees Fahrenheit, unless otherwise recommended by the manufacturer.

E. Take precautions to prevent fire and spontaneous combustion.

F. Shipping:
1. Where pre-coated items are to be shipped to the site, protect coating from damage. Batten coated items to prevent abrasion.
2. Use nonmetallic or padded slings and straps in handling.

1.8 PROJECT CONDITIONS

A. Surface moisture contents: Do not coat surfaces that exceed manufacturer specified moisture contents, or when not specified by the manufacturer, the following moisture contents:
1. Plaster and gypsum wallboard: 12 percent.
2. Masonry, concrete, and concrete block: 12 percent.
3. Interior located wood: 15 percent.
4. Concrete floors: 7 percent.

B. Do not apply coatings:
1. Under dusty conditions or adverse environmental conditions, unless tenting, covers, or other such protection is provided for structures to be coated.

2. When light on surfaces measures less than 15 foot-candles.
3. When ambient or surface temperature is less than 55 degrees Fahrenheit unless manufacturer allows a lower temperature.
4. When relative humidity is higher than 85 percent.
5. When surface temperature is less than 5 degrees Fahrenheit above dew point.
6. When surface temperature exceeds the manufacturer's recommendation.
7. When ambient temperature exceeds 90 degrees Fahrenheit, unless manufacturer allows a higher temperature.
8. Apply clear finishes at minimum 65 degrees Fahrenheit.

C. Provide fans, heating devices, dehumidifiers, or other means recommended by coating manufacturer to prevent formation of condensate or dew on surface of substrate, coating between coats and within curing time following application of last coat.

D. Provide adequate continuous ventilation and sufficient heating facilities to maintain minimum 55 degrees Fahrenheit for 24 hours before, during and 48 hours after application of finishes.

E. Dehumidification and heating for coating of digester interiors, wet wells, and high humidity enclosed spaces:
1. Provide dehumidification and heating of digester interior spaces in which surface preparation, coating application, or curing is in progress according to the following schedule:
    a. October 1 to April 30: Provide continuous dehumidification and heating as required to maintain the tanks within environmental ranges as specified in this Section and as recommended by the coating material manufacturer. For the purposes of this Section, “continuous” is defined as 24 hours per day and 7 days per week.
    b. May 1 to September 30: Provide temporary dehumidification and heating as may be required to maintain the tanks within the specified environmental ranges in the event of adverse weather or other temporary condition. At CONTRACTOR’s option and at his sole expense, CONTRACTOR may suspend work until such time as acceptable environmental conditions are restored, in lieu of temporary dehumidification and heating. Repair or replace any coating or surface preparation damaged by suspension of work, at CONTRACTOR’s sole expense.
2. Equipment requirements:
    a. Capacity: Provide dehumidification, heating, and air circulation equipment with minimum capacity to perform the following:
        1) Maintain the dew point of the air in the tanks at a temperature at least 5 degrees Fahrenheit less than the temperature of the coldest part of the structure where work is underway.
        2) Reduce dew point temperature of the air in the tanks by at least 10 degrees Fahrenheit in 20 minutes.
        3) Maintain air temperature in the tanks at 60 degrees minimum.
    b. Systems:
        1) Internal combustion engine generators: May be used; CONTRACTOR shall obtain all required permits and provide air pollution and noise control devices on equipment as required by permitting agencies.]
        2) Dehumidification: Provide desiccant or refrigeration drying. Desiccant types shall have a rotary desiccant wheel capable of continuous operation. No Liquid, granular, or loose lithium chloride drying systems will be allowed.
        3) Heating: Electric, indirect combustion, or steam coil methods may be used. Direct fired combustion heaters will not be allowed during abrasive blasting, coating application, or coating cure time.
3. Design and submittals:
    a. CONTRACTOR shall prepare dehumidification and heating plan for this project, including all equipment and operating procedures.

b. Suppliers of services and equipment shall have not less than 3 years' experience in similar applications.
c. Supplier: The following or equal:
1) Cargocaire Corporation (Munters) or equal.
d. Submit dehumidification and heating plan for ENGINEER's review.

4. Monitoring and performance:
a. Measure and record relative humidity and temperature of air, and structure temperature twice daily (beginning and end of work shifts) to verify that proper humidity and temperature levels are achieved inside the work area after the dehumidification equipment is installed and operational. Test results shall be made available to the ENGINEER upon request.
b. Interior space of the working area and tank(s) shall be sealed and a slight positive pressure maintained as recommended by the supplier of the dehumidification equipment.
c. The filtration system used to remove dust from the air shall be designed so that it does not interfere with the dehumidification equipment's ability to control the dew point and relative humidity inside the reservoir.
1) The air from the tank, working area, or dust filtration equipment shall not be recirculated through the dehumidifier during coating application or when solvent vapors are present.

1.9 SEQUENCING AND SCHEDULING

A. Sequence and Schedule coating application as specified by the MANUFACTURER.

1.10 SPECIAL GUARANTEE

A. Furnish Manufacturer's extended guarantee or warranty, with OWNER named as beneficiary, in writing, as special guarantee. Special guarantee shall provide for correction, or at the option of the OWNER, removal and replacement of work specified in this Specification section found *defective* during a period of 1 year after the date of Substantial Completion.

B. Contractor and paint Manufacturer shall jointly and severally furnish guarantee.

1.11 MAINTENANCE

A. Extra materials: Deliver as specified in Section 01 77 00. Include minimum 1 gallon of each type and color of coating applied:
1. When manufacturer packages material in gallon cans, deliver unopened labeled cans as comes from factory.
2. When manufacturer does not package material in gallon cans, deliver material in new gallon containers, properly sealed and identified with typed labels indicating brand, type, and color.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Special coatings: One of the following or equal:
1. Carboline: Carboline, St. Louis, MO.
2. Ceilcote: International Protective Coatings, Berea, OH.
3. Dampney: The Dampney Company, Everett, MA.
4. Devoe: International Protective Coatings, Louisville, KY.
5. Dudick: Dudick, Inc., Streetsboro, OH.
6. GET: Global Eco Technologies, Pittsburg, CA.

7. Henkel: Henkel North America, Madison Heights MI.
8. IET: Integrated Environmental Technologies, Santa Barbara, CA.
9. Induron Protective Coatings, Birmingham, AL.
10. PPG Amercoat: PPG Protective & Marine Coatings, Brea, CA.
11. Raven Lining Systems, Broken Arrow, OK.
12. Rustoluem : Rustoleum Corp., Sommerset, NJ.
13. Sanchem: Sanchem, Chicago, IL.
14. Superior: Superior Environmental Products, Inc., Addison, TX.
15. S-W: Sherwin-Williams Co., Cleveland, OH.
16. Tnemec: Tnemec Co., Kansas City, MO.
17. Wasser: Wasser High Tech Coatings, Kent, WA.
18. ZRC: ZRC Worldwide Innovative Zinc Technologies, Marshfield, MA.

2.2 PREPARATION AND PRETREATMENT MATERIALS

A. Metal pretreatment: As manufactured by one of the following or equal:
1. Henkel: Galvaprep 5.
2. International: AWLGrip Alumiprep 33.

B. Surface cleaner and degreaser: As manufactured by one of the following or equal:
1. Carboline Surface Cleaner No.3.
2. Devoe: Devprep 88.
3. S-W: Clean and Etch.

2.3 COATING MATERIALS

A. Alkali resistant bitumastic: As manufactured by one of the following or equal:
1. Carboline: Bitumastic No. 50.
2. S-W: Targuard.
3. Wasser: MC-Tar.

B. Wax coating: As manufactured by the following or equal:
1. Sanchem: No-Ox-Id A special.

C. High solids epoxy (self-priming) not less than 72 percent solids by volume: As manufactured by one of the following or equal:
1. Carboline: Carboguard 891.
2. Devoe: Bar Rust 233H.
3. Induron: PE-70
4. PPG Amercoat: Amerlock 2.
5. S-W: Macropoxy 646.
6. Tnemec: HS Epoxy Series 104.

D. Aliphatic or aliphatic-acrylic polyurethane: As manufactured by one of the following or equal:
1. Carboline: Carbothane 134 VOC.
2. Devoe: Devthane 379.
3. PPG Amercoat: Amershield VOC.
4. S-W: High Solids Polyurethane [CA].
5. Tnemec: Endura-Shield II Series 1075 (U).

E. Epoxy Novolac: Multi-component aggregate-filled epoxy system specifically designed for exposure to municipal wastewater. As manufactured by one of the following or equal:
1. Sauereisen: Sewergard No. 210, 210S, or 210GL
2. Carboline: Plasite 4550 S
3. Devoe: Devmat 100

4. Raven 410

F. High temperature coating 150 to 350 degrees Fahrenheit: As manufactured by one of the following or equal:
   1. Carboline: Thermaline 4900.
   2. Dampney: Thermalox 245 Silicone - Zinc Dust.
   3. PPG Amercoat: Amerlock 2/400 GFK.

G. High temperature coating 400 to 1,000 degrees Fahrenheit (dry): As manufactured by one of the following or equal:
   1. Carboline: Thermaline 4700.
   2. Dampney: Thermolox 230C Series Silicone.
   3. Devoe: HT-12, High Heat Silicone.

H. High temperature coating up to 1,400 degrees Fahrenheit: As manufactured by the following or equal:
   1. Dampney: Thermalox 240 Silicone Ceramix.

I. Asphalt varnish: AWWA C 500.

J. Protective coal tar: As manufactured by one of the following or equal:
   1. Carboline: Bitumastic No. 50.
   2. PPG Amercoat: 78HB

K. Coal tar epoxy: As manufactured by one of the following or equal:
   1. Carboline: 300-M, Bitumastic.
   2. PPG Amercoat: 78HB.
   3. S-W: Tar Guard 100.
   4. Tnemec: Series 46H-413.

L. Vinyl ester: Glass mat reinforced, total system 125 mils DFT. As manufactured by one of the following or equal:
   1. Carboline: Semstone 870.
   2. Ceilcote: 6640 Ceilcrete.
   3. Dudick: Protecto-Flex 800.
   4. Tnemec: Chembloc Series 239SC.

M. Elastomeric polyurethane, 100 percent solids, ASTM D 16, Type V, (Urethane P): As manufactured by the following or equal:
   1. GET: Endura-Flex EF-1988.

N. Concrete floor coatings: As manufactured by one of the following or equal:
   1. Carboline: Semstone 140SL.
   2. Devoe: Devran 124.
   3. Dudick: Polymer Alloy 1000.
   4. Tnemec: Tneme-Glaze Series 282.

O. Waterborne acrylic emulsion: As manufactured by one of the following or equal:
   1. S-W: DTM Acrylic B66W1.
   2. Tnemec: Tneme-Cryl Series 6.

P. Galvanizing Zinc Compound: As manufactured by one of the following or equal:
   1. ZRC: Cold Galvanizing Compound.

2.4 MIXES

A. Mix in accordance with manufacturer’s instructions.

PART 3 - EXECUTION

3.1 GENERAL PROTECTION

A. Protect adjacent surfaces from coatings and damage. Repair damage resulting from inadequate or unsuitable protection:

B. Protect adjacent surfaces not to be coated from spatter and droppings with drop cloths and other coverings:
   1. Mask off surfaces of items not to be coated or remove items from area.

C. Furnish sufficient drop cloths, shields, and protective equipment to prevent spray or droppings from fouling surfaces not being coated and in particular, surfaces within storage and preparation area.

D. Place cotton waste, cloths, and material which may constitute fire hazard in closed metal containers and remove daily from site.

E. Remove electrical plates, surface hardware, fittings, and fastenings, prior to application of coating operations. Carefully store, clean, and replace on completion of coating in each area. Do not use solvent or degreasers to clean hardware that may remove permanent lacquer finish.

3.2 GENERAL PREPARATION

A. Prepare surfaces in accordance with coating manufacturer's instructions, unless more stringent requirements are specified in this Section.

B. Protect following surfaces from abrasive blasting by masking, or other means:
   1. Threaded portions of valve and gate stems, grease fittings, and identification plates.
   2. Machined surfaces for sliding contact.
   3. Surfaces to be assembled against gaskets.
   4. Surfaces of shafting on which sprockets are to fit.
   5. Surfaces of shafting on which bearings are to fit.
   6. Machined surfaces of bronze trim, including those slide gates.
   7. Cadmium-plated items, except cadmium-plated, zinc-plated, or sherardized fasteners used in assembly of equipment requiring abrasive blasting.
   8. Galvanized items, unless scheduled to be coated.

C. Protect installed equipment, mechanical drives, and adjacent coated equipment from abrasive blasting to prevent damage caused by entering sand or dust.

D. Concrete:
   1. Allow new concrete to cure for minimum of 28 days before coating.
   2. Clean concrete surfaces of dust, mortar, fins, loose concrete particles, form release materials, oil, and grease. Fill voids so that surface is smooth. Etch or brush off-blast clean in accordance with SSPC SP-7 to provide surface profile equal to 40 to 60-grit sandpaper, or as recommended by coating manufacturer. All concrete surfaces shall be vacuumed clean prior to coating application.

E. Ferrous metal surfaces:
   1. Remove grease and oil in accordance with SSPC SP-1.

2. Remove rust, scale, and welding slag and spatter, and prepare surfaces in accordance with appropriate SSPC standard as specified.
3. Abrasive blast surfaces prior to coating.
    a. When abrasive blasted surfaces rust or discolor before coating, abrasive blast surfaces again to remove rust and discoloration.
    b. When metal surfaces are exposed because of coating damage, abrasive blast surfaces and feather in to a smooth transition before touching-up.
    c. Ferrous metal surfaces not to be submerged: Abrasive blast in accordance with SSPC SP-10, unless blasting may damage adjacent surfaces, prohibited or specified otherwise. Where not possible to abrasive blast, power tool clean surfaces in accordance with SSPC SP-3.
    d. Ferrous metal surfaces to be submerged: Unless specified otherwise, abrasive blast in accordance with SSPC SP-5 to clean and provide roughened surface profile of not less than 2 mils and not more than 4 mils in depth when measured with Elcometer 123, or as recommended by the coating manufacturer.
4. All abrasive blast cleaned surfaces shall be blown down with clean dry air and or vacuumed.

F. Ductile iron pipe and fittings to be lined or coated: Abrasive blast clean in accordance with NAPF 500-03.

G. Sherardized, aluminum, copper, and bronze surfaces: Prepare in accordance with coating manufacturer's instructions.

H. Galvanized surface:
1. Degrease or solvent clean (SSPC SP-1) to remove oily residue.
2. Power tool or hand tool clean or whip abrasive blast.
3. Test surface for contaminants using copper sulfate solution.
4. Apply metal pretreatment within 24 hours before coating galvanized surfaces that cannot be thoroughly abraded physically, such as bolts, nuts, or preformed channels.

I. Shop primed metal:
1. Certify that primers applied to metal surfaces in the shop are compatible with coatings to be applied over such primers in the field.
2. Remove shop primer from metal to be submerged by abrasive blasting in accordance with SSPC SP-10, unless greater degree of surface preparation is required by coating manufacturer’s representative.
3. Correct abraded, scratched, or otherwise damaged areas of prime coat by sanding or abrasive blasting to bare metal in accordance with SSPC SP-2, SP 3, or SP-6, as directed by the ENGINEER.
4. When entire shop priming fails or has weathered excessively (more than 25 percent of the item), or when recommended by coating manufacturer’s representative, abrasive blast shop prime coat to remove entire coat and prepare surface in accordance with SSPC SP-10.
5. When incorrect prime coat is applied, remove incorrect prime coat by abrasive blasting in accordance with SSPC SP-10.
6. When prime coat not authorized by ENGINEER is applied, remove unauthorized prime coat by abrasive blasting in accordance with SSPC SP-10.
7. Shop applied bituminous paint or asphalt varnish: Abrasive blast clean shop applied bituminous paint or asphalt varnish from surfaces scheduled to receive non-bituminous coatings.

J. Cadmium-plated, zinc-plated, or sherardized fasteners:
1. Abrasive blast in same manner as unprotected metal when used in assembly of equipment designated for abrasive blasting.

K. Abrasive blast components to be attached to surfaces which cannot be abrasive blasted before components are attached.

L. Grind sharp edges to approximately 1/16-inch radius before abrasive blast cleaning.

M. Remove and grind smooth all excessive weld material and weld spatter before blast cleaning in accordance with NACE SP0178.

N. PVC and FRP Surfaces:
   1. Prepare surfaces to be coated by light sanding (de-gloss) and wipe-down with clean cloths, or by solvent cleaning in strict accordance with coating manufacturer's instructions.

O. Cleaning of previously coated surfaces:
   1. Utilize cleaning agent to remove soluble salts such as chlorides and sulfates from concrete and metal surfaces:
      a. Cleaning agent: Biodegradable non-flammable and containing no volatile organic compounds.
      b. Manufacturer: The following or equal:
         1) Chlor-Rid International, Inc.
   2. Cleaning of surfaces utilizing the decontamination cleaning agent may be accomplished in conjunction with abrasive blast cleaning, steam cleaning, high-pressure washing, or hand washing as approved by the coating manufacturer's representative and the ENGINEER.
   3. Test cleaned surfaces in accordance with the cleaning agent manufacturer's instructions to ensure all soluble salts have been removed. Additional cleaning shall be carried out as necessary.
   4. Final surface preparation prior to application of new coating system shall be made in strict accordance with coating manufacturer's printed instructions.

3.3 MECHANICAL AND ELECTRICAL EQUIPMENT PREPARATION

A. Remove grilles, covers, and access panels for mechanical and electrical system from location and coat separately.

B. Prepare and finish coat-primed equipment with color selected by the ENGINEER.

C. Prepare and prime and coat insulated and bare pipes, conduits, boxes, insulated and bare ducts, hangers, brackets, collars, and supports, except where items are covered with prefinished coating.

D. Replace identification markings on mechanical or electrical equipment when coated over or spattered.

E. Prepare and coat interior surfaces of air ducts, convector and baseboard heating cabinets that are visible through grilles and louvers with 1 coat of flat black paint, to limit of sight line.

F. Prepare and coat dampers exposed immediately behind louvers, grilles, convector and baseboard cabinets to match face panels.

G. Prepare and coat exposed conduit and electrical equipment occurring in finished areas with color and texture to match adjacent surfaces.

H. Prepare and coat both sides and edges of plywood backboards for electrical equipment before installing backboards and mounting equipment on them.

I. Color code equipment, piping, conduit, and exposed ductwork and apply color banding and identification, such as flow arrows, naming and numbering, in accordance with Contract Documents.

3.4 GENERAL APPLICATION REQUIREMENTS

A. Apply coatings in accordance with manufacturer's instructions.

B. Coat metal unless specified otherwise:
   1. Aboveground piping to be coated shall be empty of contents during application of coatings.

C. Verify metal surface preparation immediately before applying coating in accordance with SSPC SP COM.

D. Allow surfaces to dry, except where coating manufacturer requires surface wetting before coating.

E. Wash coat and prime sherardized, aluminum, copper, and bronze surfaces, or prime with manufacturer's recommended special primer.

F. Prime shop primed metal surfaces. Spot prime exposed metal of shop primed surfaces before applying primer over entire surface.

G. Multiple coats:
   1. Apply minimum number of specified coats.
   2. Apply additional coats when necessary to achieve specified thicknesses.
   3. Apply coats to thicknesses specified, especially at edges and corners.
   4. When multiple coats of same material are specified, tint prime coat and intermediate coats with suitable pigment to distinguish each coat.
   5. Lightly sand and dust surfaces to receive high gloss finishes, unless instructed otherwise by coating manufacturer.
   6. Dust coatings between coats.

H. Coat surfaces without drops, overspray, dry spray, runs, ridges, waves, holidays, laps, or brush marks.

I. Remove spatter and droppings after completion of coating.

J. Apply coating by brush, roller, trowel, or spray, unless particular method of application is required by coating manufacturer's instructions or these Specifications.

K. Plural component application: Drums shall be premixed each day. All gauges shall be working order prior to the start of application. Ratio checks shall be completed prior to each application. A spray sample shall be sprayed on plastic sheeting to insure set time is complete prior to each application. Hardness testing shall be performed after each application.

L. Spray application:
   1. Stripe coat edges, welds, nuts, bolts, difficult to reach areas by brush before beginning spray application, as necessary, to ensure specified coating thickness along edges.
   2. When using spray application, apply coating to thickness not greater than that recommended in coating manufacturer's instructions for spray application.
   3. Use airless spray method, unless air spray method is required by coating manufacturer's instruction or these Specifications.
   4. Conduct spray coating under controlled conditions. Protect adjacent construction and property from coating mist, fumes, or overspray.

M. Drying and recoating:
1. Provide fans, heating devices, or other means recommended by coating manufacturer to prevent formation of condensate or dew on surface of substrate, coating between coats and within curing time following application of last coat.
2. For submerged service the CONTRACTOR shall provide a letter to the ENGINEER that the lining system is fully cured and ready to be placed into service.
3. Limit drying time to that required by these Specifications or coating manufacturer's instructions.
4. Do not allow excessive drying time or exposure which may impair bond between coats.
5. Recoat epoxies within time limits recommended by coating manufacturer.
6. When time limits are exceeded, abrasive blast clean and de-gloss clean prior to applying another coat.
7. When limitation on time between abrasive blasting and coating cannot be met before attachment of components to surfaces which cannot be abrasive blasted, coat components before attachment.
8. Ensure primer and intermediate coats of coating are unscarred and completely integral at time of application of each succeeding coat.
9. Touch up suction spots between coats and apply additional coats where required to produce finished surface of solid, even color, free of defects.
10. Leave no holidays.
11. Sand and feather in to a smooth transition and recoat and recoat scratched, contaminated, or otherwise damaged coating surfaces so damages are invisible to naked eye.

N. Concrete:
1. Apply first coat (primer) only when surface temperature of concrete is decreasing in order to eliminate effects of off-gassing on coating.

3.5 ALKALI RESISTANT BITUMASTIC

A. Preparation:
1. Prepare surfaces in accordance with general preparation requirements.

B. Application:
1. Apply in accordance with general application requirements and as follows:
a. Apply at least 2 coats, 8 to 14 mils dry film thickness each.

3.6 WAX COATING

A. Preparation:
1. Prepare surfaces in accordance with general preparation requirements.

B. Application:
1. Apply in accordance with general application requirements and as follows:
a. Apply at least 1/32-inch thick coat with 2-inch or shorter bristle brush.
b. Thoroughly rub coating into metal surface with canvas covered wood block or canvas glove.

3.7 HIGH SOLIDS EPOXY SYSTEM

A. Preparation:
1. Prepare surfaces in accordance with general preparation requirements and as follows:
a. Abrasive blast ferrous metal surfaces to be submerged at jobsite in accordance with SSPC SP-5 prior to coating. When cleaned surfaces rust or discolor, abrasive blast surfaces in accordance with SSPC SP-10.

b. Abrasive blast non-submerged ferrous metal surfaces at jobsite in accordance with SSPC SP-10, prior to coating. When cleaned surfaces rust or discolor, abrasive blast surfaces in accordance with SSPC SP 6.
c. Abrasive blast clean ductile iron surfaces at jobsite in accordance with SSPC SP-7.

B. Application:
1. Apply coatings in accordance with general application requirements and as follows:
a. Apply minimum 2-coat system with minimum total dry film thickness (DFT) of 12 mils.
b. Recoat or apply succeeding epoxy coats within time limits recommended by manufacturer. Prepare surfaces for recoating in accordance with manufacturer's instructions.
c. Coat metal to be submerged before installation when necessary, to obtain acceptable finish, and to prevent damage to other surfaces.
d. Coat entire surface of support brackets, stem guides, pipe clips, fasteners, and other metal devices bolted to concrete.
e. Coat surface of items to be exposed and adjacent 1 inch to be concealed when embedded in concrete or masonry.

3.8 HIGH SOLIDS EPOXY AND POLYURETHANE COATING SYSTEM

A. Preparation:
1. Prepare surfaces in accordance with general preparation requirements and as follows:
a. Prepare concrete surfaces in accordance with general preparation requirements.
b. Touch up shop primed steel and miscellaneous iron.
c. Abrasive blast ferrous metal surfaces at jobsite prior to coating. Abrasive blast clean rust and discoloration from surfaces.
d. Degrease or solvent clean, whip abrasive blast, power tool, or hand tool clean galvanized metal surfaces.
e. Lightly sand (de-gloss) fiberglass and poly vinyl chloride (PVC) pipe to be coated and wipe clean with dry cloths, or solvent clean in accordance with coating manufacturer's instructions.
f. Abrasive blast clean ductile iron surfaces.

B. Application:
1. Apply coatings in accordance with general application requirements and as follows:
a. Apply 3 coat system consisting of:
1) Primer: 4 to 5 mils dry film thickness high solids epoxy.
2) Intermediate coat: 4 to 5 mils dry film thickness high solids epoxy.
3) Topcoat: 2.5 to 3.5 mils dry film thickness aliphatic or aliphatic-acrylic polyurethane topcoat.
2. Recoat or apply succeeding epoxy coats within 30 days or within time limits recommended by manufacturer, whichever is shorter. Prepare surfaces for recoating in accordance with manufacturer's instructions.

3.9 EPOXY NOVOLAC SYSTEM

A. Preparation:
1. Prepare surfaces in accordance with general preparation requirements and as follows:
2. Prepare concrete to obtain clean, open pore with exposed aggregate in accordance with manufacturer's instructions.
3. Prepare ferrous metal surfaces in accordance with SSPC SP-5, with coating manufacturer's recommended anchor pattern.
4. Complete application of prime coat within 6 hours of abrasive blast cleaning. When cleaned surfaces rust or discolor, abrasive blast surfaces in accordance with SSPC SP-5.
5. When handling steel, wear gloves to prevent hand printing.

6. Adjust pH of concrete to within 7 to 11 before applying prime coat.

B. Application:
1. Apply coatings in accordance with general application requirements and in accordance with manufacturer's instructions.
2. Continue to monitor dew point. Dew point shall remain 5 degrees above ambient temperature for a minimum of 8 hours after application of coating.

3.10 HIGH TEMPERATURE COATING

A. Preparation:
1. Prepare surfaces in accordance with general preparation requirements and as follows:
a. Abrasive blast surface in accordance with SSPC SP-10.

B. Application:
1. Apply coatings in accordance with general application requirements and as follows:
a. Apply number of coats in accordance with manufacturer's instructions.

3.11 ASPHALT VARNISH

A. Preparation:
1. Prepare surfaces in accordance with general preparation requirements.

B. Application:
1. Apply coatings in accordance with general application requirements and as follows:
a. Apply minimum 2 coats.

3.12 PROTECTIVE COAL TAR

A. Preparation:
1. Prepare surfaces in accordance with general preparation coal tar requirements.

B. Application:
1. Apply coatings in accordance with general application requirements and as follows:
a. Apply minimum 20 mils dry film thickness coating.

3.13 COAL TAR EPOXY

A. Preparation:
1. Prepare surfaces in accordance with general preparation requirements and as follows:

B. Abrasive blast iron or steel surfaces to be coated as submerged metal in accordance with SSPC SP-5. Prepare other metal surfaces to be coated with coal tar epoxy in accordance with epoxy manufacturer's instructions.

C. Application:
1. Apply coatings in accordance with general application requirements and as follows:
a. Waterproofing outside surfaces of concrete structures: Apply minimum 2 coats with total dry film thickness of 40 mils.
b. Apply 2 coats of [8 mils] each for a total [16 mils] dry film thickness.
c. Apply coal tar epoxy on blasted steel on same day that steel is blasted.
d. Apply succeeding coats over previous coat as soon as application does not cause sagging, within the following times, or as recommended by the coating manufacturer, whichever is sooner.

Average Temperature Degrees (Fahrenheit)	Maximum Time Between Coats (Hours)
50 to 60	**36**
60 to 70	**24**
70 to 80	**12**
80 to 120	**4**

e. Apply additional coats required to obtain specified thickness.

f. When previous coat has cured or set or Maximum Time Between Coats has lapsed, abrasive blast previous coat until surface film is removed. Wash and clean surface with cleaning solvent. Apply succeeding coat within Maximum Time Between Coats or as recommended by coating manufacturer, whichever is sooner.

g. When succeeding coat is applied over previous coat which has cured or set or Maximum Time Between Coats has lapsed, and surface has not been abrasive blasted, remove entire coating system to substrate, and apply new coating system.

h. Where coating system is applied to exterior concrete surfaces below grade, extend system at least 3 inches above finish grade in straight level. Step extended system down 3 inches when extended system reaches 6 inches above finish grade.

3.14 VINYL ESTER

A. Preparation:
1. Prepare surfaces in accordance with coating manufacturer's recommendations and as directed and approved by coating manufacturer's representative.

B. Application:
1. Apply prime coat, as required by coating manufacturer, base coat, glass mat, and topcoat to total dry film thickness of 125 mils minimum:
   a. Final topcoat on floors shall include non-skid surface, applied in accordance with manufacturer's instructions.
2. Perform high voltage holiday detection test in accordance with SP0188-06, over 100 percent of coated surface areas to ensure pinhole free finished coating system.
3. All work shall be accomplished in strict accordance with coating manufacturer's instructions and under direction of coating manufacturer's representative.

3.15 ELASTOMERIC POLYURETHANE (100 PERCENT SOLIDS)

A. Preparation:
1. Prepare surfaces in strict accordance with coating manufacturer's instructions and as directed and approved by coating manufacturer's representative.

B. Application:
1. Apply epoxy primer at DFT of 1 to 2 mils, in strict accordance with manufacturer's instructions.
2. Apply polyurethane coating at minimum total DFT as follows:
   a. Steel: 60 mils DFT.
   b. Ductile iron and ductile iron pipe coating and lining: 30 mils DFT.
   c. Concrete: 120 mils DFT.
   d. Or as recommended by the coating manufacturer and accepted by the ENGINEER.

C. For concrete application, provide saw cutting for coating terminations in strict accordance with manufacturer's instructions:

D. Perform high voltage holiday detection test in accordance with SP0188-06, over 100 percent of coated surface areas to ensure pinhole free finished coating system.

3.16 CONCRETE FLOOR COATINGS

A. Preparation:
   1. Prepare surfaces in accordance with general application requirements and in strict a accordance with coating manufacturer’s instructions.

B. Application:
   1. Apply primer if required by coating manufacturer.
   2. Apply 1 or more coats as recommended by coating manufacturer to receive a minimum total dry film thickness of 25 mils, color as selected by OWNER.

C. Final topcoat shall include non-skid surface, applied in strict accordance with coating manufacturer's instructions.

3.17 WATERBORNE ACRYLIC EMULSION

A. Preparation:
   1. Remove all oil, grease, dirt, and other foreign material by Solvent Cleaning in accordance with SSPC SP-1.
   2. Lightly sand all surfaces and wipe thoroughly with clean cotton cloths before applying coating.

B. Application:
   1. Apply 2 or more coats to obtain a minimum dry film thickness (DFT) of 5.0 mils.

3.18 FIELD QUALITY CONTROL

A. Each coat will be inspected. Strip and remove defective coats, prepare surfaces and recoat. When approved, apply next coat.

B. Control and check dry film thicknesses and integrity of coatings.

C. Measure dry film thickness with calibrated thickness gauge.

D. Dry film thicknesses on ferrous-based substrates may be checked with Elcometer Type 1 Magnetic Pull-Off Gage or Positector 6000.

E. Verify coat integrity with low-voltage sponge or high-voltage spark holiday detector, in accordance with SP0188 06. Allow ENGINEER to use detector for additional checking.

F. Check wet film thickness before coal tar epoxy coating cures on concrete or non-ferrous metal substrates.

G. Arrange for services of coating manufacturer's field representative to provide periodic field consultation and inspection services to ensure proper surface preparation of facilities and items to be coated, and to ensure proper application and curing:
   1. Notify ENGINEER 24 hours in advance of each visit by coating manufacturer's representative.
   2. Provide ENGINEER with a written report by coating manufacturer's representative within 48 hours following each visit.

3.19 PROTECTIVE COATINGS SYSTEMS

A. System No. 2: Submerged Metal – Potable General:

Surface Prep.	Paint Material	Min. Coats, Cover
Abrasive Blast, or Centrifugal Wheel Blast (SP 5)	Primer – High Solids Epoxy (Self Priming)	1 coat, 6 MDFT
	Top Coat – High Solids Epoxy	3 coats, 3 MDFTPC

B. System No. 3: Exposed Metal - Highly Corrosive:

Surface Prep.	Paint Material	Min. Coats, Cover
Abrasive Blast (SP 10)	Primer – Per Manufac-turer's Recommendations	1 coat, 2.5 MDFT
	Intermediate Coat – High Solids Epoxy	1 coat, 4 MDFT
	Top Coat – Aliphatic Polyu-rethane	1 coat, 3 MDFT

C. System No. 4: Exposed Metal – Mildly Corrosive:

Surface Prep.	Paint Material	Min. Coats, Cover
Abrasive Blast (SP 10)	Primer – Per Manufac-turer's Recommendations	1 coat, 2.5 MDFT
	Top Coat – Aliphatic Polyu-rethane	1 coat, 3 MDFT

D. System No. 5: Buried Metal - General:

Surface Prep.	Paint Material	Min. Coats, Cover
Abrasive Blast or Centrifugal Wheel Blast (SP 10)	Standard Hot Coal-Tar Enamel -OR- Coal-Tar Epoxy -OR- Tape Coat System	AWWA C203 AWWA C210 AWWA C214
	For Acidic Soil, Brackish Water High Bacteria - Hot Coal-Tar, Double Felt	AWWA C203, App. A, Sec. Al.5
	For Highly Abrasive Soil, Brackish Water - Hot Coal-Tar, Fibrous Glass -OR- Tape Coat System	AWWA C203, App. A, Sec. A1.5 AWWA C214 with Double Outer Wrap

E. System No. 6 High Temperature (150º - 350º):

Surface Prep.	Paint Material	Min. Coats, Cover
Abrasive Blast (SP 10)	Primer – Per Manufacturer's Recommendations	1 coat, 2 MDFT
	Top Coat – High Temperature Coating 150º - 350º	1 coat, 2 MDFT

F. System No. 7 High Temperature (400º - 1000º):

Surface Prep.	Paint Material	Min. Coats, Cover
Abrasive Blast (SP 10)	Primer – Per Manufacturer's Recommendations	1 coat, 2 MDFT
	Top Coat – High Temperature Coating 400º - 1000º	1 coat, 2 MDFT 1 coat, 1.5 MDFT

G. System No. 8 High Temperature (1000º - 1400º):

Surface Prep.	Paint Material	Min. Coats, Cover
Abrasive Blast (SP 10)	Primer – Per Manufacturer's Recommendations	1 coat, 2 MDFT
	Top Coat – High Temperature Coating up to 1400º	1 coat, 1.5 MDFT

H. System No. 10 Galvanized Metal Conditioning:

Surface Prep.	Paint Material	Min. Coats, Cover
Solvent Clean (SP 1), followed by Hand Tool (SP 2), or Power Tool (SP 3),	Wash Primer or Coating Manufacturer's Recommendation.	1 coat, 0.4 MDFT
		Remaining coats as required by exposure

I. System No. 11 Galvanized Metal Conditioning:

Surface Prep.	Paint Material	Min. Coats, Cover
Solvent Clean (SP 1), followed by Hand Tool (SP 2), Power Tool (SP 3), or Brush-off Blast (SP 7)	Primer – Organic Zinc Rich	1 coat, 3 MDFT Additional coats as required by exposure.

J. System No. 12 Skid-Resistant Aluminum and FRP:

Surface Prep.	Paint Material	Min. Coats, Cover

Brush-off Blast (SP 7) or Plastic Surface Preparation	High Solids Epoxy (aggregated)	1 coat, 16 MDFT

K. System No. 13 Sliding Metal:

Surface Prep.	Paint Material	Min. Coats, Cover
Solvent Clean (SP 1), followed by Hand Tool (SP 2), Power Tool (SP 3), or Brush-off Blast (SP 7)	Wax Coating	1 coat, 31 MDFT

L. System No. 14 Exposed PVC:

Surface Prep.	Paint Material	Min. Coats, Cover
Plastic Surface Preparation	Primer – Per Manufacturer's Recommendations	1 coat, 2 MDFT
	Waterborne Acrylic Emulsion	1 coat, 3 MDFT

M. System No. 15 Aluminum and Dissimilar Metal Insulation:

Surface Prep.	Paint Material	Min. Coats, Cover
SP 1	Alkali Resistant Bitumastic or Coal-Tar Epoxy Substitute	1 coat, 18 MDFT

N. System No. 16 Existing Concrete/CMU Repair:

Surface Prep.	Paint Material	Min. Coats, Cover
SP 13	Filler – Per Manufacturer's Recommendations	1 coat, 10 MDFT
	Primer – Per Manufacturer's Recommendations	1 coat, 5 MDFT
	Top Coat – High Solids Epoxy	1 coat, 4 MDFT

O. System No. 17 New Concrete/CMU Exterior (as required by application schedule):

Surface Prep.	Paint Material	Min. Coats, Cover
SP 13	Filler – Per Manufacturer's Recommendations	1 coat, 10 MDFT

	Intermediate Coat – High Solids Epoxy	1 coat, 4 MDFT
	Top Coat – Aliphatic Polyurethane	1 coat, 3 MDFT

P. System No. 18 Concrete/CMU – Interior or Immersion Mildly Corrosive:

Surface Prep.	Paint Material	Min. Coats, Cover
SP 13	Filler – Per Manufacturer's Recommendations	1 coat, 10 MDFT
	Intermediate Coat – High Solids Epoxy	1 coat, 6 MDFT
	Top Coat – Aliphatic Polyurethane	1 coat, 6 MDFT

Q. System No. 19 Concrete/CMU – Immersion Highly Corrosive:

Surface Prep.	Paint Material	Min. Coats, Cover
SP 13	Per Manufacturer's Recommendations	As required by conditions
	Epoxy Novolac	2 coat, 40 MDFT Minimum or as called for on the Project Drawings.

3.20 SCHEDULE OF ITEMS NOT REQUIRING COATING

1. General: Unless specified otherwise, the following items do not require coating:
2. Items that have received final coat at factory and not listed to receive coating in field.
3. Aluminum, brass, bronze, copper, plastic (except PVC pipe), rubber, stainless steel, chrome, Everdur, or lead.
4. Buried or encased piping or conduit.
5. Exterior concrete.
6. Galvanized steel wall framing, galvanized electrical conduits, galvanized pipe trays, galvanized cable trays, and other galvanized items:
    a. Areas on galvanized items or parts where galvanizing has been damaged during handling or construction shall be repaired as follows:
        1) Clean damaged areas by SSPC SP-1, SP-2, SP-3, or SP-7 as required.
        2) Apply 2 coats of a Galvanizing Zinc Compound in strict accordance with manufacturer's instructions.
7. Grease fittings.
8. Fiberglass ducting or tanks in concealed locations.
9. Steel to be encased in concrete or masonry.

3.21 SCHEDULE OF SURFACES TO BE COATED IN THE FIELD

A. In general, apply coatings to steel, iron, galvanized surfaces, and wood surfaces unless specified or otherwise indicated on the Drawings. Coat concrete surfaces and anodized aluminum only when specified or indicated on the Drawings. Color coat all piping according to owner preferences.

B. Following schedule is incomplete. Coat unlisted surfaces with same coating system as similar listed surfaces. Verify questionable surfaces.

C. Metal:
   1. System 4 – Exposed Metal – Mildly Corrosive
      a. All proposed equipment and piping.

END OF SECTION

DIVISION 26

ELECTRICAL

SECTION 26 05 15 - ELECTRIC MOTORS

PART 1 - GENERAL

1.1 SUMMARY

A. This section describes materials, installation and testing of induction motors and applies to motors which are generally provided as part of equipment specified in other sections. The Contractor shall provide motors, accessories and appurtenances complete and operable in accordance with the individual driven equipment specifications.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Complete motor data shall be submitted, including:
1. Machine name and specification number of driven machine.
2. Motor manufacturer.
3. Motor type or model and dimensional drawing, including weight.
4. Horsepower nominal.
5. Guaranteed minimum full load efficiency. Also, nominal efficiencies at 1/2 and 3/4 load.
6. Full load speed.
7. Full load current at rated horsepower for application voltage.
8. Service factor, minimum 1.15.
9. Voltage, phase and frequency rating.
10. Winding insulation class.
11. Temperature rise class.
12. Frame size.
13. Enclosure.
14. NEMA design.
15. Thermal protection or over temperature protection.
16. Wiring diagram for devices such as temperature switches, space heaters and motor leak detection as applicable.
17. Bearing data, including recommendation of lubricants.
18. Inverter duty motor for all motors connected to variable frequency drive controllers. Include minimum speed at which motors may be operated.
19. Power factor at 1/2, 3/4 and full load.
20. Complete nameplate data, rating and characteristics.
21. Mounting arrangement, size and location of conduit entries, including lugs.
22. Factory test results for each motor.

1.3 QUALITY ASSURANCE

A. Provide routine (short commercial) test data complying with NEMA MG 1-12.51 and MG 1-23.46.

B. Test thermally protected motors in accordance with NEMA MG 1 winding temperature and trip current tests.

C. Comply with NEMA MG 1.

D. Motors for applications in hazardous locations shall bear the UL label listing its use in accordance with the NEC.

1.4 COORDINATION

A. Furnish reviewed shop drawings from motor controller manufacturer for coordination and sizing of the controller.

B. Coordinate supplied motor connection box with conduits sizes indicated in the drawings.

C. Coordinate motor leads and lugs with wire sizes indicated in the drawings.

PART 2 - PRODUCTS

2.1 GENERAL MOTOR REQUIREMENTS

A. Unless otherwise specified or specifically required by the manufacturer of the equipment to be driven, all motors shall be single speed, squirrel cage, a-c induction type motors. Electric motors shall be NEMA Design B constant speed squirrel cage induction motors having normal starting torque with low starting current except for motors controlled by variable speed operation and other special motors. In no case shall starting torque or breakdown torque be less than the value specified in ANSI/NEMA MG 1. In all cases, motors shall be suitable for the indicated starting method.

B. Stator winding shall be copper.

C. The maximum motor loading of each motor shall not exceed its nameplate horsepower rating (exclusive of service factor) under any operating condition.

D. Motors shall be sized to start and accelerate the design loading and operate the full range of driven equipment without exceeding any of the specified design requirements. Motors that fail to meet these requirements shall be replaced at no additional cost to the Owner.

E. All three phase motors shall be provided with Class F insulation, rated to operate at a maximum ambient temperature of 40 degrees C and at the altitudes where the motors will be installed and operated without exceeding Class B temperature rise limits stated in ANSI/NEMA MG1-12, 42. Single phase motors shall have Class F insulation with temperature rise not to exceed the insulation class. Motors to be operated with variable frequency drives shall be provided with insulation systems to withstand 1600 volt spikes, with dV/dt as defined in NEMA MG 1-31.

F. All motors shall have a minimum service factor of 1.15.

G. Motors for use in hazardous locations shall have enclosures suitable for the classification of the location. Such motors shall be UL listed and stamped.

H. Motors larger than 50 HP located outdoors or in non-conditioned areas shall have 120-volt AC space heaters and temperature sensors.

I. For motors controlled by variable frequency drives, the critical vibration speed of the motor/load combination shall either not fall within the operating range of the drive or such frequencies shall be blocked with the drive critical speed avoidance circuit. All motors connected to variable frequency drives shall be inverter duty rated.

J. Unless otherwise specified, motors shall have no-load sound power levels not to exceed the values specified in NEMA MG 1-12.53.3.

K. Premium Efficiency Motors:

1. Motors with a nameplate rating of 1 horsepower and larger shall be premium efficiency type motors as determined by the testing set forth in ANSI/IEEE 112 – Standard Test Procedure for Polyphase Induction Motors and Generators, Method B. Motors shall be stamped with the efficiency on the nameplate with the caption “NEMA Nominal Efficiency.”
2. Efficiency index, nominal efficiency and minimum efficiency shall be defined in accordance with ANSI/NEMA MG1-12.59 – Efficiency Levels of Energy Efficient Polyphase Squirrel-Cage Induction Motors. All three values are required to be indicated in the submittal.

2.2 MOTOR BEARINGS

A. All motors greater than 2 horsepower shall have bearings designed for 17,500 hours (belted) or 100,000 hours (coupled) L-10 life.

B. Motors less than 2 horsepower shall be provided with sealed, permanently lubricated ball bearings.

C. Horizontal motors over 2 horsepower shall be shielded open-type bearing installed with labyrinth sealed end bells with pipe plugs. Bearings shall be regreasable and have provisions for purging old grease.

D. Vertical motors over 2 horsepower shall be provided with relubricatable ball, spherical, roller or plate type trust bearings. Lubrication shall be per manufacturer’s recommendation for smooth operation and long life of the bearing. Drains shall be provided to prevent over lubrication.

2.3 MOTOR THERMAL PROTECTION

A. All single phase motors shall have integral thermal overload protection or shall be current limited.

B. Winding thermostats shall be provided in accordance with NEMA MG-1. Thermostats shall be snap action, bi-metallic, temperature actuated type switches and shall be provided with a normally closed contact. Thermostats shall be precalibrated by the manufacturer and shall be series connected.

2.4 ACCESSORIES

A. All vertical motors and horizontal motors 3 horsepower and larger shall have split-type conduit boxes with a gasketed moisture seal between the conduit box and motor frame. Motors less than 3 horsepower shall have the manufacturer’s standard conduit boxes. Motors other than open drip-proof shall be gasketed.

B. All motors weighing 250 pounds or greater shall have suitable lifting eyes for installation and removal.

C. Motor grounding lugs shall be provided and shall be suitable for terminating ground wires.

D. All motors shall be fitted with permanent stainless steel nameplates indelibly stamped or engraved with NEMA Standard motor data.

E. Refer to equipment specifications for special requirements such as space heaters or motor winding thermal protection.

PART 3 - EXECUTION

3.1 STORAGE

A. Protect motors from exposure to elements for which they are not designed. Install and energize temporary electrical service to motors with electrical heaters.

B. Store motors in an air-conditioned, ventilated or protected environment similar to or better than the destination environment.

3.2 INSTALLATION

A. Motor installation shall be performed in accordance with the motor manufacturer's written recommendations and the written requirements of the manufacturer of the driven equipment.

B. Connections, switches, controls, disconnects and other items shall be provided in accordance with the plans and specifications for each motor.

C. The Contractor shall coordinate conduit sizes indicated in the drawings with the supplied motor connection box. The Contractor shall be responsible for providing larger connection boxes as may be required.

3.3 FIELD TESTING

A. Perform insulation resistance tests in accordance with NEMA MG-1. Test voltage shall be 1000 VAC plus twice the rated voltage of motor.

B. Inspect the physical and mechanical conditions of each motor installation including any deviations from the nameplate, drawings, specifications and manufacturer's written guidelines. Verify expected rated voltage, phase and frequency for each motor installation. Confirm the presence of and correct application of lubrications for each motor along with proper securing and torque settings for bolted installations of each motor.

C. Check for proper phase and ground connections for each motor are connected. For multi-voltage motors, verify that motors are connected properly for the supplied voltage.

D. Verify that space heaters, where provided, are functional.

E. Test the motor for proper rotation prior to connection to the driven equipment. Measure and record running current and evaluate the current relative to the load conditions and nameplate full-load amps.

F. Simulate operating conditions for each motor to demonstrate proper operation of interlocks and control features.

G. Record operating current in each phase for each motor ½ horsepower and larger. Motors exceeding motor nameplates values shall be repaired or replaced.

H. For motors 50 horsepower and larger or when a discernible abnormal vibration is detectible, a vibration test shall be completed. Vibration shall not exceed 0.25 in./sec. For horizontal motors, the N-S and E-W vibrations shall be measured at the top and bottom of the front and rear bearing housing. For vertical motors, the N-S and E-W vibrations shall be measured at the upper and lower bearing housing.

I. All testing shall be witnessed by the Engineer and Owner.

1. Motor and Motor Protection Tests for motors – In addition to other testing start and stop each motor a minimum of 3 times and perform a run test for vibration, heat, and to document motor protection. The Contractor shall document the settings of the motor overcurrent protection, overload relay and similar data on the provided form – MOTOR TEST REPORT.
2. The Contractor shall develop non-conforming material reports for each failure and repair or report failures.
3. The Contractor shall replace defective parts, correct malfunctioning units, make all repairs and retest to demonstrate compliance. The Contractor shall document action taken on appropriate non-conforming material report.

3.4 MOTOR TEST REPORT

A. The following form is provided for the motor certification specified herein. Master blank forms are available on request.

END OF SECTION

ADDISON SURVEYOR PUMP STATION IMPROVEMENTS
MOTOR TEST REPORT

Each electric motor shall be tested for proper operation. Follow manufacturer's testing recommendations and procedures.

1. Name and Horsepower of Motor Tested:_____

2. Overcurrent Protection:_____

3. Overload Protection: _____

4. Visual Inspection Checklist:

   - ❑ Momentarily Bump Motor Shaft for Proper Rotation
   - ❑ Motor Frame Bolts
   - ❑ Shaft Coupling
   - ❑ Lubricants
   - ❑ Other Comments:

5. Megger motor from wire in motor control center or control panel and record results:

   ϕA-ϕB_____ ϕB-ϕC_____ ϕC-ϕA_____

   ϕA-G_____ ϕB-G_____ ϕC-G_____

6. Record full load voltage and current:

   Vab_____ Van_____ Ia_____

   Vbc_____ Vbn_____ Ib_____

   Vca_____ Vcn_____ Ic_____

7. Motor Nameplate FLA:_____

   Running Amps:_____

   P.F. _____

8. Comments:

Signature Required: _____

Company: _____

Date: _____

DIVISION 33

UTILITIES

SECTION 33 13 00 - DISINFECTION OF WATER SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes: Work, material, and procedures for disinfection of installed potable water lines.

B. Related sections:
1. Section 01 33 00 – Submittal Procedures.

1.2 REFERENCES

A. The following is a list of standards which may be referenced in this section:
1. American Water Works Association (AWWA):
a. AWWA B300, Hypochlorites.
b. AWWA B301, Liquid Chlorine.
c. AWWA B303, Sodium Chlorite.
d. AWWA C651, Disinfecting Water Mains.
e. AWWA C652, Disinfection of Water-Storage Facilities.
f. AWWA C653, Disinfection of Water Treatment Plants.
g. AWWA C654, Disinfection of Wells.

1.3 QUALITY CONTROL SUBMITTALS

A. Submittals shall be made as required in Section 01 33 00, SUBMITTAL PROCEDURES. The following specific information shall be provided:
1. Procedures and plans for disinfection and testing.
2. Type of disinfecting solution and method of preparation.

1.4 SEQUENCING AND SCHEDULING

A. Commence disinfection after completion of following:
1. Completion and acceptance of internal painting of system(s).
2. Hydrostatic and pneumatic testing, pressure testing, functional and performance testing and acceptance of pipelines, pumping systems, structures, and equipment.

PART 2 - PRODUCTS

2.1 WATER FOR DISINFECTION AND TESTING

A. Clean, uncontaminated, and potable.

B. Owner will supply potable quality water, Contractor shall convey in disinfected pipelines or containers.

2.2 CONTRACTOR'S EQUIPMENT

A. Furnish chemicals and equipment, such as pumps and hoses, to accomplish disinfection.

2.3 MIXING DISINFECTANT

A. Prepare solution by mixing any of following as described below. The purpose of the stock solution is to facilitate mixing and dilution to ensure a uniform disinfecting solution. The Contractor will not

be required to mix a stock solution if a liquid chlorine gas feed system that can accurately feed a desired amount of chlorine to mix a final (dilute) disinfecting solution is used.

1. Liquid chlorine gas conforming to AWWA B301 and water mixture.
2. Dry chlorine gas conforming to AWWA B301.
3. Calcium hypochlorite conforming to AWWA B300 or sodium hypochlorite conforming to AWWA B303 powder or liquid and water mixture.

B. Feed dry chlorine gas through devices to regulate the rate of flow and ensure uniform diffusion of gas into water within the pipe or vessel being treated. Chlorinating devices for feeding chlorine gas solution or the gas itself shall prevent of water into chlorine cylinder.

C. Use following proportions of hypochlorite or chlorine to water:
   1. Chlorine Gas or Liquid (100 Percent Cl):1 pound per 1 1.75 gallons water.
      a. Apply liquid chlorine gas-water solution by means of a solution feed chlorinating device.
   2. Calcium Hypochlorite (65 to 70 Percent Cl): 1 pound per 7.5 gallons water.
      a. If calcium hypochlorite is used, first mix dry powder with water to make a thick paste, then thin to a 1 percent solution (10,000 ppm chlorine).
   3. Sodium Hypochlorite (5.25 Percent Cl): 1 gallon per 4.25 gallons water.
      a. If sodium hypochlorite procedure is used, dilute the liquid with water to obtain a 1 percent solution.

PART 3 - EXECUTION

3.1 GENERAL

A. Disinfect pumps and pipelines, installed or modified under this Project, intended to hold, transport, or otherwise contact potable water:
   1. Disinfect new pipelines that connect to existing pipelines up to the point of connection.
   2. Disinfect surfaces of materials that will contact finished water, both during and following construction using spray method described below.
   3. Disinfect prior to contact with finished water. Take care to avoid recontamination following disinfection.

B. Prior to application of disinfectants, clean equipment and pipelines of loose and suspended material. Flush pipelines until clear of suspended solids and color. Use water suitable for flushing and disinfecting.

C. Conform to AWWA C651 for pipes and pipelines, C652 for tanks and reservoirs, and AWWA C654 for wells, except as modified in these Specifications.

D. Allow freshwater and stock disinfectant solution to flow into the pipe or vessel at a measured rate so that the chlorine-water solution is at the specified strength. Do not place concentrated commercial disinfectant in the pipeline or vessel before it is filled with water.

3.2 PIPING AND PIPELINES

A. Flushing:
   1. Before disinfecting, flush all foreign matter from pipeline. Provide hoses, temporary pipes, ditches, and other conduits as needed to dispose of flushing water without damage to adjacent properties. Flushing velocities shall be at least 2.5 fps. For large diameter pipe, where it is impractical or impossible to flush the pipe at specified velocity, clean the pipeline in-place from the inside by brushing and sweeping, then flush the line.
   2. Flush pipelines through flushing branches and remove branches after flushing is completed. Operate valves during flushing process at least twice during each flush.

3. Flush service connections and hydrants. Flush distribution lines prior to flushing hydrants and service connections.

B. Disinfecting Solution: Chlorine-water solution having a free chlorine concentration of not less than 50 ppm.

C. Disinfecting Procedure: In accordance with AWWA C651, unless herein modified.

D. Point of Application:
1. Inject chlorine mixture into pipeline to be treated at beginning of line through corporation stop or suitable tap in top of pipeline.
2. Control water from existing system to flow slowly into pipeline during application of chlorine.
3. Control rate of chlorine solution flow in proportion to rate of water entering pipe so that combined mixture shall contain not less than 50 ppm of free available chlorine.
4. Prevent of chlorine solution into line supplying water.

E. Retention Period:
1. Retain treated water in pipeline for at least 24 hours to destroy all nonspore-forming bacteria. At end of 24 hour period, disinfecting solution shall contain at least 10 ppm of free chlorine or the pipeline shall be recleaned, disinfecting solution shall be reapplied, and specified procedure repeated.
2. Operate valves, hydrants, and appurtenances during disinfection to ensure that disinfecting solution is dispersed into all parts of pipeline, including dead-ends and areas that otherwise may not be treated.
3. After disinfection, flush water from the permanent source until water through the pipeline is equal chemically and bacteriologically to permanent source of supply.

3.3 PUMPS

A. Disinfecting Solutions: Minimum free chlorine concentration of 200 ppm.

B. Disinfecting Procedure: In accordance with AWWA unless herein modified.

C. Application:
1. Inject the disinfecting solution into the pump and associated piping and circulate for a minimum 2 hour period of time. At the end of the 2 hour period, the solution shall have a strength of at least 100 ppm free chlorine.
2. Operate valves and/or pump appurtenances during disinfection to ensure that the disinfecting solution is dispersed into all parts of the pumps and lines.
3. If the disinfecting solution contained in the pumps has a residual free chlorine concentration less than 100 ppm after the 2 hour retention period, reclean the pump, reapply disinfecting solution, and retest until a satisfactory test result is obtained.
4. After chlorination, flush the water from the pumps until the water through the units is chemically and bacteriologically equal to the permanent source of supply.

3.4 DISPOSAL OF DISINFECTING WASTEWATER

A. Do not allow flow into a waterway without neutralizing disinfectant residual.
1. See AWWA C652 for acceptable neutralization methods.

3.5 TESTING

A. Test Equipment:
1. Clean containers and equipment used in sampling and assure they are free of contamination.

2. Obtain sampling bottles with instructions for handling from laboratory.

B. Chlorine Concentration Sampling and Analysis:
   1. Sampling Frequency for Disinfecting Solution: Two samples per disinfecting procedure.
   2. Residual Free Chlorine Samples: Two samples per disinfecting procedure.
   3. Dechlorinated Disinfecting Wastewater Residual Samples: Two samples per disinfecting procedure.
   4. Sampling Locations: Each 1,000 feet of pipeline or each building.
   5. Analysis to be performed by the Owner's laboratory.

C. After pipelines have been cleaned, disinfected, and refilled with potable water, Owner will take water Samples and have them analyzed for conformance to bacterial limitations for public drinking water supplies. Samples shall be analyzed for coliform concentrations in accordance with the latest edition of Standard Methods for the Examination of Water and Wastewater.
   1. A minimum of two Samples on each of 2 consecutive days from each separable structure every 1,000 feet of pipeline will be obtained and analyzed by standard procedures outlined by state and local regulatory agencies.

D. If the minimum Samples required above are not bacterially negative, the disinfecting procedures and bacteriological testing shall be repeated on the respective facilities until bacterial limits are met.

END OF SECTION

SECTION 33 34 13 - DUCTILE IRON FORCE MAIN PIPE AND FITTINGS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes the Work necessary to completely furnish and install Ductile Iron force main pipe and fittings.

1.2 GENERAL

A. Like items of ductile iron pipe provided hereinafter shall be the end products of one manufacturer to achieve standardization of appearance, operation, maintenance, and manufacturer's services.

B. General Requirements: See Division 01, GENERAL REQUIREMENTS, which contains information and requirements that apply to the work specified herein and are mandatory for this project.

C. All pipe shall be circular and shall be of the sizes shown on the Plans and/or listed in the Unit Price Schedule. All pipe shall be new. Used pipe is prohibited.

D. At the discretion of the Engineer, all pipe line and materials are subject to inspection and approval at the plant of the manufacturer.

E. All materials shall equal or exceed the standards specified herein.

F. During the process of unloading, all pipe materials shall be inspected by the Contractor and any damaged pipe set aside.

G. After pipe lines are laid, the Contractor shall test for defects and leakage.

H. Inspection of pipe at the manufacturer's plant, at the point of delivery, on the job site, or in place shall not relieve the Contractor of his responsibility and the material may be subject to rejection until final acceptance of the completed project.

1.3 SUBMITTALS

A. General: Administrative, shop drawings, samples, quality control, and contract closeout submittals shall conform to the requirements of Section 01 33 00, SUBMITTAL PROCEDURES.

B. In addition to the requirements of Section 01 33 00, SUBMITTAL PROCEDURES, submit the following additional specific information:
   1. Quality Control Submittals:
      a. Pipe size, class, and thickness.
      b. Special shipping, storage and protection, and handling instructions.
      c. Test procedures.
      d. Test results, reports, and certifications.

PART 2 - PRODUCTS

2.1 GENERAL

A. Ductile iron force main pipe shall be provided to conform to materials of construction as specified herein.

B. All force mains shall be installed with tracer wire.

C. Weights and Marking:
   1. Weights of pipe and fittings shall conform strictly to the requirements of ANSI Specifications. The class designations for the various classes of pipe and fittings shall be cast onto fittings in raised numerals, and cast or stamped on the outside of each joint of pipe. Weights shall be plainly and conspicuously painted in white on the outside of each joint of pipe and each fitting after the exterior coating has hardened.

D. Certification:
   1. The Contractor shall upon request furnish the Engineer with certified reports stating that inspection and specified tests have been made and that the results thereof comply with the applicable ANSI Specifications for each.

2.2 DUCTILE IRON FORCE MAIN PIPE

A. All pipe and pipe fittings furnished for underground sewer piping shall have either push-on or mechanical type joints.

B. Flanged DIP and DI fittings shall be used only as indicated on the Plans. Flanged pipe and pipe fittings shall conform to ANSI/AWWA C115/21.15, Class 250 psi. Flanged drilling shall conform to ANSI B16.1, Class 125 flange.

C. All DIP, 4-inch through 36-inch, shall conform to the requirements of ANSI/AWWA C150/A21.50 (Thickness Design of Ductile-Iron Pipe) and ANSI/AWWA C151/A21.51 (Ductile Iron, Centrifugally-Cast for Water).

D. Ductile iron pipe for force mains shall have a minimum Pressure Class of 350.

E. Standard laying lengths shall be 20 feet ± 1 inch, unless otherwise specified.

2.3 FITTINGS FOR DUCTILE IRON FORCE MAIN

A. All fittings over 3-inches shall be ductile iron, mechanical joint fittings and shall conform to the requirements of AWWA C153. All fittings shall have a minimum pressure rating of 350 pounds per square inch and shall be lightweight (compact) fittings unless otherwise shown on the Plans.

B. All fittings shall be furnished with gaskets. MJ fittings shall also be furnished with bolts, nuts, and iron glands. All plugs, caps, tees, and bends deflecting 22-1/2° or more shall be provided with reaction backing.

C. All casting and mating surfaces shall be smooth and of a workmanlike quality, free from cracks, holes, scale, shrinkage, distortion, grooves, scratches, and other defects. Fittings and other castings may be rejected if found to be unacceptable by the Engineer in accordance with these Specifications.

D. Joints shall be mechanical joint, shall conform to AWWA C111, and shall be furnished with Mega-lug type retainer glands and gaskets.

E. Special fittings shall be in accordance with the pipe manufacturer’s recommendations and as approved by the Engineer.

F. All fittings and appurtenances placed on sanitary sewer lines shall meet with the requirements of the type of pipe used and shall be installed in accordance with the manufacturer's recommendations and as approved by the Engineer.

G. Connections between different kinds of pipe shall be detailed on the Plans and provide self-cleansing sanitary flow and watertight joints and connections.

H. All fittings shall be fusion-bonded epoxy coated inside and outside in accordance with ANSI/AWWA C116/A21.16.

I. All valves and fittings (including in-line valves) shall have Megalug style retainer glands or approved equal. Valves, bends, reducers and other hardware near bends shall be positively bolted, all-threaded, or mechanically joined to each other. Bolted includes single and double flanged adapters (such as Foster Adapters or Swivel Adapters) which provide a solid bolted or mechanical joint type connection.

2.4 DUCTILE IRON PIPE JOINTS

A. Joints shall be mechanical joints (MJ) or push-on type joints which conform to ANSI/AWWA C111/A21.11 (Rubber Gasket Joints for Ductile Iron Pressure Pipe and Fittings), unless otherwise specified.

B. Joints shall have the same pressure rating of the pipe or fittings of which they are a part.

C. All pipe joints other than those specified herein shall be made in strict accordance with the manufacturer’s recommendations and as approved.

D. All joints shall be made watertight in accordance with the latest applicable AWWA and ASTM standards.

2.5 GASKETS FOR DUCTILE IRON JOINTS AND FITTINGS

A. Gaskets shall be made of vulcanized styrene butadiene rubber (SBR).

B. Gaskets shall be marked for nominal pipe size, manufacturer, and year of manufacture.

C. Gaskets shall comply with the requirements of AWWA C111 (Rubber-Gasket joints for Ductile Iron Pressure Pipe and Fittings).

2.6 DUCTILE IRON JOINT AND FITTING LUBRICANT

A. Lubricant shall be provided by the pipe manufacturer and applied as per the manufacturer’s recommendations in accordance with ANSI/AWWA C111/A21.11 (Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings).

B. Lubricant shall be non-toxic, not support the growth of bacteria and have no deteriorating effects on the gasket or pipe material.

C. Lubricant containers shall be appropriately identified and labeled with the manufacturer's name.

D. Each lubricant container shall have printed instructions for usage and joint assembly.

2.7 COATINGS

A. Interior Coatings
   1. All ductile iron pipe for force mains shall receive the following interior lining treatment:
      a. Epoxy Lining

1) All DIP and DI fittings shall be lined with a high-build, multi-component amine-cured novalac epoxy lining, containing at least 20% ceramic quartz pigment, by volume.
2) The lining system shall be Protecto 401 Ceramic Epoxy as manufactured by Vulcan Painters, Inc.
3) The lining Applicator shall have a successful history of applying linings to the interior of DIP.

b. Condition of Ductile Iron Prior to Surface Preparation
1) All DIP and DI fittings shall have a high-build protective lining on the interior. All DIP and DI fittings shall be delivered to the application facility without any lining on the interior surface. As removal of old linings may not be possible, the intent of this Specification is that the entire interior of DIP and DI fittings shall not have been lined with any substance prior to the application of the lining specified herein.

c. Surface Preparation
1) Prior to abrasive blasting, the entire area to receive the protective compound shall be inspected for oil, grease, and other substances. Any areas where oil, grease, or another substance is detected and can be removed by solvent shall be solvent-cleaned using the guidelines outlined in SSPC-SP-1 (Solvent Cleaning).
2) After the surface has been made free of grease, oil, and other substances, all areas to receive the protective compounds shall be abrasive blasted with sand or grit abrasive media.
3) The entire surface to be lined shall be struck with the blast media so that all rust, loose oxides, and other sources of roughness shall be removed from the surface. If rust reappears before coating, the affected areas must be reblasted.

d. Lining
1) Within eight (8) hours after surface preparation, the interior of the pipe shall receive approximately 40 mils dry film thickness of the protective lining.
2) Lining shall not occur if the substrate or ambient temperature is below 40º F.
3) The surface shall be dry and dustfree before lining.
4) The linings shall not be used on the face of any flanged pipe or fitting, unless otherwise specified.
5) All fittings shall be lined with approximately 40 mils of the protective lining. The 40 mils system shall not be applied in the gasket grooves.

e. Coating Gasket and End Spigots
1) Due to the tolerances involved, the gasket area and exterior spigot end, up to six (6) inches back from the end of the spigot end, must be coated with 6 mils nominal, 10 mils maximum Protecto Joint Compound, or approved equal.
2) This coating shall be applied by brush to ensure coverage. Care shall be taken so the coating is smooth, without excess buildup in the gasket groove or on the spigot end.
3) All materials for the gasket groove and spigot end shall be applied after the application of the lining.

f. Number of Coats
1) The number of coats of lining material applied shall be as recommended by the lining manufacturer. However, in no case shall this material be applied above the dry thickness per coat recommended by the lining manufacturer in printed literature. The time between coats shall never exceed that time recommended by the lining material manufacturer. No material shall be used for lining which is not indefinitely recoatable without roughening of the surface.

g. Touchup and Repair

1) Protecto Joint Compound, or approved equal, shall be used for touchup or repair. Procedures for touchup and repair shall be in accordance with manufacturer's recommendations.

h. Inspection and Certification

1) Inspection

a) All DIP and DI fitting linings shall be checked for thickness using a magnetic film thickness gage. The thickness testing shall be as set forth in SSPC-PA-2 (Measurement of Dry Coating Thickness with Magnetic Gages).

b) The interior lining of all pipe and fittings shall be tested for pinholes with a nondestructive 2,500 volt test. Any defects shall be repaired prior to shipment.

c) Each pipe joint and fitting shall be marked with the date of application of the lining system and the numerical sequence of application on that date.

2) Certification

a) The pipe or fitting manufacturer shall supply a certificate attesting that the Applicator met the requirements of these Specifications, the material used was as specified, and the material was applied as required.

B. Exterior Coatings

1. All ductile iron pipe shall have an exterior coating as set forth below.

a. Factory Primed Pipe

1) Unless otherwise shown on the Plans, all exposed pipe and fittings within the limits of structure walls or exposed pipe and fittings located aboveground shall be delivered to the job site factory-blasted, cleaned, and primed with one (1) coat of Tnemec Series N140 Pota-Pox Plus, or approved equal compatible paint system.

b. Bituminous Coating

1) All pipe and fittings indicated for buried service shall have a petroleum asphaltic coating approximately one (1) mil thick factory-applied to the outside of all pipe and fittings. The finished coating shall be continuous, smooth, neither brittle when exposed to the cold nor sticky when exposed to the sun, and shall be strongly adherent to the pipe or fitting. The bituminous coating shall not be applied to the first six (6) inches of the exterior of the spigot ends.

c. Field Painting

1) Coat all exposed pipes, valves, and fittings with aliphatic polyurethane, @ 3 MDFT min.

PART 3 - EXECUTION

3.1 GENERAL

A. All pipe and fittings shall be installed in accordance with these specifications and the Plans.

3.2 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Comply with Section 01 60 00, PRODUCT REQUIREMENTS.

B. Delivery of Materials: Products shall be delivered in original, unbroken packages, containers, or bundles bearing the name of the manufacturer.

C. Storage: Products shall be carefully stored in a manner that will prevent damage and in an area that is protected from the elements.

3.3 FIELD QUALITY CONTROL

A. Contractor shall visually inspect all pipe and fittings upon delivery and set aside and damaged or flawed materials and shall not install any damaged or flawed material.

B. Contractor shall test for defects and leakage.

3.4 INSTALLATION

A. As specified on design sheets

END OF SECTION

DIVISION 44

POLLUTION CONTROL EQUIPMENT

SECTION 44 42 56 – HORIZONTAL SPLIT-CASE CENTRIFUGAL PUMPS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Work necessary to furnish and install a complete and functional horizontal split-case centrifugal pump(s) as specified here in. The pump system shall be supplied with the necessary equipment to make a complete and operable system. Any portion or part of the system, which does not operate as specified, shall be replaced and made operable at no additional cost to the Owner.

B. Related Sections:
1. Section 01 33 00 – Submittal Procedures.
2. Section 01 60 00 – Product Requirements.
3. Section 01 78 23 – Operation and Maintenance Data.
4. Section 01 79 00 – Demonstration and Training.
5. Section 09 90 00 – Painting and Protective Coatings.
6. Division 26 – Electrical.

1.2 GENERAL

A. Equipment Numbers: See supplemental data sheet(s) at end of section.

B. PUMP SIZES AND FITTING SIZES MAY BE DIFFERENT FROM THOSE SHOWN ON THE PLANS DEPENDING ON THE PUMP MANUFACTURER SELECTED. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY THE DIMENSIONS REQUIRED TO INSTALL THE PUMPS CORRECTLY.

C. Like items of equipment provided hereinafter shall be the end products of one manufacturer to achieve standardization of appearance, operation, maintenance, spare parts, and manufacturer's services.

D. Unit Responsibility: The Work requires that the horizontal split case pumps, motors, instruments, and components, complete with all accessories and appurtenances be the end product of one responsible system manufacturer or responsible system supplier. Unless otherwise indicated, the Contractor shall obtain each system from the responsible supplier of the equipment, which supplier shall furnish all components and accessories of the system to enhance compatibility, ease of operation and maintenance, and as necessary to place the equipment in operation in conformance with the specified performance, features, and functions without altering or modifying the Contractor's responsibilities under the Contract Documents. The Contractor is responsible to the Owner for providing the equipment systems as specified herein.

E. General Requirements: See Division 01, GENERAL REQUIREMENTS, which contains information and requirements that apply to the work specified herein and are mandatory for this project.

F. The equipment specified herein is included in the MANUFACTURER/ SUBCONTRACTOR Form. Refer to the bid Form and the Instructions to bidders for additional requirements.

1.3 REFERENCES

A. Terminology pertaining to pumping unit performance and construction shall conform to the ratings and nomenclature of the Hydraulic Institute Standards.

1.4 SUBMITTALS

A. General: Administrative, shop drawings, samples, quality control, and contract closeout submittals shall conform to the requirements of Section 01 33 00, SUBMITTAL PROCEDURES.

B. In addition to the requirements of Section 01 33 00, SUBMITTAL PROCEDURES, submit the following additional specific information:
   1. Shop Drawings:
      a. Make, model, weight, and horsepower of each equipment assembly.
      b. Complete catalog information, descriptive literature, specifications, and identification of materials of construction.
   2. Hydraulic Shop Testing: Performance data curves showing head, capacity, horsepower demand, and pump efficiency over the entire operating range of the specific pump, from shutoff to maximum capacity. Indicate separately the head, capacity, horsepower demand, overall efficiency, and minimum submergence required at the guarantee point.
   3. Detailed mechanical and electrical drawings showing the equipment dimensions, size, and locations of connections and weights of associated equipment.
   4. Power and control wiring diagrams, including terminals and numbers.
   5. Complete motor nameplate data, as defined by NEMA, motor manufacturer, and including any motor modifications.
   6. Factory finish system.
   7. Quality Control Submittals:
      a. Factory Functional and Performance Test Reports.
      b. Manufacturer's Certification of Compliance that the factory finish system is identical to the requirements specified herein.
      c. Special shipping, storage and protection, and handling instructions.
      d. Manufacturer's printed installation instructions.
      e. Manufacturer's Certificate of Proper Installation.
      f. Suggested spare parts list to maintain the equipment in service for a period of 1 year and 5 years. Include a list of special tools required for checking, testing, parts replacement, and maintenance with current price information.
      g. List special tools, materials, and supplies furnished with equipment for use prior to and during startup and for future maintenance.
      h. Operation and Maintenance manual.
   8. Contract Closeout submittals: Service records for maintenance performed during construction.

1.5 QUALITY CONTROL

A. Factory Tests and Adjustments: Test all equipment actually furnished.

B. Factory Test Report: Include test data sheets, curve test results, and performance test logs.

C. Functional Test: Perform manufacturer's standard pump test on equipment. Include vibration test, as follows:
   1. Dynamically balance rotating parts of each pump and its actual driving unit before final assembly.
   2. Limits:
   3. Driving Unit Alone: Less than 80 percent of NEMA MG 1 limits.
   4. Complete Rotating Assembly Including Coupling, Drive Unit, and Motor: Less than 90 percent of limits established in the Hydraulic Institute Standards at all operating speeds.
   5. Shop Performance Test:
   6. Conduct on each pump with actual motor furnished.
   7. Perform under simulated operating conditions.
   8. Test for a continuous 3-hour period without malfunction.
   9. Test Log: Record the following for each flow head condition:

1) Total head.
2) Capacity.
3) Horsepower requirements.
4) Flow measured by factory instrumentation and storage volumes.
5) Average distance from suction well water surface to pump discharge centerline for duration of test.
6) Pump discharge pressure converted to feet of liquid pumped and corrected to pump discharge centerline.
7) Calculated velocity head at the discharge flange.
8) Field head.
9) Driving motor voltage and amperage measured for each phase.

10. Adjust, realign, or modify units and retest in accordance with Hydraulic Institute Standards, if necessary.
11. Motor Test: Provide NEMA short commercial test. Document guaranteed efficiency by providing certified test report for test conducted on actual motor furnished.

1.6 OPERATION AND MAINTENANCE DATA

A. O&M Manuals: Content, form, and schedule for providing as specified in Section 01 78 23, OPERATION AND MAINTENANCE DATA.

B. Maintenance summary Forms: As specified in Section 01 78 23, OPERATION AND MAINTENANCE DATA.

1.7 WARRANTY

A. Provide warranty for a period of 12 months after the final acceptance of the equipment by the Owner and Engineer. The warranty shall stipulate that the equipment furnished is suitable for the purpose intended and free from defects of material and workmanship for the duration of the warranty. In the event the equipment fails to perform as specified, the Manufacturer shall promptly repair or replace the defective equipment without additional cost to the Owner.

B. Spare parts identified within this specification shall not be used to address warranty repairs.

PART 2 - PRODUCTS

2.1 HORIZONTAL SPLIT-CASE CENTRIFUGAL PUMPS

A. Manufacturers:
1. Advanced Engineered Pumps
2. Patterson Pumps
3. Or equal.

B. Design:
1. General:
a. Pumps shall be furnished and installed, as shown on the plans with drip rim base, coupling, coupling guard, and premium efficiency motor. The pump(s) shall meet the following design criteria.
b. All related equipment in this Specification shall be furnished as a system complete and operable in every respect. Any portion or part of the system that does not operate properly shall be replaced and made operable at no additional cost to the Owner.
c. Furnish a coordinated operating system complete with pump, motor, and drive.
d. Coordinate pump requirements with motor manufacturers and be responsible for pump and motor requirements

e. ANY EXCEPTIONS TO THESE SPECIFICATIONS MUST BE LISTED AND ATTACHED TO THE PROPOSAL. THE OWNER, BY ACCEPTANCE OF A SUBMITTED PROPOSAL, WILL REQUIRE THE SPECIFIED EQUIPMENT TO BE SUPPLIED UNLESS THOSE EXCEPTIONS DIFFERENT FROM THAT WHICH IS SPECIFIED ARE ATTACHED.

f. Compliance with the performance requirements of these Specifications will not relieve the manufacturer from his responsibilities to supply pumps, which have the structural, mechanical, and operational features specified. Equipment that is not considered an acceptable equivalent product in the opinion of the Engineer and Owner to the equipment specified will not be accepted.

g. All equipment herein shall be designed and installed in accordance with current OSHA standards.

2. Pump Casing:
   a. Pump casing shall be close-grained cast iron for working pressures up to 175 psig and shall be able to withstand stresses and strains at full operating pressures.
   b. Casing shall consist of upper and lower half castings containing the volute and suction passages, and removable bearing housings that are doweled and securely bolted to the lower half casing. Additionally, bearing housing shall be cast integrally with the lower half of the casing. Inboard and out board bearing housings shall be replaceable without need for field alignment.
   c. Casing shall be axially split along the horizontal shaft centerline with flat faced suction and discharge flanges and mounting feet cast integral with the lower half casing.
   d. The upper and lower half casings shall be doweled to permit easy removal and accurate replacement of the upper half for inspection and maintenance. The upper half casing shall be completely removable without disturbing the suction or discharge piping connections. Removal of upper casing half shall allow removal of rotating elements without disconnecting suction or discharge piping.
   e. Suction and discharge connections shall be sized to reduce friction losses and to reduce turbulence and pipe noise. All suction and discharge flanges shall be designed for straight through nut and bolt flange connections. Flanges shall be of 125# ASA Standard. Suction and discharge flanges shall be on a common centerline in both the horizontal and vertical planes.
   f. Tapped and plugged holes shall be provided for priming, vent, draining and gauge connections.
   g. Upper half casing shall have a drilled and tapped connection at the highest point on the casing for the purpose of pump priming and/or air release.
   h. Lower half casing shall be drilled and tapped to allow for drainage piping.
3. Impeller:
   a. Impeller shall be of the double suction type made of bronze to minimize inlet losses and accommodate high suction lifts.
   b. Impeller shall be hydraulically and statically balanced to reduce bearing loading.
   c. Impellers shall be fixed axially along the shaft by sleeves and sleeve nuts, and secured to the shaft through a precision fit and full length key.
   d. Impeller hub shall have sufficient metal thickness to allow machining for installation of impeller wear rings.
   e. Maximum diameter shall be less than 94% of shaft to casing lip distance for quiet operation.
4. Shaft:
   a. The shaft shall be made of SAE-1045 steel of ample size to operate under load with a minimum of deflection.
   b. Shaft shall be accurately machined along its entire length. A keyway shall be machined at the coupling end. Shaft shall not be threaded adjacent to the impeller.
   c. Shaft sleeves shall be made of bronze and shall protect the shaft from wear and from contact with the pumped liquid. Shaft sleeves shall be locked in place by

threaded bronze shaft sleeve nuts. An O ring shall be furnished under the sleeve to prevent leakage.

5. Stuffing Box Housings:
   a. Stuffing box housings shall be made of cast iron separate from the casing and mounted in cylindrical fits in the casing.
   b. Stuffing box/bearing brackets shall be drilled and tapped for drain connections.
   c. Stuffing box shall consist of six rings of graphited acrylic yarn packing with a split gland to permit removal and access to packing.
   d. Piping, valve and seal cages shall be supplied to provide packing lubrication and shall be mounted on the upper half of the casing.
6. Bearings and Bearing Housings:
   a. Bearings shall be ball type, single row inboard and double row outboard, selected to carry radial and thrust loads.
   b. Bearing housings shall be accurately doweled and accurately positioned onto the bearing shoulders located on the lower half casing to ensure accurate alignment.
   c. The outboard bearing shall be retained by a bearing nut and lock washer.
   d. Bearing shall be grease lubricated.
   e. Bearing housings shall be bolted to the ends of the bearing bracket/stuffing box and shall be male/female fitted for a full 360 degrees to assure positive alignment.
   f. The housings shall provide a fit for the inboard bearing that allows freedom for thermal expansion while the outboard bearing shall be clamped in place to take all thrust loads and keep the rotating element in its proper axial location.
   g. Openings for adding new grease and draining old grease shall be provided.
7. Wear Rings:
   a. Wear rings shall be provided on both the impeller and casing so that clearances can be maintained throughout the life of the rings and minimize recirculation.
   b. Impeller wear rings shall be mounted on the hubs to provide for to provide for impeller clearances.
   c. . Casing wear rings shall be installed with an anti-rotation device and designed to restrict leakage across the ring fit.
   d. Wear rings shall be bronze.
8. Baseplate, Coupling, and Guard:
   a. The Baseplate shall be steel with drip rim, and designed to resist torsional movement and to support the combined weight pump and driver. Final alignment of pump and driver shall be made after grouting and installation, and shall be approved by the manufacturer/representative prior to operation.
   b. The pump coupling shall be of the flexible type with steel flanges connected by a rubber sleeve for torque transmission. Coupling hubs shall be secured to the driver and driven shafts by a set screw located over the key.
   c. Coupling guard shall be the all-metal type.

2.2 ACCESSORIES

A. Equipment Identification Plate: 16-gauge stainless steel with 1/4-inch die-stamped equipment tag number securely mounted in a readily visible location.

B. Lifting Lugs: Shall be provided on all modular section, including motor, and pump. Lugs shall be adequate to lift two times the equipment weight.

2.3 FACTORY FINISHING

A. Prepare, prime, and finish coating and lining shall be in accordance with Section 09 90 00, PAINTING AND PROTECTIVE COATINGS, System No. 4.

2.4 MOTOR REQUIREMENTS

A. Motor shall be selected in accordance with the pump's non-overloading performance characteristics. Motor horsepower rating shall be chosen in keeping with the pump's possible peak horsepower requirements. In sizing the motor, the pump maximum brake horsepower shall not exceed the motor's nominal nameplate rating.
   1. Motor Rating
      a. The motor shall be 200 HP.
      b. The motor shall be 1800 RPM.
      c. The motor shall be 460 Volts.
      d. The motor shall have a TEFC enclosure.

B. The motor shall be mounted with the pump of the baseplate at the pump manufacturer's plant and shipped as one unit.

C. Motor shall be as specified in 26 05 15 Electric Motors and following supplement data sheets.

2.5 ELECTRICAL COMPONENTS AND ACCESSORIES

A. General:
   1. Conform to Division 26, ELECTRICAL.
   2. Provide all necessary electrical components and wiring for a complete, functional system.
   3. Where indicated, motor starters for constant-speed, 460-volt motors shall be provided in a separate motor control center specified in Division 26, ELECTRICAL. Provide all necessary control functions to properly interface with this motor starter.

B. Wiring: The Drawings and Specifications indicate the anticipated wiring for the equipment provided under this section. If additional wiring is required, or if required wiring does not match what is indicated, the Contractor shall make the necessary modifications to the electrical wiring and documentation as part of the lump sum price. Wiring shall meet the requirements of Division 26, ELECTRICAL, and NFPA 70. Insulation shall be rated 600 volts, minimum. Low-voltage (24V) signals shall be run in twisted, shielded pair cable.

C. Electrical Raceways: Electrical wiring shall be installed in conduit meeting the requirements of Division 26, ELECTRICAL. Raceways shall be installed in accordance with Division 26, ELECTRICAL, and NFPA 70.

2.6 TOOLS AND SPARE PARTS

A. Tools: The work includes furnishing two complete sets of special tools if recommended by the manufacturer for maintenance and repair of each separate type of equipment; tools shall be stored in tool boxes, and identified with the equipment number by means of stainless steel or solid plastic name tags attached to the box. Spare tools are not required.

B. Spare Parts:
   1. All equipment, if recommended, shall be furnished with the specified manufacturers spare parts as indicated in the individual equipment sections.
   2. Necessary spare parts shall be tagged by project equipment number and identified as to part number, equipment manufacturer and subassembly component (as appropriate). Spare parts subject to deterioration such as ferrous metal items and electrical components shall be properly protected by lubricants or desiccants and encapsulated in hermetically sealed plastic wrapping. Spare parts with individual weights less than 50 pounds and dimensions less than 2 feet wide, or 18 inches high, or 3 feet in length shall be stored in a wooden box with hinged wooden cover and locking clasp. Hinges shall be strap type. The box shall be painted and identified with stenciled lettering stating the name of the

equipment, equipment numbers and the words “spare parts.” A neatly typed inventory of spare parts shall be taped to the underside of the cover.

3. If recommended, provide at a minimum the following spare parts for the equipment:
   a. Complete set packing.
   b. Complete set pump bearings.
   c. Complete set gaskets and lip seals.
   d. Complete set of shaft sleeves.
   e. Wear rings.

2.7 FABRICATION

A. Shop Assembly: The system shall be factory assembled and tested.

B. Shop/Factory Finishing: Shop prime coatings shall conform to the requirements of Section 09 90 00, PAINTING AND PROTECTIVE COATINGS; coordinate color with Owner.

PART 3 - EXECUTION

3.1 INSTALLATION

A. The pump(s) shall be furnished for installation by the Contractor in accordance with the manufacturer’s printed instructions, Plans and as specified herein. The Contractor shall furnish all necessary foundation bolts required of the size and type recommended by the pump manufacturer (minimum ASTM A307, Grade A), unless shown otherwise on the Plans. The bolts shall be carefully set by means of a jig or template. All pump foundations shall be Class “A” concrete. They shall be accurately located and all exposed concrete surfaces shall receive a rubbed finish which will be smooth and uniform and free from all form marks.

B. The erection work shall include the furnishing of the necessary oil and grease for initial operation. The grades of fuel, oil, and grease shall be in accordance with the recommendations of the pump manufacturer.

C. The pump and motor of each unit shall be assembled in its position and shall be carefully set and aligned by a competent mechanic. The base of the unit shall be shimmed or wedged to level position in all directions on the foundation blocks. Pump alignment shall be checked under the supervision of the pump manufacturer’s representative before grouting.

D. Adjust alignment of pump and motor shafts for angular and parallel alignment by use of calibrated **laser** alignment equipment and procedures shall comply with the method specified in the Hydraulic Institute's Standards for Centrifugal, Rotary & Reciprocating Pumps - "Instructions for Installation, Operation and Maintenance."

E. The base shall be grouted by the deep grouting method using “Embeco”, a product of Master Builders or “Ferrolith G”, a product of Sonneborn-Contach or equal as an admixture in the cement mortar grout to prevent shrinkage. The admixture shall be used in accordance with the recommendations of the manufacturer using a mix of one part admixture, one part cement, and one part sand. Grout shall be placed under the entire base being careful to fill all voids and space.

F. After the base has been grouted, the alignment of the unit shall be rechecked. If the connected shafts of the pump and motor are found to be in true alignment, the motor and pump shall be secured by approved means.

G. Install automatic air release valve at the top of pump casing and plumb to drain any air/water vented by the ARV.

3.2 FINISHING

A. Painting of all pumps and motors shall be as specified in SECTION 09 90 00, PAINTING AND PROTECTIVE COATINGS of these Specifications.

3.3 FIELD QUALITY CONTROL

A. Initial operation of the pumps shall take place in the presence of a representative of the pump manufacturer, and in the presence of a licensed electrician. The operation shall be intermittent to the extent that each pump shall be started and stopped at least three (3) times. The operation shall extend over a long enough period to assure that the equipment has been installed properly and is in satisfactory condition. Power and water will be furnished by the Owner. All other costs shall be borne by the Contractor.

B. Functional Tests: Conduct on each pump.
   1. Alignment: Test complete assemblies of actual pump with motors furnished for correct rotation, proper alignment and connection, and quiet operation.
   2. Vibration Test:
   3. Test with units installed and in normal operation, and discharging to the connected piping systems at rates between the low discharge head and high discharge head conditions specified, and with the actual building structures and foundations provided shall not develop vibration exceeding limits specified in HIS 9.6.4 at all operating speeds.
   4. If units exhibit vibration in excess of the limits specified adjust or modify as necessary. Units which cannot be adjusted or modified to conform as specified shall be replaced.
   5. Flow Output: Measured by pump station instrumentation.
   6. Operating Temperatures: Monitor bearing areas on pump and motor for abnormally high temperatures.

C. Performance Test: In accordance with Hydraulic Institute Standards, latest standard.

3.4 MANUFACTURER'S SERVICES

A. A manufacturer's representative for the equipment specified herein shall be present at the job site for the minimum person-days listed for the services herein under, travel time excluded:
   1. Installation, Startup, and Testing Services:
   2. 1 person day for installation assistance, inspection, and Certificate of Proper Installation.
   3. 1 person-day for functional and performance testing.
   4. Provide Qualifications of Manufacturer's Representative.
   5. Training Services:
   6. 1 person-day of prestart classroom or jobsite training of Owner's personnel.
   7. Training of Owner's personnel shall be at such times and at such locations as required and approved by the Owner.

3.5 MANUFACTURER'S CERTIFICATES

A. Provide Manufacturer's certificate(s) in accordance with Section 01 79 00, DEMONSTRATION AND TRAINING.

3.6 SUPPLEMENT

A. The supplement listed below, following "End of Section," is a part of this Specification.
   1. Horizontal Split-Case Pump Data Sheet.

END OF SECTION

Section 44 42 56.1: HORIZONTAL SPLIT-CASE PUMP DATA SHEET

PROJECT:	Addison Surveyor Pump Station Improvements
OWNER:	Town of Addison
EQUIPMENT NAME(S):	High Service Pump #1
EQUIPMENT TAG NUMBER(S):	HSP-1
TOTAL PUMPS REQUIRED:	1

MANUFACTURERS	SUGGESTED MODEL
Advanced Engineered Pumps	12x10x17 Model 8000 SC 80
Patterson Pumps	12x10 MAA-C
Or equal	

SERVICE CONDITIONS

Liquid Pumped:	Water
Largest solid:	N/A
Liquid Temperature:	70 F

PERFORMANCE REQUIREMENTS

The pump shall perform as specified at the following flow rates:

Design Flow Rate:	3,000	gpm
Design TDH:	175	ft
Min. Efficiency @ Design Flow:	82	%
Shutoff Head (Min):	215	ft

EQUIPMENT DESCRIPTION

Pump Type:	Double Suction Horizontal Split-Case Centrifugal	Rotation Direction:	
Impeller:	Bronze or Stainless Steel	Seals:	Packing
Casing:	Class 30 cast iron		with seal cages and seal water
Wear Rings:	Impeller and casing		piping

MOTOR DATA

Type:

Manufacturer: WEG or equal

Hazardous Location: ☐ Furnish motors for hazardous (classified) locations that conform to UL 674 and have an applied UL listing marking.

Motor Horsepower:	200	Mounting Type	☒ Horizontal ☐ Vertical
Voltage	460	Enclosure Type	TEFC
Phase	3	Material	
Frequency	Hz		

Synchronous Speed 1800 rpm max ☐ Multispeed, Two Speed:_____ rpm

Service Factor: ☐ 1.0 ☒ 1.15

☐ Adjustable Speed Drive: See Division 26, ELECTRIC. Provide Inverter Duty Rated Motors.

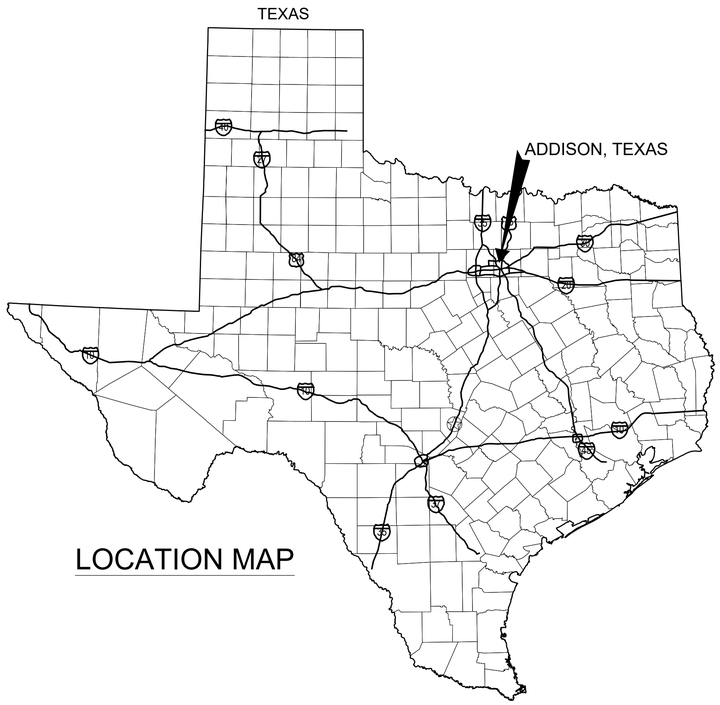
Windings: ☐ One ☐ Two ☐ Thermal protection embedded in windings.
Motor nameplate horsepower shall not be exceeded at any operational point.

Provide ☐ Space Heater ☐ Oversize main terminal (conduit) box for motors ☐ Moisture detection switches
Additional Motor Requirements: See Section 26 05 15, ELECTRIC MOTORS

SPECIAL FEATURES / NOTES

Suggested models are for reference only. Other models meeting the design criteria will be considered.

SURVEYOR PUMP STATION IMPROVEMENTS
TOWN OF ADDISON
ADDISON, TEXAS



LOCATION MAP

N

BASIS

VICINITY MAP

NO SCALE

SHEET INDEX		
DRAWING NO.	SHEET NO.	TITLE
G-01	1	COVER SHEET
G-02	2	PROPOSED IMPROVEMENTS

GARVER PROJECT NO. 18088025
SEPT. 2018

GARVER
14160 N. Dallas Parkway
Suite 850
Dallas, TX 75240
(214) 451-2950

GARVER
TEXAS REGISTRATION NO. F-5713

STATE OF TEXAS
LANCE P. KLEMENT
113630
LICENSED PROFESSIONAL ENGINEER
Digitally Signed 9/10/2018

REV.	DATE	DESCRIPTION	BY

ADDISON INFRASTRUCTURE

CITY OF ADDISON
ADDISON, TEXAS

ADDISON SURVEYOR
PUMP STATION IMPROVEMENTS

COVER SHEET

JOB NO.: 18088025
DATE: SEPT. 2018
DESIGNED BY: LDK
DRAWN BY: VLS

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
G-01

SHEET NUMBER **1**

File: L:\2017\17088135 - Addison Surveyor Pump Station Imps\Drawings\G003 EXISTING SITE PHOTS.dwg Last Save: 9/6/2018 12:10 PM Last saved by: EAFlores
Last plotted by: Flores, Ernesto A Plot Style: Garver2012mono.ctb Plot Scale: 1:1 Plot Date: 9/7/2018 5:02 PM Plotter used: DWG To PDF.pc3

KEY NOTES:

1. REMOVE AND REPLACE MOTOR, PUMP AND BASE PLATE. CONTRACTOR TO COORDINATE NEW MOUNTING BOLT LOCATIONS AS NEEDED. CONTRACTOR SHALL MAKE NECESSARY MODIFICATIONS TO PUMP SYSTEM AND PROVIDE PIPING AND FITTINGS AS REQUIRED TO INSTALL NEW PUMP AND MOTOR. SEE SPECIFICATIONS 26 AND 44 FOR ELECTRICAL AND PUMP REQUIREMENTS.
2. REPAIR CONCRETE ON PUMP BASE AS NEEDED.
3. RECONNECT EXISTING ELECTRICAL CONDUCTORS TO NEW MOTOR.

GARVER

TEXAS REGISTRATION NO. F-5713

STATE OF TEXAS
LANCE P. KLEMENT
113630
LICENSED PROFESSIONAL ENGINEER

Digitally Signed 9/10/2018

REV.	DATE	DESCRIPTION	BY

ADDISON INFRASTRUCTURE

CITY OF ADDISON
ADDISON, TEXAS

ADDISON SURVEYOR
PUMP STATION IMPROVEMENTS

PROPOSED IMPROVEMENTS

JOB NO.: 18088025
DATE: SEPT. 2018
DESIGNED BY: LDK
DRAWN BY: VLS

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
G-02

SHEET NUMBER **2**

File: L:\2017\17088135 - Addison Surveyor Pump Station Imps\Drawings\G003 EXISTING SITE PHOTS.dwg Last Save: 9/7/2018 5:05 PM Last saved by: EAFlores
Last plotted by: Flores, Ernesto A Plot Style: Garver2012mono.ctb Plot Scale: 1:1 Plot Date: 9/10/2018 11:00 AM Plotter used: DWG To PDF.pc3

Work Session and Regular Meeting **11.**

Meeting Date: 11/13/2018

Department: Special Events

AGENDA CAPTION:

Consider Action to Approve a **Resolution for an Events Sponsorship Agreement with DCO Reality, Inc., (UDR) for the Purposes of Sponsoring Events at Vitruvian Park to Include, but not limited to, Vitruvian Nights Live, Vitruvian Salsa Nights and the Vitruvian Holiday Lights Display and Authorize the City Manager to Execute the Agreement** in an Amount not to Exceed $185,000.

BACKGROUND:

The Town of Addison and DCO Reality, Inc., (UDR) the developer/manager of Vitruvian Park entered into an event sponsorship reimbursement agreement in 2012 that is presented to Council for renewal annually. UDR desires to conduct and present a variety of public events within the Vitruvian Park area. The Town desires to participate in the public events and activities as a sponsor and as such entered into this agreement with UDR, for sponsorship reimbursement purposes in the amount of $185,000.

These funds are used as referenced below:

- Vitruvian Christmas Lights Display
- Vitruvian Nights Live
- Vitruvian Salsa Nights
- Additional events as money is available

From 2012 to 2014, the contracting of the vendor to install, maintain and remove the holiday lights component of the events was hired directly by UDR and paid for from the Towns sponsorship funds. In 2014, the City Attorney recommended that the Town bid out and hire the lighting contractor for the holiday display directly. As of 2015, Town staff manages the bidding and procurement of the contractor to install, maintain and remove the holiday lights each season and funds it directly from the sponsorship funds before any remaining funds are allocated to UDR.

Other events that are funded from the sponsorship include, but are not limited to, Vitruvian Nights Live and Vitruvian Salsa Nights. The amount of funds remaining that are available to reimburse UDR for these events may vary from year to year after the Town has paid for the holiday lighting display. This agreement will cover the 2019 event season.

The amount for this agreement is budgeted out of the Hotel Fund and is included in the Fiscal Year (FY) 2019 budget.

RECOMMENDATION:

Administration recommends approval.

Attachments

Resolution - Events Agreement

TOWN OF ADDISON, TEXAS

RESOLUTION NO. _____

A RESOLUTION OF THE CITY COUNCIL OF THE TOWN OF ADDISON, TEXAS APPROVING AN EVENTS AGREEMENT BETWEEN THE TOWN OF ADDISON AND DCO REALTY, INC., FOR THE MANAGEMENT, OPERATION, COORDINATION AND CONTROL OF A VARIETY OF EVENTS AT VITRUVIAN PARK IN AN AMOUNT NOT TO EXCEED $185,000.00, AUTHORIZING THE CITY MANAGER TO EXECUTE THE AGREEMENT, AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the Town of Addison is authorized by Chapter 351 of the Texas Property Tax Code to levy a hotel occupancy tax to be used to directly enhance and promote tourism and the convention and hotel industry; and

WHEREAS, the Vitruvian Nights Live, Vitruvian Salsa Festival, Vitruvian Lights and other special events conducted by DCO Realty, Inc., within Vitruvian Park, bring thousands of visitors and tourists to the Town of Addison, many of whom will stay at Addison hotels.

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

Section 1. The Events Agreement between the Town of Addison and DCO Realty, Inc., for the management, operation, coordination and control of a variety of events at Vitruvian Park in an amount not to exceed $185,000.00, 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 13th day of November 2018.

_____
Joe Chow, Mayor

ATTEST:

By: _____
Irma Parker, City Secretary

APPROVED AS TO FORM:

By: _____
Brenda N. McDonald, City Attorney

EXHIBIT A

STATE OF TEXAS §
§
COUNTY OF DALLAS §

EVENTS AGREEMENT

This Events Agreement ("Agreement") is made and entered into as of the ___ day of October, 2018 ("Effective Date") by and between the Town of Addison, Texas ("City" or "Addison") and DCO Realty, Inc., a Delaware corporation ("DCO") (the City and DCO are sometimes referred to herein together as the "parties" and individually as a "party").

Recitals:

1. Except for properties owned by the City, DCO is the owner, manager, or otherwise has control over that area within the City that is known as Vitruvian Park and that is generally located along each side of Vitruvian Way, south of Spring Valley Road, and east of Marsh Lane.

2. DCO desires to conduct and present a variety of public events and activities within that area as described herein, and the City desires to participate in the public events and activities as set forth in this Agreement.

3. The public events and activities within Vitruvian Park attract individuals throughout the region to the City.

NOW, THEREFORE, for and in consideration of the mutual covenants and agreements hereinafter set forth, the benefits flowing to each of the parties hereto, and other good and valuable consideration, the City and DCO do hereby contract and agree as follows:

Section 1. Events; Term. DCO will conduct, present, manage, operate, coordinate, and control a variety of events, including Vitruvian Nights Live, Vitruvian Lights, and Vitruvian Salsa Festival (collectively, the "Events" and each an "Event"), during the period of time from October 1, 2018 to September 30, 2019 (the "Events Period"). The Events will be conducted at and within that area of the City depicted and described in the attached Exhibit A ("Event Site"). A portion of the Event Site is a public park and open space area generally referred to as Vitruvian Park, which portion is shown on Exhibit A (and is referred to herein as the "Vitruvian Park Portion"). DCO is solely responsible for the Events.

DCO will conduct each Event in accordance and compliance with the terms and conditions hereof and all laws, ordinances, rules, regulations, standards, guidelines, and policies of the City or any other governmental authority having jurisdiction over the Event or the Event Site.

Bands and music performers selected to perform at the Events shall not conflict with those scheduled to perform at events produced by City. For the following events, DCO will provide the names of contracted performers as follows:

- Vitruvian Nights Live (June-August 2019) - DCO will provide names of contracted performers (bands) by December 1, 2018

- Vitruvian Salsa Festival (August 2019) – DCO will provide names of contracted performers (bands) by February 1, 2019.

- Vitruvian Lights (November-December 2019) - DCO will provide names of contracted performers (bands) by June 1, 2019

This Agreement shall be effective as of the Effective Date first set forth above and continue in effect through September 30, 2019, subject, however, to the termination provisions of this Agreement.

Section 2. Sponsorship; Sponsorship Benefits. The City will be a sponsor of the Events, as set forth herein. The City shall make available to DCO an annual sponsor fee (the "Sponsor Fee") in an annual amount not to exceed $185,000.00 to cover the costs of the Events during the Event Period. It is understood and agreed that the City will bid, hire and provide payment directly to a lighting contractor for the Vitruvian Lights annual holiday light show ("Light Show"). The cost of the Light Show shall be deducted from the Sponsor Fee; and the remaining balance, if any, shall be submitted to DCO to cover the costs of other Events scheduled during the Events Period.

The Events will be designed to enhance and promote the identity of the Vitruvian Park area of Addison, which will in turn benefit retail, restaurant and housing providers in that area. The Events will create an entertainment amenity for all Addison residents and for those that live or work in the surrounding area and for regional tourists. In addition to these benefits to the City, for the City's sponsorship of each Event, DCO will provide the City with the following benefits:

(a) a listing of the City logo as a sponsor of the Events on collateral pieces, including but not limited to posters, fliers, invitations, admission passes, tickets, brochures, programs, etc.;

(b) a listing of the City logo as a sponsor of the Events on all print, broadcast, outdoor and electronic advertising, including but not limited to newspaper ads, magazine ads, radio ads, billboards, newsletters, web communications, etc.;

(c) a listing of the City as a sponsor of the Events in all press releases, and other communications regarding the Events;

(d) a listing of the City logo as a sponsor on all street banners and signs in connection with the Events;

(e) the inclusion of the City logo on the web site (www.vitruvianpark.com) and links to the City's websites (www.addisontexas.net); and

(f) provide recognition of the Town of Addison from the stage at the Events.

Section 3. Event Promotion, Advertising. Any promotion or advertising by, for, or on behalf of DCO or the City of any of the Events that references Addison or the Vitruvian Park

Portion shall, before being used for promotion or advertising purposes, first be submitted to Addison or DCO, as applicable, for its prior review and approval (if any), which approval shall not be unreasonably withheld, conditioned or delayed. In the event Addison or DCO, as applicable, fails to disapprove (with specific comments regarding the reason(s) for such disapproval) such promotion or advertising within ten (10) calendar days after the same is submitted (or resubmitted after modifications, as the case may be) to Addison or DCO, as applicable, such promotion or advertising shall be deemed approved. The parties agree that the type of promotions and advertising provided for the same or similar events in the Town of Addison prior to this Agreement are acceptable.

The City will promote the Events and will, among other things, (a) list the Events on the City's website (www.addisontexas.net) with a link to DCO's website (www.vitruvianpark.com), (b) display banners (as approved by the City, if at all and in the City's sole discretion, and subject to availability) across Belt Line Road advertising the Events (which banners, if any, will be supplied by DCO to the City no later than three (3) days prior to display), and (c) promote the Events on the City's social media sites.

Section 4. Termination.

(a) Either party may terminate this Agreement if the other party commits a material breach of this Agreement, and

(i) such breach remains uncured for a period of 10 calendar days after notice thereof (which notice shall specifically identify the breach) is received by the breaching party, or

(ii) if the breach cannot with diligence be cured within said 10 day period, if within such period the breaching party provides the non-breaching party written notice of the curative measures which it proposes to undertake, and proceeds promptly to initiate such measures to cure such breach, and thereafter prosecutes the curing of such breach with diligence and continuity, the time within which such failure may be cured shall be extended for such period as may be necessary to complete the curing of such breach with diligence and continuity, not to exceed 30 calendar days following the occurrence of the breach unless otherwise agreed by the parties,

Upon termination of this Agreement by Addison pursuant to this subsection 4(a), Addison will pay to DCO any amounts then due pursuant to this Agreement through the date of such termination, but no further or additional payments will be made (and if any payment has been made for which services have not been provided, DCO will reimburse to Addison proportional amount of such payment equal to the value of the services not received). Upon termination of this Agreement by DCO pursuant to this subsection 4(a), Addison will pay to DCO the then unpaid portion of the Sponsor Fee.

(b) This Agreement may also be terminated by either party hereto for any reason or for no reason upon giving at least thirty (30) days written notice of such termination to the other party hereto. If Addison terminates this Agreement pursuant to this subsection 4(b), Addison will pay to DCO the then unpaid portion of the Sponsor Fee. If DCO terminates this Agreement pursuant

to this subsection 4(b), Addison will pay to DCO any amounts then due pursuant to this Agreement through the date of such termination but no further or additional payments will be made (and if any payment has been made for which services have not been provided, DCO will reimburse to Addison proportional amount of such payment equal to the value of the services not received).

(c) Payment obligations under this Section 4 shall survive termination of this Agreement.

Section 5. Insurance. At all times in connection with this Agreement, DCO shall purchase and maintain in a company or companies lawfully authorized to do business in Texas such insurance coverages set forth in Section 67-16(b)(4) of the Code of Ordinances of the City, a copy of which is attached as Exhibit B to this Agreement (with the addition that the requirement for commercial general liability shall also include coverage for death); provided, however, that the City Manager may waive the requirement of any of such insurance where, in the sole opinion of the City Manager, such insurance is not necessary to cover or protect a function or purpose of this Agreement.

In addition to the provisions of Section 67-16(b)(4), DCO shall specifically endorse applicable insurance policies as follows:

(i) The Town of Addison, Texas shall be named as an additional insured with respect to General Liability and Automobile Liability.

(ii) All liability policies shall contain no cross liability exclusions or insured versus insured restrictions applicable to the claims of the Town of Addison, Texas.

(iii) A waiver of subrogation in favor of the Town of Addison, Texas, its elected officials, its officers, employees, and agents shall be contained in each policy required herein.

(iv) Reserved.

(v) All insurance policies shall be endorsed to the effect that the Town of Addison, Texas will receive at least sixty (60) days' notice prior to cancellation or non-renewal of the insurance.

(vi) All insurance policies, which name the Town of Addison, Texas as an additional insured, must be endorsed to read as primary coverage regardless of the application of other insurance.

(vii) Required limits may be satisfied by any combination of primary and umbrella liability insurances.

(viii) DCO may maintain reasonable and customary deductibles, subject to approval by the Town of Addison, Texas.

(ix) Insurance must be purchased from insurers that are financially acceptable to the Town of Addison, Texas and licensed to do business in the State of Texas.

Certificates of Insurance shall be prepared and executed by the insurance company or its authorized agent, delivered to DCO and the City prior to the commencement of each Event, and shall:

(i) List each insurance coverage described and required herein. Such certificates will also include a copy of the endorsements necessary to meet the requirements and instructions contained herein.

(ii) Specifically set forth the notice-of-cancellation or termination provisions to the Town of Addison.

Upon request, DCO shall furnish the Town of Addison with complete copies of all insurance policies certified to be true and correct by the insurance carrier.

Section 6. **Responsibility, Assumption of Risk.** In connection with the Events and this Agreement and for the consideration set forth herein, **DCO agrees to assume and does hereby assume all responsibility and liability for any and all damages or destruction of any property or personal injuries (including death) to any person of whatsoever kind or nature caused by, arising out of, or in connection with DCO's conducting, presentation, management, operation, coordination, and control of the Events as set forth in Section 1 of this Agreement or by any act or omission of any DCO Persons (as defined in Section 7, below). Addison assumes, and shall have, no responsibility for any property placed by DCO or by any DCO Persons on the Event Site, and DCO hereby RELEASES Addison and all Addison Persons from any and all claims or liabilities of any kind or nature whatsoever for any loss, injury or damages whatsoever to persons or property that are sustained by reason of the occupancy of the Event Site.**

DCO, for itself and the DCO Persons do hereby ASSUME THE RISK of all conditions, whether dangerous or otherwise, in and about the Vitruvian Park Portion, and waive any and all specific notice of the existence of any defective or dangerous condition in or about the same. The provisions of this paragraph shall survive the termination of this Agreement and the Events.

The provisions of this Section shall survive the expiration or termination of this Agreement.

Section 7. **DCO's INDEMNITY OBLIGATION. FOR THE CONSIDERATION SET FORTH IN THIS AGREEMENT, DCO COVENANTS AND AGREES TO FULLY DEFEND, INDEMNIFY AND HOLD HARMLESS ADDISON, ITS ELECTED AND APPOINTED OFFICIALS, ITS OFFICERS, EMPLOYEES, REPRESENTATIVES, AND VOLUNTEERS, INDIVIDUALLY OR COLLECTIVELY, IN BOTH THEIR OFFICIAL AND PRIVATE CAPACITIES (COLLECTIVELY, "ADDISON PERSONS" AND EACH AN "ADDISON PERSON"), FROM AND AGAINST ANY AND ALL CLAIMS, LIABILITY, JUDGMENTS, LAWSUITS, DEMANDS, HARM, LOSSES, DAMAGES, PROCEEDINGS, SUITS, ACTIONS, CAUSES OF ACTION, LIENS, FEES, FINES, PENALTIES, EXPENSES, OR COSTS, OF ANY KIND**

AND NATURE WHATSOEVER MADE UPON OR INCURRED BY THE CITY OR ANY OTHER ADDISON PERSON, WHETHER DIRECTLY OR INDIRECTLY, (THE "CLAIMS"), THAT ARISE OUT OF, RESULT FROM, OR RELATE TO:

(1) DCO'S CONDUCTING, PRESENTATION, MANAGEMENT, OPERATION, COORDINATION, AND CONTROL OF THE EVENTS AS SET FORTH IN SECTION 1 OF THIS AGREEMENT,

(2) REPRESENTATIONS OR WARRANTIES BY DCO UNDER THIS AGREEMENT,

(3) ANY PERSONAL INJURIES (INCLUDING BUT NOT LIMITED TO DEATH) TO ANY DCO PERSONS (AS HEREINAFTER DEFINED) ARISING OUT OF OR IN CONNECTION WITH DCO'S CONDUCTING, PRESENTATION, MANAGEMENT, OPERATION, COORDINATION, AND CONTROL OF THE EVENTS, AND/OR

(4) ANY OTHER ACT OR OMISSION UNDER, IN CONNECTION WITH, OR IN PERFORMANCE OF THIS AGREEMENT BY

(I) DCO OR BY ANY OF ITS OWNERS, PARTNERS, OFFICERS, DIRECTORS, MANAGERS, EMPLOYEES, AGENTS, REPRESENTATIVES, CONSULTANTS, CONTRACTORS, SUBCONTRACTORS, LICENSEES, INVITEES, OR CONCESSIONAIRES, OR ANY OTHER PERSON OR ENTITY FOR WHOM DCO IS LEGALLY RESPONSIBLE, BY

(II) ANY AFFILIATE OF DCO OR ANY AFFILIATE'S OWNERS, PARTNERS, OFFICERS, DIRECTORS, MANAGERS, EMPLOYEES, AGENTS, REPRESENTATIVES, CONSULTANTS, CONTRACTORS, SUBCONTRACTORS, LICENSEES, INVITEES, OR CONCESSIONAIRES, OR OF ANY OTHER PERSON OR ENTITY FOR WHOM SUCH AFFILIATE IS LEGALLY RESPONSIBLE, AND/OR BY

(III) THE RESPECTIVE OWNERS, PARTNERS, OFFICERS, MANAGERS, EMPLOYEES, DIRECTORS, AGENTS, REPRESENTATIVES, CONSULTANTS, CONTRACTORS, SUBCONTRACTORS, LICENSEES, AND CONCESSIONAIRES OF THE ENTITIES AND PERSONS DESCRIBED IN THE FOREGOING (I) AND (II) (THE ENTITIES AND PERSONS DESCRIBED IN THE FOREGOING (I), (II), AND (III) BEING COLLECTIVELY "DCO PERSONS").

SUCH DEFENSE, INDEMNITY AND HOLD HARMLESS SHALL AND DOES INCLUDE DAMAGES ALLEGED OR FOUND TO HAVE BEEN CAUSED IN WHOLE OR IN PART BY THE NEGLIGENCE OF ADDISON AND/OR ANY OTHER ADDISON PERSON, OR CONDUCT BY ANY ADDISON AND/OR ANY OTHER ADDISON PERSON THAT WOULD GIVE RISE TO STRICT LIABILITY OF ANY KIND, BUT DOES NOT INCLUDE ANY CLAIMS FOUND TO BE CAUSED BY THE GROSS NEGLIGENCE OR WILLFUL MISCONDUCT OF ADDISON AND/OR ANY OTHER ADDISON PERSON. HOWEVER, DCO'S LIABILITY UNDER THIS CLAUSE SHALL BE REDUCED BY THAT PORTION OF THE TOTAL AMOUNT OF THE CLAIMS (INCLUDING DEFENSE FEES AND COSTS) EQUAL TO THE ADDISON PERSON OR ADDISON PERSONS' PROPORTIONATE SHARE OF THE NEGLIGENCE, OR CONDUCT THAT WOULD GIVE RISE TO STRICT LIABILITY OF ANY KIND, THAT CAUSED THE LOSS.

FOR PURPOSES HEREOF, "AFFILIATE" MEANS (A) ALL PERSONS, CORPORATIONS, AND OTHER ENTITIES, IF ANY, CONTROLLED BY DCO, (B) ALL PERSONS, CORPORATIONS, AND OTHER ENTITIES WHICH CONTROL DCO ("PARENT"), AND (C) ALL PERSONS, CORPORATIONS, AND OTHER ENTITIES CONTROLLED BY A PARENT; AND "CONTROL" MEANS THE POSSESSION, DIRECTLY OR INDIRECTLY, OF THE POWER TO DIRECT OR CAUSE THE DIRECTION OF THE MANAGEMENT AND POLICIES OF AN ENTITY, WHETHER THROUGH OWNERSHIP OF VOTING SECURITIES OR PARTNERSHIP INTERESTS, BY CONTRACT, OR OTHERWISE.

EACH PARTY SHALL PROMPTLY ADVISE THE OTHER PARTY IN WRITING OF ANY CLAIM OR DEMAND AGAINST ANY ADDISON PERSON, DCO, OR ANY DCO PERSON RELATED TO OR ARISING OUT OF DCO'S ACTIVITIES UNDER THIS AGREEMENT, AND, TO THE EXTENT REQUIRED UNDER THIS SECTION 7, DCO SHALL SEE TO THE INVESTIGATION AND DEFENSE OF SUCH CLAIM OR DEMAND AT DCO'S SOLE COST AND EXPENSE. THE ADDISON PERSONS SHALL HAVE THE RIGHT, AT THE ADDISON PERSONS' OPTION AND AT OWN EXPENSE, TO PARTICIPATE IN SUCH DEFENSE WITHOUT RELIEVING DCO OF ANY OF ITS OBLIGATIONS HEREUNDER.

THE PROVISIONS OF THIS DEFENSE, INDEMNITY, AND HOLD HARMLESS OBLIGATION SHALL SURVIVE THE TERMINATION OR EXPIRATION OF THIS AGREEMENT.

Section 8. Miscellaneous.

(a) *Notices*. For purposes of this Agreement and except as otherwise provided for in this Agreement, notices and all other communications provided for herein shall be in writing, addressed as provided hereinafter to the party to whom the notice or request is given, and shall be either (i) delivered personally, (ii) sent by United States certified mail, postage prepaid, return receipt requested, or (iii) placed in the custody of Federal Express Corporation or other nationally recognized carrier to be delivered next business day. Notice shall be deemed given when received if delivered personally or if sent by Federal Express or other nationally recognized carrier; or seventy-two (72) hours after deposit if sent by certified mail.

Addresses for notices and communications are as follows:

To DCO:	To Addison:
c/o UDR, Inc. 1745 Shea Center Drive, Suite 200 Highlands Ranch, CO 80129 Attn: Legal Department	Town of Addison, Texas 5300 Belt Line Road Dallas, Texas 75254 Attn: City Manager

From time to time either party may designate another address within the United States for all purposes of this Agreement by giving the other party not less than ten (10) days advance notice of such change of address in accordance with the provisions hereof.

(b) *Independent Contractors*. This Agreement shall not be deemed to create a joint venture, joint enterprise, partnership, principal-agent, employer-employee or similar relationship

between DCO and Addison. DCO and Addison are and shall be acting as independent contractors under this Agreement.

(c) *Assignment; Binding Agreement.* DCO shall not, and has no authority to, assign, sell, pledge, transfer, encumber, or otherwise convey (any of the foregoing, and the occurrence of any of the foregoing, a "Conveyance") in any manner or form whatsoever (including by operation of law, by merger, or otherwise) all or part of its rights and obligations hereunder without the prior written approval of the City. Any Conveyance of any kind or by any method without the City's prior written consent shall be null and void. This Agreement shall be binding on and inure to the benefit of the parties, their respective permitted successors and permitted assigns.

(d) *Construction of Terms.* For purposes of this Agreement, (i) "includes" and "including" are terms of enlargement and not of limitation or exclusive enumeration, and use of the terms does not create a presumption that components not expressed are excluded, and (ii) "day" or "days" means calendar days. The use of any gender in this Agreement shall be applicable to all genders, and the use of singular number shall include the plural and conversely. Article and section headings are for convenience only and shall not be used in interpretation of this Agreement.

(e) *Rights, Remedies; Waiver.* Except as set forth in or otherwise limited by this Agreement, the remedies and rights set forth in this Agreement: (a) are and shall be in addition to any and all other remedies and rights either party may have at law, in equity, or otherwise, (b) shall be cumulative, and (c) may be pursued successively or concurrently as either party may elect. The exercise of any remedy or right by either party shall not be deemed an election of remedies or rights or preclude that party from exercising any other remedies or rights in the future. Any rights and remedies either party may have with respect to the other arising out of this Agreement shall survive the expiration or termination of this Agreement. All waivers must be in writing and signed by the waiving party.

(f) *Entire Agreement; Amendment.* This Agreement represents the entire and integrated agreement between DCO and the City with regard to the matters set forth herein and supersedes all prior negotiations, representations and/or agreements, either written or oral. Any amendment or modification of this Agreement must be in writing and signed by authorized representatives of DCO and the City or it shall have no effect and shall be void.

(g) *No Third Party Benefits.* This Agreement and each of its provisions are solely for the benefit of the parties hereto and are not intended to create or grant any rights, contractual or otherwise, to any third person or entity.

(h) *Immunity.* Notwithstanding any other provision of this Agreement, nothing in this Agreement shall or may be deemed to be, or shall or may be construed to be, a waiver or relinquishment of any immunity, defense, or tort limitation to which the City, its officials, officers, employees, representatives, and agents are or may be entitled, including, without limitation, any waiver of immunity to suit.

(i) *Severability.* The terms, conditions, and provisions of this Agreement are severable, and if any provision of this Agreement shall be held to be invalid, illegal or

unenforceable by a court of competent jurisdiction, the validity, legality and enforceability of the remaining provisions shall in no way be affected or impaired thereby.

(j) *Governing Law; Venue.* This Agreement and performance hereunder shall be governed by and construed in accordance with the laws of the State of Texas, without regard to choice of laws rules of any jurisdiction. Any and all suits, actions or legal proceedings relating to this Agreement shall be maintained in the state or federal courts of Dallas County, Texas, which courts shall have exclusive jurisdiction for such purpose. Each of the parties submits to the exclusive jurisdiction of such courts for purposes of any such suit, action, or legal proceeding hereunder, and waives any objection or claim that any such suit, action, or legal proceeding has been brought in an inconvenient forum or that the venue of that suit, action, or legal proceeding is improper.

(k) *Recitals; Exhibits.* The Recitals to this Agreement are incorporated into this Agreement and made a part hereof for all purposes. All appendices and exhibits to this Agreement referenced in this Agreement are incorporated herein by reference and made a part hereof for all purposes wherever reference is made to the same.

(l) *Authorized Signatories.* The officers and/or agents of the parties hereto executing this Agreement are the properly authorized officials or representatives and have the necessary authority to execute this Agreement on behalf of each of the respective parties, 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.

(m) *Counterparts.* This Agreement may be executed in any number of counterparts, each of which shall be deemed an original and constitute one and same instrument.

(n) *No Boycott – Israel.* Pursuant to Texas Government Code Chapter 2270, Organization's execution of this Agreement shall serve as verification that the Organization does not presently boycott Israel and will not boycott Israel during the term of this Agreement.

In Witness Whereof, the parties hereto have executed this Agreement effective as of Effective Date.

TOWN OF ADDISON, TEXAS	**DCO REALTY, INC.**
By:_____	By:_____
Wesley S. Pierson, City Manager	Typed name: Harry G. Alcock
	Title: Authorized Agent
Date:_____	Date:_____

EXHIBIT A

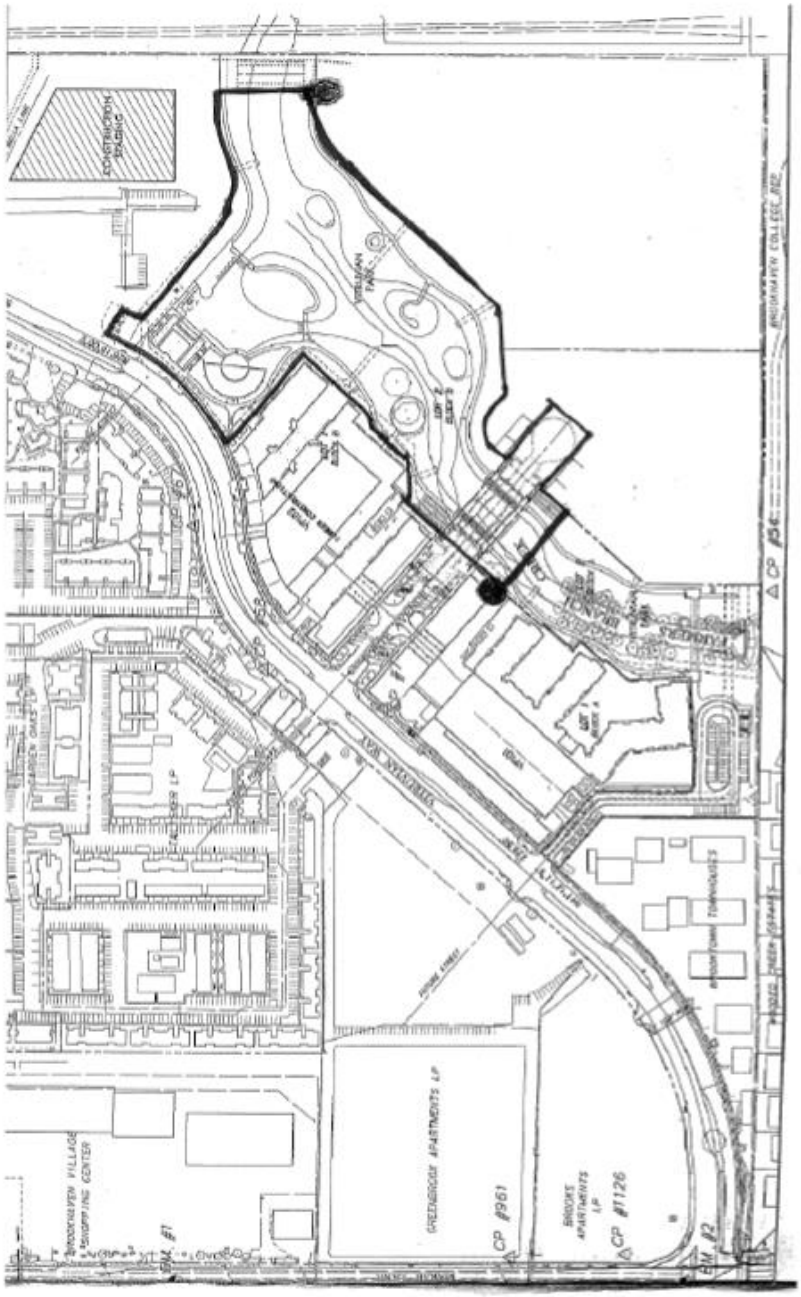

CONSTRUCTION STAGING
BROOKHAVEN COLLEGE DR
KELLER SPRINGS RD
VITRUVIAN PARK
PEDWAY
KNOX ARMSTRONG
KNOX ST
STONE STREET
BROOKHAVEN VILLAGE SHOPPING CENTER
GREENBRIDGE APARTMENTS LP
CP #961
BROOKS APARTMENTS LP
CP #1126
EM #1
EM #2

EXHIBIT B

Section 67-16(b)(4), Code of Ordinances

(4) *Insurance.* The promoter of a district event or host of a non-district event held on public property and all contractors and subcontractors shall purchase and maintain insurance at their own expense during the event and its setup and teardown in the following minimum amounts:

a. Statutory limits of workers compensation insurance.

b. Employers liability $1,000,000.00.

c. Commercial general liability $1,000,000.00.

d. General aggregate $2,000,000.00.

e. Product/completed operations aggregate $2,000,000.00.

f. Personal injury and advertising $1,000,000.00.

g. Per occurrence $1,000,000.00.

h. Medical coverage $5,000.00 per person.

i. Fire liability $50,000.00 per fire.

j. Liquor liability endorsement $1,000,000.00 per claim.

k. Comprehensive automobile liability $1,000,000.00 (owned, leased, non-owned and hired automobiles).

The committee shall review the sufficiency of required policies and, based on the nature of the event, request reasonable changes or increases in coverage. Upon such request, the promoter shall immediately increase the limits of such insurance to an amount satisfactory to the town and make other reasonable changes requested. The amount required by the committee shall be commensurate with other events of the nature of the subject event.

Required policies shall be issued by a carrier that is rated "A-:VII" or better by A.M. Best's Key Rating Guide and licensed to do business in the State of Texas, name the Town of Addison as an additional insured on a primary basis in all liability coverages, and include a waiver of the subrogation endorsement in all coverages in favor of Addison.

Certificates of insurance shall be delivered to the special event manager at least 30 days prior to the first day of the district event. Each such certificate must provide that it shall not be canceled without at least 30 days written notice thereof being given to the Town of Addison. Certified copies of insurance policies shall be furnished to the Town of Addison upon request.

Work Session and Regular Meeting **12.**

Meeting Date: 11/13/2018

Department: Economic Development

Pillars: Entrepreneurship & Business Hub
Optimize the Addison Brand

Milestones: Economic development focus on activities which attracting and retaining entrepreneurship and high-tech conferences

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AGENDA CAPTION:

Consider Action to Approve a **Resolution for a Contract with The World Affairs Council of Dallas/Fort Worth for Consulting Services and Authorize the City Manager to Execute the Agreement** in an Amount not to Exceed $60,000.

BACKGROUND:

Over the last few years, the Town of Addison has maintained a formal agreement with the World Affairs Council (WAC) of Dallas/Fort Worth. In the initial years, WAC provided support to the Town to enhance its efforts with World Fest. In Fiscal Year (FY) 2015, the focus of WAC's efforts evolved to provide support in enhancing the Town's international business development efforts.

The management of the agreement falls under the purview of the Economic Development and Tourism Department. A request is being made for approval of the FY 2019 agreement with WAC for an amount not to exceed $60,000. The agreement includes an amount of $50,000 to cover deliverables highlighted in the agreement, plus an annual amount of $10,000 to be utilized for marketing and venue costs for events hosted in Addison.

The World Affairs Council successfully completed the deliverables in the FY 2018 agreement and provided quarterly reports to staff. The reports were shared with Mayor Joe Chow and Councilmember Ivan Hughes who serve as the Council Liaisons to the World Affairs Council.

The scope of services in the FY 2019 Agreement are the same as in the FY 2018 Agreement. Successful completion of these scope of services makes the group eligible for quarterly payments from the Town of Addison. These scopes of services include:

1. International Promotion and Business Development:
   - Work with Addison's Economic Development staff to strengthen its international business focus.

- Work with Addison to maintain and strengthen its relationship with former Spotlight countries and the Consular Corps of DFW and Houston.
- Assist Addison in promoting its airport to international businesses.

2. Entrepreneur Development:
   - Promote the Addison TreeHouse as a regional entrepreneur resource center to international entrepreneurs/groups interested in the North Texas Start-up Community.

3. Provide Town of Addison with opportunities to participate in international events:
   - Make recommendations on events that would be appropriate for Addison City Council to attend.
   - Provide World Affairs Council memberships to the Addison City Council and key city staff; provide program passes to Town of Addison to designated WAC events.
   - Recognize City Council present at events from podium and in signage where appropriate.
   - Evaluate feasibility and extent of a German program element for the Town's annual Oktoberfest event in collaboration with the German Consulate in Texas.

4. Feature the Town of Addison as a Strategic Partner:
   - Recognize Addison as a partner on World Affairs Council website.
   - Recognize Addison as a partner in designated events hosted by World Affairs Council
   - Promote Taste Addison and Oktoberfest to World Affairs Council members.
   - Work with Addison to invite the Consular Corps of DFW to Kaboom Town as VIP guests.

5. Consulting Services: Provide on-going, as requested, consulting services on international relations, including cultural awareness and protocol services.

The total annual funding amount was approved in the FY 2019 Budget as part of the Economic Development & Tourism Department annual budget.

RECOMMENDATION:

Administration recommends approval.

Attachments

TOWN OF ADDISON, TEXAS
RESOLUTION NO. _____

A RESOLUTION OF THE CITY COUNCIL OF THE TOWN OF ADDISON, TEXAS APPROVING AN AGREEMENT FOR FUNDING BETWEEN THE TOWN AND THE WORLD AFFAIRS COUNCIL OF DALLAS/FORT WORTH; AUTHORIZING THE CITY MANAGER TO EXECUTE THE GRANT FUNDING AGREEMENT; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City Council of the Town of Addison, Texas ("City Council") has investigated and determined that it is in the best interest of the Town of Addison, Texas ("Town") to provide a grant of public funds to various organizations that promote public purposes and benefit the public within the Town; and

WHEREAS, the City Council has adopted an application process ("Application") whereby these organizations may apply for public funds that will be used for public purposes within the Town, as determined by the Town; and

WHEREAS, the World Affairs Council of Dallas/Fort Worth (the "World Affairs Council") submitted an Application to the Town for consideration; and

WHEREAS, the Town has reviewed the Application and investigated and determined that the requests set forth in the Application are for a public purpose and will benefit its citizens; and

WHEREAS, the Town and World Affairs Council desire to enter into this Agreement to set forth the terms and conditions regarding the World Affairs Council's use of the public funds.

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

Section 1. The Grant Funding Agreement between the Town and World Affairs Council, a copy of which is attached to this Resolution as **Exhibit A,** is hereby approved. The City Manager is hereby authorized to execute said 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 13th day of November 2018.

_____
Joe Chow, Mayor

ATTEST:

By:_____
Irma Parker, City Secretary

APPROVED AS TO FORM:

By:_____
Brenda N. McDonald, City Attorney

EXHIBIT A

STATE OF TEXAS	§	
	§	**AGREEMENT FOR FUNDING**
COUNTY OF DALLAS	§	

This Agreement for Funding ("Agreement") is entered into by and between the Town of Addison, Texas (the "City" or "Addison") and World Affairs Council of Dallas / Fort Worth ("World Affairs Council") (the City and World Affairs Council are sometimes referred to herein together as the "parties" and individually as a "party").

Recitals:

1. The City desires to expand its cultural and international trade efforts through its Economic Development & Tourism and Special Events Departments. Among other things, these efforts provide an opportunity to attract tourists and businesses to the City and educate the public on the many cultures that make up the North Texas region.

2. World Affairs Council is a non-profit corporation established under the laws of the State of Texas with a mission to promote international awareness, understanding and connections through its multifaceted programs. The Council works to enhance the region's global stature and to prepare North Texans to thrive in our complex world.

3. Addison desires to retain the services of World Affairs Council, and World Affairs Council desires to provide its services to Addison, to enhance the City's international focus, as set forth herein.

NOW, THEREFORE, for and consideration of the above and foregoing premises, the mutual covenants and obligations set forth herein, and other good and valuable consideration, the Town of Addison, Texas and World Affairs Council do contract and agree as follows:

1. **Term.** This Agreement shall be effective on October 1, 2018 (the "Effective Date"), and shall remain in effect through September 30, 2019 (the "Expiration Date"), subject, however, to the termination provisions of this Agreement.

2. **Services.** In connection with this Agreement, World Affairs Council will provide to the City the following non-exclusive services ("Services"):

A. International Promotion and Business Development:
   i. Work with Addison's Economic Development staff to strengthen its international business focus.
   ii. Work with Addison to maintain and strengthen its relationship with former Spotlight countries and the Consular Corps of DFW and Houston.
   iii. Assist Addison in promoting its airport to international businesses.

B. Entrepreneur Development:

i. Promote the Addison TreeHouse as a regional entrepreneur resource center to international entrepreneurs/groups interested in the North Texas Start-up Community.

C. Provide Town of Addison with opportunities to participate in international events:
   i. Make recommendations on events that would be appropriate for Addison City Council to attend.
   ii. Provide World Affairs Council memberships to the Addison City Council and key city staff; provide program passes to Town of Addison to designated WAC events.
   iii. Recognize City Council present at events from podium and in signage where appropriate.
   iv. Evaluate feasibility and extent of a German program element for the Town's annual Oktoberfest event in collaboration with the German Consulate in Texas.

D. Feature the Town of Addison as a Strategic Partner:
   i. Recognize Addison as a partner on World Affairs Council website.
   ii. Recognize Addison as a partner in designated events hosted by World Affairs Council
   iii. Promote Taste Addison and Oktoberfest to World Affairs Council members.
   iv. Work with Addison to invite the Consular Corps of DFW to Kaboom Town as VIP guests.

E. Consulting Services: Provide on-going, as requested, consulting services on international relations, including cultural awareness and protocol services.

A table reflecting and including these Services is attached to this Agreement as Exhibit A and incorporated herein and made a part hereof.

Performance Reports – World Affairs Council shall provide to the City following or at the end of the first, second, third, and fourth of the City's fiscal year (2019) quarters (or portion thereof, as applicable) while this Agreement is in effect, a report ("Performance Report") regarding the work and activities of World Affairs Council for the calendar year quarter immediately prior to the date the report is provided, including, without limitation, (i) all marketing activities of World Affairs Council, (ii) a report on expenses and the payment thereof (e.g., payments to performers, other third parties, and proof of such payment), (iii) a report regarding the activities of World Affairs Council as to all other of the above and foregoing Services. The Performance Report for the (a) first year quarter shall be provided by December 31, 2018, (b) second quarter shall be provided by March 31, 2019, (c) third fiscal year quarter shall be provided by June 30, 2019, and (d) fourth fiscal quarter shall be provided by September 30, 2019. Each such report shall be in form and content satisfactory to the City, and World Affairs Council shall provide supporting information for its report, including any supporting information as the City may reasonably request. Upon the expiration or earlier termination of this Agreement, World Affairs Council shall provide such report to the City not later than the 25th day following

the Expiration Date or the date of termination, as applicable, and the obligation to provide such report shall survive the expiration or earlier termination of this Agreement.

In connection with the Services, World Affairs Council warrants and represents to the City that:

1) World Affairs Council has the skills, qualifications, expertise, experience and financial capability necessary to perform the Services with a high degree of quality and responsiveness;

2) The Services and work will be provided in a professional and timely manner, consistent with the commercially accepted best practices and standards;

3) The Services shall comply with all applicable federal, state or local statutes, ordinances, laws, rules, standards, codes and regulations;

4) World Affairs Council: (i) is a corporation duly organized, validly existing and in good standing under the laws of the State of Texas, and shall remain in good standing throughout the term of this Agreement; (ii) it has the requisite power and authority to carry on its business as it is now being conducted; (iii) it has the legal capacity to enter into this Agreement; and, (iv) the execution, delivery and performance of this Agreement and the consummation of the transactions contemplated by this Agreement have been authorized and approved by all action required on the part of World Affairs Council; and

5) The execution and delivery of this Agreement by World Affairs Council does not: (i) conflict with, or result in any violation or breach of, any provision of the World Affairs Council's charter documents; (ii) result in any violation or breach of, or constitute a default under, or require a consent or waiver under, any of the terms, conditions or provisions of any license, contract or other agreement to which World Affairs Council is a party; or (iii) materially conflict with or violate any franchise, license, judgment, order, statute, law, rule or regulation applicable to World Affairs Council.

All Services shall be provided by World Affairs Council in cooperation and coordination with the City Staff, and in particular with the Addison Director of Economic Development & Tourism (the "Director"). Any and all promotional or other materials regarding the Scope of Services which are to be prepared, given or delivered by World Affairs Council shall be first presented to the Director for the Director's review and approval prior to the public dissemination of any such materials. Standardized language agreed upon by both parties prior to any public dissemination thereof may, after such agreement, be disseminated in World Affairs Council materials without prior review of those materials. Prior to solicitation of any activities and other vendors, World Affairs Council shall use its reasonable efforts to first obtain the pre-approval of the Director regarding such solicitation; however, the parties hereto recognize that World Affairs Council may not be able in all instances to obtain the pre-approval of the Director prior to a solicitation, and in such event World Affairs shall nevertheless, in conducting any

solicitation, abide by and comply with such communication standards as the Director shall establish. The Services shall be provided by World Affairs Council in a professional manner. In identifying, selecting, and recommending entertainers, activities, and vendors pursuant to this Agreement, and in performing all of its Services hereunder, World Affairs Council understands and recognizes that the events under this agreement are not for religious or political purposes (and are not events that promote or suggest any religious or political agenda), and World Affairs Council will perform its Services hereunder in accordance therewith.

3. **Compensation.** For the Services provided by World Affairs Council in accordance with the terms and conditions of this Agreement and subject to the termination provisions of this Agreement, the City will pay World Affairs Council a fee as follows:

The City will pay World Affairs Council Fifty Thousand and No/100 Dollars ($50,000.00), to be paid in four installments as follows: (1) The first installment ("first Installment") of $12,500.00 shall be paid by January 15, 2019, (2) the second installment ("second installment") of $12,500.00 shall be paid by April 15, 2019, (3) the third installment (the "third installment") of $12,500.00 shall be paid by July 15, 2019, and (4) the fourth and final installment (the "fourth installment") of $12,500 shall be paid by October 15, 2019 upon (i) the completion of the Scope of Services (that is, upon completion of all of the Services), and (ii) the satisfactory performance as reasonably determined by the City of all of the Services by World Affairs Council, including, without limitation, the timely receipt by the City of the September (for the last quarter of 2019) Performance Report and all performance reports to be provided prior thereto, in form and content reasonably acceptable to the City (upon the satisfaction of the said (i) and (ii), payment of the third installment shall be by no later than September 31, 2019).

The City will also provide the World Affairs Council a maximum allowance of Ten Thousand Dollars ($10,000) for marketing and promotional collateral material and event space costs associated for events hosted solely in Addison. This amount is to be paid as a reimbursement to the World Affairs Council upon the receipt of an invoice with demonstrated proof that such expenses were incurred by the World Affairs Council for events hosted solely in Addison.

4. **Termination.**

A. *Without cause.* Either party may terminate this Agreement at any time by giving to the other party at least 30 days written notice of such termination. Termination shall have no effect upon the rights and obligations of the parties arising out of any transaction occurring prior to the effective date of such termination. In the event of termination or upon the expiration of this Agreement, all finished or unfinished data, studies, reports and other materials and items (whether kept electronically, in writing, or otherwise) prepared by World Affairs Council shall be and become the property of the City and World Affairs Council shall promptly deliver such items to the City.

B. *With cause.*

(i) If (a) World Affairs Council fails to perform any of World Affairs Council's duties or responsibilities as reasonably determined by the City, or (b) if World Affairs Council fails to fulfill in a timely and professional manner World Affairs Council's obligations under this Agreement, or (c) if World Affairs Council shall violate any of the terms or provisions of this Agreement (the said (a), (b) and (c) being referred to together in this paragraph as a "Failure"), or (d) if World Affairs Council, World Affairs Council's agents or employees fail to exercise good behavior either during or outside of working hours that is of such a nature as to bring discredit upon the City, as determined reasonably but solely by the City, then the City shall have the right to terminate this Agreement effective immediately upon the City giving notice thereof, either oral or in writing, to World Affairs Council.

(ii) Notwithstanding the foregoing subparagraph B(i), with respect to a Failure, such right of termination shall not be exercised by the City unless and until a Failure remains uncured by World Affairs Council for a reasonable period of time (as determined by the City and communicated to World Affairs Council) after notice thereof (which notice shall specifically identify the Failure) from the City is received by World Affairs Council.

(iii) If the City's termination of this Agreement for cause is defective for any reason, including but not limited to the City's reliance on erroneous facts concerning World Affairs Council's performance, or any defect in notice thereof, the City's maximum liability shall not exceed the amount payable to World Affairs Council under Section 3 above through the quarter in which the termination for cause is attempted.

C. If this Agreement is terminated in December 2016, World Affairs Council shall promptly reimburse the amount of the first installment to the City. If this Agreement is terminated: (i) in January, 2019, World Affairs Council shall promptly reimburse to the City the sum of $ 6,250.00; (ii) in February 2019, World Affairs Council shall promptly reimburse to the City the sum of $ 3,125.00. If this Agreement is terminated in March, 2019, World Affairs Council shall promptly reimburse the amount of the second installment to the City. If this Agreement is terminated: (i) in April, 2019, World Affairs Council shall promptly reimburse to the City the sum of $ 6,250.00; (ii) in May,

2019, World Affairs Council shall promptly reimburse to the City the sum of $3,125.00. If this Agreement is terminated in June, 2019, World Affairs Council shall promptly reimburse the amount of the third installment to the City. If this Agreement is terminated: (1) in July, 2019, World Affairs Council shall promptly reimburse to the City the sum of $6,250.00; (ii) August, 2019, World Affairs Council shall promptly reimburse to the City the Sum of $3,125. If this Agreement is terminated in September, 2019, World Affairs Council shall promptly reimburse the amount of the fourth installment to the City. Following such termination, World Affairs Council shall be entitled to no further payment or compensation hereunder, and all finished or unfinished data, studies, reports and other items (whether kept electronically, in writing, or otherwise) prepared by World Affairs Council shall be and become the property of the City and World Affairs Council shall promptly deliver such items to the City. The reimbursement obligation set forth herein shall survive the termination of this Agreement.

5. **Relationship of Parties.** World Affairs Council is and shall be during the entire term of the Agreement an independent contractor, and nothing in this Agreement is intended nor shall be construed to create an employer-employee relationship, a joint venture relationship, a joint enterprise, or to allow the City to exercise discretion or control over the professional manner in which World Affairs Council performs the Services which are the subject matter of the Agreement; provided always however that the Services to be provided by World Affairs Council shall be provided in a manner consistent with all applicable standards, regulations, and laws governing such Services.

6. **Insurance.** At all times in connection with this Agreement, World Affairs Council shall purchase and maintain in a company or companies lawfully authorized to do business in Texas such insurance coverages as set forth below:

a.	Commercial General Liability:	$1,000,000.00
b.	General Aggregate	$1,000,000.00
c.	Product/Completed Operations Aggregate	$1,000,000.00
d.	Personal & Adv. Injury	$1,000,000.00
e.	Per Occurrence	$1,000,000.00
f.	Medical Coverage	$5,000.00 (any one person)
g.	Liquor Liability Endorsement	$1,000,000.00 (if selling beer and/or wine)
h.	Fire Liability (any one fire)	$ 50,000.00
i.	Statutory Limits of Workers Compensation Insurance	

All 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, (ii) name the Town of Addison as an additional insured and contain a waiver of the subrogation endorsement in favor of the Town of Addison, (iii) endorsed to read as primary coverage regardless of the application of other insurance, (iv) contain no cross liability exclusions or insured versus insured restrictions applicable to the claims of the Town of Addison, and (v) include coverage for the period of time including the Festival days as well as set-up days (usually one day before and one day after the event). Certified copies of all such

policies shall be delivered to Addison upon the execution of this Agreement, but in any event no later than two weeks prior to the event; provided, however, that Addison, in its sole discretion and in lieu of certified copies of such policies, may permit the delivery of certificates of insurance (listing each insurance coverage described and required herein) together with the declaration page of such policies, along with a copy of the endorsements necessary to meet the requirements and instructions contained herein, including, without limitation, the endorsement naming the Town of Addison as an additional insured, and shall specifically set forth the notice of cancellation and termination provisions to the Town of Addison. Each such policy shall provide that it shall not be canceled without at least 30-days written notice thereof being given to the Town of Addison. Coverage for Products/ Completed Operations must be maintained at least two (2) years after this Agreement is terminated in its entirety, including any renewal thereof or extensions thereto.

7. **Records.** World Affairs Council shall keep complete and accurate records for the Services performed pursuant to this Agreement and any records required by law or government regulation and shall make such records available to City upon request. World Affairs Council shall assure the confidentiality of any records that are required by law to be so maintained. World Affairs Council shall prepare and forward such additional or supplementary records as City may reasonably request.

8. **Notice.** For purposes of this Agreement, if written notice or other communication is given, such notice or other communication shall be in writing, addressed as provided hereinafter to the party to whom the notice or request is given, and shall be either (i) delivered personally, (ii) sent by United States certified mail, postage prepaid, return receipt requested, or (iii) placed in the custody of Federal Express Corporation or other nationally recognized carrier to be delivered overnight. Notice shall be deemed given: when received if delivered personally; seventy-two (72) hours after deposit if sent by mail; and twenty-four (24) hours after deposit if sent by Federal Express or other nationally recognized carrier. Addresses for notice are as follows:

To the City:	To World Affairs Council:
Town of Addison, Texas	World Affairs Council
5300 Belt Line Road	325 N. St. Paul Street, Suite 4200
Dallas, Texas 75254-7606	Dallas, TX 75201
Attn: Wesley S. Pierson	Attn: Jim Falk

The addresses and addressees for the purpose of this Section may be changed by giving notice of such change in the manner herein provided for giving notice. Unless and until such written notice is received the last addresses and addressee stated by written notice, or provided herein if no written notice of change has been sent or received, shall be deemed to continue in effect for all purposes hereunder.

9. **Reports Confidential.** No reports, information (either in writing or oral), documents, or other materials given to or prepared by World Affairs Council under this Agreement which the City requests in writing to be kept confidential, shall be made available to any

individual or organization by World Affairs Council without the prior written approval of the City.

10. **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 Agreement on behalf of the parties hereto.

11. **Ownership of Reports.** The reports, documents and materials prepared by World Affairs Council under or pursuant to this Agreement shall be the sole property of the City.

12. **Assignment.** Inasmuch as this Agreement is intended to secure the specialized services of World Affairs Council, World Affairs Council has no authority or power to and may not assign, transfer, delegate, subcontract or otherwise convey any interest herein without the prior written consent of the City, and any such assignment, transfer, delegation, subcontract or other conveyance without the City's prior written consent shall be considered null and void *ab initio*.

13. **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 for any reason whatsoever, including with respect to any such right, power or option or to such compliance or to any other or subsequent default or breach hereof, nor a waiver by either party of its rights at any time to exercise any such right, power or option or 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.

14. **Applicable Law; Venue.** In the event of any action under this Agreement, exclusive 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.

15. **Enforceability.** If any term, covenant, condition or provision of this Agreement is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remainder of the provisions hereof shall remain in full force and effect and shall in no way be affected, impaired or invalidated thereby.

16. **Force Majeure.** In the event either the City or World Affairs Council 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.

17. **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.

18. **Incorporation of Recitals.** The above and foregoing Recitals to this Contract are true and correct and are incorporated herein and made a part hereof for all purposes.

19. **Construction of Certain Terms.** Section and subsection headings herein are for convenience only and shall not be used in interpretation of this Agreement. The words "includes" and "including" are terms of enlargement and not of limitation or exclusive enumeration, and use of the terms does not create a presumption that components not expressed are excluded.

20. **Severability.** The sections, paragraphs, sentences, phrases, words, and all other provisions of this Agreement are severable, and if any part of this Agreement is determined by a court of competent jurisdiction to be illegal, unlawful, unconstitutional, or void for any reason, the parties intend that the remaining provisions of this Agreement shall remain in full force and effect. In lieu of any such illegal, unlawful, unconstitutional, or void provision, the parties agree to seek to negotiate to add to this Agreement another provision that would be permitted that is as close to the intent of the original provision as possible.

21. **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.

SIGNED by each of the respective parties on the date set forth below.

TOWN OF ADDISON, TEXAS	**WORLD AFFAIRS COUNCIL OF DALLAS FORT WORTH**
By:_____	By:_____
Wesley S. Pierson, City Manager	James N. Falk, President and CEO
Date:_____	Date: 11-6-18

EXHIBIT A

World Affairs Council/Town of Addison
2018-19 Scope of Services
Level of Funding: $50,000

1.	***International Promotion and Business Development ($20,000):*** A. Assist Addison in strengthening its International Business Focus. B. Work with Addison to maintain and strengthen its relationship with former Spotlight countries and forge new relationships with targeted countries. C. Assist Addison to develop strategy on marketing its airport to international businesses. D. Plan, organize, execute and co-host at least two (2) forums/luncheons in Addison with the Town of Addison focused on international business/tourism/trade during the funding year.	
Item	**Date**	**Accomplishment/Milestone**
2.	***Entrepreneur Development: ($5,000)*** A. Recommend the Addison TreeHouse as a regional entrepreneur resource center to international entrepreneurs/groups interested in the North Texas Start-up Community.	
Item	**Date**	**Accomplishment/Milestone**
3.	***Provide Town of Addison with opportunities to participate in international events ($10,000):*** A. Make recommendations on events that may be appropriate for Addison City Council to attend. B. Provide passes to Town of Addison to such events. C. Recognize City Council present at events from podium when appropriate. D. Evaluate feasibility of a German Program element for Town's annual Oktoberfest event in collaboration with German Consulate in Texas.	
Item	**Date**	**Accomplishment/Milestone**
4.	***Feature the Town of Addison as a Strategic Partner ($10,000):*** A. Recognize Addison as a partner in World Affairs Council website. B. Recognize Addison as a partner in designated events hosted by World Affairs Council. C. Promote Taste Addison and Oktoberfest to World Affairs Council Members. D. Work with Addison to invite the Consular Corps of DFW to KaboomTown as VIP guests.	
Item	**Date**	**Accomplishment/Milestone**

5.	***Consulting Services ($5,000):*** A. Provide consulting services on how to respond to issues having an international focus. B. Provide cultural consulting awareness services on how to appropriately address dignitaries from particular countries. C. Explore the opportunity to plan a new authentic German program element for the Town's annual Oktoberfest event in collaboration with the German Consulate in Texas.	
Item	**Date**	**Accomplishment/Milestone**

Work Session and Regular Meeting **13.**

Meeting Date: 11/13/2018

Department: Infrastructure- Development Services

AGENDA CAPTION:

Hold a Public Hearing, Present, Discuss, and Consider Action on an **Ordinance to Amend Article XX, Special Uses, Item (39) Microbrewery, and Article XXX, Definitions, By Revising the Definition of Microbrewery**. Case 1785-Z/Town of Addison.

BACKGROUND:

COMMISSION FINDINGS:

The Addison Planning and Zoning Commission, meeting in regular session on October 16, 2018, voted to recommend approval of an ordinance amending Article XX, Special Uses, by revising item (39) Microbrewery, and Article XXX, Definitions, by revising the definition of Microbrewery without conditions.

Voting Aye: Catalani, Dougan, Groce, Meleky, Resnik, Souers, Wheeler
Voting Nay: none
Absent: none

SPEAKERS AT THE PUBLIC HEARING:
For: Matt Ehinger, 15103 Surveyor Blvd
On: none
Against: none

Please refer to the attached staff report for additional information on this case.

RECOMMENDATION:

Administration recommends approval.

Attachments

1785-Z Ordinance
1785-Z Staff Report

TOWN OF ADDISON, TEXAS

ORDINANCE NO. _____

AN ORDINANCE OF THE TOWN OF ADDISON, TEXAS AMENDING THE CODE OF ORDINANCES OF THE TOWN BY AMENDING ARTICLE XX (SPECIAL USES) PROVIDING A REVISION TO ITEM (39) "MICROBREWERY," AND ARTICLE XXX, DEFINITIONS, PROVIDING A REVISED DEFINITION OF "MICROBREWERY;" PROVIDING A SAVINGS CLAUSE; PROVIDING A PENALTY NOT TO EXCEED THE SUM OF 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; PROVIDING A SEVERABILITY CLAUSE; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the Town of Addison, Texas (the "City") is a home rule municipality having full power of local self-government pursuant to Article 11, Section 5 of the Texas Constitution and its Home Rule Charter; and

WHEREAS, currently, Special Use Permits for the sale of beer and wine for off-premises consumption only may be approved for properties zoned Local Retail, Urban Center or in certain Planned Development Districts; 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 ordinance 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. Incorporation of Premises. The above and foregoing premises are true and correct and are incorporated herein and made a part hereof for all purposes.
Code of Ordinance

Section 2. Amendment. The Code of Ordinances of the Town of Addison, Texas is hereby amended by amending Appendix A – Zoning, in part as follows:

A. Article XX - Special Uses, Section 1 (Special Uses in Specified Districts), subsection A (39) Microbrewery, which shall read in its entirety as follows:

> (39) Microbrewery with sale of beer for off premises consumption in any district other than a planned development district; in a planned development district, a microbrewery may be authorized if such use is specifically allowed in the ordinance establishing the planned development district.

B. Article XXX – Definitions, Section 1 (Terms defined), Subsection 72.1 which shall read in its entirety as follows:

Microbrewery - an establishment:

(a) located at premises and that holds at those premises:

(i) both a valid brewer's self-distribution permit and a valid manufacturer's self-distribution license issued by the State of Texas, or a brewpub permit, and whose annual production of beer and ale, combined, at the premises does not exceed 125,000 barrels, and whose sales of beer and ale, combined at the same premises does not exceed 40,000 barrels annually; and/or

(ii) both a valid brewer's permit and a valid manufacturer's license, or a brewpub permit, and whose annual production of beer and ale, combined at the premises does not exceed a total of 225,000 barrels, and whose total combined sales of beer and ale produced on the same premises under the said permit and license to ultimate consumers on the premises for responsible consumption on the premises does not exceed 5000 barrels annually, and whose sale to such ultimate consumers takes place only between 8:a.m. and midnight on any day except Sunday and between 10 a.m. and midnight on Sunday; and

(b) that is in compliance at all times with the applicable permits and licenses described in subsection (a) and with all applicable laws, rules and regulations of the State and with the Charter and ordinances of the town and that promptly provides to the town information requested, and in form and format determined, by the town to determine such compliance.

Section 3. Purpose. The amendment to zoning herein made has been made in accordance with the comprehensive plan of the City for the purpose of promoting the health, safety and welfare of the community, and with consideration of the reasonable suitability for the particular use and with a view of conserving the value of the buildings and encouraging the most appropriate use of land within the community.

Section 4. No Other Amendment; Savings. Except for the amendment and change made herein, Appendix A - Zoning of the City's Code of Ordinances is not otherwise amended hereby, and all other provisions thereof shall remain in full force and effect. This Ordinance shall be cumulative of all other ordinances of the City and shall not repeal any of the provisions of those ordinances except in those instances where the provisions of those ordinances are in direct conflict with the provisions of this Ordinance.

Section 5. Penalty. It shall be unlawful for any person to violate any provision of this Ordinance, and any person violating or failing to comply with any provision hereof shall be fined, upon conviction, in an amount not more than Two Thousand 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. Severability. The sections, paragraphs, sentences, phrases, clauses and words of this Ordinance are severable, and if any section, paragraph, sentence, phrase, clause or word in this Ordinance or application thereof to any person or circumstance is held invalid, void, unlawful or unconstitutional by a Court of competent jurisdiction, such holding shall not affect the validity of the remaining portions of this Ordinance, and the City Council hereby declares that it would have passed such remaining portions of this Ordinance despite such invalidity, voidness, unlawfulness or unconstitutionality, which remaining portions shall remain in full force and effect.

Section 7. Effective date. This Ordinance shall become effective from and after its passage and approval and after publication as provided by law.

PASSED AND APPROVED by the City Council of the Town of Addison, Texas this 13th day of November, 2018.

_____
Joe Chow, Mayor

ATTEST:

_____
Irma Parker, City Secretary

CASE NO: 1785-Z/Town of Addison

APPROVED AS TO FORM:

_____
Brenda N. McDonald, City Attorney

PUBLISHED ON: _____

Case 1785-Z/Town of Addison

October 16, 2018

COMMISSION FINDINGS:

The Addison Planning and Zoning Commission, meeting in regular session on October 16, 2018, voted to recommend approval of an ordinance amending Article XX, Special Uses, item (39) Microbrewery, and Article XXX, Definitions, by revising the definition of Microbrewery without conditions.

Voting Aye: Catalani, Dougan, Groce, Meleky, Resnik, Souers, Wheeler
Voting Nay: none
Absent: none

SPEAKERS AT THE PUBLIC HEARING:

For: Matt Ehinger, 15103 Surveyor Blvd
On: none
Against: none

October 11, 2018

STAFF REPORT

RE:	Case 1785-Z/Town of Addison
LOCATION:	N/A – This is a text amendment to the zoning code.
REQUEST:	Approval of an ordinance amending Article XX, Special Uses, item (39) Microbrewery, and Article XXX, Definitions, by revising the definition of Microbrewery.
APPLICANT:	Town of Addison

DISCUSSION:

Background: In 2013 the Texas Legislature adopted bills pertaining to the craft brewing industry that were intended to help the industry grow and flourish. The bills authorized brewers and manufacturers that produce less than 125,000 barrels of beer and ale annually to obtain a self-distribution license and/or permit and sell up to 40,000 barrels annually direct to retailers. Brewers and manufacturers who produce no more than 225,000 barrels annually were also allowed to sell no more than 5,000 barrels annually of malt beverages, produced on the brewery premises, to visitors of the brewery for on-site consumption. Prior to this legislation, breweries could give beer away on site, but could not sell it.

As a result of this legislation, in December 2013, the Town amended the Zoning Ordinance to establish the definition of microbreweries and to include them under the Special Use Permit section.

Currently, Article XXX. Definitions of the Zoning Ordinance defines microbreweries as:

> An establishment:
>
> (a) located at premises and that holds at those premises:
>
> (i) both a valid brewer's self-distribution permit and a valid manufacturer's self-distribution license issued by the State of Texas and whose annual production of beer and ale, combined, at the premises does not exceed 125,000 barrels, and

whose sales of beer and ale, combined at the same premises does not exceed 40,000 barrels annually; and/or

(ii) both a valid brewer's permit and a valid manufacturer's license and whose annual production of beer and ale, combined at the premises does not exceed a total of 225,000 barrels, and whose total combined sales of beer and ale produced on the same premises under the said permit and license to ultimate consumers on the premises for responsible consumption on the premises does not exceed 5000 barrels annually, and whose sale to such ultimate consumers takes place only between 8:a.m. and midnight on any day except Sunday and between 10 a.m. and midnight on Sunday; and

(b) that is in compliance at all times with the applicable permits and licenses described in subsection (a) and with all applicable laws, rules and regulations of the State and with the Charter and ordinances of the town and that promptly provides to the town information requested, and in form and format determined, by the town to determine such compliance.

Article XX. Special Uses currently reads as follows:

(39) Microbrewery in any district other than a planned development district; in a planned development district, a microbrewery may be authorized if such use is specifically allowed in the ordinance establishing the planned development district.

Current TABC regulations allow holders of a brewpub permit to sell beer, malt liquor, and ale for off-premises consumption. The Town's definition of a microbrewery only allows for the sale of beer and ale but does not allow for any off-premises sales.

<u>Current Request:</u> Microbreweries can also apply to be brewpubs, therefore, in order to bring the Town's ordinance into conformity with TABC guidelines, as well as allow such businesses to sell for off-premises consumption, staff is proposing to revise two sections of the ordinance pertaining to microbreweries:

Staff is proposing to revise Article XXX, Definitions of the Zoning Ordinance, as follows:

Microbrewery - an establishment:

(a) located at premises and that holds at those premises:

(i) both a valid brewer's self-distribution permit and a valid manufacturer's self-distribution license issued by the State of Texas, <u>or a brewpub permit,</u> and whose annual production of beer and ale, combined, at the premises does not exceed 125,000 barrels, and whose sales of beer and ale,

combined at the same premises does not exceed 40,000 barrels annually; and/or

(ii) both a valid brewer's permit and a valid manufacturer's license, or a brewpub permit, and whose annual production of beer and ale, combined at the premises does not exceed a total of 225,000 barrels, and whose total combined sales of beer and ale produced on the same premises under the said permit and license to ultimate consumers on the premises for responsible consumption on the premises does not exceed 5000 barrels annually, and whose sale to such ultimate consumers takes place only between 8:a.m. and midnight on any day except Sunday and between 10 a.m. and midnight on Sunday; and

(b) that is in compliance at all times with the applicable permits and licenses described in subsection (a) and with all applicable laws, rules and regulations of the State and with the Charter and ordinances of the town and that promptly provides to the town information requested, and in form and format determined, by the town to determine such compliance.

Staff is also proposing to revise Article XX, Special Uses, to read as follows:

(39) Microbrewery with sale of beer for off premises consumption in any district other than a planned development district; in a planned development district, a microbrewery may be authorized if such use is specifically allowed in the ordinance establishing the planned development district.

RECOMMENDATION: **APPROVAL**

Currently, the only microbrewery in Addison is Bitter Sisters Brewing Company, located at 15103 Surveyor Blvd. Bitter Sisters has expressed an interest in the ability to sell for off-premises consumption. This text change would allow Bitter Sisters to do so. Additionally, other microbreweries, approved through the SUP process in the future, would also be allowed to sell beer for off-premises consumption in accordance with TABC requirements.

When the microbrewery definition was added in 2013, the Town was interested in promoting this use throughout the Town. While the use did not catch on as quickly as originally hoped, this change keeps Addison as a competitive destination for microbreweries in the future.

Work Session and Regular Meeting **14.**

Meeting Date: 11/13/2018

Department: Infrastructure- Development Services

AGENDA CAPTION:

Hold a Public Hearing, Present, Discuss, and Consider Action on an Ordinance Approving **Development Plans for the Development of Vitruvian West Phase II and III, Including Site Plan, Landscape Plan, Building Elevations, and Floor Plans for 767 Multifamily Units, Including Amenities, on a 6.854 Acre Property in an Existing Planned Development District (PD O07-034 as Amended By O16-017), Generally Located on the Northeast Corner of Marsh Lane and Vitruvian Way, and Approving Waivers to Construction Materials.** Case 1786-Z/Vitruvian West Phase II and III.

BACKGROUND:

COMMISSION FINDINGS:

The Addison Planning and Zoning Commission, meeting in regular session on October 16, 2018, voted to recommend approval of a development plan for the development of Vitruvian West Phase II and III, including site plan, landscape plan, utility and drainage plan, building elevations, and floor plans for 767 multifamily units, including amenities, on a 6.854 acre property in an existing Planned Development district (PD O07-034 as amended by O16-017), generally located on the northeast corner of Marsh Lane and Vitruvian Way, and approving waivers to construction materials, without conditions.

Voting Aye: Catalani, Dougan, Groce, Meleky, Resnik, Souers, Wheeler
Voting Nay: none
Absent: none

SPEAKERS AT THE PUBLIC HEARING: none

RECOMMENDATION:

Administration recommends approval.

Attachments

1786-Z Ordinance
1786-Z Staff Report

TOWN OF ADDISON, TEXAS

ORDINANCE NO. _____

AN ORDINANCE OF THE TOWN OF ADDISON, TEXAS, PROVIDING FOR APPROVAL OF A DEVELOPMENT PLAN FOR A MULTIFAMILY DEVELOPMENT IN A PLANNED DEVELOPMENT ZONING DISTRICT (O07-034 AS AMENDED BY O16-017) LOCATED ON 6.854 ACRES OF LAND GENERALLY LOACTED ON THE NORTHEAST CORNER OF MARSH LANE AND VITRUVIAN WAY; PROVIDING A SAVINGS CLAUSE; PROVIDING A SEVERABILITY CLAUSE; PROVIDING FOR A PENALTY OF A FINE NOT TO EXCEED THE SUM OF TWO THOUSAND DOLLARS ($2,000) FOR EACH OFFENSE; PROVIDING AN EFFECTIVE DATE.

WHEREAS, the Town of Addison, Texas (the "City") is a home rule municipality having full power of local self-government pursuant to Article 11, Section 5 of the Texas Constitution and its Home Rule Charter; and

WHEREAS, the area generally known as Vitruvian Park was zoned PD, Planned Development, with development standards and a concept plan governing the entire property through Ordinance O07-034 as amended by Ordinance O16-017; and

WHEREAS, the PD requires development plan approval prior to the issuance of a building permit; and

WHEREAS, after due deliberations and consideration of the recommendation of the Planning and Zoning Commission, the information received at the public hearing, and other relevant information and materials, the City Council of the Town of Addison, Texas finds that this ordinance promotes the general welfare and safety of this community.

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

Section 1. That 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. The property shall be improved in accordance with the development plans which are attached hereto as **Exhibit A** and made hereof for all purposes.

Section 3. The following waivers to development standards are hereby placed on the property.

1. Maximum number of building materials may be four, instead of three.

Section 4. That any person, firm, or corporation violating any of the provisions or terms of this ordinance shall be subject to the same penalty as provided for in the Comprehensive Zoning Ordinance of the city, as heretofore amended, and upon conviction shall be punished by a fine set

in accordance with Chapter 1, General Provisions, Section 1.10, General penalty for violations of Code; continuing violations, of the Code of Ordinances for the Town of Addison.

Section 5. 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 6. That 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 7. That 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 13th day of November, 2018.

_____
Joe Chow, Mayor

ATTEST:

_____
Christie Wilson, Interim City Secretary

CASE NO: 1786-Z/ Vitruvian West II and III

APPROVED AS TO FORM:

_____
Brenda N. McDonald, City Attorney

PUBLISHED ON: _____

EXHIBIT A: DEVELOPMENT PLANS

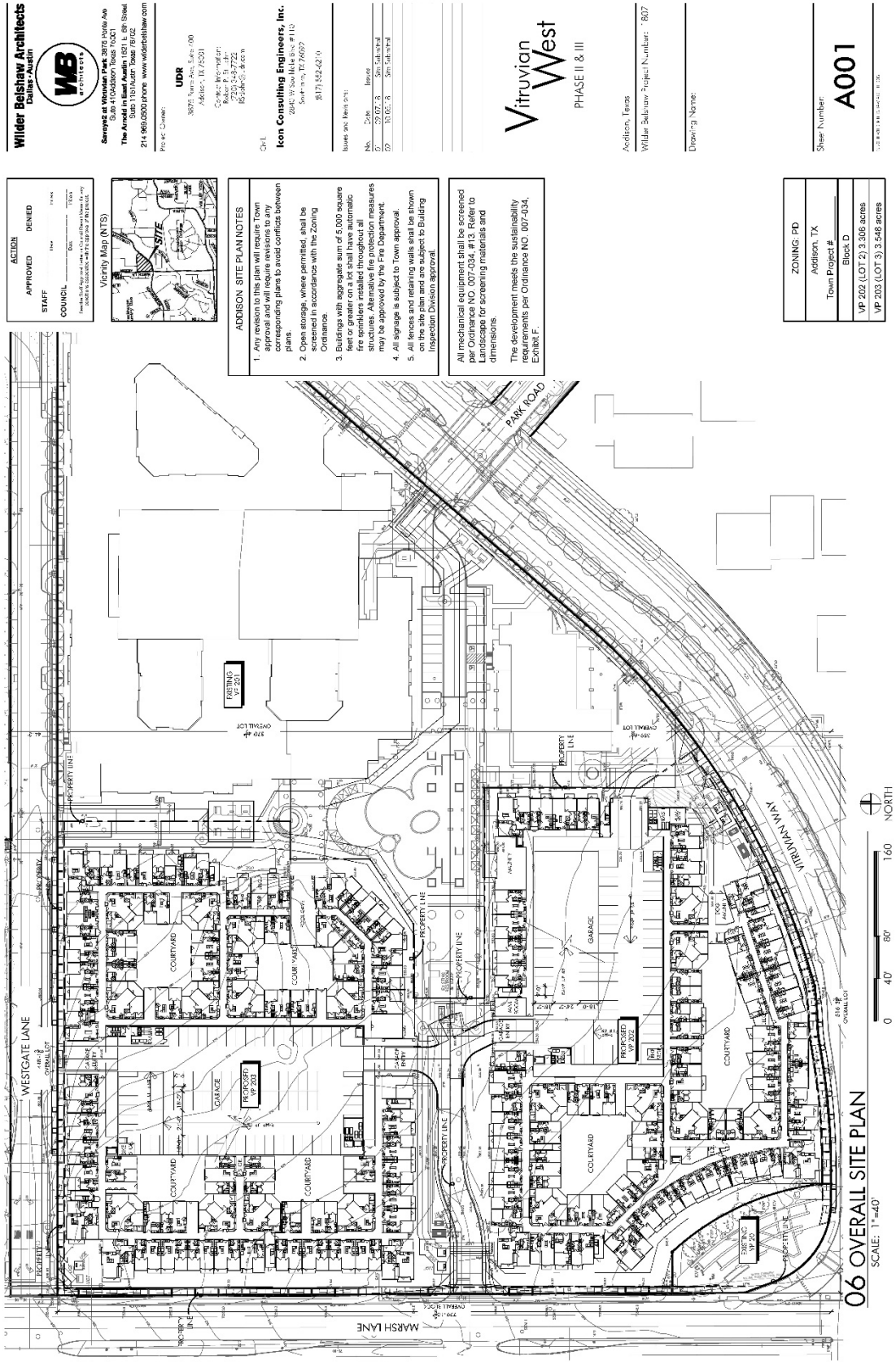

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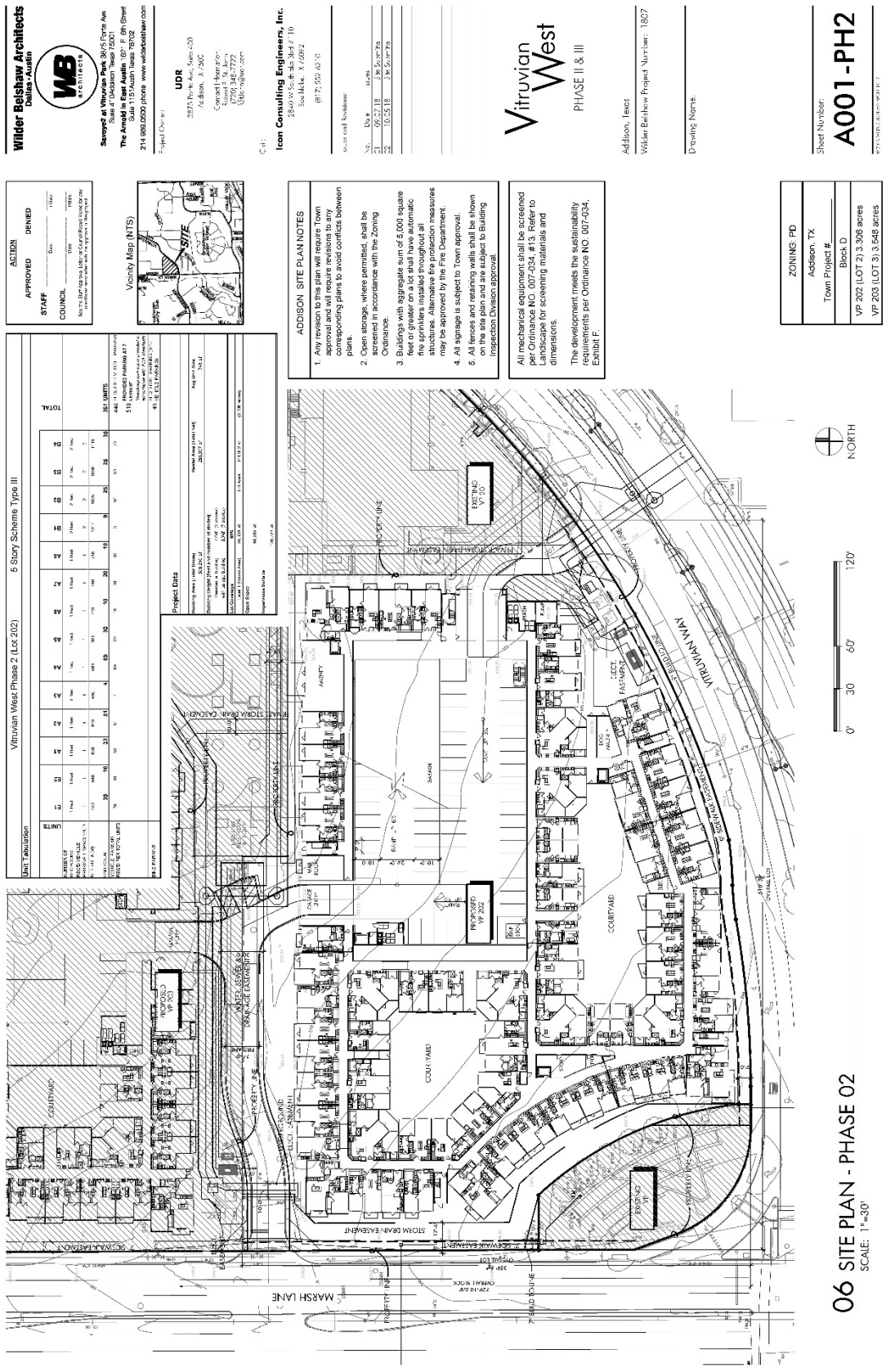
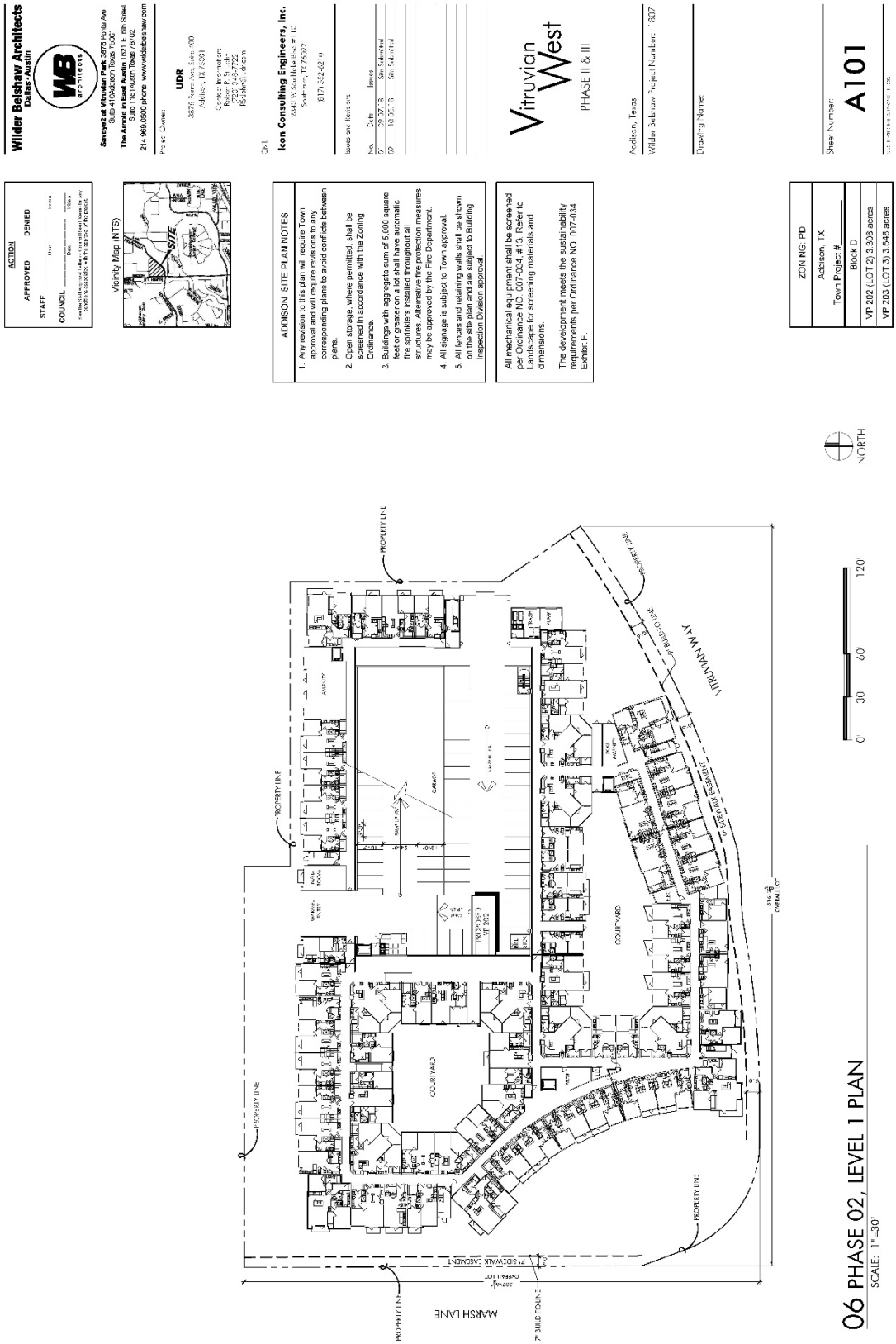
EXHIBIT A: DEVELOPMENT PLANS



06 SITE PLAN - PHASE 02
SCALE: 1" =30'

EXHIBIT A: DEVELOPMENT PLANS



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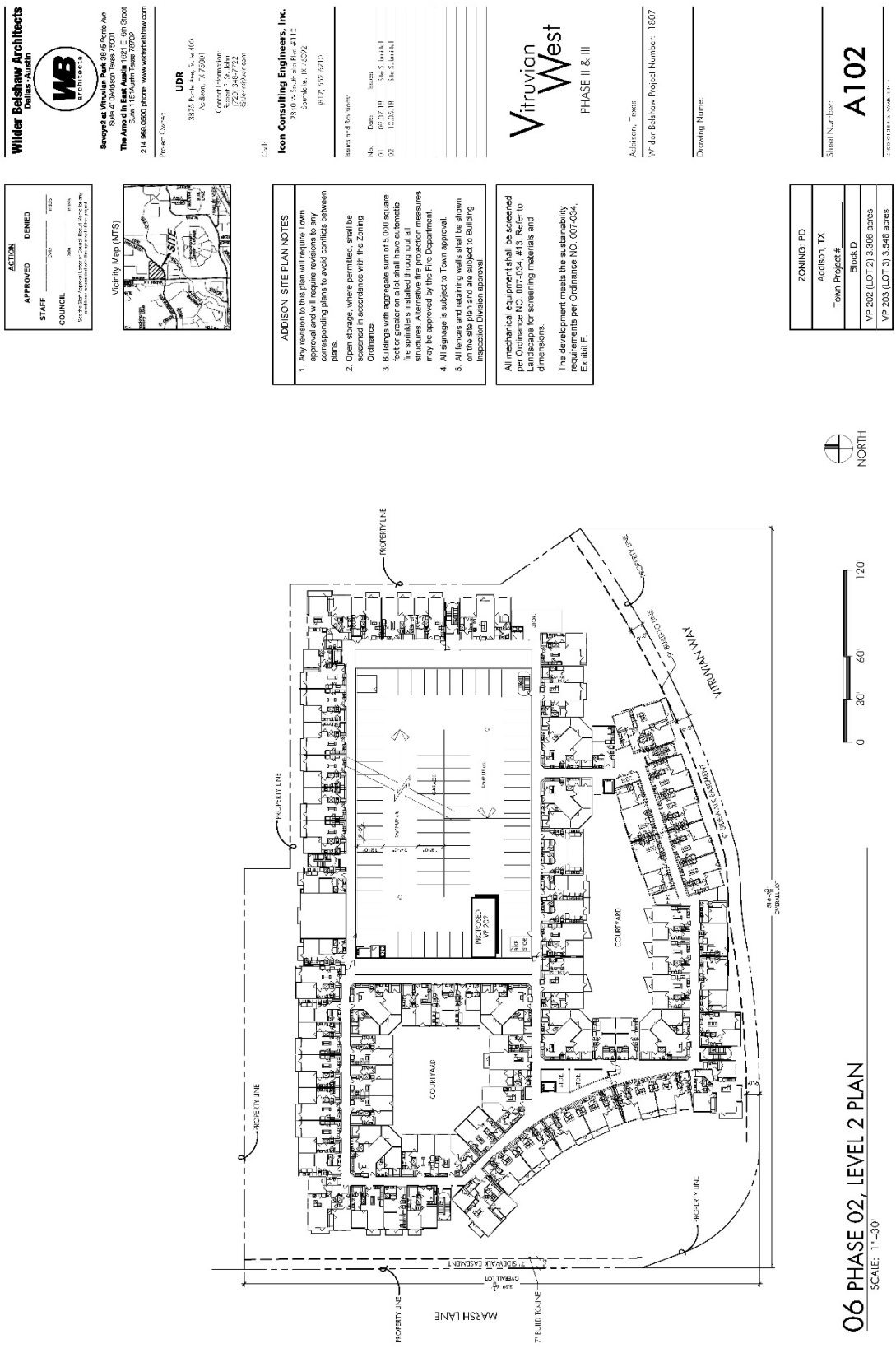


EXHIBIT A: DEVELOPMENT PLANS

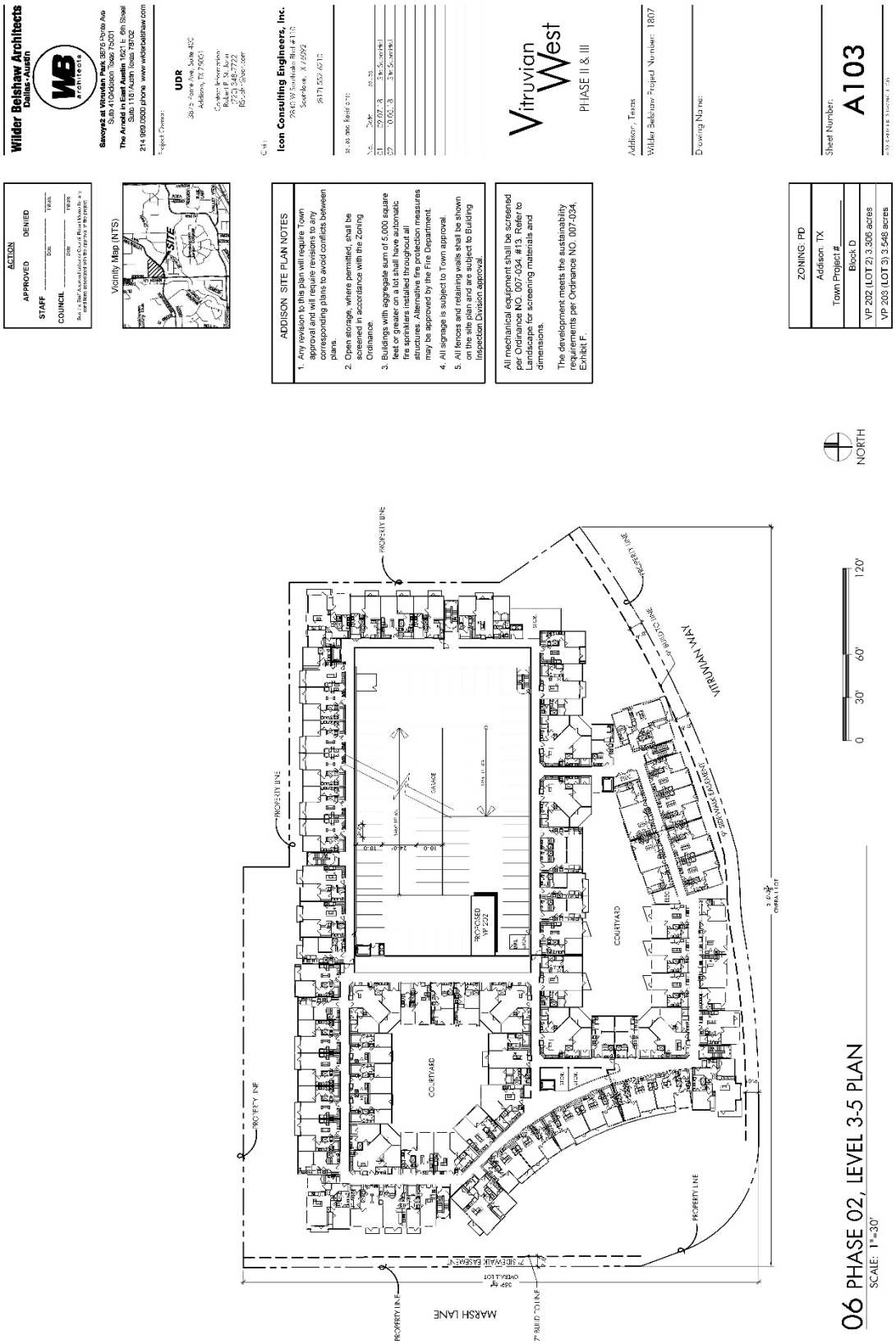


EXHIBIT A: DEVELOPMENT PLANS

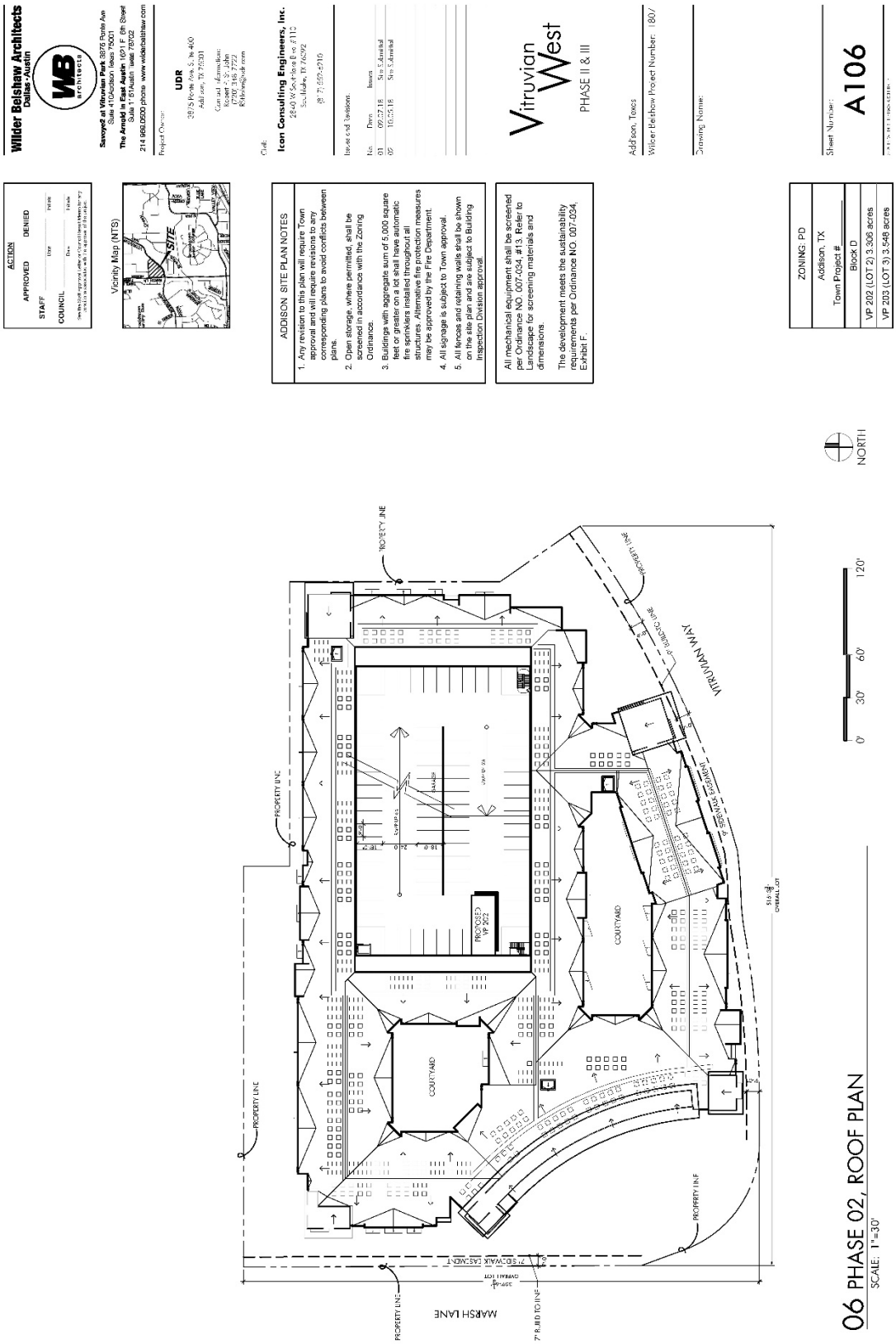


EXHIBIT A: DEVELOPMENT PLANS

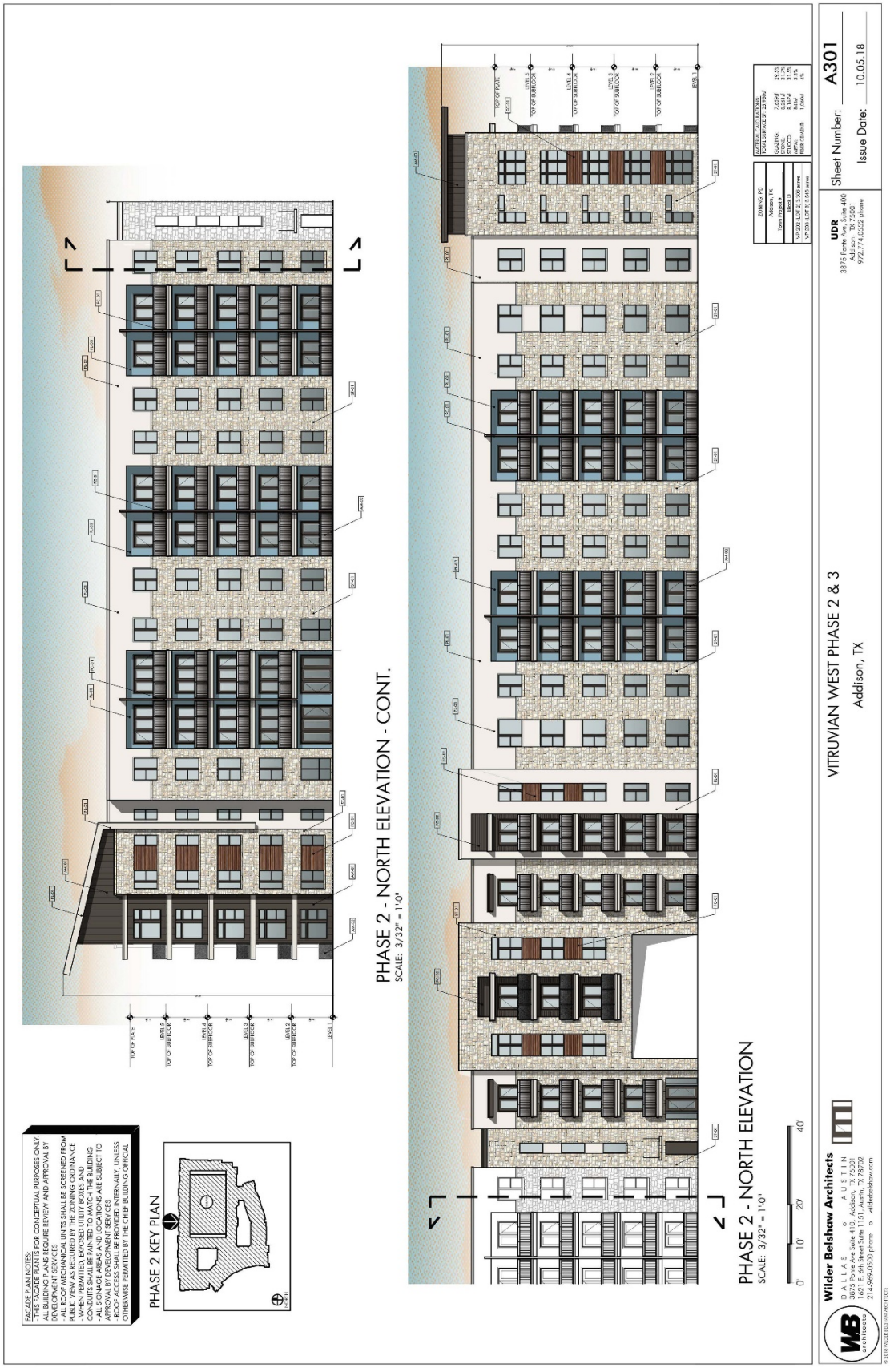
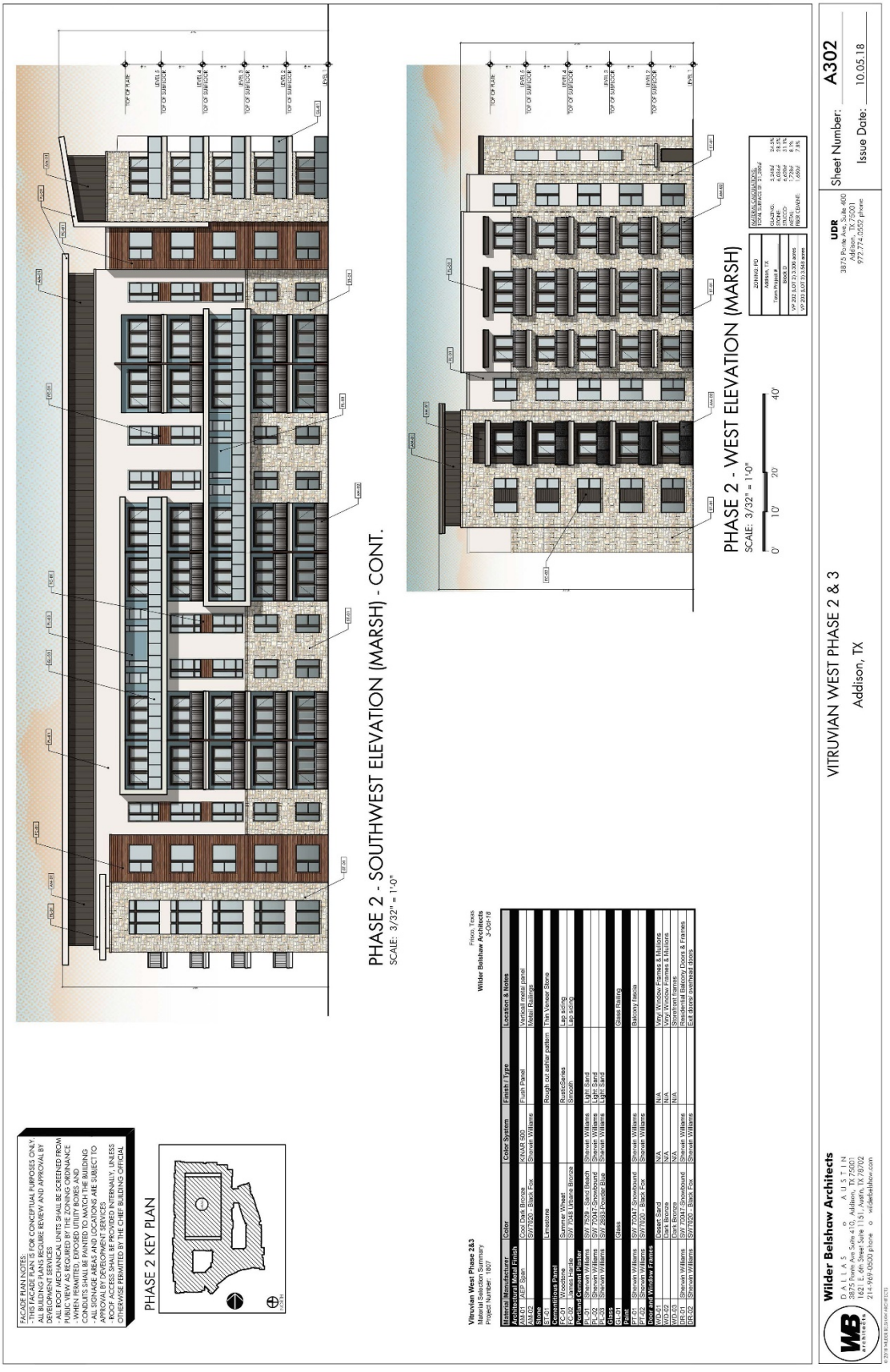


EXHIBIT A: DEVELOPMENT PLANS



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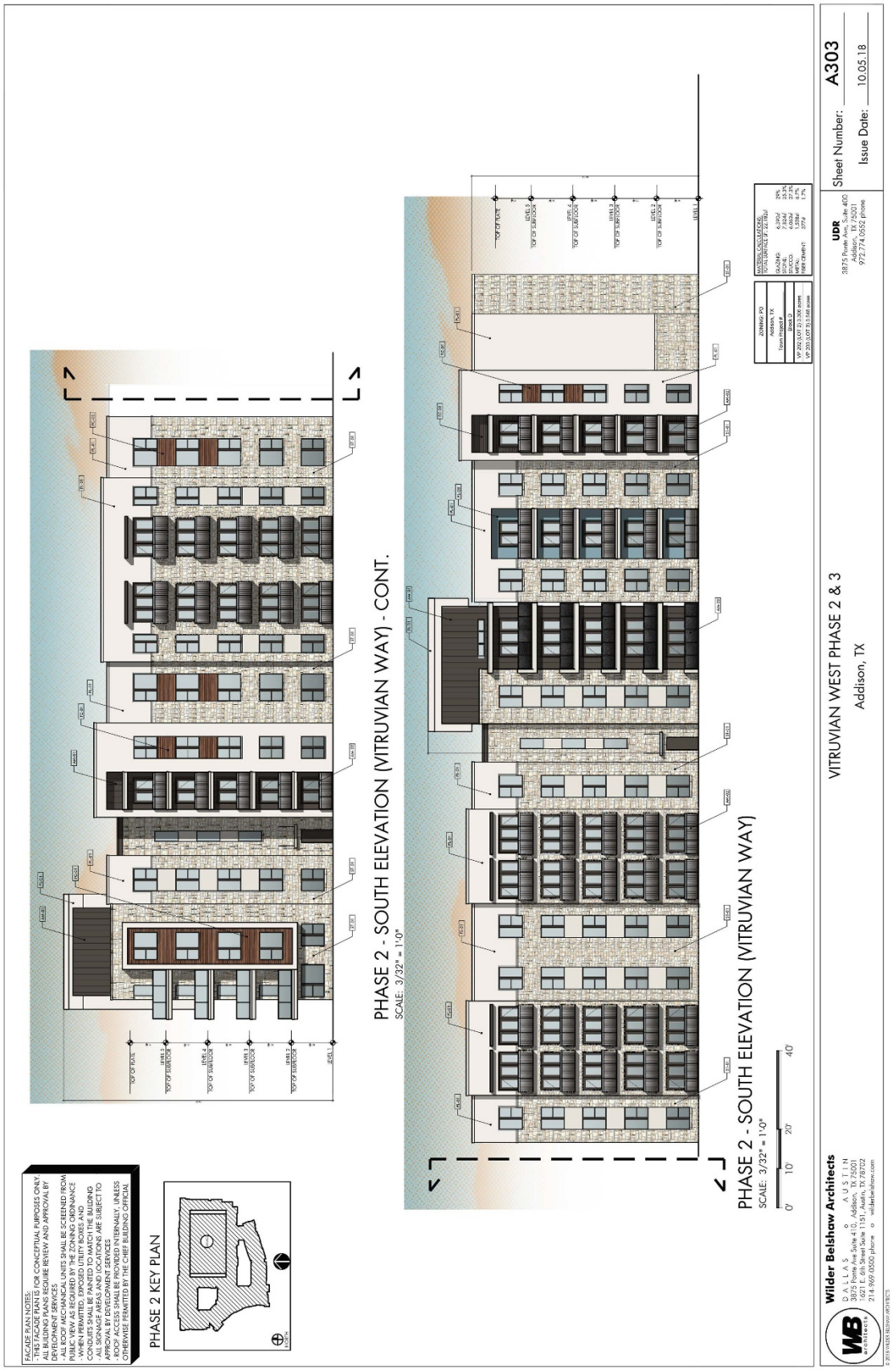

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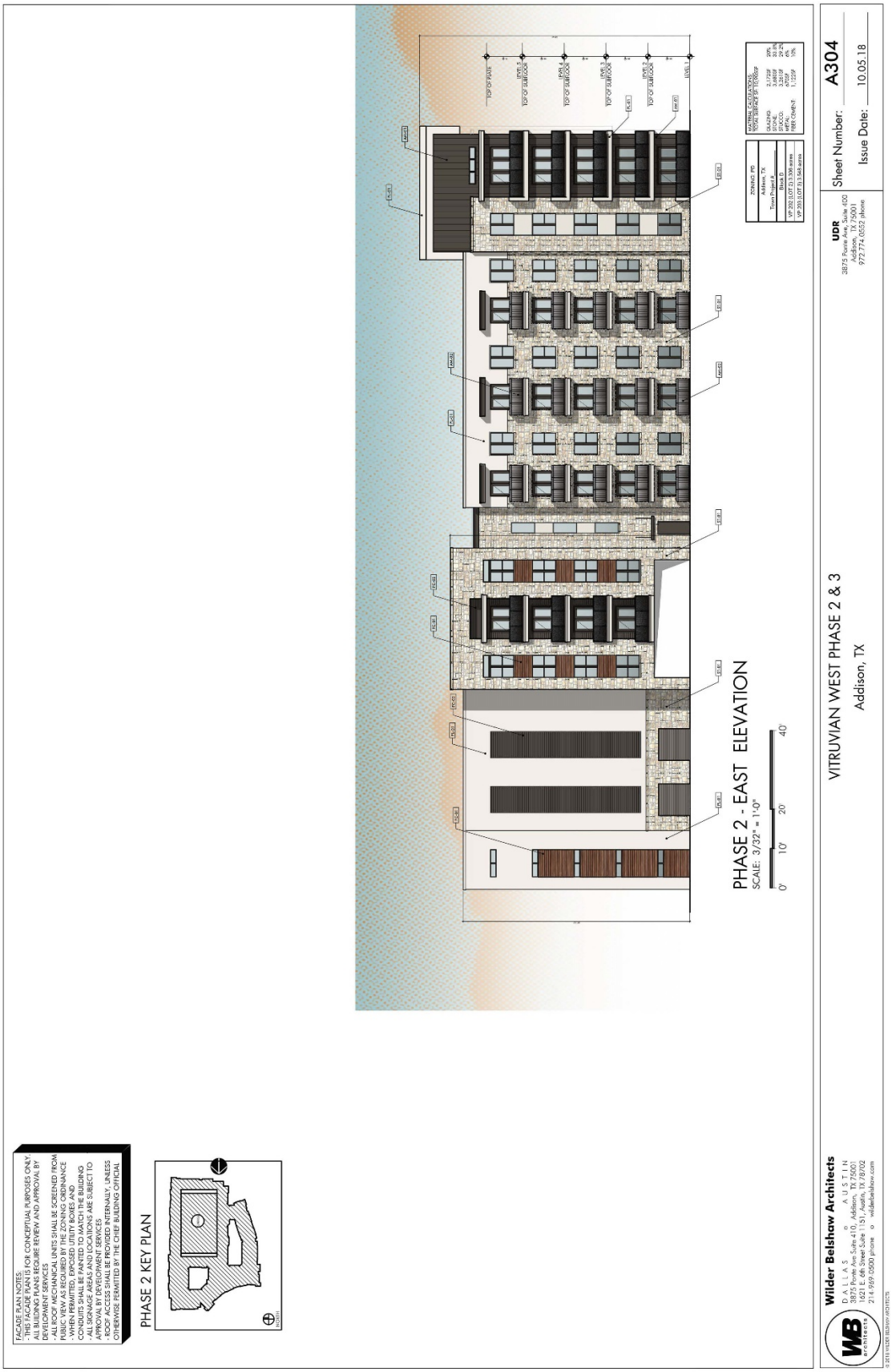

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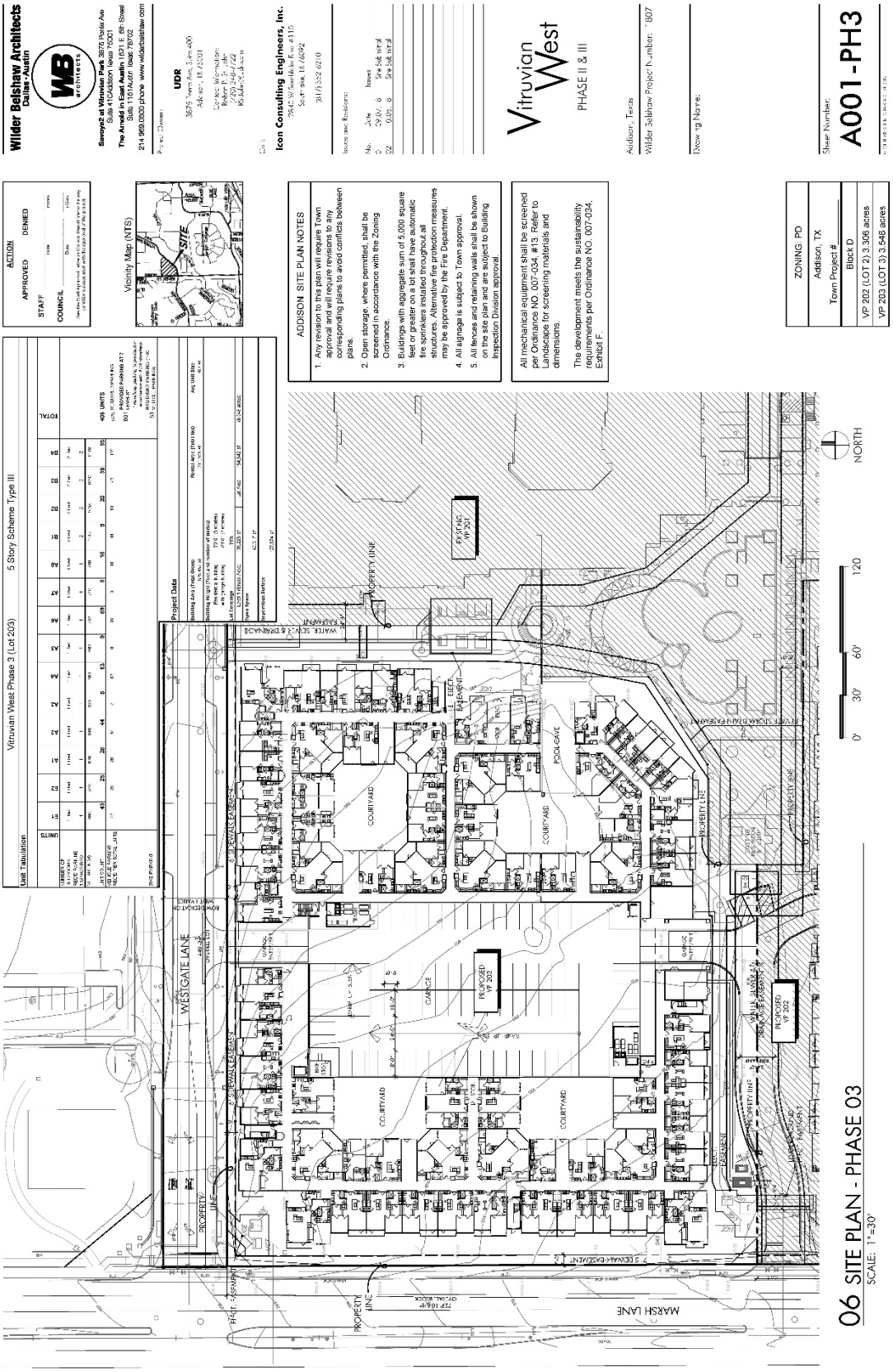

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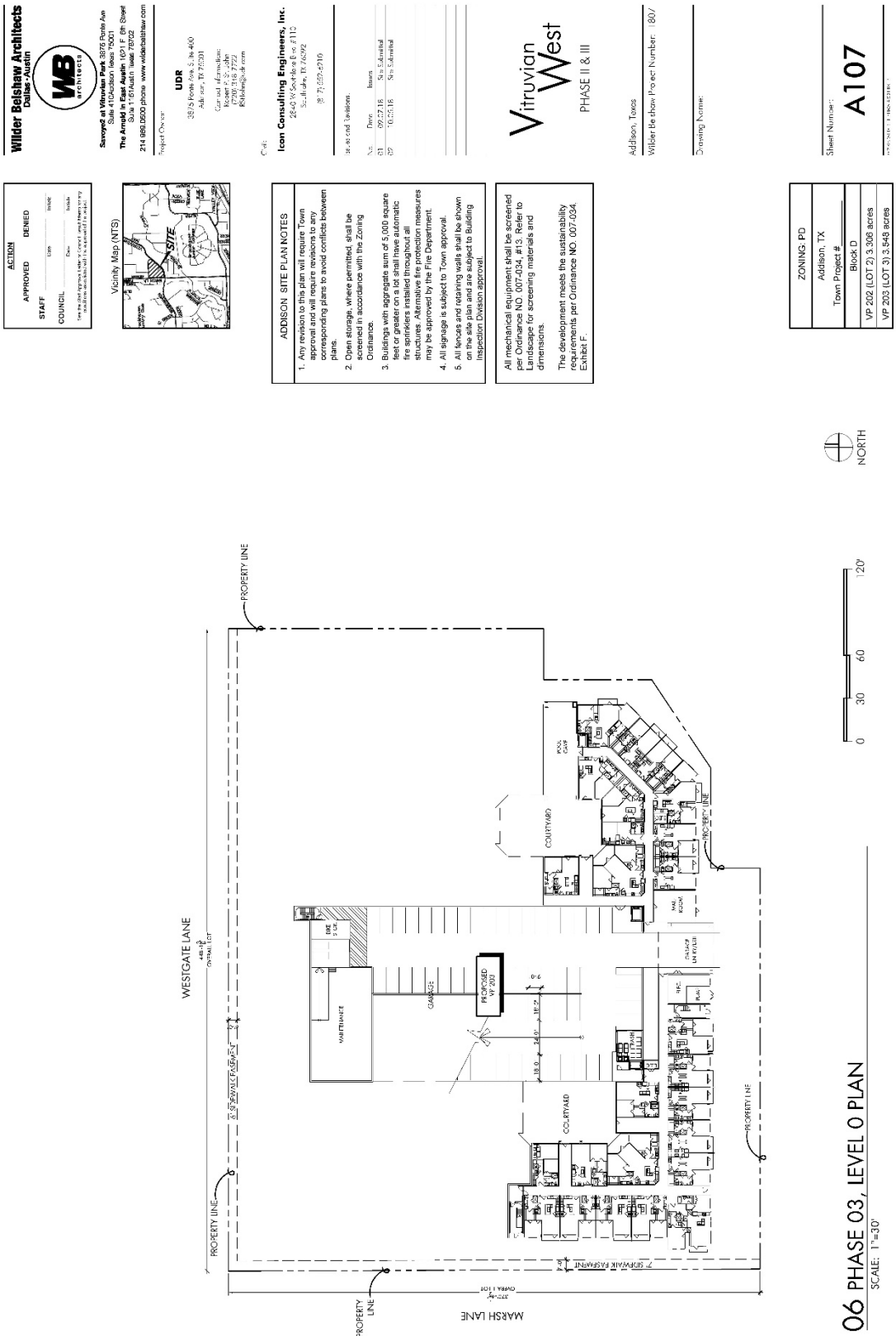

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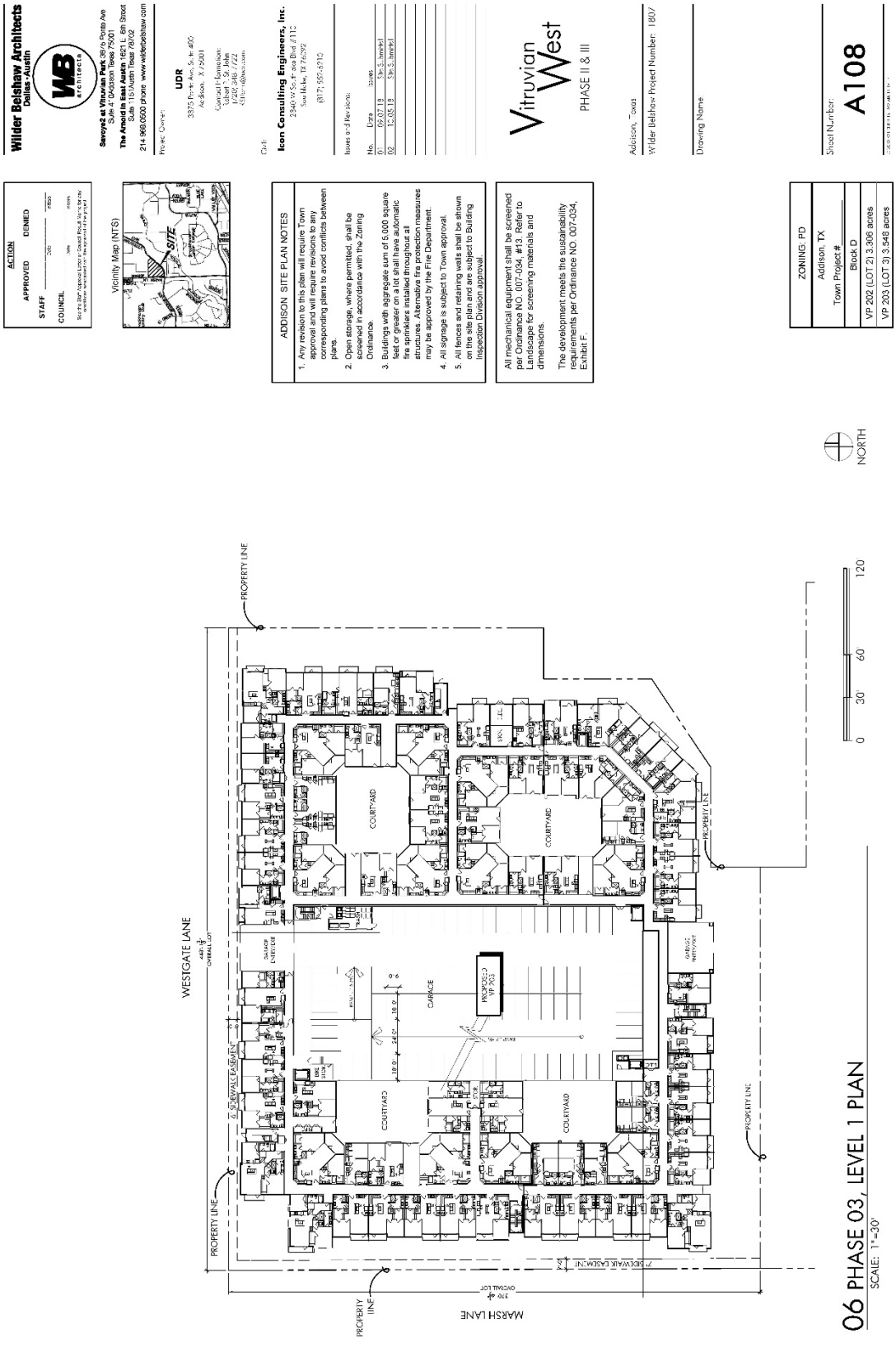

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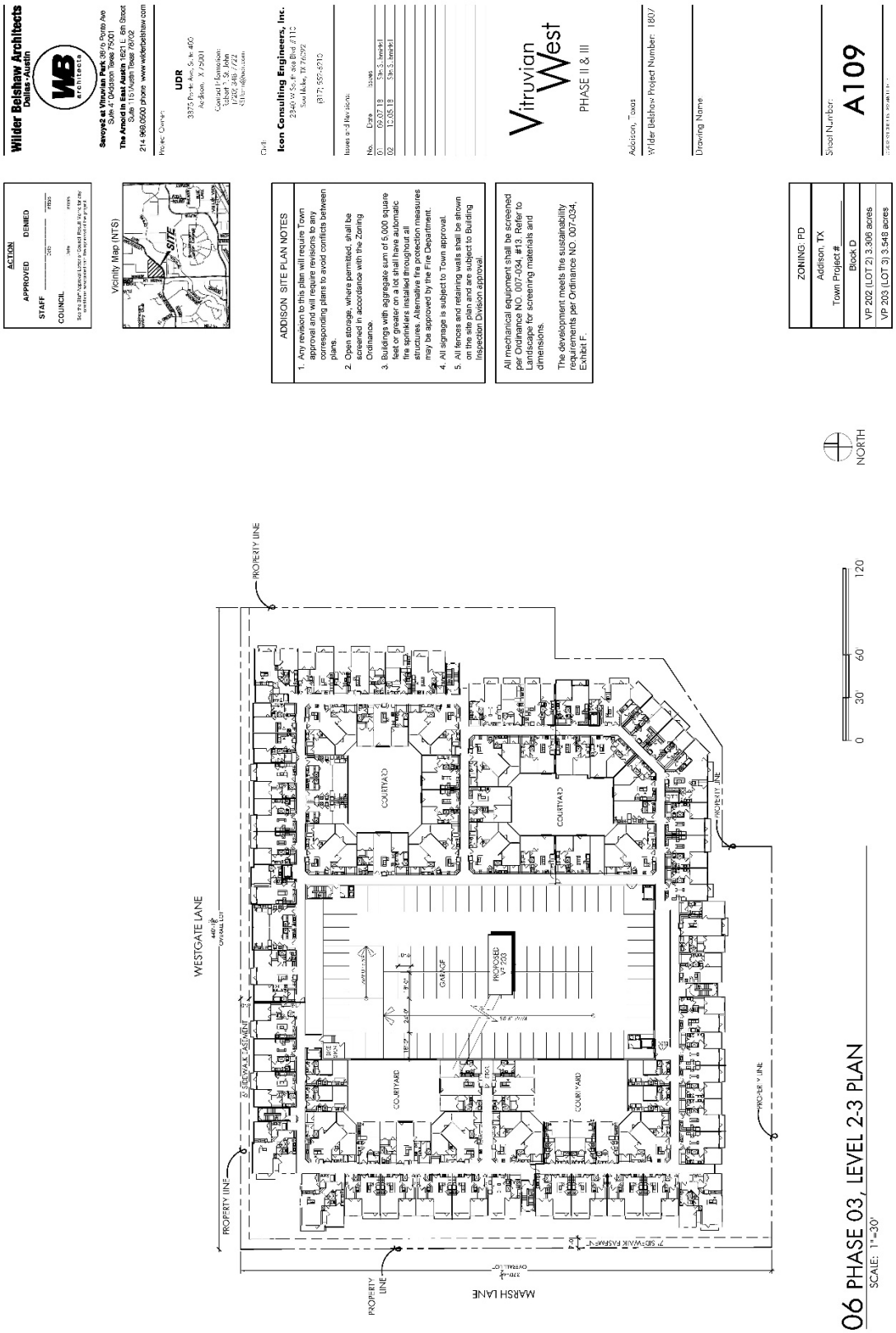

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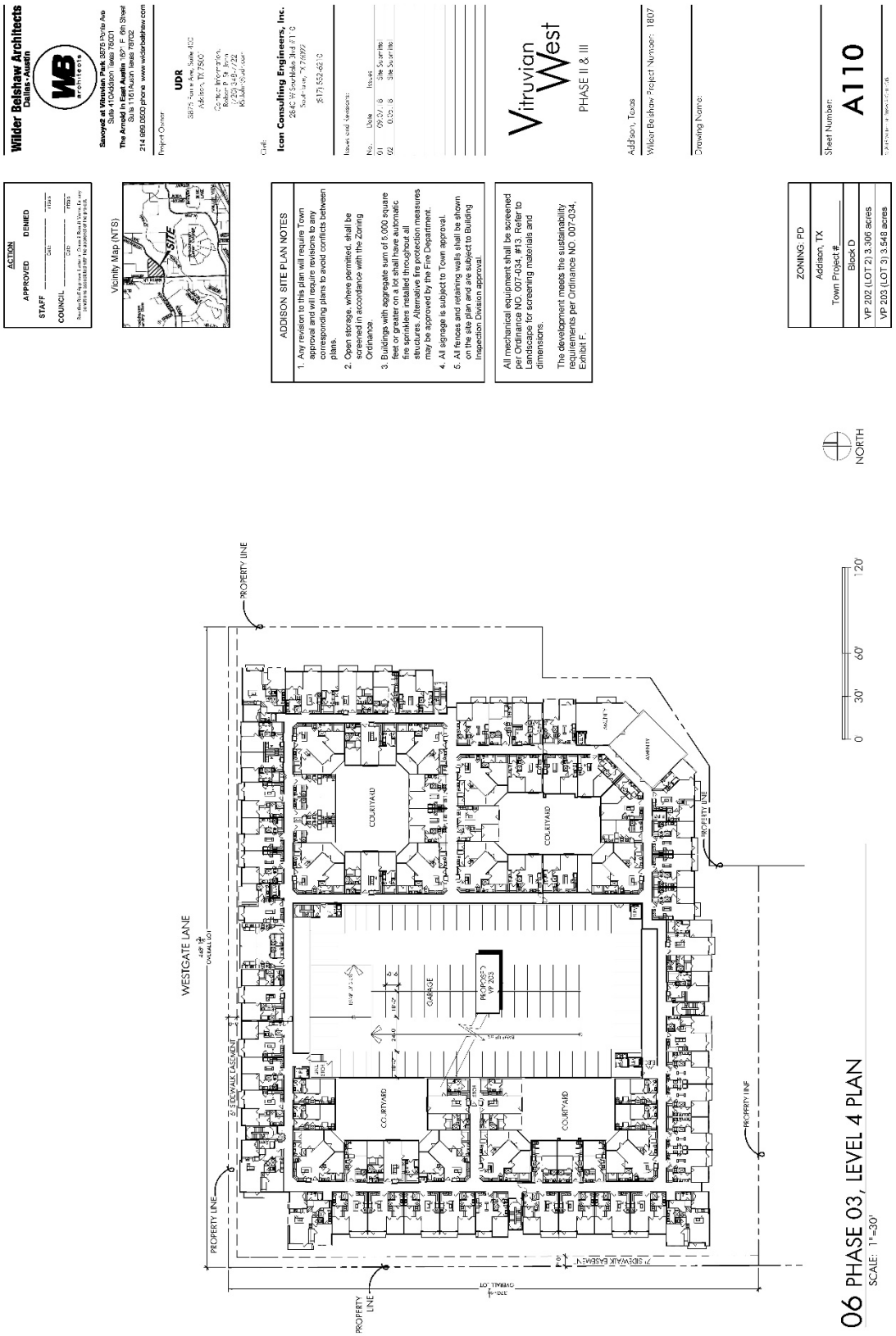

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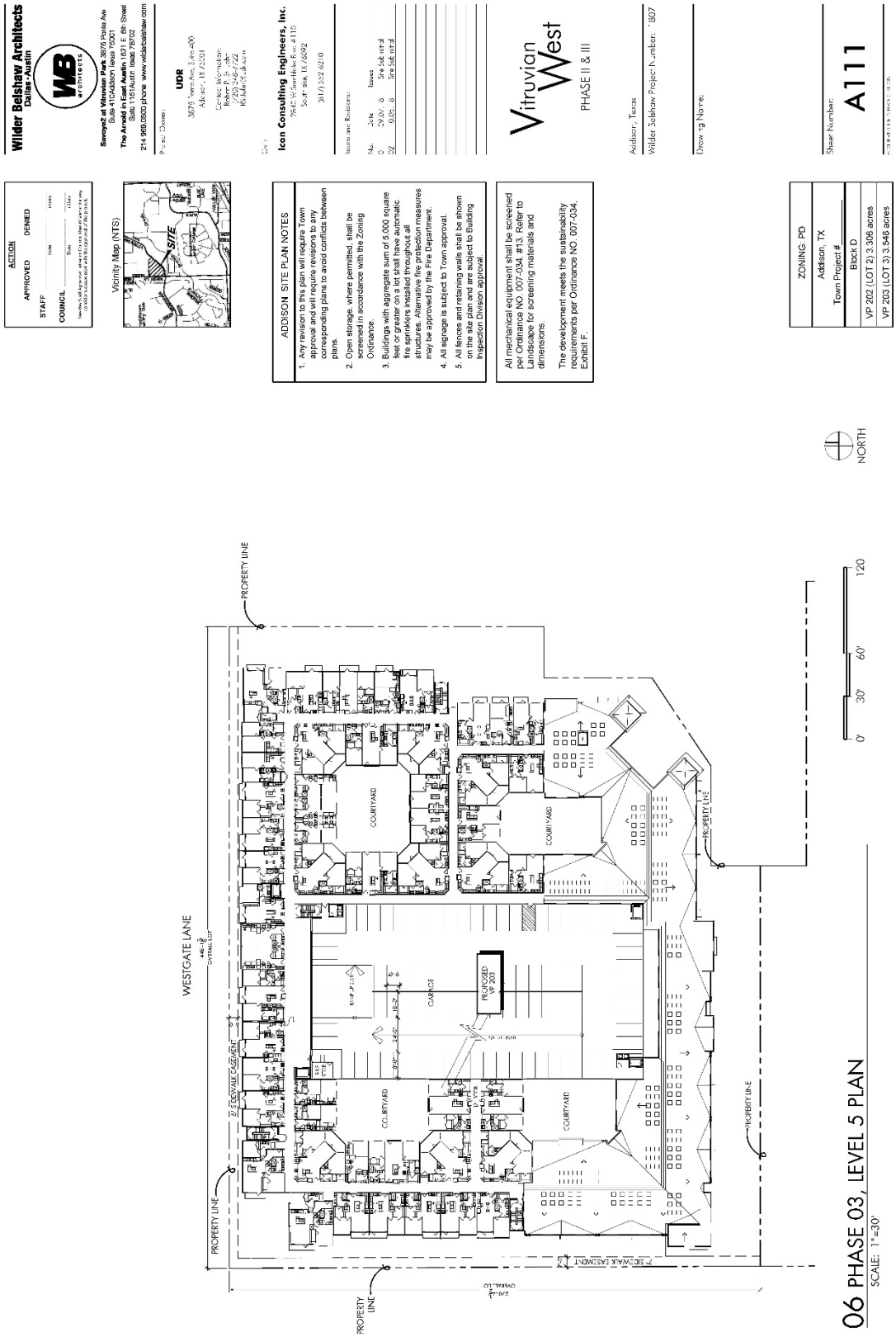

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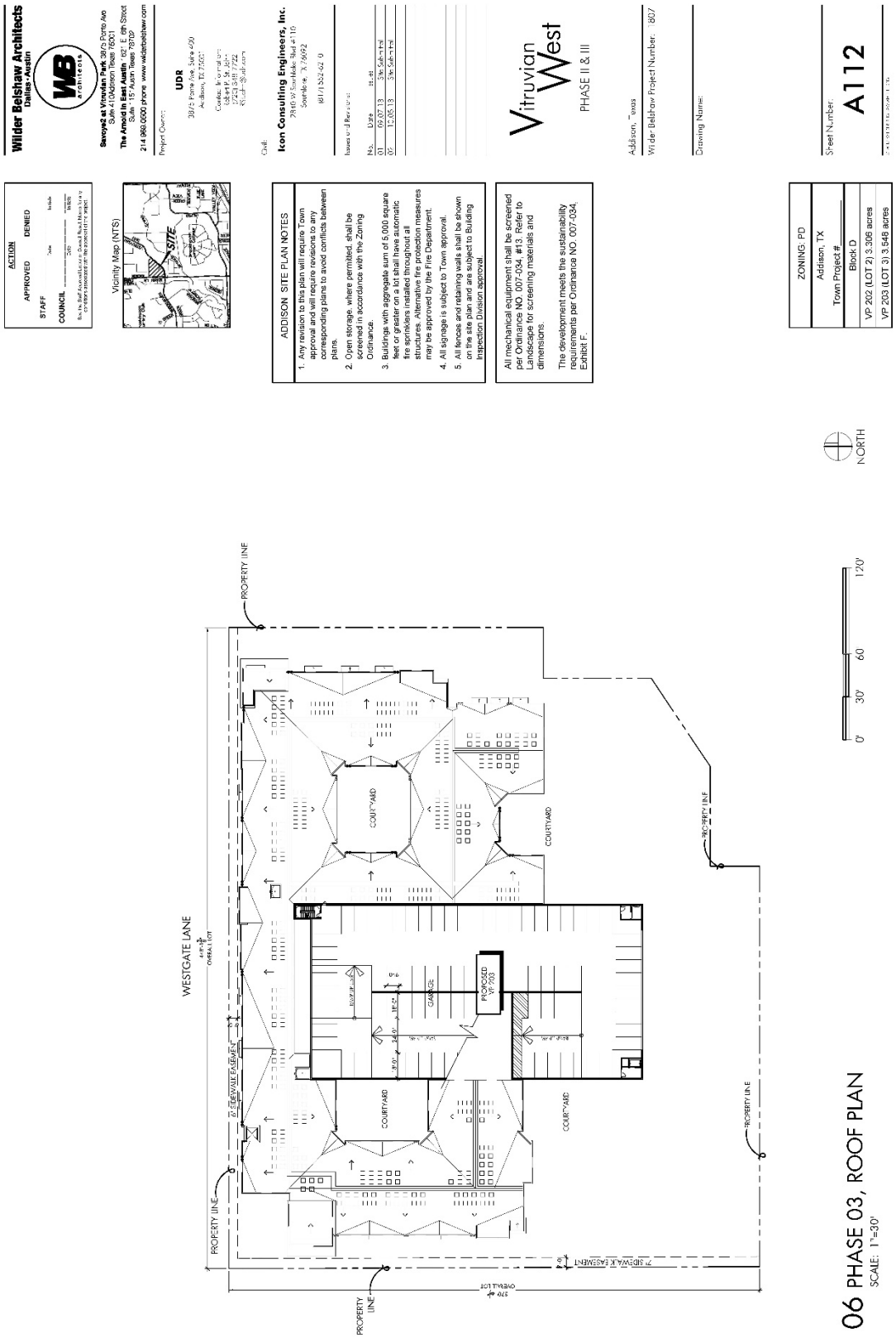

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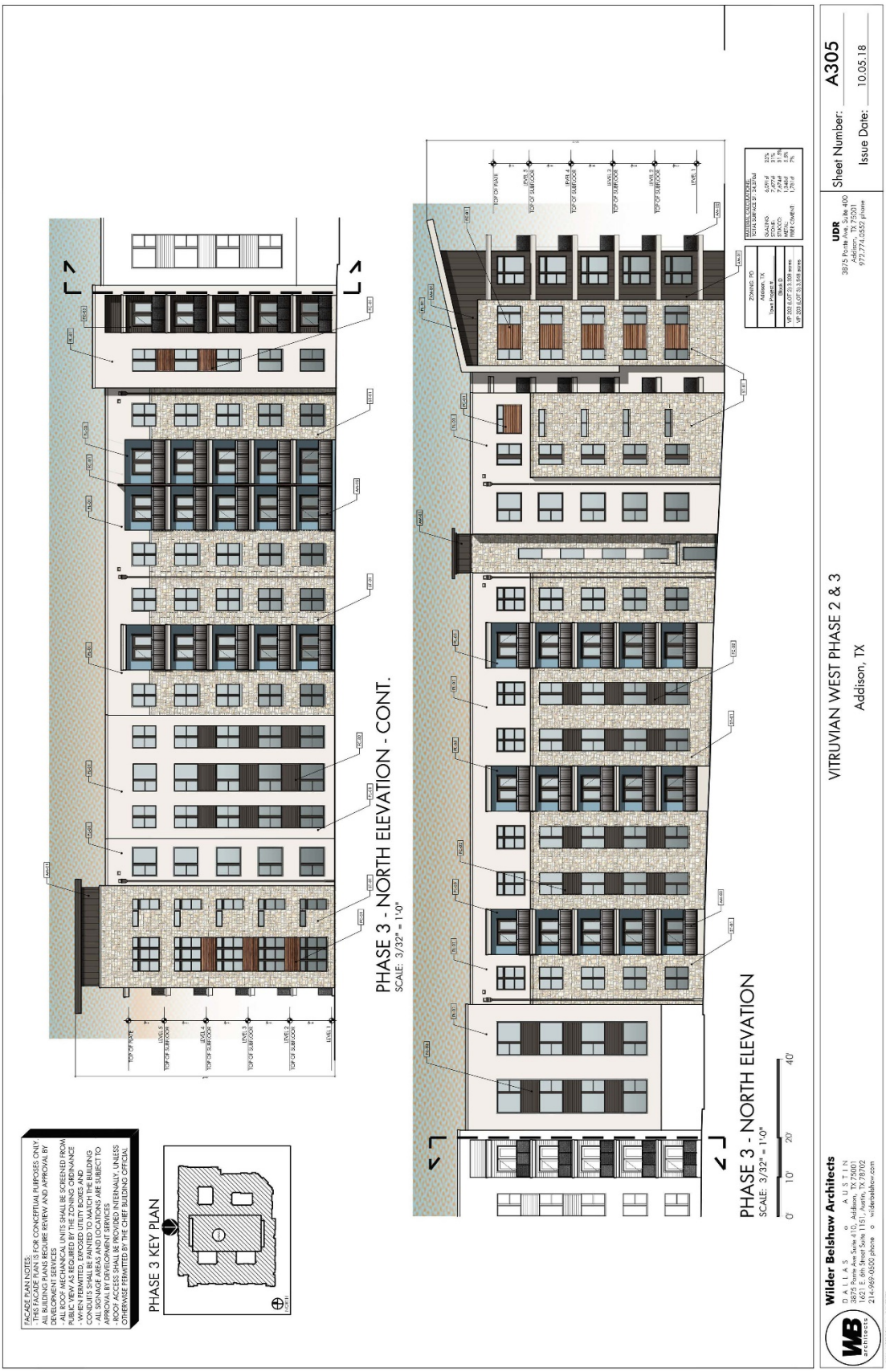

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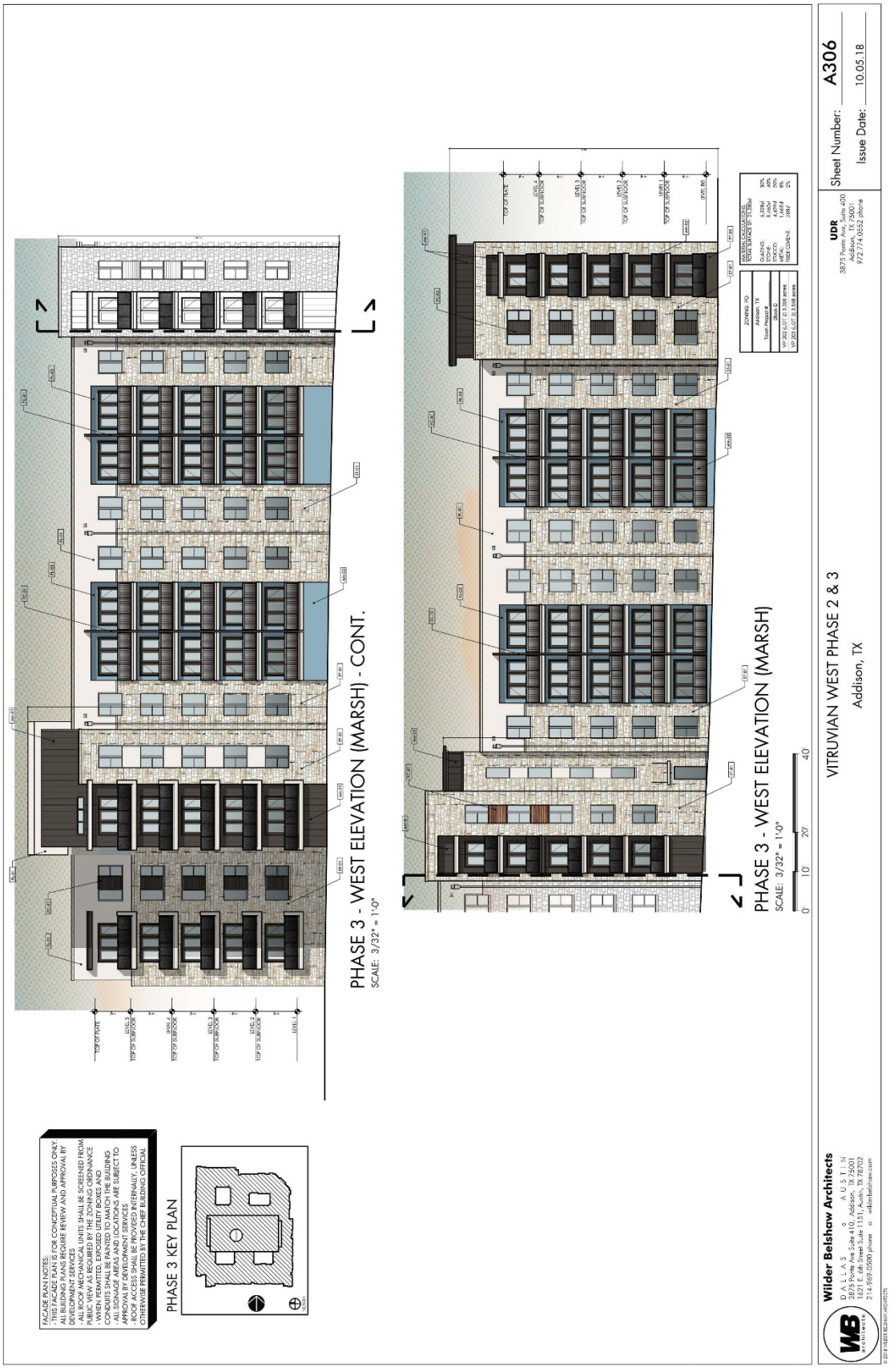

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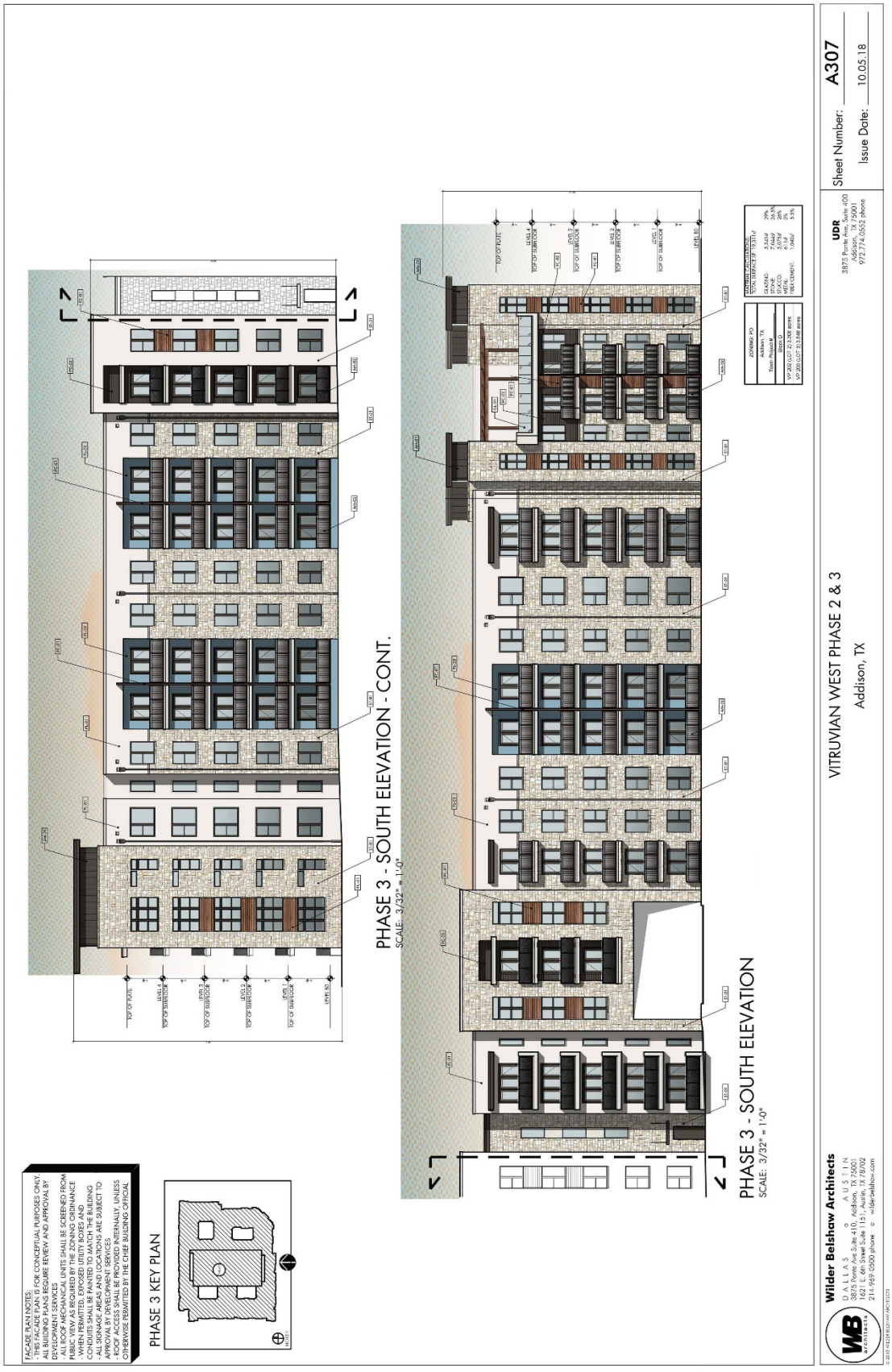

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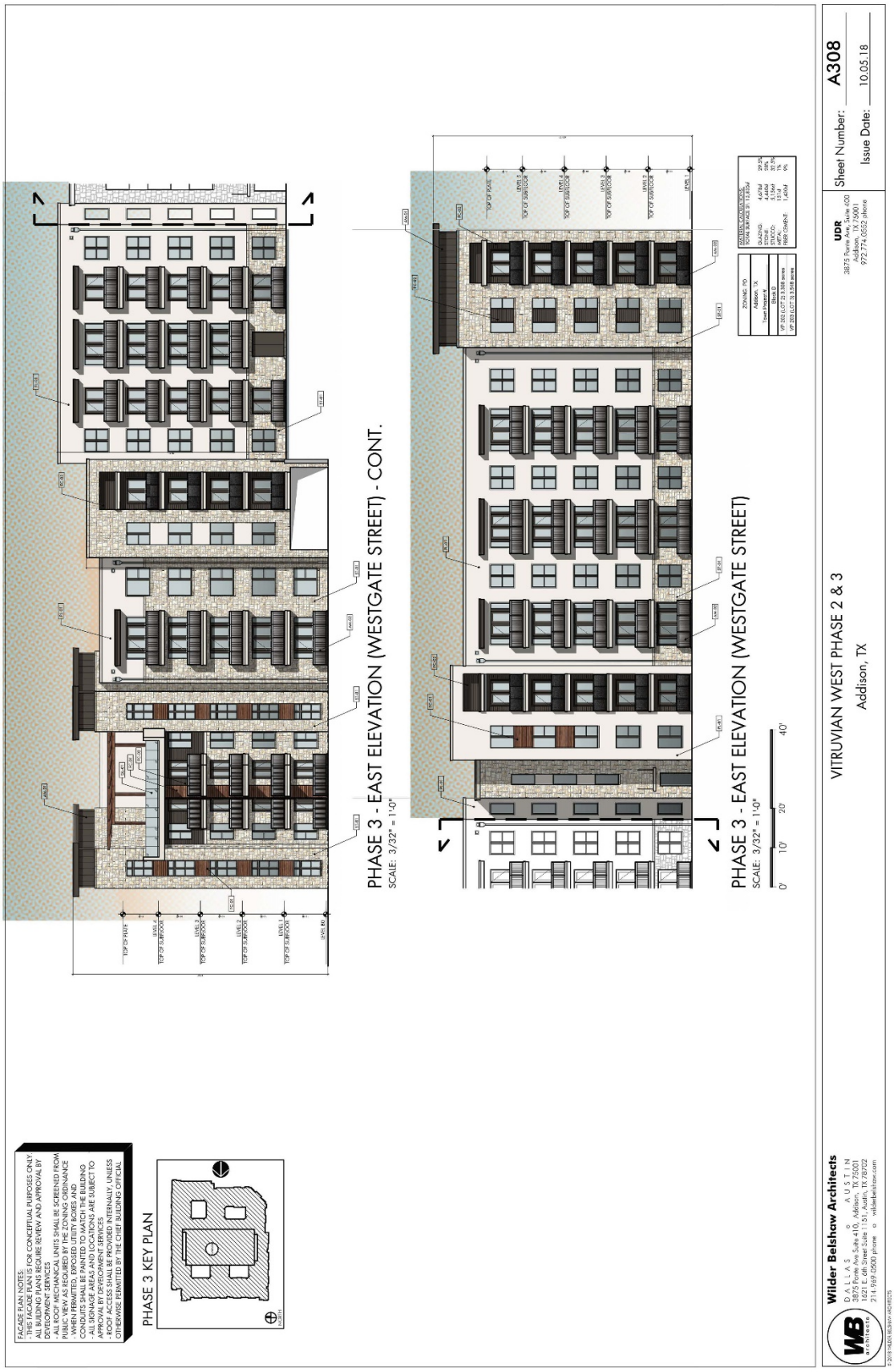

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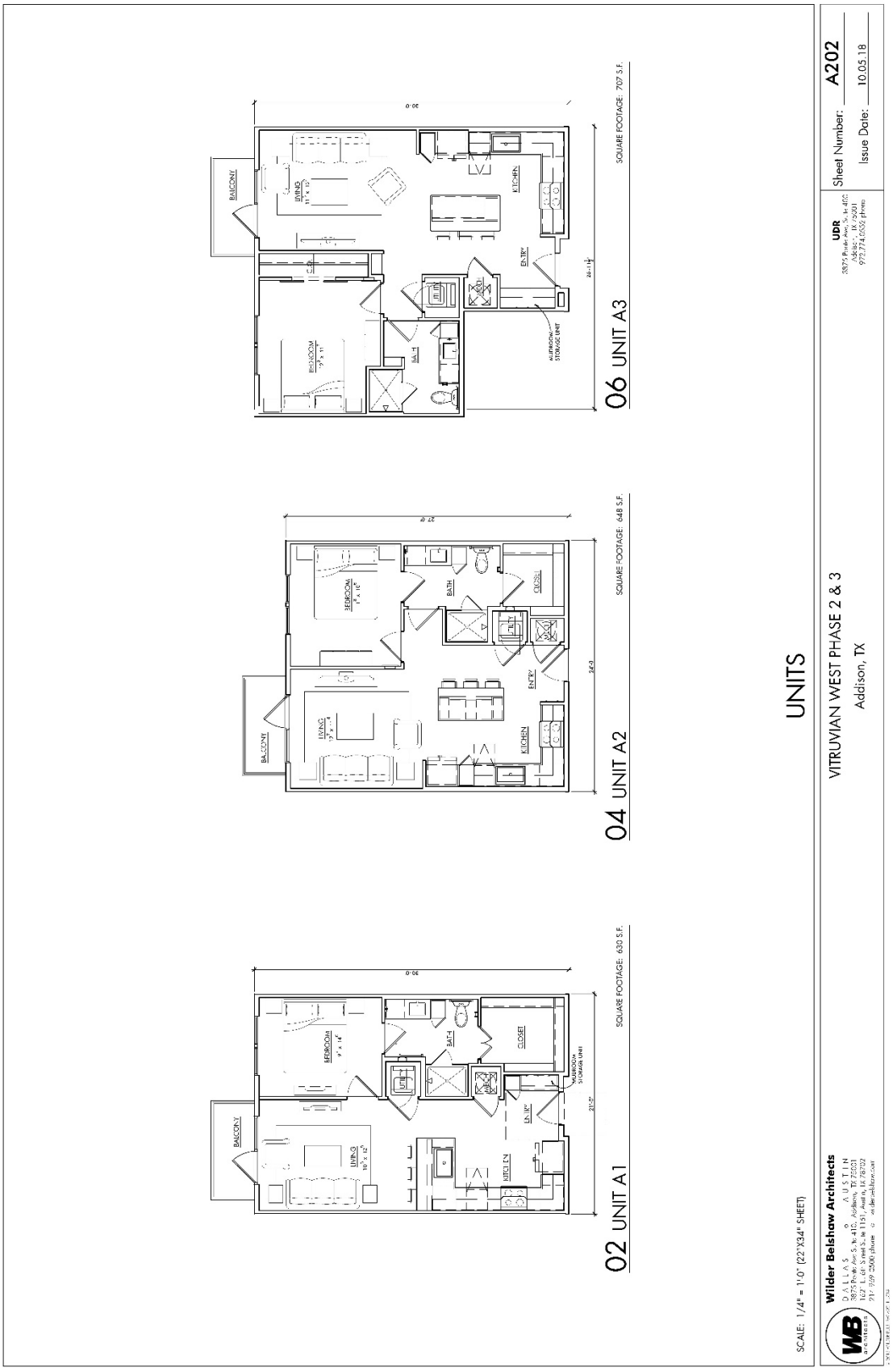

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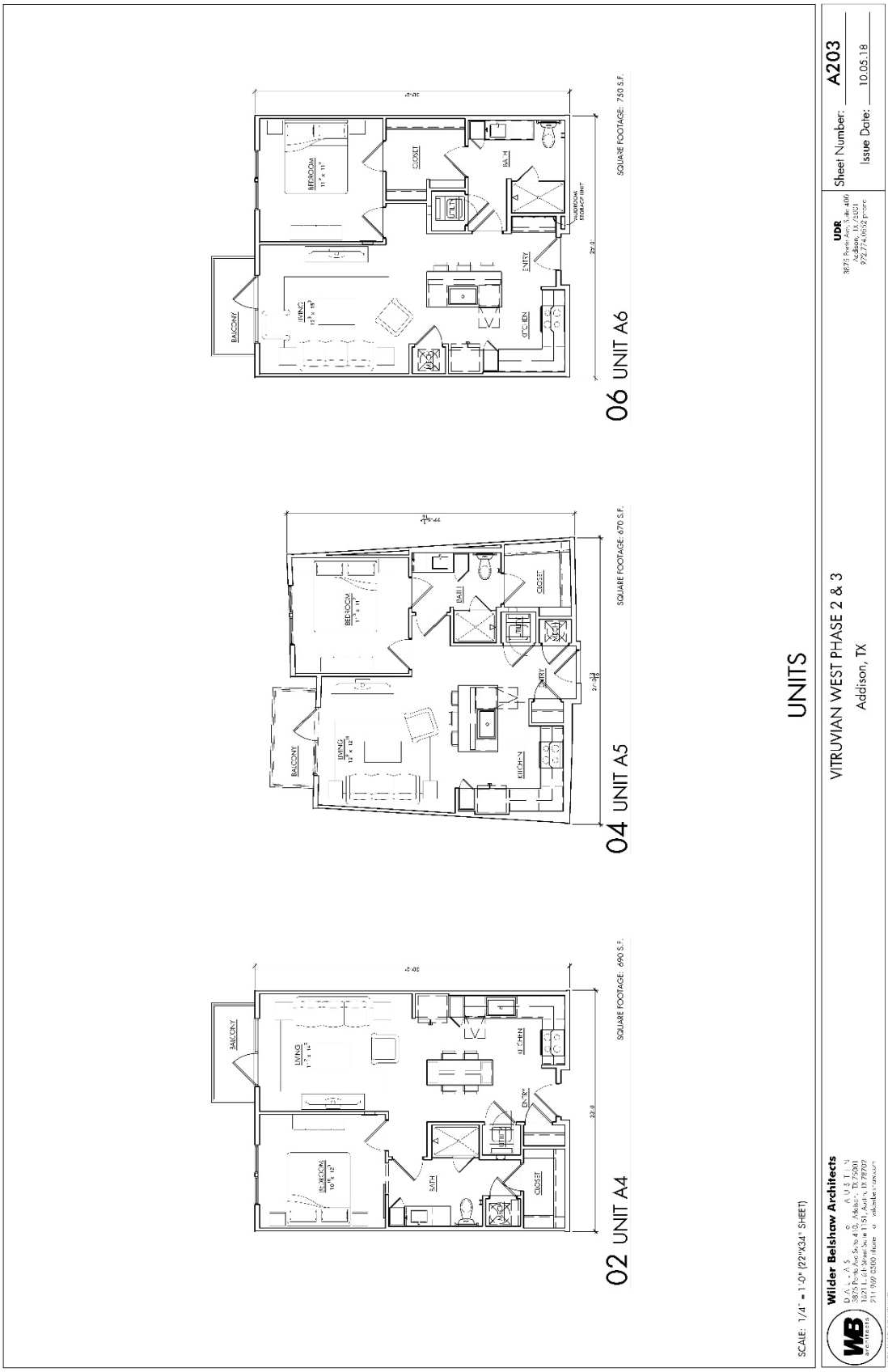

EXHIBIT A: DEVELOPMENT PLANS

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CITY GENERAL NOTES:

1. ANY PLANTING WITHIN THE PUBLIC ROW MUST BE COORDINATED WITH THE TOWN OF ADDISON PARKS DEPARTMENT.
2. MECHANICAL EQUIPMENT IS SCREENED FROM PUBLIC ROADWAYS WITH EVERGREEN LANDSCAPE MATERIAL PER ORDINANCE NO. 007-034. PLANT MATERIAL TO BE MINIMUM HEIGHT OF 8' AT TIME OF INSTALLATION.

CITY PLANTING NOTES:

1. ANY CHANGES TO PLANTINGS WITHIN THE PUBLIC R.O.W. MUST ALSO BE REPORTED TO THE TOWN OF ADDISON PARKS DEPARTMENT.
2. FINAL FINISH GRADE OF PLANTING AREAS IN THE PUBLIC R.O.W. MUST REVIEWED AND APPROVED BY THE TOWN OF ADDISON PARKS DEPARTMENT.
3. THE PARKS DEPARTMENT MUST REVIEW AND APPROVE ANY PLANT MATERIAL PROVIDED WITHIN THE PUBLIC R.O.W. PRIOR TO DELIVERY TO SITE. ANY PLANT SUBSTITUTION IN THE R.O.W. MUST BE PROVIDED TO THE PARKS DEPARTMENT FOR APPROVAL PRIOR TO PURCHASE.
4. PLANTINGS WITH THE PUBLIC R.O.W. MUST BE PLANTED WITH THE FOLLOWING SOIL SPECIFICATIONS:

   LANDSCAPE BEDS - PH BALANCED COMPOST FROM SOIL BUILDING SYSTEMS, OR APPROVED EQUAL. TILL INTO EXISTING SOIL TO ACHIEVE A MAXIMUM RATION OF 50% COMPOST AND 1 PART EXISTING SOIL.

   STREETSCAPE LANDSCAPE / TREE PLANTING BEDS - DEEP TREE PLANTING MIX FROM SOIL BUILDING SYSTEMS OR APPROVED EQUAL. THIS PERTAINS TO ALL OF THE SOIL IN THE PLANTING AREA. IT IS NOT ALLOWABLE TO KEEP 2/3 NATIVE SOIL IN THE PLANTING AREA.

   LAWN - GUMBO BUSTER FROM SOIL BUILDING SYSTEMS OR APPROVED EQUAL. TILL IN 1 PART GUMBO BUSTER WITH PART NATIVE SOIL. NOTE THAT PLANTING AREAS WITH HEAVILY COMPACTED SOIL AND CONSTRUCTION DEBRIS MAY NOT QUALIFY AS NATIVE SOIL AND IMPORTED TOPSOIL MAY BE REQUIRED.

CITY IRRIGATION NOTES:

1. AN AUTOMATIC IRRIGATION SYSTEM THAT COMPLIES WITH THE TOWNS IRRIGATION SPECIFICATIONS MUST BE INSTALLED IN THE PUBLIC R.O.W. ALL IRRIGATION WITHIN THE R.O.W. MUST BE CONTROLLED BY THE TOWNS CENTRAL CONTROL SYSTEM. THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF ANY RADIO ANTENNAE THAT MAY BE REQUIRED.
2. ANY PLANTING DAMAGED IN ADJACENT MEDIANS AND PROPERTIES DURING CONSTRUCTION IS TO BE REPLACED AT NO COST TO THE OWNER.
3. ANY DAMAGED PLANT MATERIAL CAUSED BY A NON-FUNCTIONAL IRRIGATION SYSTEM WILL BE REPLACED AT THE COST OF THE CONTRACTOR.
4. PLANTINGS MAY NOT BE INSTALLED UNTIL THE IRRIGATION SYSTEM IS INSTALLED, HAS A WORKING POWER SOURCE AND IF FULLY OPERATIONAL. CONTRACTOR RESPONSIBLE FOR IRRIGATION TO PLANTING UNTIL TRANSFERRED TO THE CITY AFTER SUBSTANTIAL COMPLETION.

GENERAL NOTES:

1. WARNING!!!!!!! CALL BEFORE YOU DIG!!!!! TOLL FREE 811
2. WRITTEN DIMENSIONS PREVAIL OVER SCALED DIMENSIONS. NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES.
3. THE CONTRACTOR BEARS ALL RESPONSIBILITY FOR VERIFYING ALL UNDERGROUND UTILITIES, PIPES, STRUCTURES, AND LINE RUNS IN THE FIELD PRIOR TO CONSTRUCTION. ANY DAMAGE TO UTILITIES THAT ARE TO REMAIN SHALL BE REPAIRED IMMEDIATELY AT NO EXPENSE TO THE OWNER. LANDSCAPE ARCHITECT ASSUMES NO RESPONSIBILITY FOR ANY NOT SHOWN ON PLANS.
4. THE LOCATIONS OF EXISTING UTILITIES AS SHOWN ON THESE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UNDERGROUND UTILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
5. ALL PROPOSED AND FINISHED GRADES ARE BASED ON INFORMATION PROVIDED BY THE OWNER'S SURVEY AND/OR CIVIL ENGINEER. ANY DISCREPANCIES IN ACTUAL FIELD MEASUREMENTS ARE TO BE REPORTED TO THE LANDSCAPE ARCHITECT IMMEDIATELY.
6. CONTRACTOR IS RESPONSIBLE FOR ALL QUANTITIES PER DRAWINGS AND SPECIFICATIONS. ANY QUANTITIES PROVIDED BY LANDSCAPE ARCHITECT ARE PROVIDED FOR CONVENIENCE ONLY. CONTRACTORS ARE TO BID THEIR OWN VERIFIED QUANTITIES. NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES.
7. EASEMENTS SETBACKS, BUILDING, CURB AND GUTTER, UNDERGROUND UTILITIES HAVE BEEN SUPPLIED TO LANDSCAPE ARCHITECT BY THE PROJECT CIVIL ENGINEER. REFER TO CIVIL ENGINEERS DRAWINGS FOR ADDITIONAL INFORMATION.
8. STUDIO OUTSIDE ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITIES, OR COST RESULTING FROM CHANGES OR ALTERATIONS MADE TO THE PLAN WITHOUT THE EXPRESS WRITTEN CONSENT OF STUDIO OUTSIDE.

PLANTING NOTES:

1. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL UNDERGROUND UTILITIES, PIPES, STRUCTURES, AND LINE RUNS IN THE FIELD PRIOR TO THE INSTALLATION OF ANY PLANT MATERIAL.
2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ADVISE THE LANDSCAPE ARCHITECT OF ANY CONDITION FOUND ON THE SITE WHICH PROHIBITS INSTALLATION AS SHOWN ON THESE DRAWINGS. REF: CITY PLANTING NOTES FOR R.O.W. PLANTING.
3. ALL PLANT MATERIAL SHALL BE MAINTAINED IN A HEALTHY AND GROWING CONDITION AND MUST BE REPLACED WITH PLANT MATERIAL OF SAME VARIETY AND SIZE IF DAMAGED, DESTROYED, OR REMOVED.
4. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR FINE GRADING AND REMOVAL OF DEBRIS PRIOR TO PLANTING IN ALL AREAS.
5. FINAL FINISH GRADING SHALL BE REVIEWED BY THE LANDSCAPE ARCHITECT. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL TOPSOIL REQUIRED TO CREATE A SMOOTH CONDITION PRIOR TO PLANTING. REF. CITY PLANTING NOTES FOR R.O.W. PLANTING.
6. ALL PLANT QUANTITIES LISTED ARE FOR INFORMATION ONLY. IT IS THE CONTRACTORS RESPONSIBILITY TO PROVIDE FULL COVERAGE IN ALL PLANTING AREAS AS SPECIFIED IN THE PLANT SCHEDULE AND VERIFY ALL QUANTITIES.
7. LANDSCAPE CONTRACTOR TO PROVIDE STEEL EDGING (REFER TO MATERIALS PAGE) BETWEEN ALL PLANTING BEDS AND LAWN AREAS.
8. ALL PLANT MATERIAL SHALL CONFORM TO THE SPECIFICATIONS AND SIZES GIVEN IN THE PLANT LIST AND SHALL BE NURSERY GROWN IN ACCORDANCE WITH THE AMERICAN STANDARD FOR NURSERY STOCK, LATEST EDITION AMERICAN ASSOCIATION OF NURSERYMEN STANDARDS. ANY PLANT SUBSTITUTION SHALL BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO PURCHASE. REF. CITY PLANTING NOTES FOR R.O.W. PLANTING.
9. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR ANY COORDINATION WITH OTHER CONTRACTORS ON SITE AS REQUIRED TO ACCOMPLISH ALL PLANTING OPERATIONS.
10. ALL NEW PLANTING AREAS TO BE AMENDED PER SPECIFICATIONS.
11. ANY PLANT MATERIAL THAT DOES NOT SURVIVE SHALL BE REPLACED WITH AN EQUIVALENT SIZE AND SPECIES WITHIN THIRTY (30) DAYS.
12. PLANT MATERIAL SHALL BE PRUNED AS NECESSARY TO CONTROL SIZE BUT NOT TO DISRUPT THE NATURAL GROWTH PATTERN OR CHARACTERISTIC FORM OF THE PLANT EXCEPT AS NECESSARY TO ACHIEVE HEIGHT CLEARANCE FOR VISIBILITY AND PEDESTRIAN PASSAGE OR TO ACHIEVE A CONTINUOUS OPAQUE HEDGE IF REQUIRED.
13. LANDSCAPED AREAS SHALL BE KEPT FREE OF TRASH, WEEDS, DEBRIS, AND DEAD PLANT MATERIAL
14. ALL LIME STABILIZED SOIL & INORGANIC SELECT FILL FOR BUILDING SHOULD BE REMOVED FROM PLANTING AREAS TO A DEPTH OF 24" & REPLACED WITH ORGANIC IMPORTED TOPSOIL FILL.

IRRIGATION NOTES:

1. AN AUTOMATIC IRRIGATION SYSTEM SHALL BE PROVIDED FOR ALL PLANTING AREAS. OVER SPRAY ON STREETS AND WALKS IS PROHIBITED. REF: CITY IRRIGATION NOTES FOR R.O.W. IRRIGATION.
2. IRRIGATION SYSTEMS SHALL BE MAINTAINED AND REPLACED AS NECESSARY.
3. ALL PLANTING AREAS TO BE FULLY IRRIGATED.
4. IRRIGATION SYSTEM TO HAVE A FULLY AUTOMATED CONTROL SYSTEM.
5. ANY EXISTING PLANTING DAMAGED DURING CONSTRUCTION IS TO BE REPLACED AT NO COST TO THE OWNER.
6. IF THE EXISTING IRRIGATION SYSTEM IS DAMAGED OR TURNED OFF DURING CONSTRUCTION ACTIVITIES, IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO HAND WATER ALL PLANT MATERIAL AS NEEDED.

STREET TREE REQUIREMENTS:

	REQUIRED	PROVIDED
VITRUVIAN WAY 416 LF STREET FOOTAGE ALONG PROPERTY LINE	14 TREES 1 TREE / 30 LF PER TOWN LANDSCAPE REGULATIONS	16 TREES
MARSH LANE 545 LF STREET FOOTAGE ALONG PROPERTY LINE	18 TREES 1 TREE / 30 LF PER TOWN LANDSCAPE REGULATIONS	17 TREES
WESTGATE LANE 410 LF STREET FOOTAGE ALONG PROPERTY LINE	13 TREES 1 TREE / 30 LF PER TOWN LANDSCAPE REGULATIONS	12 TREES

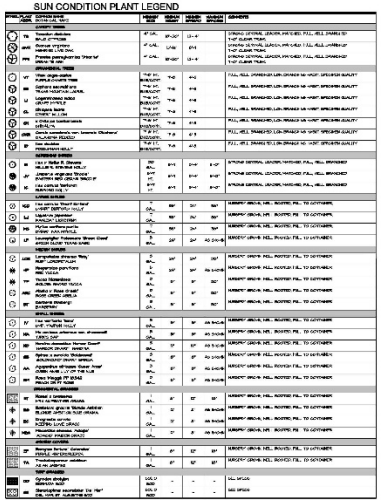
LANDSCAPE REQUIREMENTS:

20' STREET LANDSCAPE BUFFER	PROVIDED
VISIBILITY TRIANGLES	REFER TO PLANS
OFF-STREET LOADING SCREEN	PROVIDED
PARKING LOT SCREENING	N/A

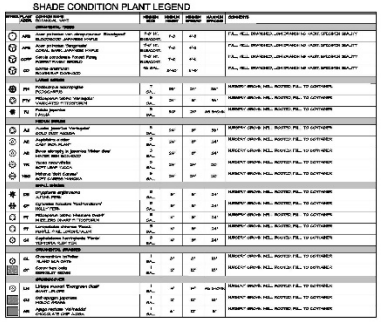
LANDSCAPE CALCULATIONS:

REQUIRED	PROVIDED
20% GROSS SITE LANDSCAPING	GROSS SITE SQ. FT.: 299,247 (6.8 ACRES) PROPOSED LANDSCAPE SQ. FT.: 61,849 (30% OF GROSS SITE SQ. FT.)

SUN CONDITION PLANT LEGEND



SHADE CONDITION PLANT LEGEND



Wilder Belshaw Architects
Dallas · Austin

Savoye2 at Vitruvian Park 3875 Ponte Ave Suite 410Addison Texas 75001
The Arnold in East Austin 1621 E 6th Street Suite 1161Austin Texas 78702
214 969.0500 phone www.wilderbelshaw.com

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624 Exposition Avenue, Ste. 5
Dallas, Texas 75226
c214.864.7160
o214.954.7162

Project Owner:

UDR
3875 Ponte Ave, Suite 400
Addison, TX 75001

Contact Information:
Robert P. St. John
(720) 348-7722
RStJohn@udr.com

Issues and Revisions:

No.	Date	Issues

09.07.2018

Vitruvian West
PHASE II & III

Addison, TX

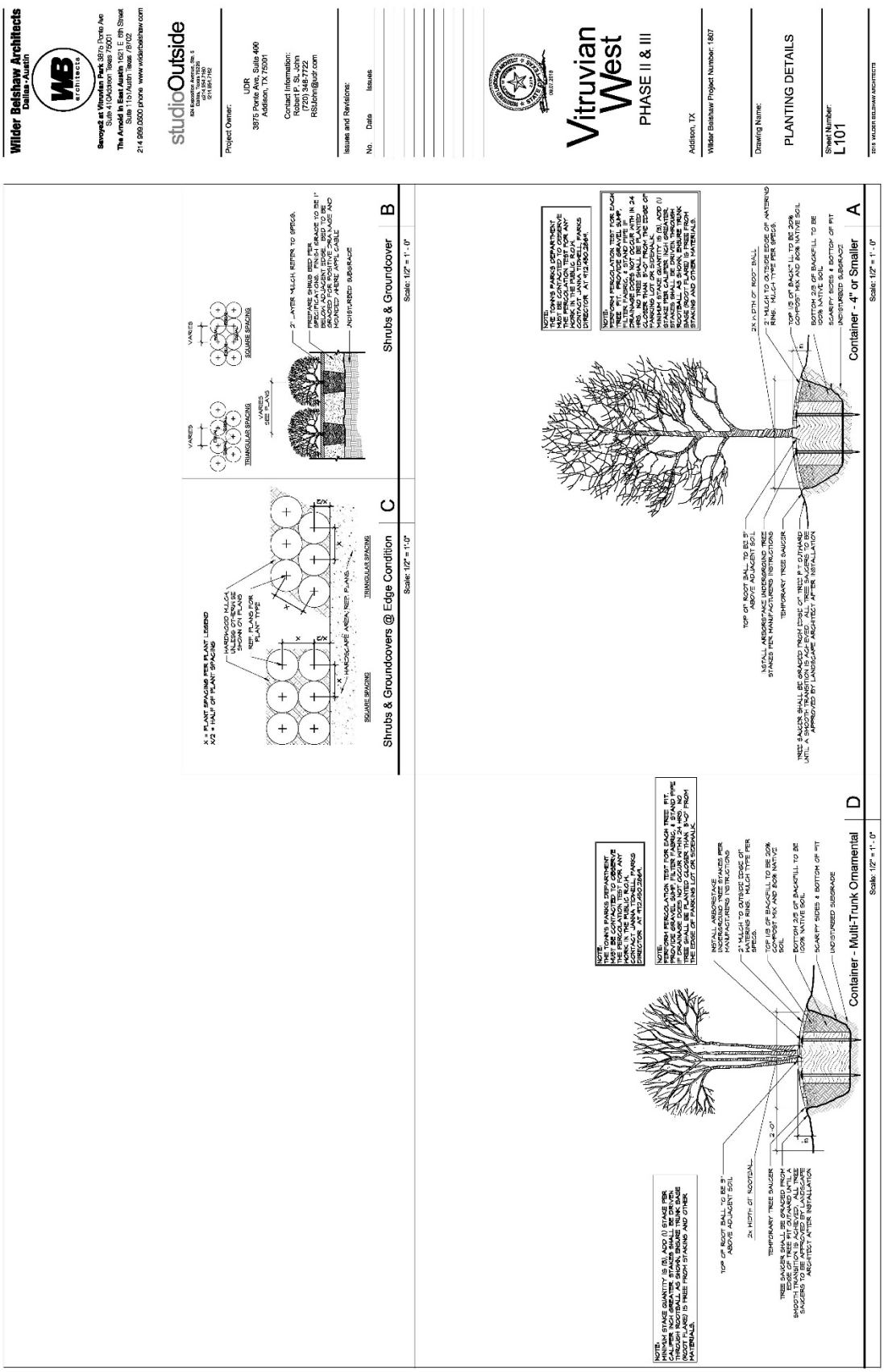
Wilder Belshaw Project Number: 1607

Drawing Name:
GENERAL NOTES, PLANTING LEGEND & LANDSCAPE CALCULATIONS

Sheet Number:
L100

2018 WILDER BELSHAW ARCHITECTS

EXHIBIT A: DEVELOPMENT PLANS



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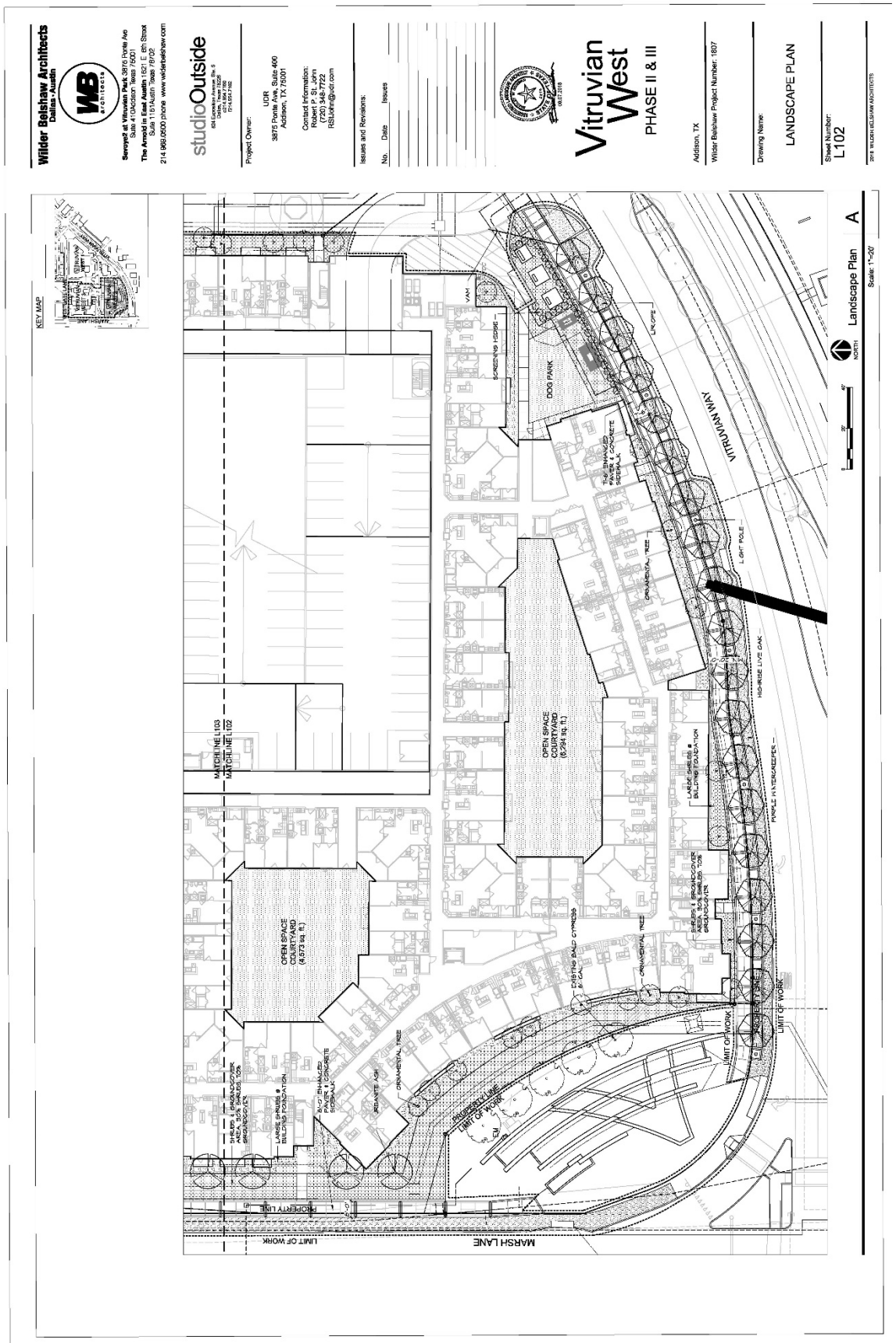

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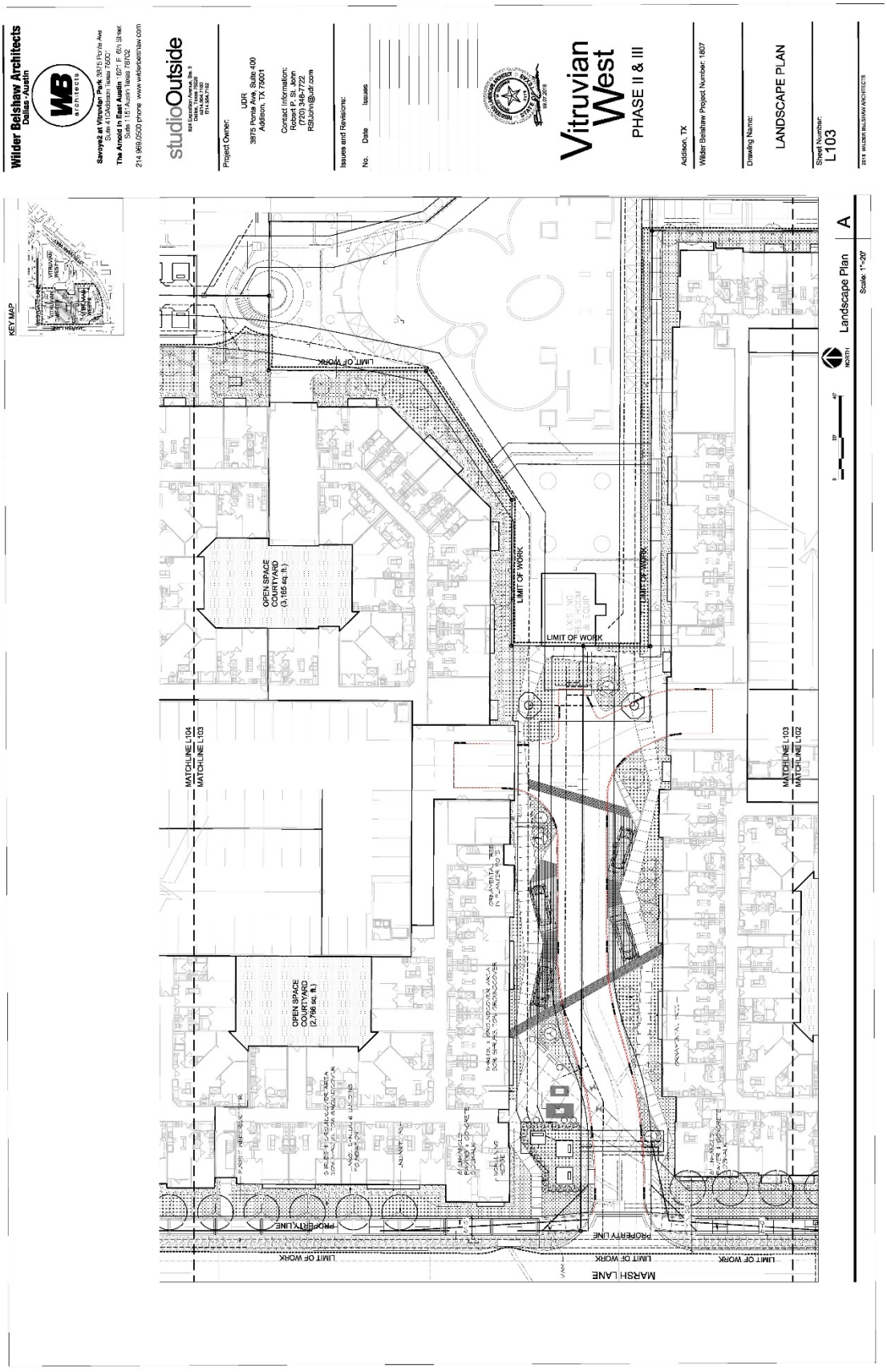

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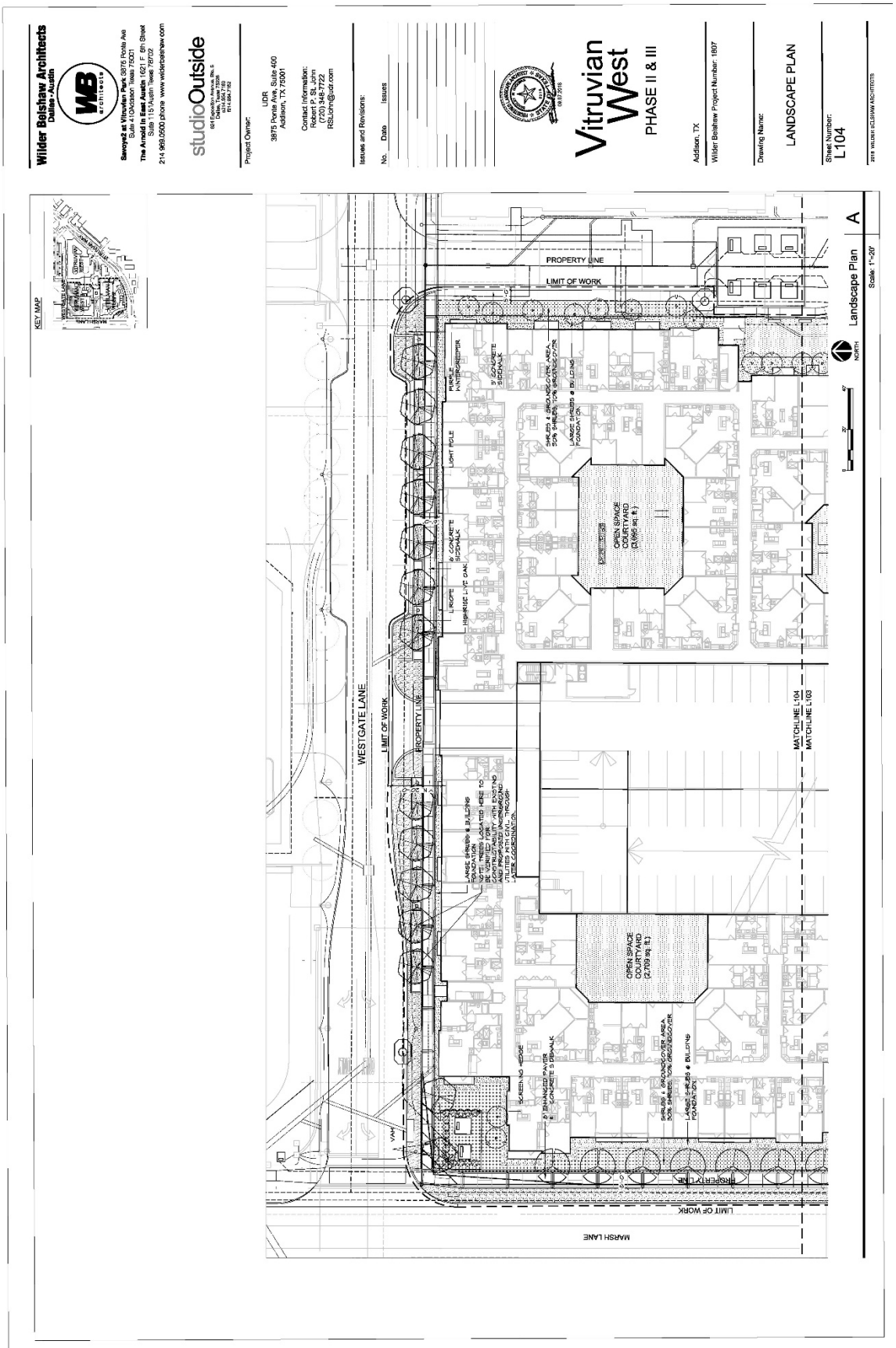


Ordinance No. _____

Case 1786-Z/Vitruvian West Phase II and III

October 16, 2018

COMMISSION FINDINGS:

The Addison Planning and Zoning Commission, meeting in regular session on October 16, 2018, voted to recommend approval of a development plan for the development of Vitruvian West Phase II and III, including site plan, landscape plan, utility and drainage plan, building elevations, and floor plans for 767 multifamily units, including amenities, on a 6.854 acre property in an existing Planned Development district (PD O07-034 as amended by O16-017), generally located on the northeast corner of Marsh Lane and Vitruvian Way, and approving waivers to construction materials, without conditions.

Voting Aye: Catalani, Dougan, Groce, Meleky, Resnik, Souers, Wheeler
Voting Nay: none
Absent: none

SPEAKERS AT THE PUBLIC HEARING:

For: none
On: none
Against: none

October 11, 2018

STAFF REPORT

RE:	1786-Z/Vitruvian West Phase II and III
LOCATION:	6.854 acres of land generally located on the northeast corner of Marsh Lane and Vitruvian Way
REQUEST:	Development Plan Approval in an existing Planned Development District (PD O07-034 as amended by O16-017) with waivers regarding requirements related to the number of building materials in order to allow construction of 767 multifamily units on Lots 2 and 3 of Block D of Vitruvian Park Addition.
APPLICANT:	UDR, represented by Jamie Mulholland, Wilder Belshaw Architects

DISCUSSION:

Background: On October 9, 2007, UDR obtained approval to rezone a 99-acre neighborhood. Six years later in 2013, the zoning for the project was expanded to include 4 additional tracts totaling 21.7 acres. The planned development zoning district established development standards and a concept plan, which were subsequently revised in 2016. The zoning district also established that prior to the issuance of a building permit for any project within the PD district, a development plan for the project must be approved by the Planning and Zoning Commission and the City Council.

This property held some of the oldest apartments that were part of the previous development. These were taken down at the outset of the project. In the current concept plan for the district, the northeast corner of Marsh Lane and Vitruvian Way is envisioned as three multi-family apartment buildings with a centralized amenity center and pool, collectively known as Vitruvian West. The first phase of this development, Vitruvian West I, was approved in 2016 and completed construction earlier this year. UDR is now seeking Development Plan approval for Phase II and Phase III of Vitruvian West.

Proposed Plan: Phase II is located at the corner of Vitruvian Way and Marsh Lane. Phase II is a five-story, 506,210 square foot building with 361 units, with an average unit size of 743 square feet, wrapping a 518-space parking garage and two interior courtyards. Phase III is located at the southeast corner of

Marsh Lane and Westgate Lane. Phase III is a five-story, 585,457 square foot building with 406 units, with an average unit size of 767 square feet, wrapping a 601-space parking garage and four interior courtyards.

Together, Phases II and III will add 767 multifamily residential. The project is 100% residential and does not contain any retail or office space. The design of these buildings is intended to represent a modern Texas Hill Country esthetic and will closely resemble Phase I of this development.

Staff Review: Development Plan approval differs from a typical zoning case. While zoning is a legislative decision with wide latitude given during the consideration process, development plan approval is a ministerial function more like plat approval. The purpose of the development plan approval process is to review the proposal in the context of the existing zoning requirements for the site. If the proposal meets the requirements, then it must be approved.

The remainder of the staff report will address each section of the ordinance and how the proposed plan complies.

Uses: The applicant is proposing 767 multi-family units. **The proposed uses meet the standards in the ordinance.**

Development Standards: Development standards regulate the setbacks, building heights, lot sizes, and square footages of certain uses. The development plan is in compliance with all development standards, except as noted below.

> *Street Build-to Line:* The development standards require a nine-foot setback along Vitruvian Way, a type A street, and between six and nine feet along Westgate Lane, a type B street. Both buildings comply with the requirements. **The proposal meets the build-to line standard in the ordinance.**
>
> *Minimum area per dwelling unit.* The development standards establish the following minimum unit size criteria:
>
> - Efficiency: 450 square feet
> - One-Bedroom: 600 square feet
> - Two-Bedroom: 850 square feet
>
> The development plans show 14 unit types ranging from efficiency up to two bedroom units. All comply with the minimum requirements. **The proposal meets the minimum area per dwelling unit standard in the ordinance.**

Open Space: Open space is required with residential uses and is calculated to require two acres for every 1,000 residents up to 2,250 and then 1.5 acres per 1,000 residents above 2,250. The code assumes 1.5 persons per unit. With the 767 additional units being proposed, the development will have 2,280 units with an assumed resident count of 3,420. This requires that 6.25 acres of open space be

provided. The applicant has already dedicated 12 acres with Vitruvian Park. **The proposal exceeds the standard for open space dedication at this phase.**

Parking: The ordinance requires that one space be provided per bedroom with a maximum of two spaces per unit.

Number of units:	767
Parking required:	971 (1,534 maximum)
Parking provided:	1,119

The proposal meets the parking requirements in the ordinance.

Exterior Appearance: The multi-family building is required to have 80% masonry construction on all sides visible from a public street and a maximum of three building materials, excluding glass. The building is proposed to include four materials: stucco, stone, cementitious panel siding, and metal paneling. The glass, stucco, and stone count towards the masonry requirement. All elevations comply with the 80% standard. The metal paneling is being used as an accent material at certain corners of the building. **The proposal does not meet the exterior appearance requirements in the ordinance relating to the number of building materials. Waiver requested.**

Landscape: The landscaping regulations in the ordinance govern the street edge as well as private landscaping. The plan has been reviewed by the Parks Department and no issues were identified. **The proposal meets the standards for landscape in the ordinance.**

Sustainability: The zoning ordinance includes a variety of suggestions for a more environmentally conscious development. The applicant has indicated that the building will qualify for LEED certification and will incorporate many of the sustainable aspects noted in the ordinance. **The proposal meets the standards for sustainability in the ordinance.**

Screening: The ordinance requires that mechanical equipment as well as loading, service, and trash storage areas be screened from view of all public roadways. The applicant is proposing to screen all such areas. **The proposal meets the standards for screening in the ordinance.**

Flexible standards: The ordinance grants the Planning and Zoning Commission and City Council the authority to approve waivers from the standards included in the ordinance. **The applicant is requesting the following waiver**

- **Maximum number of building materials**

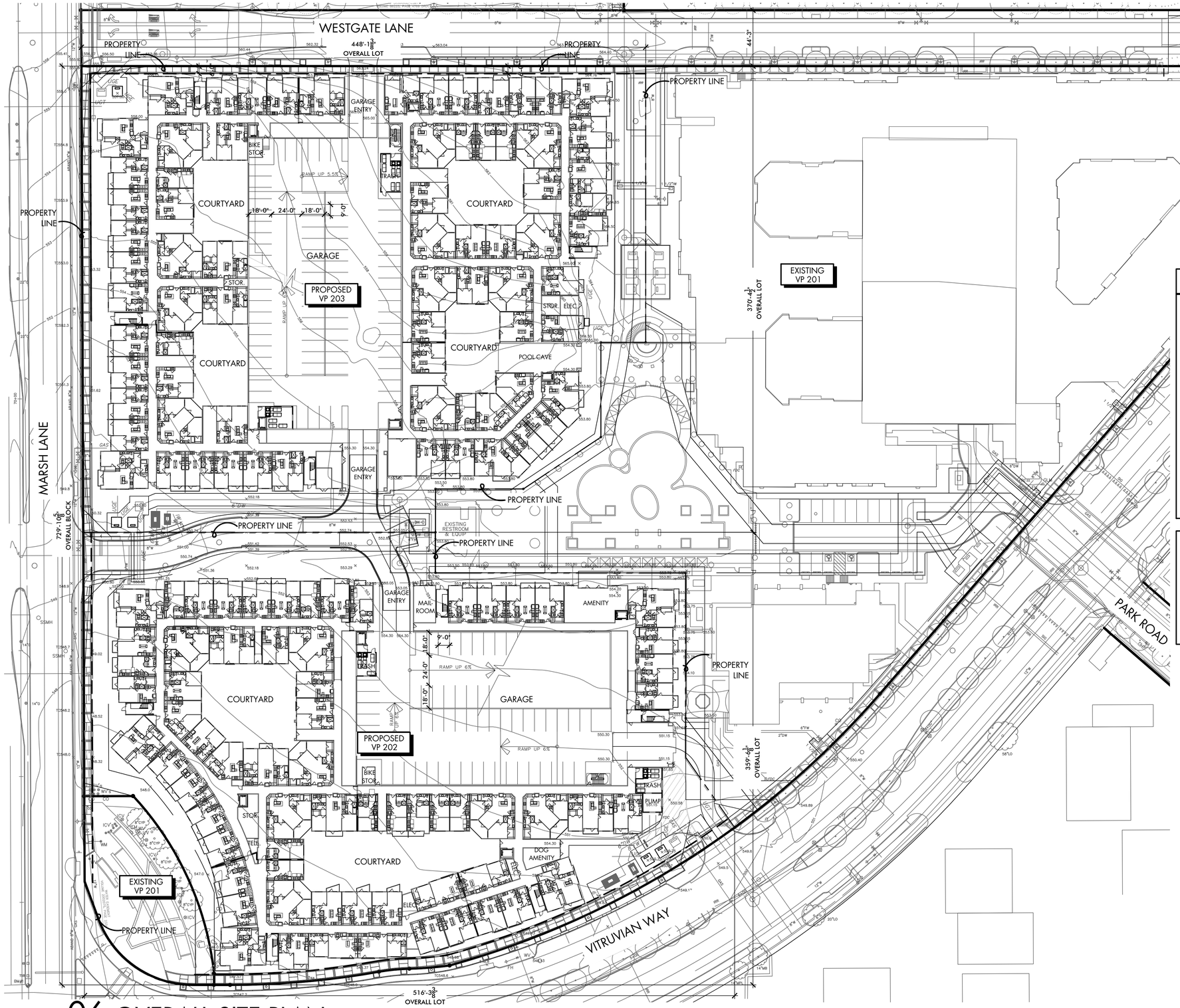
RECOMMENDATION: **APPROVAL**

Vitruvian West II and III represent the next phase of multi-family units in Vitruvian Park and reflect the goals established at the outset of Vitruvian Park to establish a variety of unit types and prices. The plan

shows quality and attractive buildings with an abundance of amenities, which is in keeping with the type of development the Town has seen in the previous four developments at Vitruvian Park.

Staff is supportive of the requested waiver. The same waiver to the number of building materials was approved for Vitruvian West Phase I. The intent behind the masonry requirement is to ensure a certain construction quality. While not included in the definition of masonry, the metal paneling being proposed is actually of higher quality and cost than the masonry materials. This gives the building an attractive modern look and should age well.

Staff recommends approval subject to no conditions.



06 OVERALL SITE PLAN

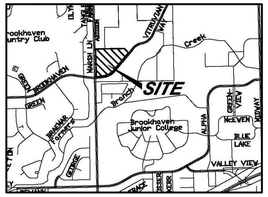
SCALE: 1"=40'

0' 40' 80' 160' NORTH

ACTION			
APPROVED		DENIED	
STAFF	Date		Initials
COUNCIL	Date		Initials

See the Staff Approval Letter or Council Result Memo for any conditions associated with the approval of the project.

Vicinity Map (NTS)



ADDISON SITE PLAN NOTES

1. Any revision to this plan will require Town approval and will require revisions to any corresponding plans to avoid conflicts between plans.
2. Open storage, where permitted, shall be screened in accordance with the Zoning Ordinance.
3. Buildings with aggregate sum of 5,000 square feet or greater on a lot shall have automatic fire sprinklers installed throughout all structures. Alternative fire protection measures may be approved by the Fire Department.
4. All signage is subject to Town approval.
5. All fences and retaining walls shall be shown on the site plan and are subject to Building Inspection Division approval.

All mechanical equipment shall be screened per Ordinance NO. 007-034, #13. Refer to Landscape for screening materials and dimensions.

The development meets the sustainability requirements per Ordinance NO. 007-034, Exhibit F.

ZONING: PD
Addison, TX Town Project #_____
Block D
VP 202 (LOT 2) 3.306 acres
VP 203 (LOT 3) 3.548 acres

Wilder Belshaw Architects
Dallas • Austin

Savoye2 at Vitruvian Park 3875 Ponte Ave Suite 410Addison Texas 75001
The Arnold in East Austin 1621 E 6th Street Suite 1151Austin Texas 78702
214 969.0500 phone www.wilderbelshaw.com

Project Owner:

UDR
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Addison, TX 75001

Contact Information:
Robert P. St. John
(720) 348-7722
RStJohn@udr.com

Civil:

Icon Consulting Engineers, Inc.
2840 W Southlake Blvd #110
Southlake, TX 76092

(817) 552-6210

Issues and Revisions:

No.	Date	Issues
01	09.07.18	Site Submittal
02	10.05.18	Site Submittal

Vitruvian West

PHASE II & III

Addison, Texas

Wilder Belshaw Project Number: 1807

Drawing Name:

Sheet Number:

A001

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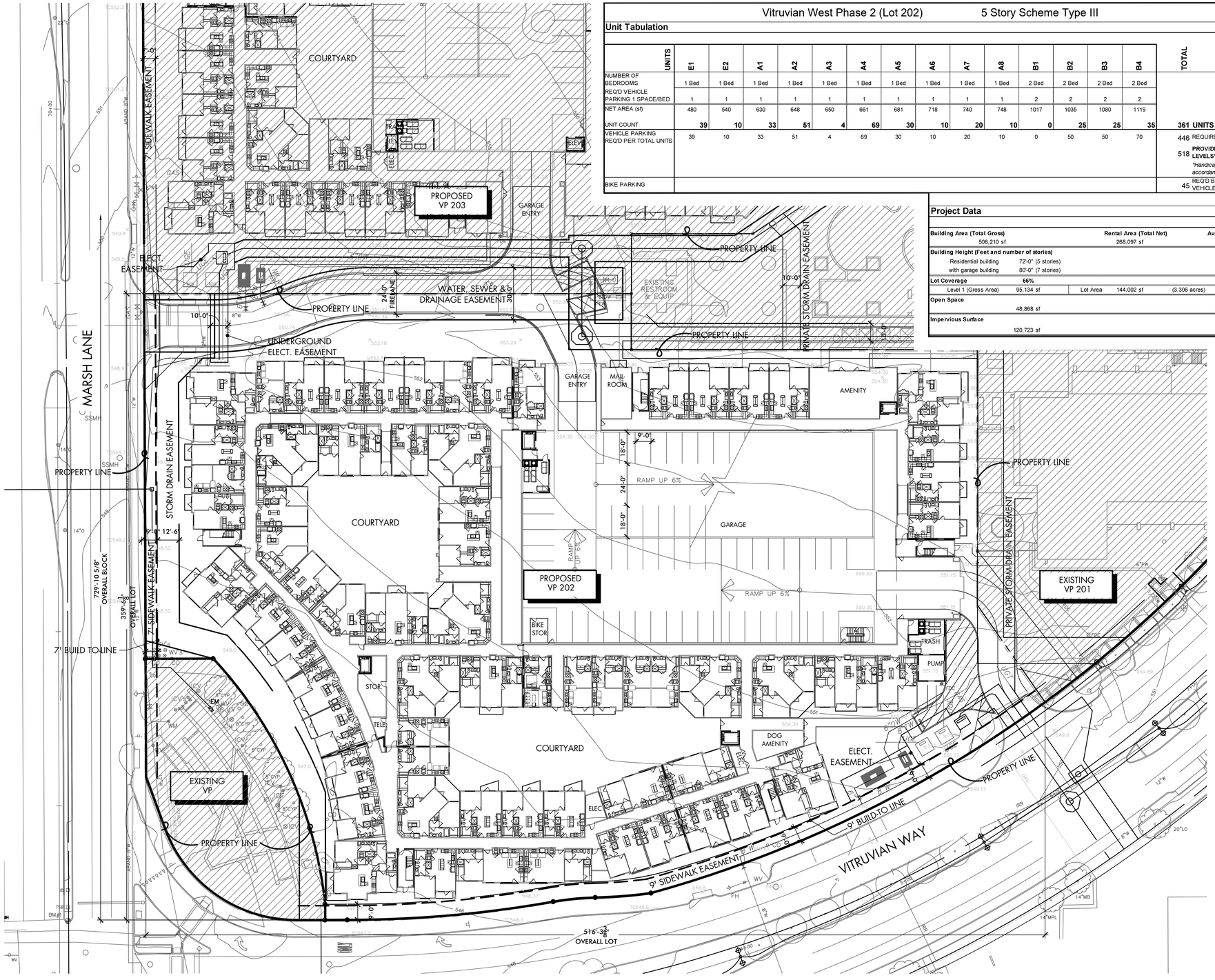

06 SITE PLAN - PHASE 02

SCALE: 1"=30'

0' 30' 60' 120'

NORTH

Vitruvian West Phase 2 (Lot 202) 5 Story Scheme Type III

Unit Tabulation

UNITS	E1	E2	A1	A2	A3	A4	A5	A6	A7	A8	B1	B2	B3	B4	TOTAL
NUMBER OF BEDROOMS	1 Bed	1 Bed	1 Bed	1 Bed	1 Bed	1 Bed	1 Bed	1 Bed	1 Bed	1 Bed	2 Bed	2 Bed	2 Bed	2 Bed	
REQ'D VEHICLE PARKING 1 SPACE/BED	1	1	1	1	1	1	1	1	1	1	2	2	2	2	
NET AREA (sf)	480	540	630	648	650	661	681	718	740	748	1017	1035	1080	1119	
UNIT COUNT	39	10	33	51	4	69	30	10	20	10	0	25	25	35	361 UNITS
VEHICLE PARKING REQ'D PER TOTAL UNITS	39	10	33	51	4	69	30	10	20	10	0	50	50	70	446 REQUIRED VEHICLE PARKING
															518 PROVIDED PARKING AT 7 LEVELS* *Handicap parking is provided in accordance with ADA standards
BIKE PARKING															45 REQ'D BIKE PARKING (1/10 VEHICLE PARKING)

Project Data

Building Area (Total Gross)		**Rental Area (Total Net)**		**Avg Unit Size**
506,210 sf		268,097 sf		743 sf
Building Height (Feet and number of stories)				
Residential building	72'-0" (5 stories)			
with garage building	80'-0" (7 stories)			
Lot Coverage	**66%**			
Level 1 (Gross Area)	95,134 sf	Lot Area	144,002 sf	(3.306 acres)
Open Space	48,868 sf			
Impervious Surface	120,723 sf			

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ZONING: PD
Addison, TX Town Project #_____
Block D
VP 202 (LOT 2) 3.306 acres
VP 203 (LOT 3) 3.548 acres

ACTION

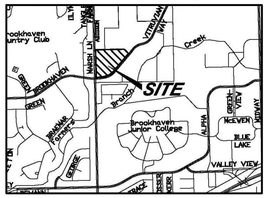
APPROVED DENIED

STAFF _____ Date _____ Initials

COUNCIL _____ Date _____ Initials

See the Staff Approval Letter or Council Result Memo for any conditions associated with the approval of the project.

Vicinity Map (NTS)



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Project Owner:

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Civil:

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Southlake, TX 76092

(817) 552-6210

Issues and Revisions:

No.	Date	Issues
01	09.07.18	Site Submittal
02	10.05.18	Site Submittal

Vitruvian West

PHASE II & III

Addison, Texas

Wilder Belshaw Project Number: 1807

Drawing Name:

Sheet Number:

A001-PH2

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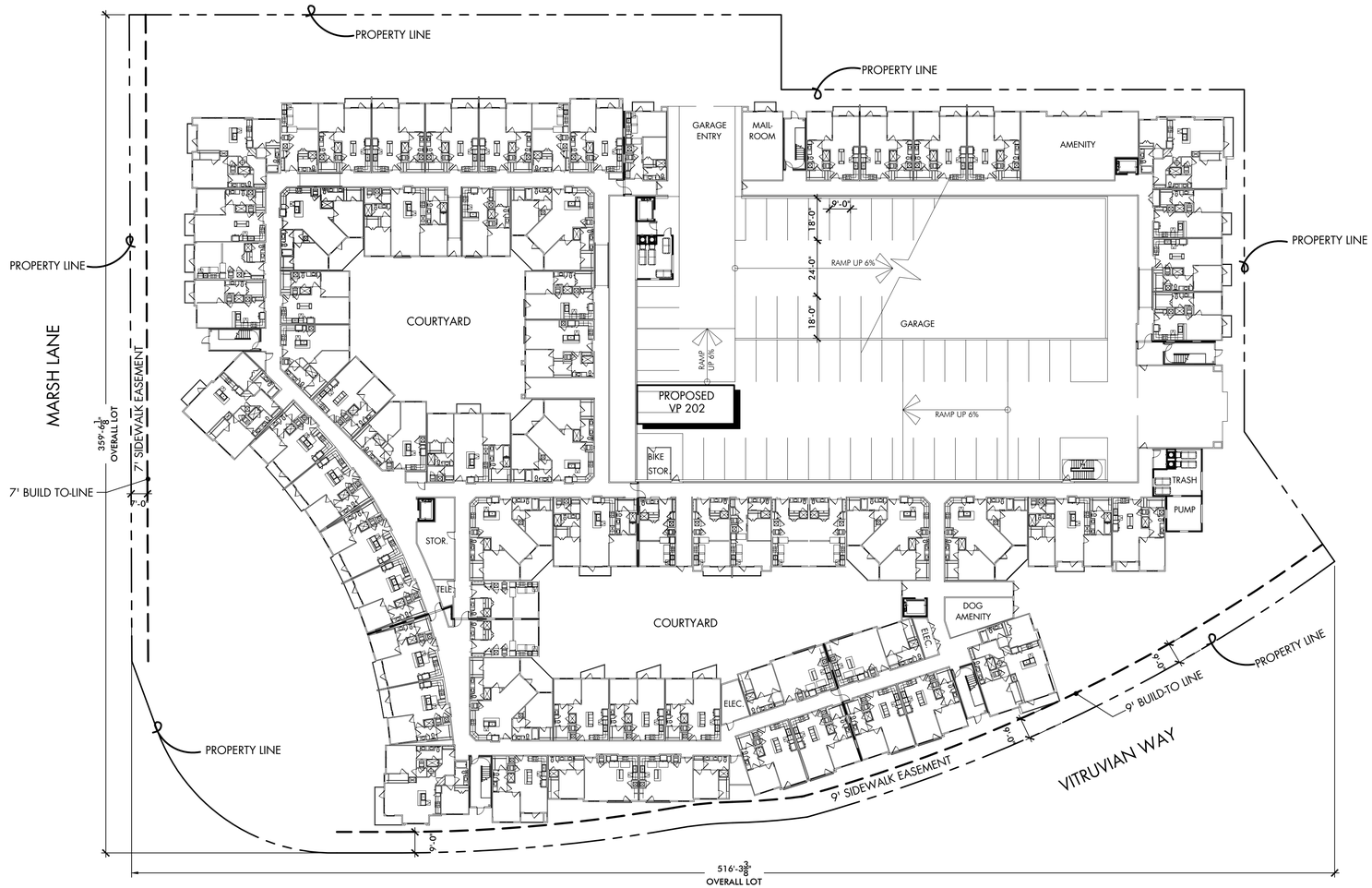

06 PHASE 02, LEVEL 1 PLAN

SCALE: 1"=30'

0' 30' 60' 120'

NORTH

ACTION

	APPROVED	DENIED
STAFF	_____ Date	_____ Initials
COUNCIL	_____ Date	_____ Initials

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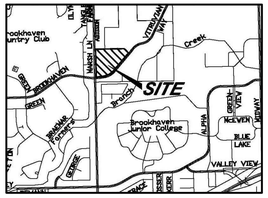
Vicinity Map (NTS)



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ZONING: PD
Addison, TX Town Project #_____
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VP 203 (LOT 3) 3.548 acres

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01	09.07.18	Site Submittal
02	10.05.18	Site Submittal

Vitruvian West
PHASE II & III

Addison, Texas

Wilder Belshaw Project Number: 1807

Drawing Name:

Sheet Number:
A101

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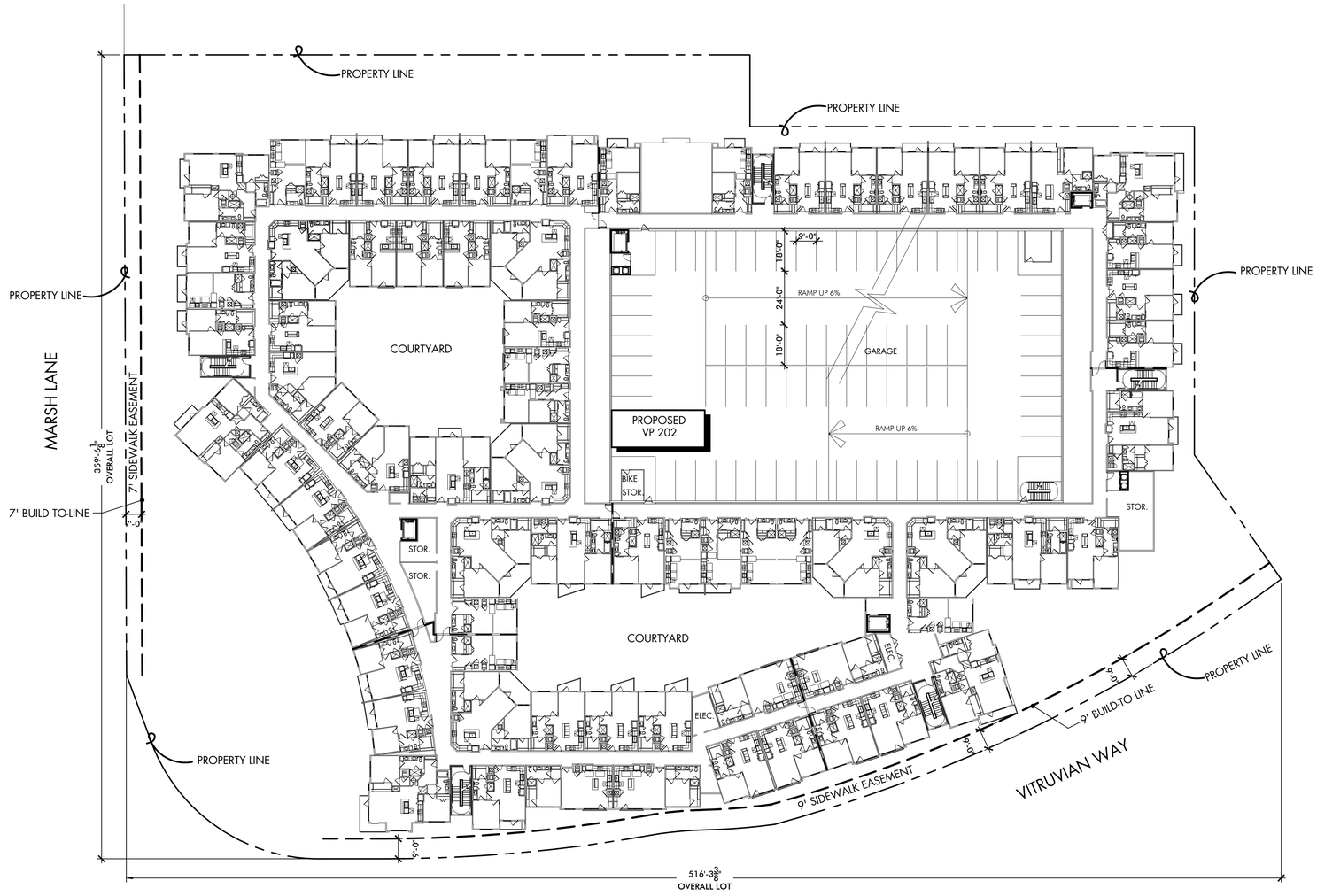

06 PHASE 02, LEVEL 2 PLAN

SCALE: 1"=30'

0' 30' 60' 120'

NORTH

ACTION

APPROVED DENIED

STAFF _____ Date _____ Initials

COUNCIL _____ Date _____ Initials

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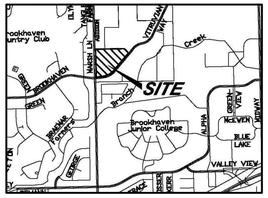
Vicinity Map (NTS)



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ZONING: PD
Addison, TX
Town Project #_____
Block D
VP 202 (LOT 2) 3.306 acres
VP 203 (LOT 3) 3.548 acres

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Dallas • Austin

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01	09.07.18	Site Submittal
02	10.05.18	Site Submittal

Vitruvian West
PHASE II & III

Addison, Texas

Wilder Belshaw Project Number: 1807

Drawing Name:

Sheet Number:
A102

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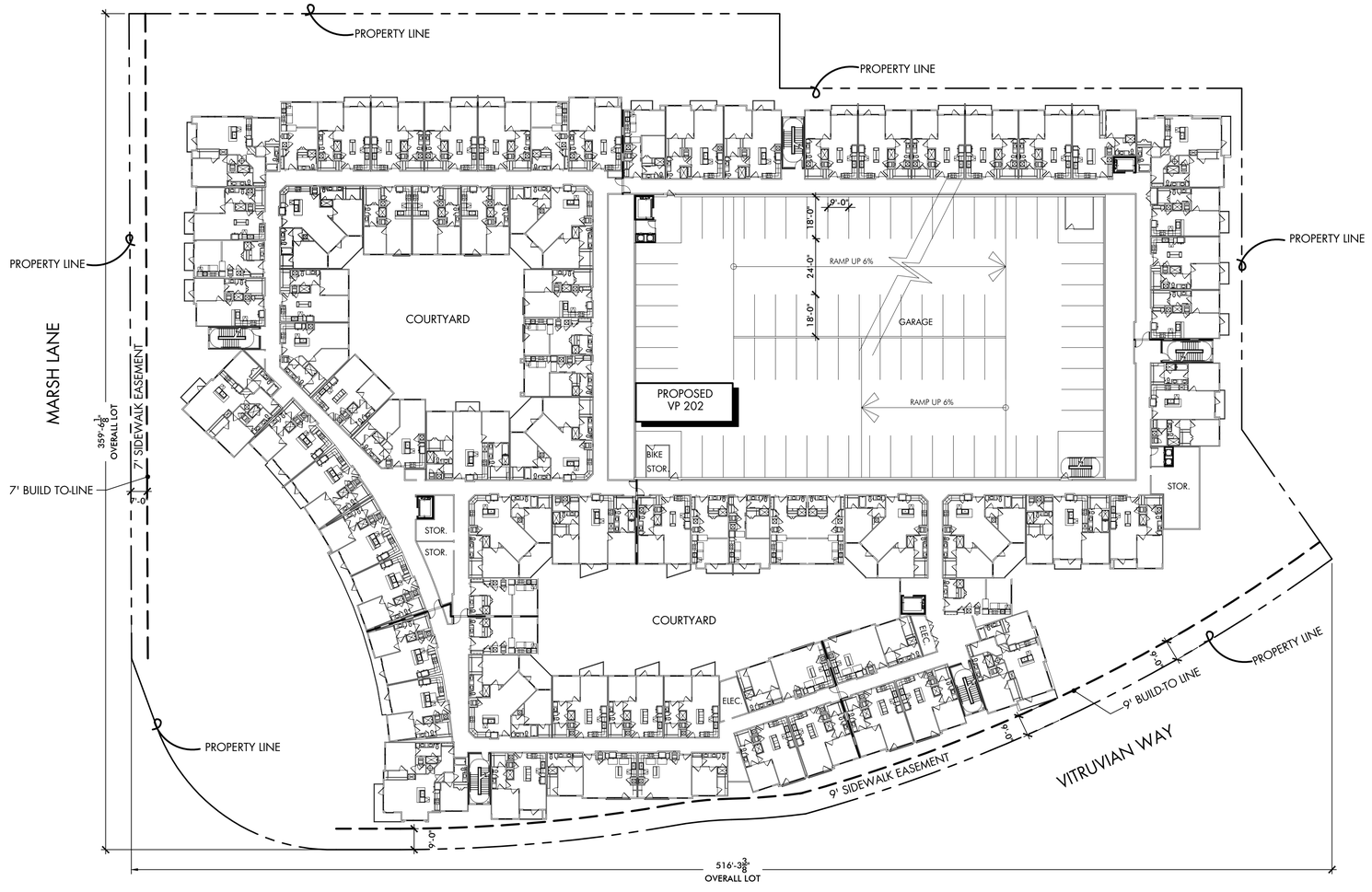

06 PHASE 02, LEVEL 3-5 PLAN

SCALE: 1"=30'

0' 30' 60' 120'

NORTH

ACTION		
	APPROVED	DENIED
STAFF	_____ Date	_____ Initials
COUNCIL	_____ Date	_____ Initials

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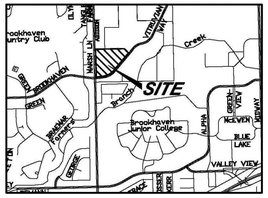
Vicinity Map (NTS)



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ZONING: PD
Addison, TX
Town Project #_____
Block D
VP 202 (LOT 2) 3.306 acres
VP 203 (LOT 3) 3.548 acres

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Issues and Revisions:

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01	09.07.18	Site Submittal
02	10.05.18	Site Submittal

Vitruvian West
PHASE II & III

Addison, Texas

Wilder Belshaw Project Number: 1807

Drawing Name:

Sheet Number:
A103

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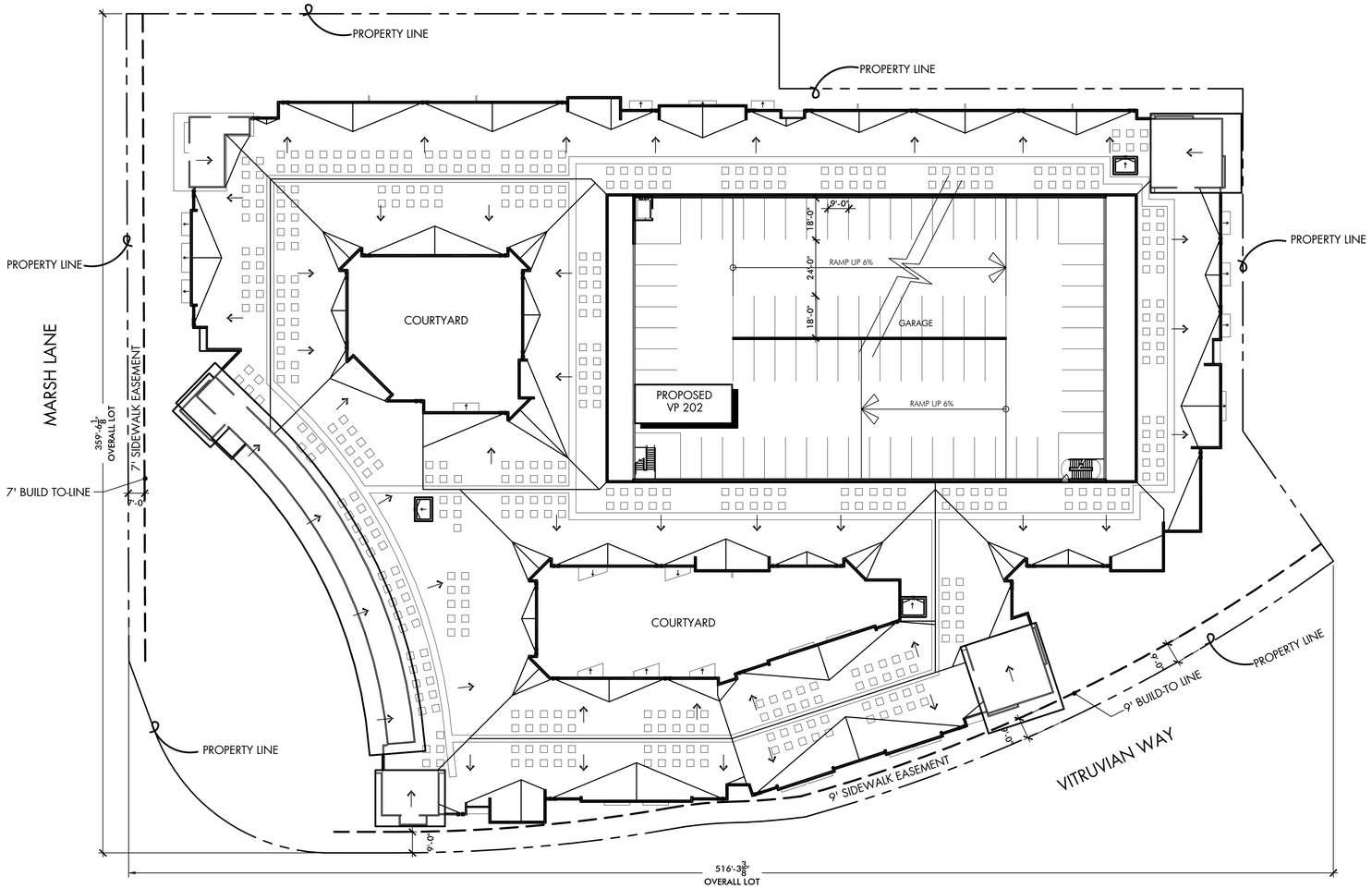

06 PHASE 02, ROOF PLAN

SCALE: 1"=30'

0' 30' 60' 120'

NORTH

ACTION		
	APPROVED	DENIED
STAFF	_____ Date	_____ Initials
COUNCIL	_____ Date	_____ Initials

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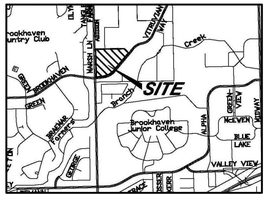
Vicinity Map (NTS)



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ZONING: PD
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Block D
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01	09.07.18	Site Submittal
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Vitruvian West
PHASE II & III

Addison, Texas

Wilder Belshaw Project Number: 1807

Drawing Name:

Sheet Number:
A106

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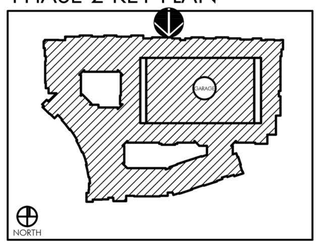
FACADE PLAN NOTES:
- THIS FACADE PLAN IS FOR CONCEPTUAL PURPOSES ONLY. ALL BUILDING PLANS REQUIRE REVIEW AND APPROVAL BY DEVELOPMENT SERVICES
- ALL ROOF MECHANICAL UNITS SHALL BE SCREENED FROM PUBLIC VIEW AS REQUIRED BY THE ZONING ORDINANCE
- WHEN PERMITTED, EXPOSED UTILITY BOXES AND CONDUITS SHALL BE PAINTED TO MATCH THE BUILDING
- ALL SIGNAGE AREAS AND LOCATIONS ARE SUBJECT TO APPROVAL BY DEVELOPMENT SERVICES
- ROOF ACCESS SHALL BE PROVIDED INTERNALLY, UNLESS OTHERWISE PERMITTED BY THE CHIEF BUILDING OFFICIAL

PHASE 2 KEY PLAN



PHASE 2 - NORTH ELEVATION - CONT.

SCALE: 3/32" = 1'-0"

PHASE 2 - NORTH ELEVATION

SCALE: 3/32" = 1'-0"

0' 10' 20' 40'

ZONING: PD
Addison, TX
Town Project #
Block D
VP 202 (LOT 2) 3.306 acres
VP 203 (LOT 3) 3.548 acres

MATERIAL CALCULATIONS:
TOTAL SURFACE SF: 25,980sf

GLAZING:	7,659sf	29.5%
STONE:	8,251sf	31.7%
STUCCO:	8,167sf	31.5%
METAL:	843sf	3.3%
FIBER CEMENT:	1,060sf	4%

Wilder Belshaw Architects
DALLAS o AUSTIN
3875 Ponte Ave Suite 410, Addison, TX 75001
1621 E. 6th Street Suite 1151, Austin, TX 78702
214-969-0500 phone o wilderbelshaw.com

VITRUVIAN WEST PHASE 2 & 3

Addison, TX

UDR
3875 Ponte Ave, Suite 400
Addison, TX 75001
972.774.0552 phone

Sheet Number: A301

Issue Date: 10.05.18

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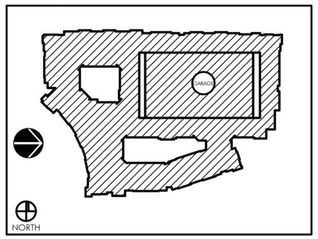
PHASE 2 KEY PLAN



PHASE 2 - SOUTHWEST ELEVATION (MARSH) - CONT.

SCALE: 3/32" = 1'-0"

Vitruvian West Phase 2&3
Material Selection Summary
Project Number: 1807

Frisco, Texas
Wilder Belshaw Architects
3-Oct-18

Material	Manufacturer	Color	Color System	Finish / Type	Location & Notes
Architectural Metal Finish					
AM-01	AEP Span	Cool Dark Bronze	KINAR 500	Flush Panel	Verticall metal panel
AM-02		SW7020 - Black Fox	Sherwin Williams		Metail Railings
Stone					
ST-01		Limestone		Rough cut ashlar pattern	Thin Veneer Stone
Cementitious Panel					
FC-01	Woodtone	Summer Wheat		RusticSeries	Lap siding
FC-02	James Hardie	SW 7048 Urbane Bronze		Smooth	Lap siding
Portland Cement Plaster					
PL-01	Sherwin Williams	SW 7529 - Sand Beach	Sherwin Williams	Light Sand	
PL-02	Sherwin Williams	SW 70047-Snowbound	Sherwin Williams	Light Sand	
PL-03	Sherwin Williams	SW 2863-Powder Blue	Sherwin Williams	Light Sand	
Glass					
GL-01		Glass			Glass Railing
Paint					
PT-01	Sherwin Williams	SW 70047-Snowbound	Sherwin Williams		Balcony fascia
PT-02	Sherwin Williams	SW7020 - Black Fox	Sherwin Williams		
Door and Window Frames					
WD-01		Desert Sand	N/A	N/A	Vinyl Window Frames & Mullions
WD-02		Dark Bronze	N/A	N/A	Vinyl Window Frames & Mullions
WD-03		Dark Bronze	N/A	N/A	Storefront frames
DR-01	Sherwin Williams	SW 70047-Snowbound	Sherwin Williams		Residential Balcony Doors & Frames
DR-02	Sherwin Williams	SW7020 - Black Fox	Sherwin Williams		Exit doors/ overhead doors

PHASE 2 - WEST ELEVATION (MARSH)

SCALE: 3/32" = 1'-0"

0' 10' 20' 40'

ZONING: PD
Addison, TX Town Project #_____
Block D
VP 202 (LOT 2) 3.306 acres
VP 203 (LOT 3) 3.548 acres

MATERIAL CALCULATIONS:
TOTAL SURFACE SF: 21,280sf

GLAZING:	5,248sf	24.5%
STONE:	6,034sf	28.5%
STUCCO:	6,620sf	31.1%
METAL:	1,728sf	8.1%
FIBER CEMENT:	1,650sf	7.8%

Wilder Belshaw Architects
DALLAS o AUSTIN
3875 Ponte Ave Suite 410, Addison, TX 75001
1621 E. 6th Street Suite 1151, Austin, TX 78702
214-969-0500 phone o wilderbelshaw.com

VITRUVIAN WEST PHASE 2 & 3

Addison, TX

UDR
3875 Ponte Ave, Suite 400
Addison, TX 75001
972.774.0552 phone

Sheet Number: A302

Issue Date: 10.05.18

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FACADE PLAN NOTES:
- THIS FACADE PLAN IS FOR CONCEPTUAL PURPOSES ONLY. ALL BUILDING PLANS REQUIRE REVIEW AND APPROVAL BY DEVELOPMENT SERVICES
- ALL ROOF MECHANICAL UNITS SHALL BE SCREENED FROM PUBLIC VIEW AS REQUIRED BY THE ZONING ORDINANCE
- WHEN PERMITTED, EXPOSED UTILITY BOXES AND CONDUITS SHALL BE PAINTED TO MATCH THE BUILDING
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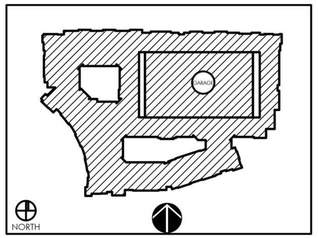
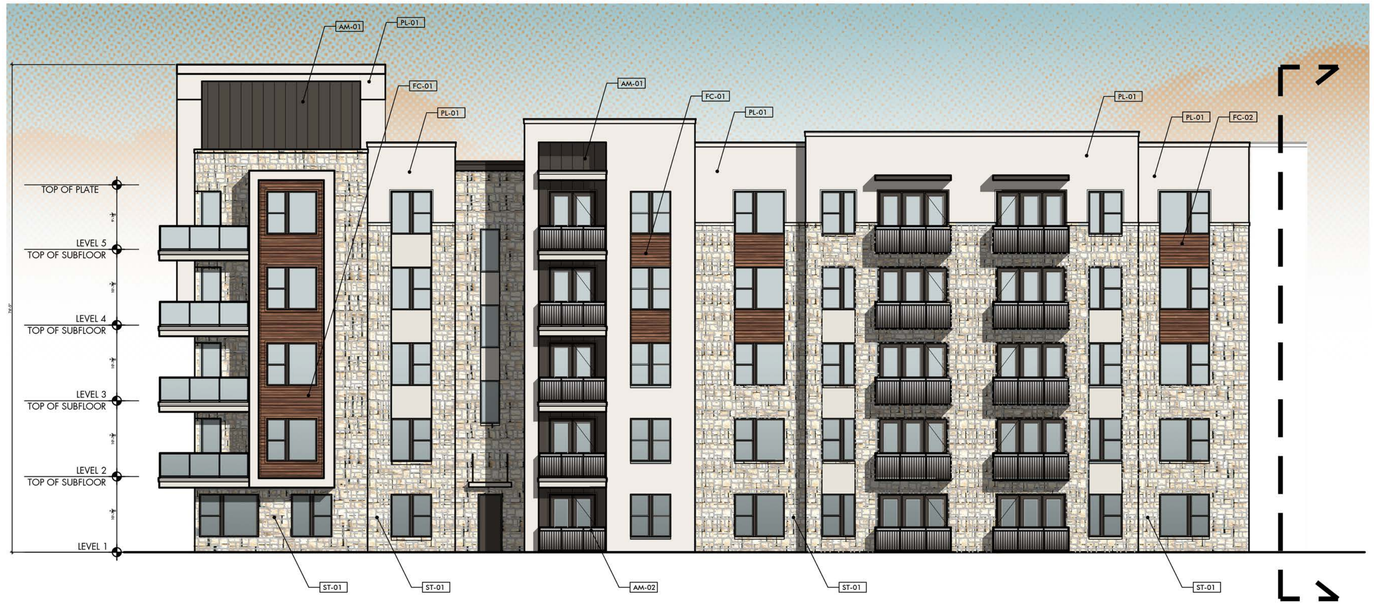
- ROOF ACCESS SHALL BE PROVIDED INTERNALLY, UNLESS OTHERWISE PERMITTED BY THE CHIEF BUILDING OFFICIAL

PHASE 2 KEY PLAN





PHASE 2 - SOUTH ELEVATION (VITRUVIAN WAY) - CONT.

SCALE: 3/32" = 1'-0"

PHASE 2 - SOUTH ELEVATION (VITRUVIAN WAY)

SCALE: 3/32" = 1'-0"

0' 10' 20' 40'

ZONING: PD
Addison, TX
Town Project #_____
Block D
VP 202 (LOT 2) 3.306 acres
VP 203 (LOT 3) 3.548 acres

MATERIAL CALCULATIONS:
TOTAL SURFACE SF: 22,182sf

GLAZING:	6,390sf	29%
STONE:	7,824sf	35.3%
STUCCO:	6,063sf	27.3%
METAL:	1,528sf	6.7%
FIBER CEMENT:	377sf	1.7%

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VITRUVIAN WEST PHASE 2 & 3
Addison, TX

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Sheet Number: A303
Issue Date: 10.05.18

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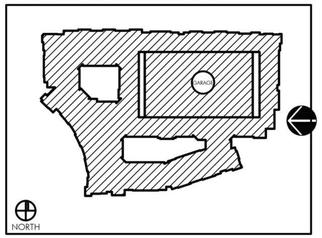

PHASE 2 - EAST ELEVATION

SCALE: 3/32" = 1'-0"

0' 10' 20' 40'

ZONING: PD
Addison, TX Town Project #_____
Block D
VP 202 (LOT 2) 3.306 acres
VP 203 (LOT 3) 3.548 acres

MATERIAL CALCULATIONS:
TOTAL SURFACE SF: 10,905SF

GLAZING:	2,172SF	20%
STONE:	3,680SF	33.8%
STUCCO:	3,261SF	29.2%
METAL:	670SF	6%
FIBER CEMENT:	1,122SF	10%

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VITRUVIAN WEST PHASE 2 & 3

Addison, TX

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3875 Ponte Ave, Suite 400
Addison, TX 75001
972.774.0552 phone

Sheet Number: A304

Issue Date: 10.05.18

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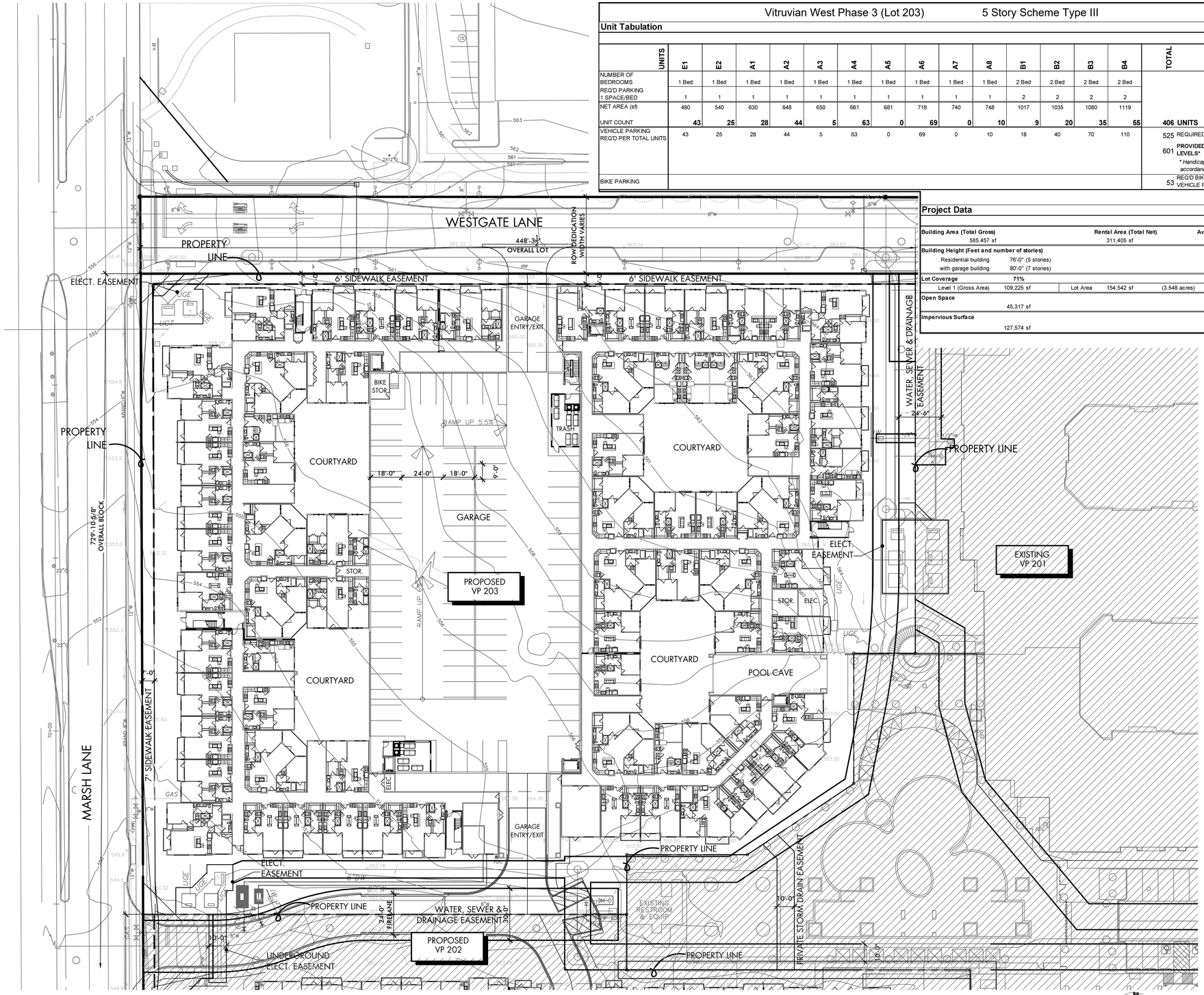


06 SITE PLAN - PHASE 03

SCALE: 1"=30'

Vitruvian West Phase 3 (Lot 203) 5 Story Scheme Type III

Unit Tabulation

UNITS	E1	E2	A1	A2	A3	A4	A5	A6	A7	A8	B1	B2	B3	B4	TOTAL
NUMBER OF BEDROOMS	1 Bed	1 Bed	1 Bed	1 Bed	1 Bed	1 Bed	1 Bed	1 Bed	1 Bed	1 Bed	2 Bed	2 Bed	2 Bed	2 Bed	
REQ'D PARKING 1 SPACE/BED	1	1	1	1	1	1	1	1	1	1	2	2	2	2	
NET AREA (sf)	480	540	630	648	650	661	681	718	740	748	1017	1035	1080	1119	
UNIT COUNT	43	25	28	44	5	63	0	69	0	10	9	20	35	55	406 UNITS
VEHICLE PARKING REQ'D PER TOTAL UNITS	43	25	28	44	5	63	0	69	0	10	18	40	70	110	525 REQUIRED PARKING 601 PROVIDED PARKING AT 7 LEVELS* * Handicap parking is provided in accordance with ADA standards
BIKE PARKING															53 REQ'D BIKE PARKING (1/10 VEHICLE PARKING)

Project Data

Building Area (Total Gross)	585,457 sf	**Rental Area (Total Net)**	311,405 sf	**Avg Unit Size** 767 sf
Building Height (Feet and number of stories)				
Residential building	76'-0" (5 stories)			
with garage building	80'-0" (7 stories)			
Lot Coverage	71%			
Level 1 (Gross Area)	109,225 sf	Lot Area	154,542 sf	(3.548 acres)
Open Space	45,317 sf			
Impervious Surface	127,574 sf			

ACTION

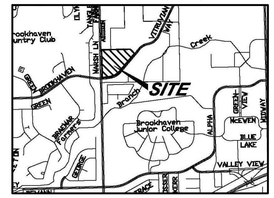
APPROVED DENIED

STAFF _____ Date _____ Initials

COUNCIL _____ Date _____ Initials

See the Staff Approval Letter or Council Result Memo for any conditions associated with the approval of the project.

Vicinity Map (NTS)



ADDISON SITE PLAN NOTES

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The development meets the sustainability requirements per Ordinance NO. 007-034, Exhibit F.

ZONING: PD
Addison, TX Town Project #_____
Block D
VP 202 (LOT 2) 3.306 acres
VP 203 (LOT 3) 3.548 acres

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Project Owner:

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Contact Information:
Robert P. St. John
(720) 348-7722
RStJohn@udr.com

Civil:

Icon Consulting Engineers, Inc.
2840 W Southlake Blvd #110
Southlake, TX 76092

(817) 552-6210

Issues and Revisions:

No.	Date	Issues
01	09.07.18	Site Submittal
02	10.05.18	Site Submittal

Vitruvian West
PHASE II & III

Addison, Texas

Wilder Belshaw Project Number: 1807

Drawing Name:

Sheet Number:
A001-PH3

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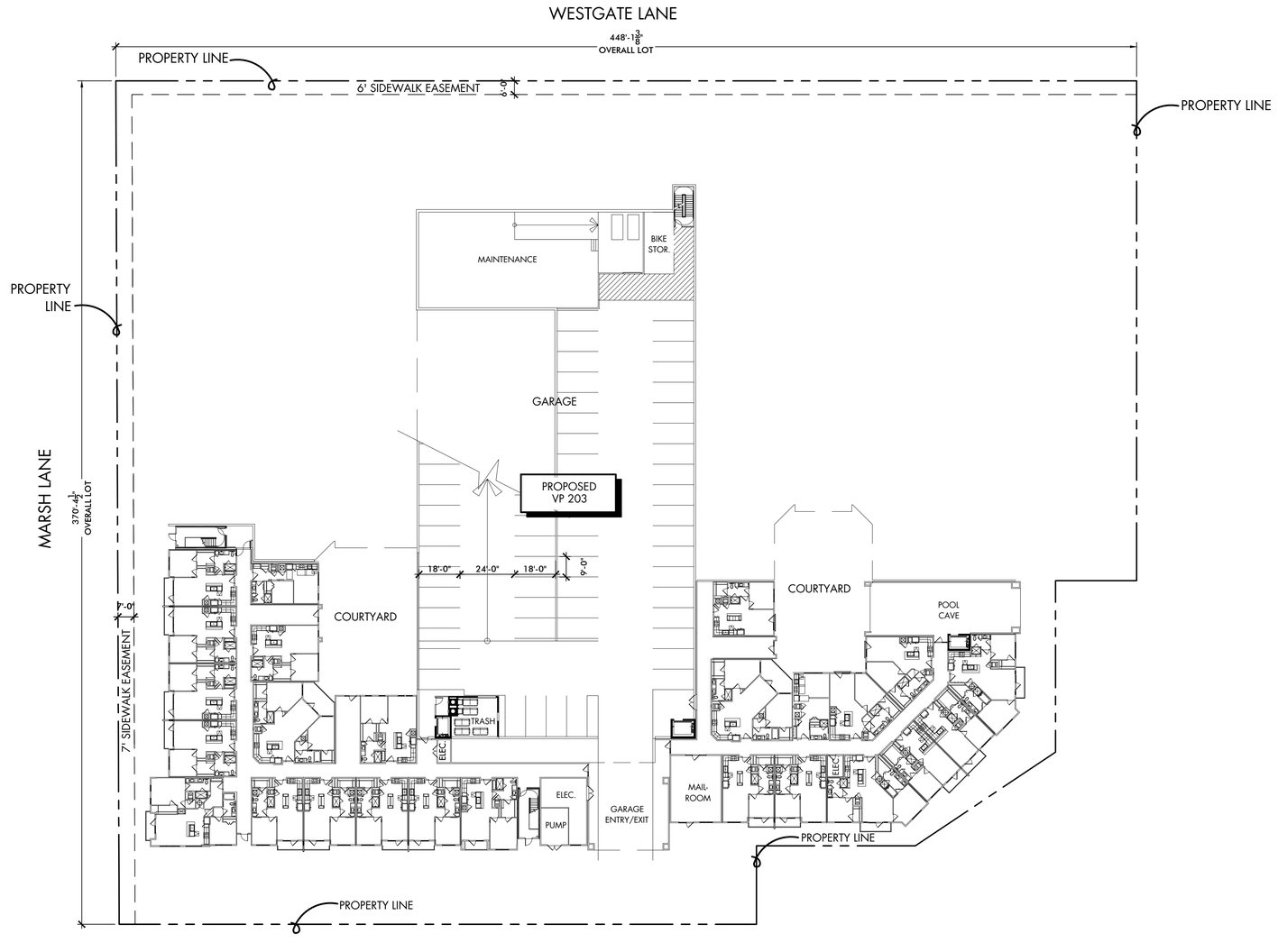

06 PHASE 03, LEVEL 0 PLAN

SCALE: 1"=30'

0' 30' 60' 120'

NORTH

ACTION

	APPROVED	DENIED
STAFF	_____ Date	_____ Initials
COUNCIL	_____ Date	_____ Initials

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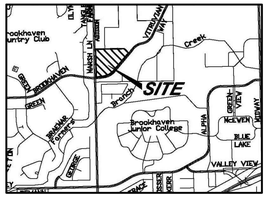
Vicinity Map (NTS)



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ZONING: PD
Addison, TX Town Project #_____
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Issues and Revisions:

No.	Date	Issues
01	09.07.18	Site Submittal
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Vitruvian West
PHASE II & III

Addison, Texas

Wilder Belshaw Project Number: 1807

Drawing Name:

Sheet Number:
A107

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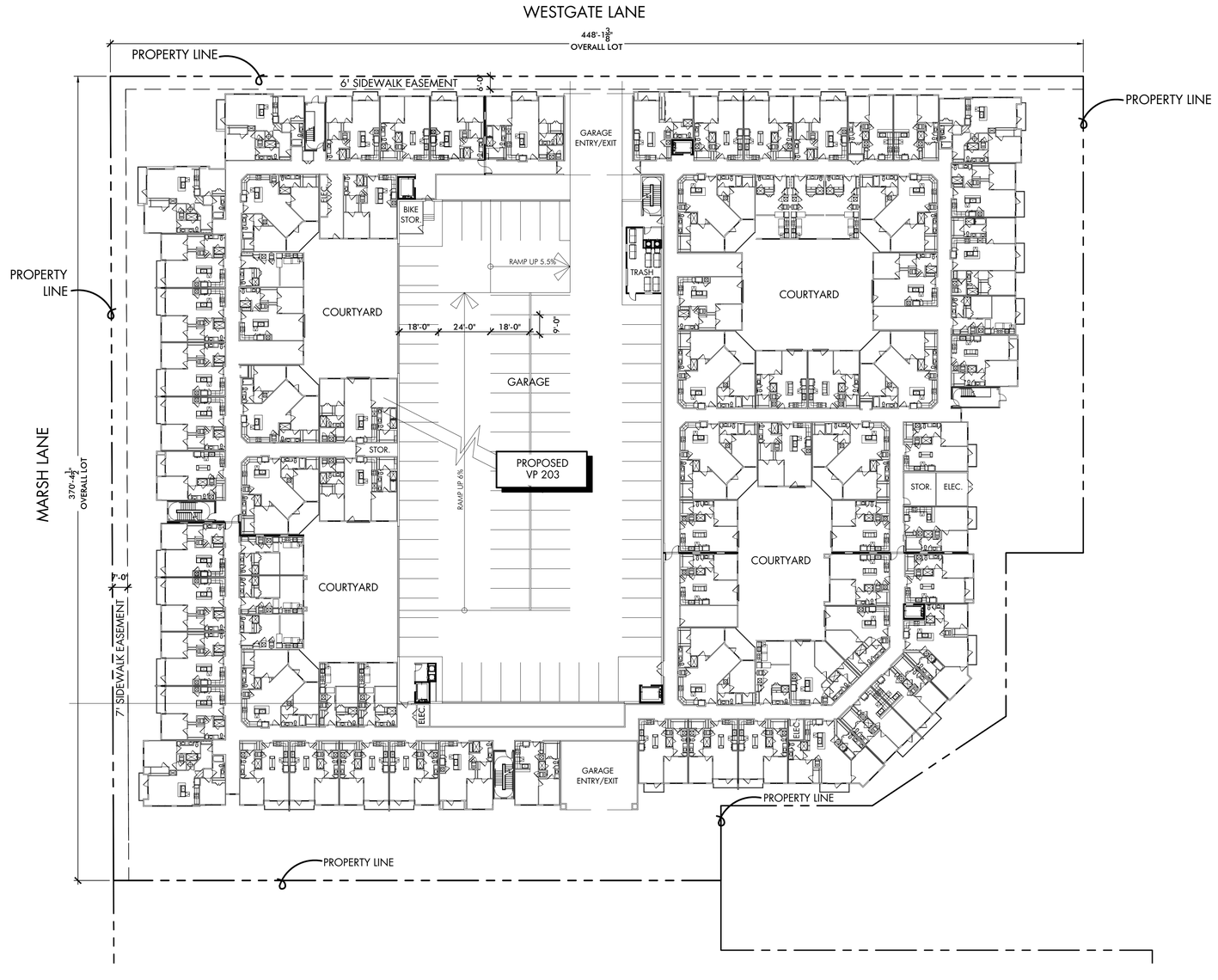


06 PHASE 03, LEVEL 1 PLAN

SCALE: 1"=30'

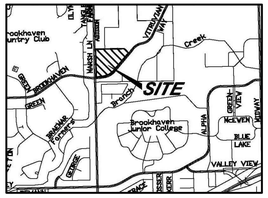
0' 30' 60' 120'

NORTH

ACTION		
APPROVED		DENIED
STAFF	Date	Initials
COUNCIL	Date	Initials

See the Staff Approval Letter or Council Result Memo for any conditions associated with the approval of the project.

Vicinity Map (NTS)



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ZONING: PD
Addison, TX
Town Project #_____
Block D
VP 202 (LOT 2) 3.306 acres
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02	10.05.18	Site Submittal

Vitruvian West
PHASE II & III

Addison, Texas

Wilder Belshaw Project Number: 1807

Drawing Name:

Sheet Number:
A108

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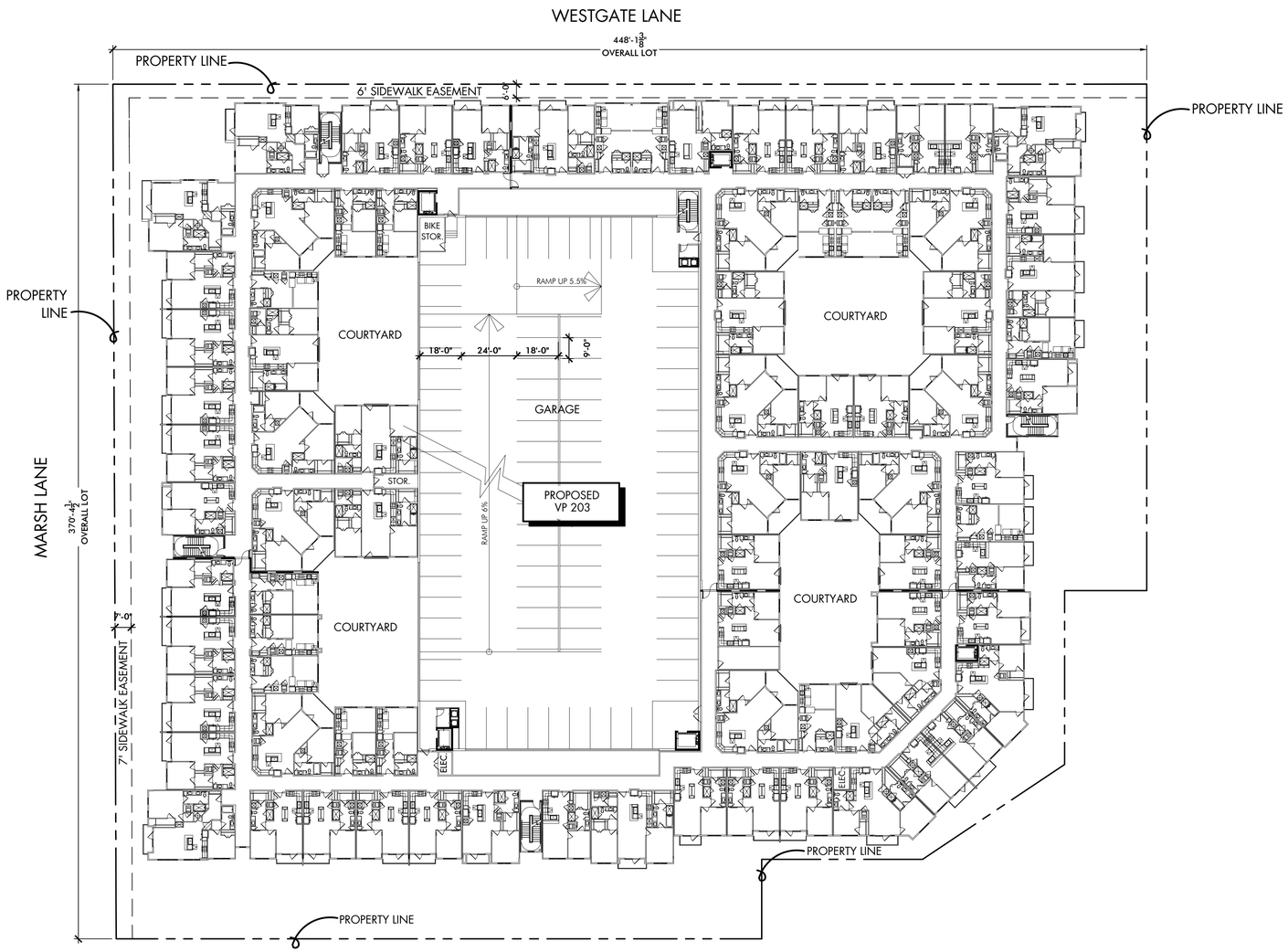

06 PHASE 03, LEVEL 2-3 PLAN

SCALE: 1"=30'

0' 30' 60' 120'

NORTH

ACTION

	APPROVED	DENIED
STAFF	_____ Date	_____ Initials
COUNCIL	_____ Date	_____ Initials

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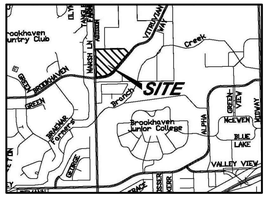
Vicinity Map (NTS)



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ZONING: PD
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Issues and Revisions:

No.	Date	Issues
01	09.07.18	Site Submittal
02	10.05.18	Site Submittal

Vitruvian West
PHASE II & III

Addison, Texas

Wilder Belshaw Project Number: 1807

Drawing Name:

Sheet Number:
A109

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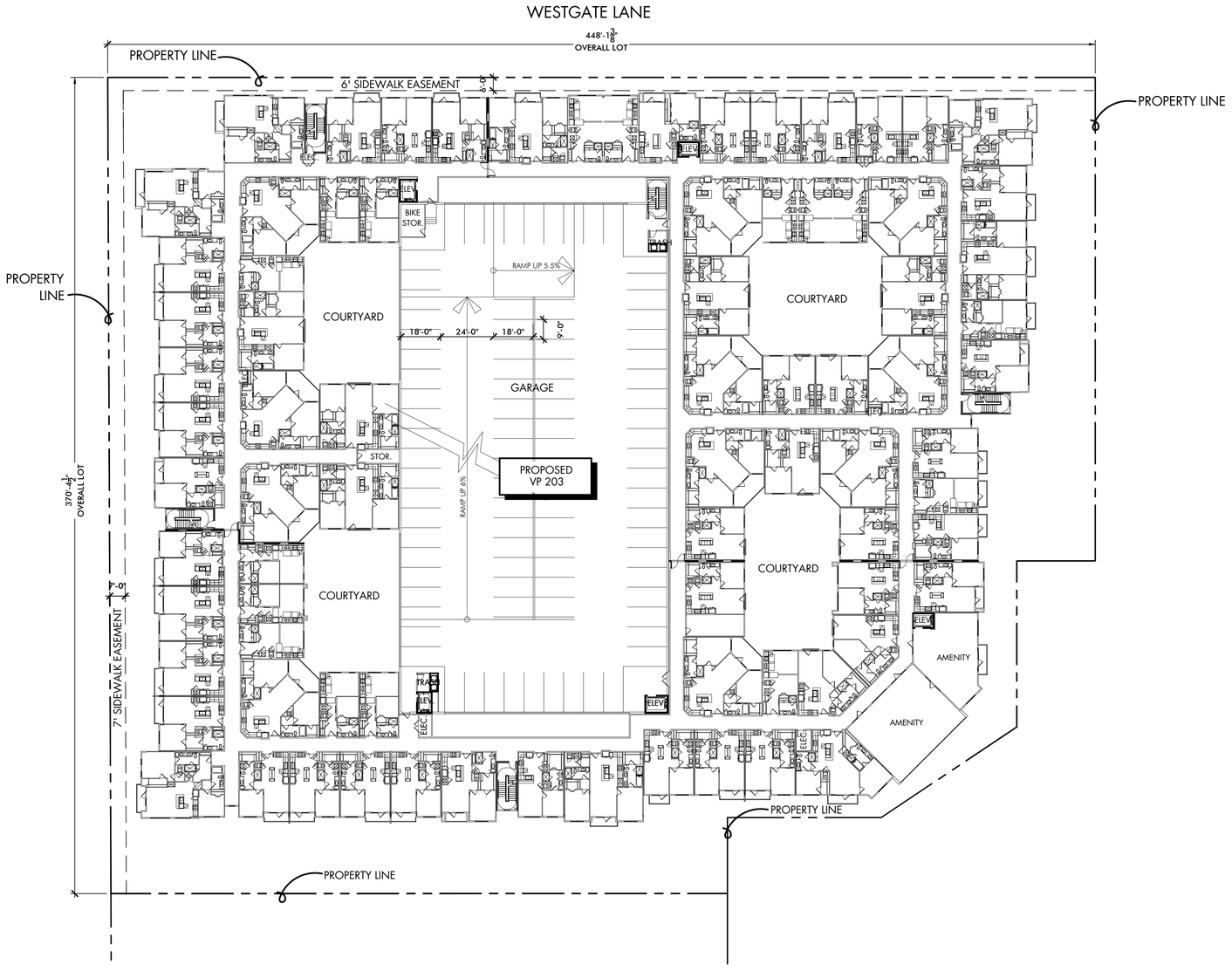


06 PHASE 03, LEVEL 4 PLAN

SCALE: 1"=30'

0' 30' 60' 120'

NORTH

ACTION

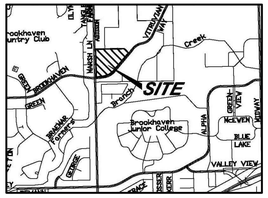
APPROVED DENIED

STAFF _____ _____
Date Initials

COUNCIL _____ _____
Date Initials

See the Staff Approval Letter or Council Result Memo for any conditions associated with the approval of the project.

Vicinity Map (NTS)



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Issues and Revisions:

No.	Date	Issues
01	09.07.18	Site Submittal
02	10.05.18	Site Submittal

Vitruvian West
PHASE II & III

Addison, Texas

Wilder Belshaw Project Number: 1807

Drawing Name:

Sheet Number:
A110

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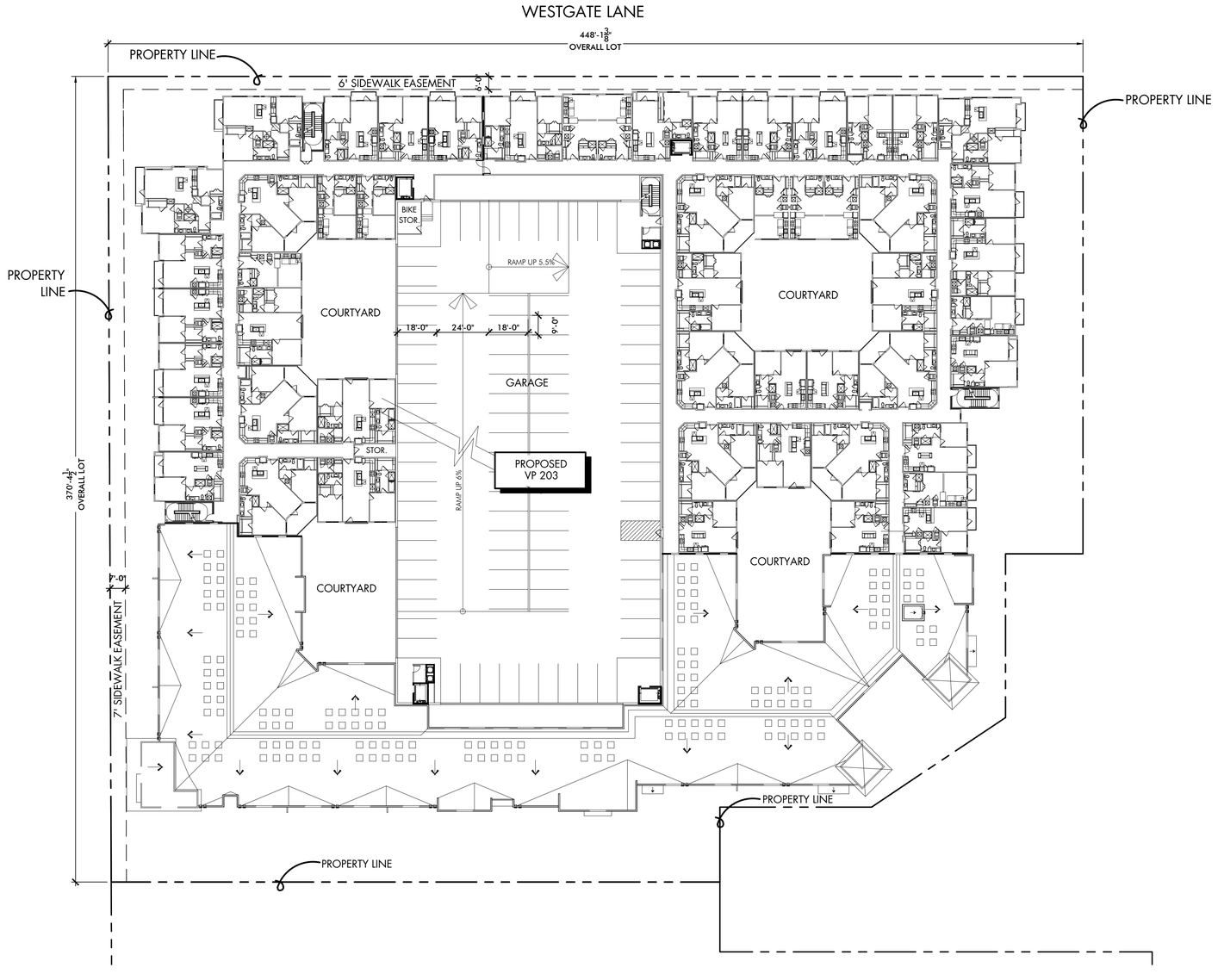


06 PHASE 03, LEVEL 5 PLAN

SCALE: 1"=30'

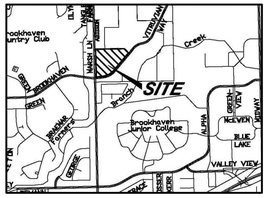
0' 30' 60' 120'

NORTH

ACTION		
APPROVED		DENIED
STAFF	Date	Initials
COUNCIL	Date	Initials

See the Staff Approval Letter or Council Result Memo for any conditions associated with the approval of the project.

Vicinity Map (NTS)



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ZONING: PD
Addison, TX
Town Project #_____
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Issues and Revisions:

No.	Date	Issues
01	09.07.18	Site Submittal
02	10.05.18	Site Submittal

Vitruvian West
PHASE II & III

Addison, Texas

Wilder Belshaw Project Number: 1807

Drawing Name:

Sheet Number:
A111

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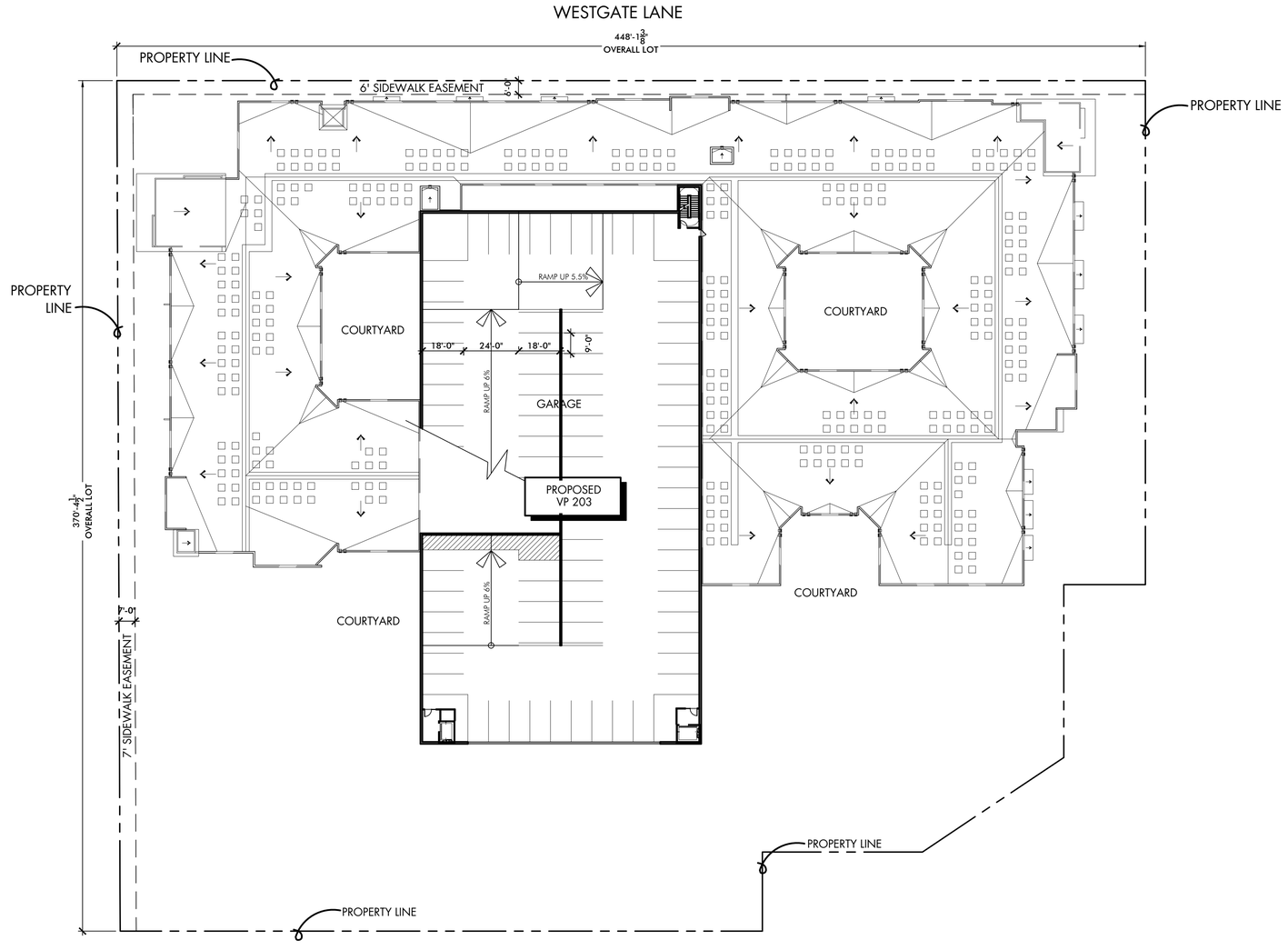

06 PHASE 03, ROOF PLAN

SCALE: 1"=30'

0' 30' 60' 120'

NORTH

ACTION		
APPROVED	DENIED	
STAFF	Date	Initials
COUNCIL	Date	Initials

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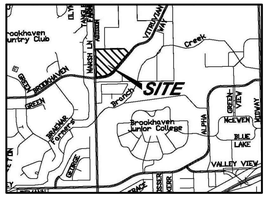
Vicinity Map (NTS)



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1. Any revision to this plan will require Town approval and will require revisions to any corresponding plans to avoid conflicts between plans.
2. Open storage, where permitted, shall be screened in accordance with the Zoning Ordinance.
3. Buildings with aggregate sum of 5,000 square feet or greater on a lot shall have automatic fire sprinklers installed throughout all structures. Alternative fire protection measures may be approved by the Fire Department.
4. All signage is subject to Town approval.
5. All fences and retaining walls shall be shown on the site plan and are subject to Building Inspection Division approval.

All mechanical equipment shall be screened per Ordinance NO. 007-034, #13. Refer to Landscape for screening materials and dimensions.

The development meets the sustainability requirements per Ordinance NO. 007-034, Exhibit F.

ZONING: PD
Addison, TX Town Project #_____
Block D
VP 202 (LOT 2) 3.306 acres
VP 203 (LOT 3) 3.548 acres

Wilder Belshaw Architects
Dallas • Austin

Savoye2 at Vitruvian Park 3875 Ponte Ave
Suite 410Addison Texas 75001
The Arnold in East Austin 1621 E 6th Street
Suite 1151Austin Texas 78702
214 969.0500 phone www.wilderbelshaw.com

Project Owner:

UDR
3875 Ponte Ave, Suite 400
Addison, TX 75001

Contact Information:
Robert P. St. John
(720) 348-7722
RStJohn@udr.com

Civil:

Icon Consulting Engineers, Inc.
2840 W Southlake Blvd #110
Southlake, TX 76092

(817) 552-6210

Issues and Revisions:

No.	Date	Issues
01	09.07.18	Site Submittal
02	10.05.18	Site Submittal

Vitruvian West
PHASE II & III

Addison, Texas

Wilder Belshaw Project Number: 1807

Drawing Name:

Sheet Number:

A112

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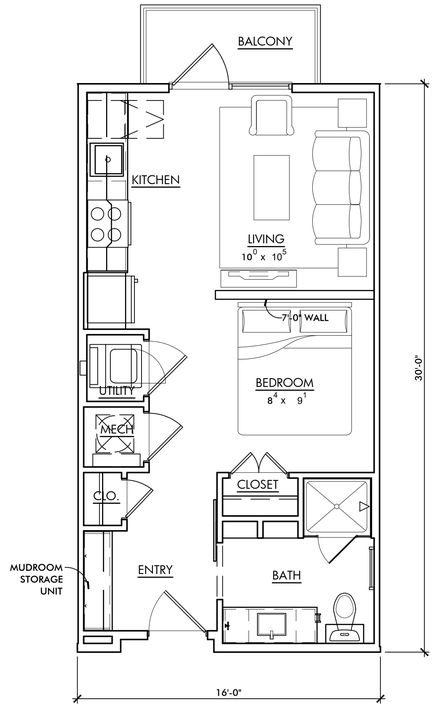
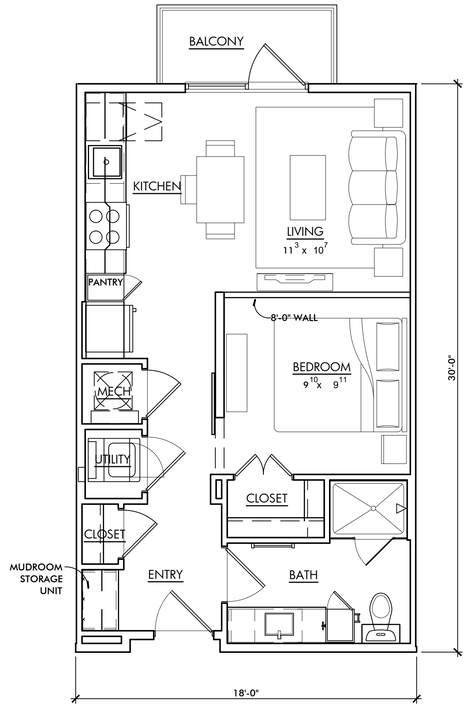


02 UNIT E1

SQUARE FOOTAGE: 480 S.F.



04 UNIT E2

SQUARE FOOTAGE: 540 S.F.

SCALE: 1/4" = 1'-0" (22"X34" SHEET)

UNITS

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VITRUVIAN WEST PHASE 2 & 3

Addison, TX

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Sheet Number: A201

Issue Date: 10.05.18

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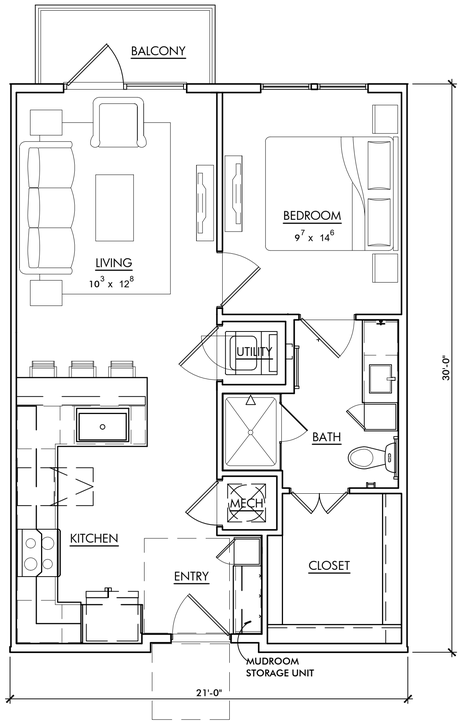

02 UNIT A1

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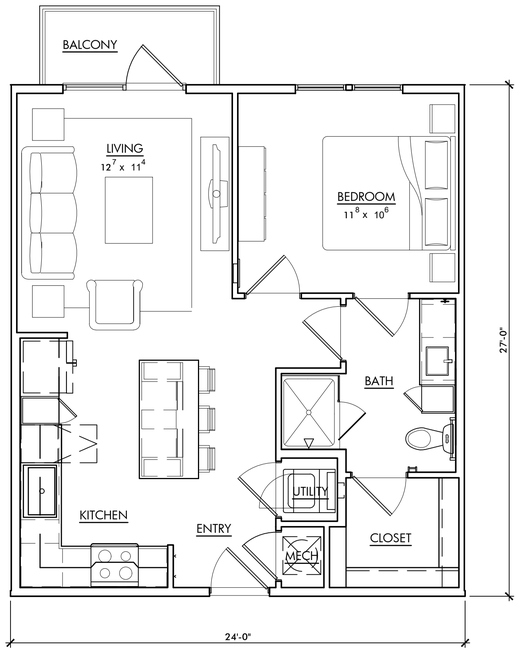
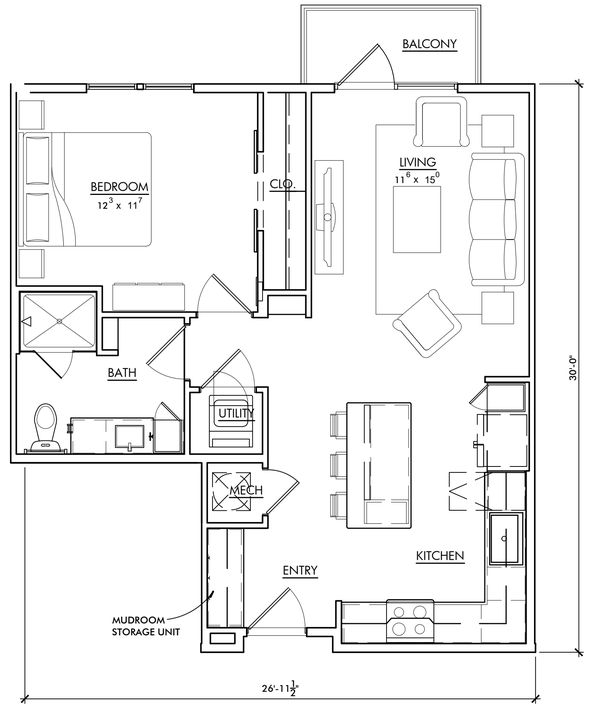


04 UNIT A2

SQUARE FOOTAGE: 648 S.F.



06 UNIT A3

SQUARE FOOTAGE: 707 S.F.

SCALE: 1/4" = 1'-0" (22"X34" SHEET)

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VITRUVIAN WEST PHASE 2 & 3

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Sheet Number: A202

Issue Date: 10.05.18

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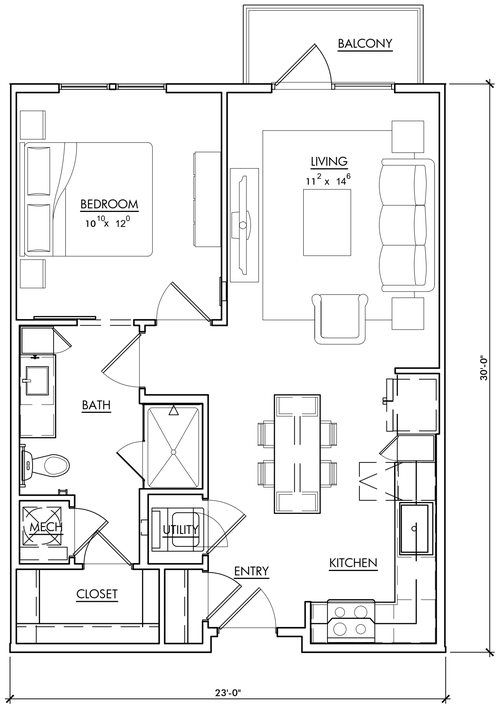
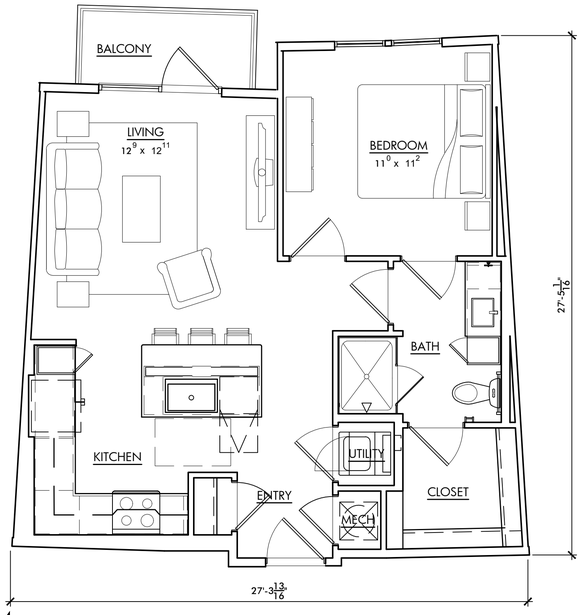


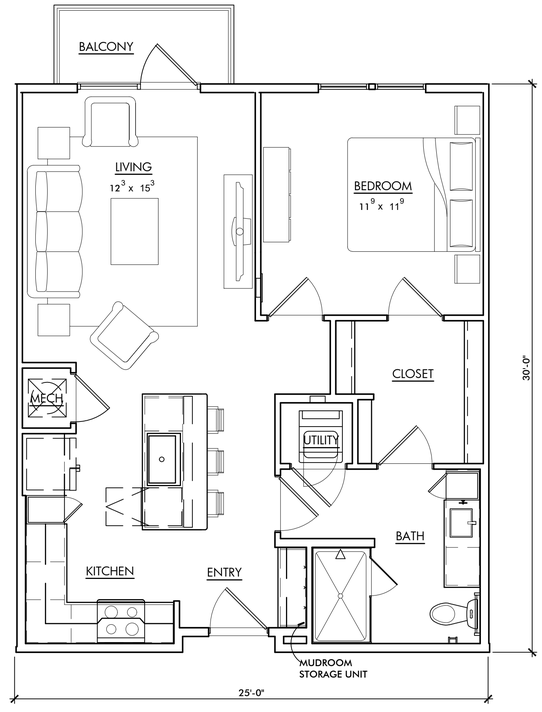
02 UNIT A4

SQUARE FOOTAGE: 690 S.F.



04 UNIT A5

SQUARE FOOTAGE: 670 S.F.



06 UNIT A6

SQUARE FOOTAGE: 750 S.F.

SCALE: 1/4" = 1'-0" (22"X34" SHEET)

UNITS

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VITRUVIAN WEST PHASE 2 & 3

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Issue Date: 10.05.18

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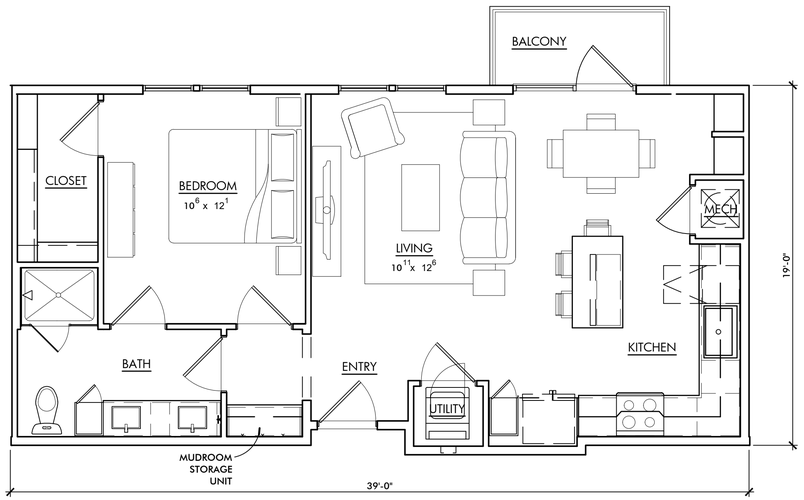
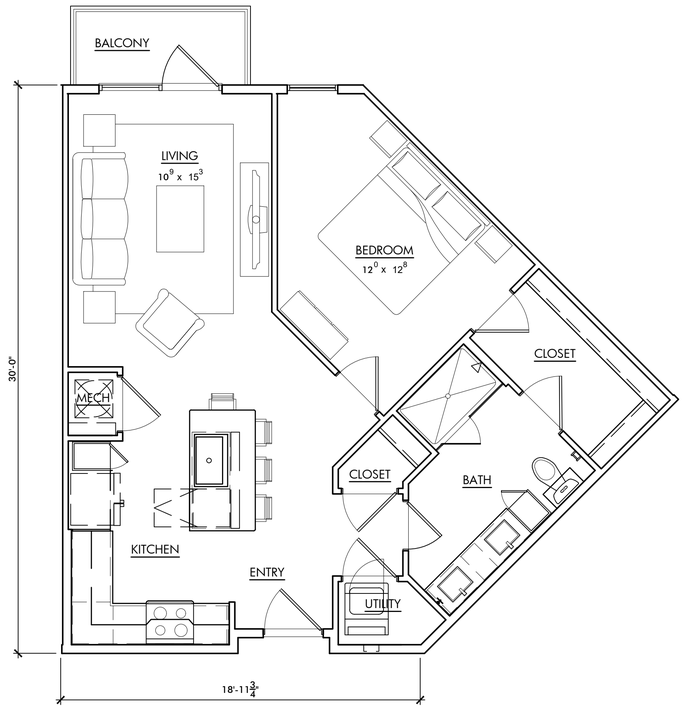


02 UNIT A7

SQUARE FOOTAGE: 740 S.F.



04 UNIT A8

SQUARE FOOTAGE:747 S.F.

SCALE: 1/4" = 1'-0" (22"X34" SHEET)

UNITS

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VITRUVIAN WEST PHASE 2 & 3

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Sheet Number: A204

Issue Date: 10.05.18

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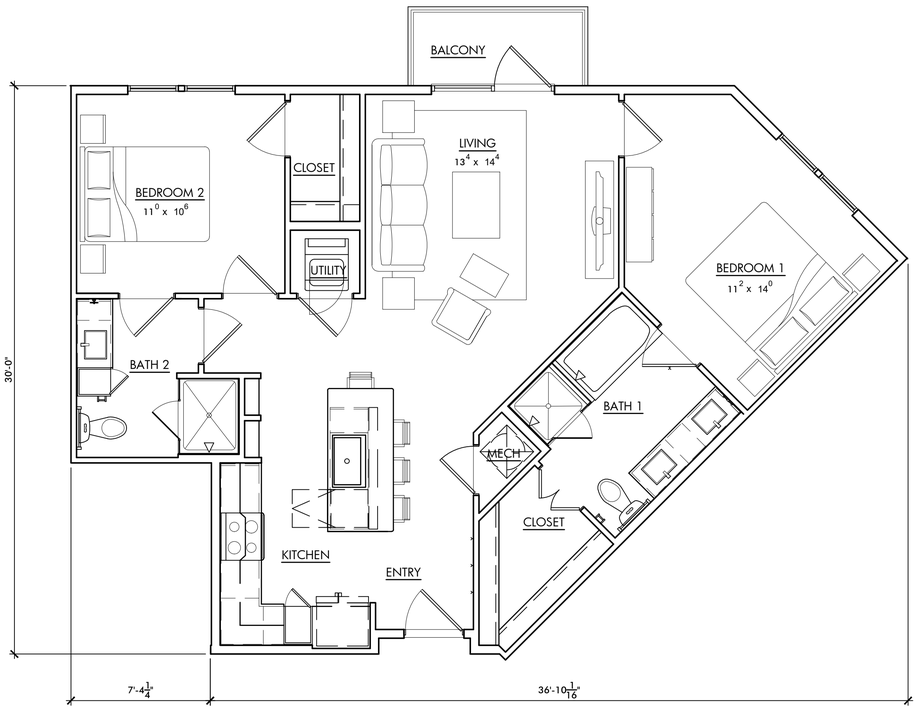
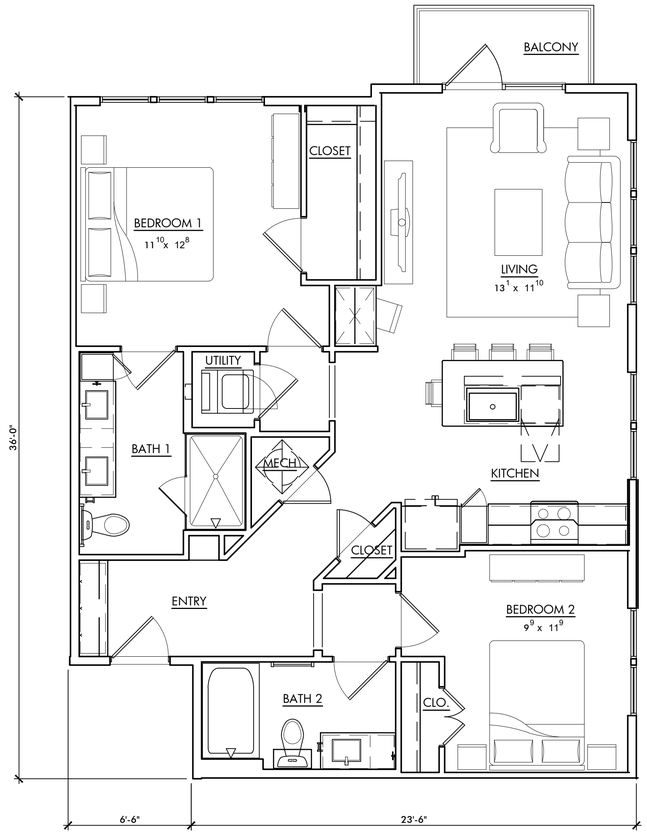


02 UNIT B1

SQUARE FOOTAGE: 993 S.F.



04 UNIT B2

SQUARE FOOTAGE: 1,050 S.F.

SCALE: 1/4" = 1'-0" (22"X34" SHEET)

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VITRUVIAN WEST PHASE 2 & 3

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Sheet Number: A205

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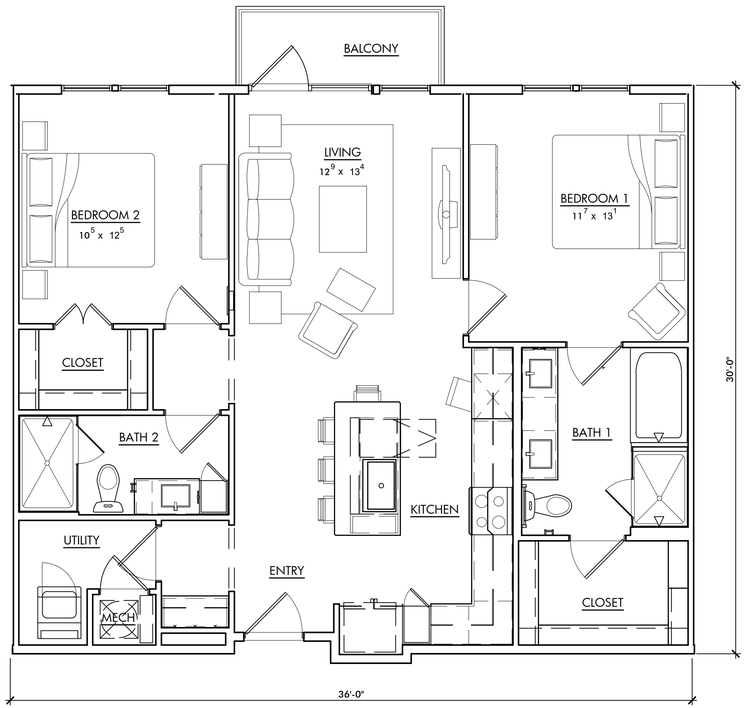
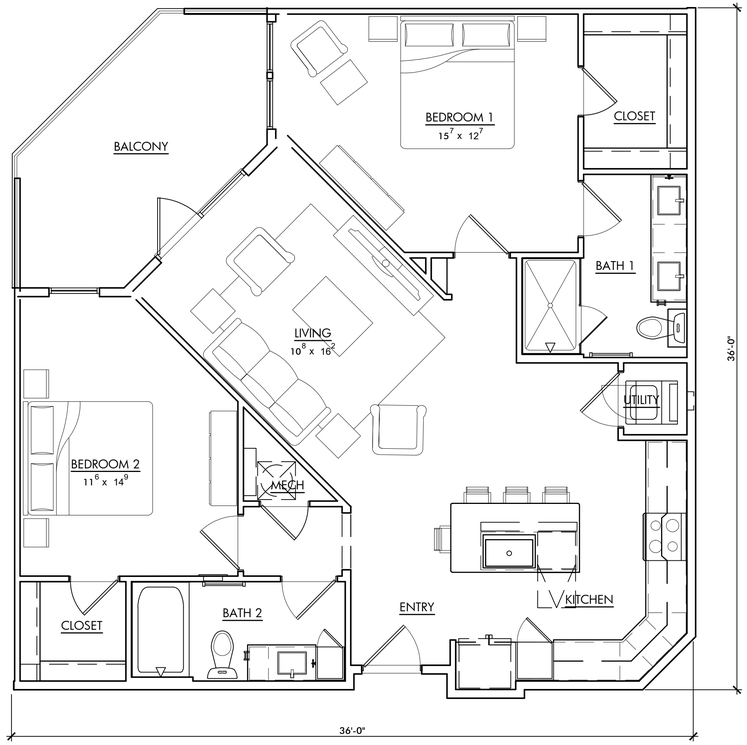


02 UNIT B3

SQUARE FOOTAGE: 1,080 S.F.



04 UNIT B4

SQUARE FOOTAGE: 1,120 S.F.

SCALE: 1/4" = 1'-0" (22"X34" SHEET)

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Sheet Number: A206

Issue Date: 10.05.18

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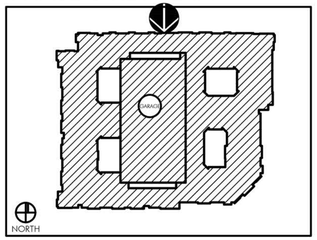
FACADE PLAN NOTES:
- THIS FACADE PLAN IS FOR CONCEPTUAL PURPOSES ONLY. ALL BUILDING PLANS REQUIRE REVIEW AND APPROVAL BY DEVELOPMENT SERVICES
- ALL ROOF MECHANICAL UNITS SHALL BE SCREENED FROM PUBLIC VIEW AS REQUIRED BY THE ZONING ORDINANCE
- WHEN PERMITTED, EXPOSED UTILITY BOXES AND CONDUITS SHALL BE PAINTED TO MATCH THE BUILDING
- ALL SIGNAGE AREAS AND LOCATIONS ARE SUBJECT TO APPROVAL BY DEVELOPMENT SERVICES
- ROOF ACCESS SHALL BE PROVIDED INTERNALLY, UNLESS OTHERWISE PERMITTED BY THE CHIEF BUILDING OFFICIAL

PHASE 3 KEY PLAN



PHASE 3 - NORTH ELEVATION - CONT.

SCALE: 3/32" = 1'-0"

PHASE 3 - NORTH ELEVATION

SCALE: 3/32" = 1'-0"

0' 10' 20' 40'

ZONING: PD
Addison, TX Town Project #_____
Block D
VP 202 (LOT 2) 3.306 acres
VP 203 (LOT 3) 3.548 acres

MATERIAL CALCULATIONS:
TOTAL SURFACE SF: 24,370sf

GLAZING:	6,091sf	25%
STONE:	7,477sf	31%
STUCCO:	7,674sf	31.5%
METAL:	1,348sf	5.5%
FIBER CEMENT:	1,781sf	7%

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VITRUVIAN WEST PHASE 2 & 3

Addison, TX

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Sheet Number: A305

Issue Date: 10.05.18

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FACADE PLAN NOTES:
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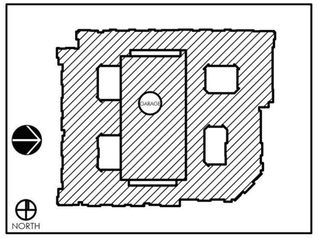
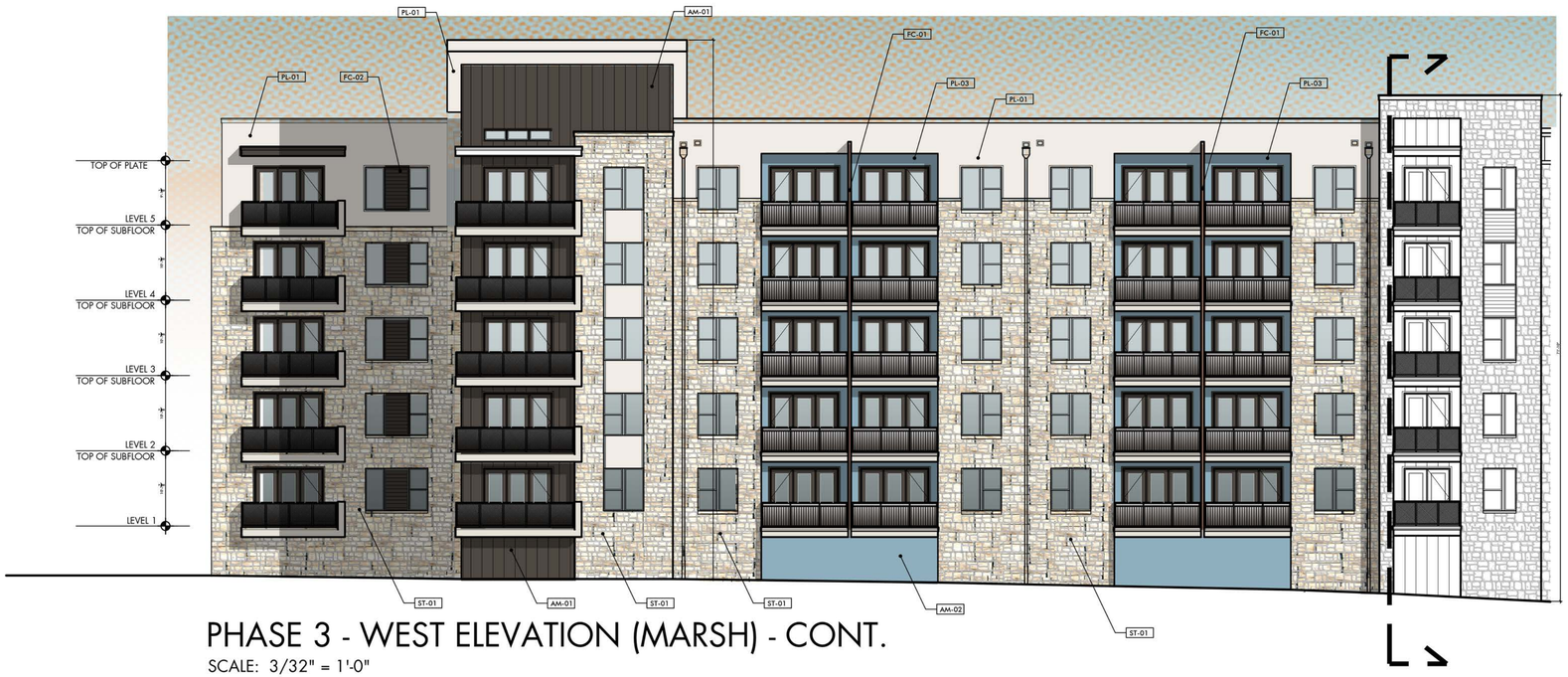
- ALL ROOF MECHANICAL UNITS SHALL BE SCREENED FROM PUBLIC VIEW AS REQUIRED BY THE ZONING ORDINANCE
- WHEN PERMITTED, EXPOSED UTILITY BOXES AND CONDUITS SHALL BE PAINTED TO MATCH THE BUILDING
- ALL SIGNAGE AREAS AND LOCATIONS ARE SUBJECT TO APPROVAL BY DEVELOPMENT SERVICES
- ROOF ACCESS SHALL BE PROVIDED INTERNALLY, UNLESS OTHERWISE PERMITTED BY THE CHIEF BUILDING OFFICIAL

PHASE 3 KEY PLAN





PHASE 3 - WEST ELEVATION (MARSH) - CONT.

SCALE: 3/32" = 1'-0"

PHASE 3 - WEST ELEVATION (MARSH)

SCALE: 3/32" = 1'-0"

0' 10' 20' 40'

ZONING: PD
Addison, TX Town Project #_____
Block D
VP 202 (LOT 2) 3.306 acres
VP 203 (LOT 3) 3.548 acres

MATERIAL CALCULATIONS:
TOTAL SURFACE SF: 21,280sf

GLAZING:	6,328sf	30%
STONE:	8,460sf	40%
STUCCO:	4,439sf	20%
METAL:	1,665sf	8%
FIBER CEMENT:	388sf	2%

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VITRUVIAN WEST PHASE 2 & 3

Addison, TX

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Sheet Number: A306

Issue Date: 10.05.18

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FACADE PLAN NOTES:
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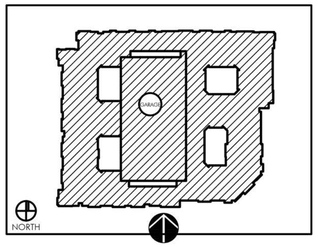
- ALL ROOF MECHANICAL UNITS SHALL BE SCREENED FROM PUBLIC VIEW AS REQUIRED BY THE ZONING ORDINANCE
- WHEN PERMITTED, EXPOSED UTILITY BOXES AND CONDUITS SHALL BE PAINTED TO MATCH THE BUILDING
- ALL SIGNAGE AREAS AND LOCATIONS ARE SUBJECT TO APPROVAL BY DEVELOPMENT SERVICES
- ROOF ACCESS SHALL BE PROVIDED INTERNALLY, UNLESS OTHERWISE PERMITTED BY THE CHIEF BUILDING OFFICIAL

PHASE 3 KEY PLAN



PHASE 3 - SOUTH ELEVATION - CONT.

SCALE: 3/32" = 1'-0"

PHASE 3 - SOUTH ELEVATION

SCALE: 3/32" = 1'-0"

ZONING: PD
Addison, TX
Town Project #_____
Block D
VP 202 (LOT 2) 3.306 acres
VP 203 (LOT 3) 3.548 acres

MATERIAL CALCULATIONS:
TOTAL SURFACE SF: 19,311sf

GLAZING:	5,541sf	29%
STONE:	7,044sf	36.5%
STUCCO:	5,075sf	26%
METAL:	611sf	3%
FIBER CEMENT:	1,040sf	5.5%

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VITRUVIAN WEST PHASE 2 & 3

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Sheet Number: A307

Issue Date: 10.05.18

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FACADE PLAN NOTES:
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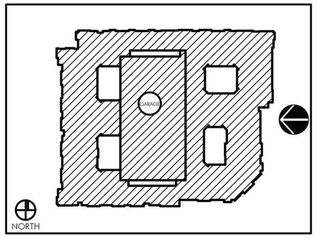
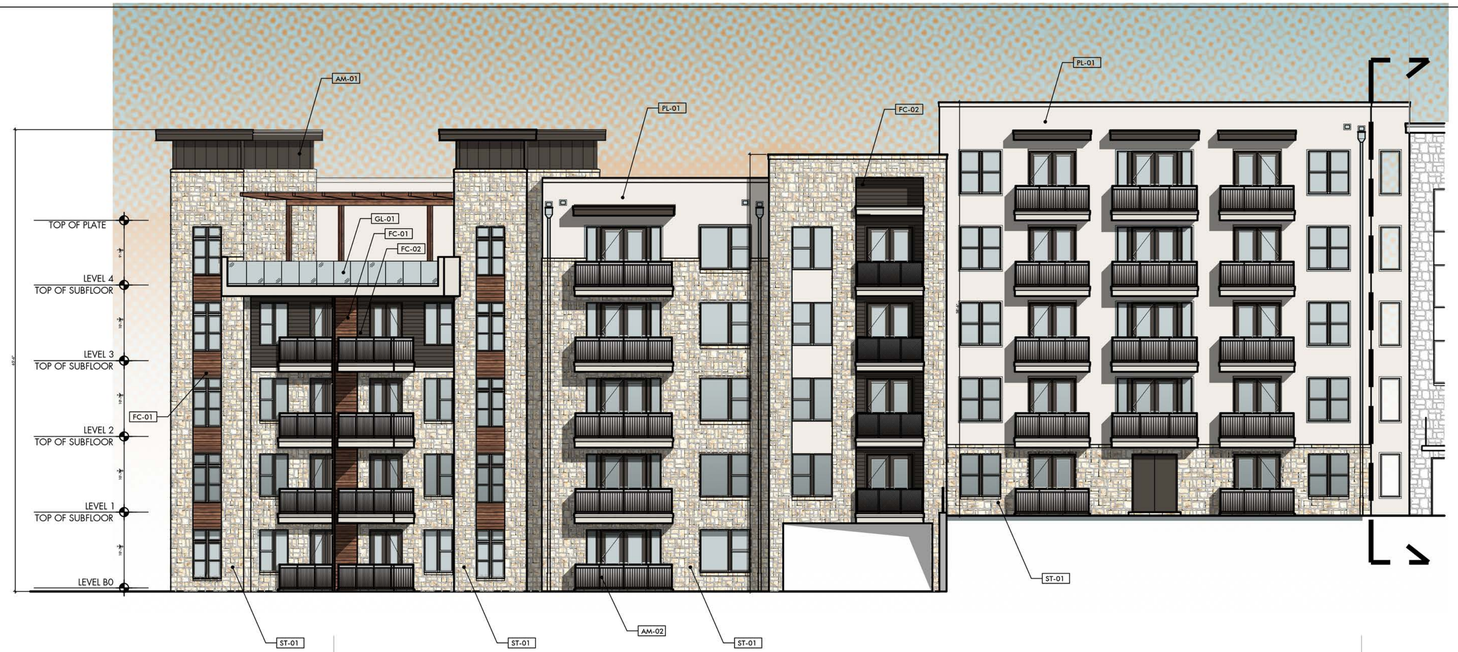
- ALL ROOF MECHANICAL UNITS SHALL BE SCREENED FROM PUBLIC VIEW AS REQUIRED BY THE ZONING ORDINANCE
- WHEN PERMITTED, EXPOSED UTILITY BOXES AND CONDUITS SHALL BE PAINTED TO MATCH THE BUILDING
- ALL SIGNAGE AREAS AND LOCATIONS ARE SUBJECT TO APPROVAL BY DEVELOPMENT SERVICES
- ROOF ACCESS SHALL BE PROVIDED INTERNALLY, UNLESS OTHERWISE PERMITTED BY THE CHIEF BUILDING OFFICIAL

PHASE 3 KEY PLAN





PHASE 3 - EAST ELEVATION (WESTGATE STREET) - CONT.

SCALE: 3/32" = 1'-0"

PHASE 3 - EAST ELEVATION (WESTGATE STREET)

SCALE: 3/32" = 1'-0"

0' 10' 20' 40'

ZONING: PD
Addison, TX Town Project #_____
Block D
VP 202 (LOT 2) 3.306 acres
VP 203 (LOT 3) 3.548 acres

MATERIAL CALCULATIONS:
TOTAL SURFACE SF: 15,835sf

GLAZING:	4,678sf	29.5%
STONE:	4,440sf	28%
STUCCO:	5,156sf	32.5%
METAL:	131sf	1%
FIBER CEMENT:	1,430sf	9%

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Sheet Number: A308

Issue Date: 10.05.18

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CITY GENERAL NOTES:

1. ANY PLANTING WITHIN THE PUBLIC ROW MUST BE COORDINATED WITH THE TOWN OF ADDISON PARKS DEPARTMENT.
2. MECHANICAL EQUIPMENT IS SCREENED FROM PUBLIC ROADWAYS WITH EVERGREEN LANDSCAPE MATERIAL PER ORDINANCE NO. 007-034. PLANT MATERIAL TO BE MINIMUM HEIGHT OF 6' AT TIME OF INSTALLATION.

CITY PLANTING NOTES:

1. ANY CHANGES TO PLANTINGS WITHIN THE PUBLIC R.O.W. MUST ALSO BE REPORTED TO THE TOWN OF ADDISON PARKS DEPARTMENT.
2. FINAL FINISH GRADE OF PLANTING AREAS IN THE PUBLIC R.O.W. MUST REVIEWED AND APPROVED BY THE TOWN OF ADDISON PARKS DEPARTMENT.
3. THE PARKS DEPARTMENT MUST REVIEW AND APPROVE ANY PLANT MATERIAL PROVIDED WITHIN THE PUBLIC R.O.W. PRIOR TO DELIVERY TO SITE. ANY PLANT SUBSTITUTION IN THE R.O.W. MUST BE PROVIDED TO THE PARKS DEPARTMENT FOR APPROVAL PRIOR TO PURCHASE.
4. PLANTINGS WITH THE PUBLIC R.O.W. MUST BE PLANTED WITH THE FOLLOWING SOIL SPECIFICATIONS:

   LANDSCAPE BEDS - PH BALANCED COMPOST FROM SOIL BUILDING SYSTEMS, OR APPROVED EQUAL. TILL INTO EXISTING SOIL TO ACHIEVE A MAXIMUM RATION OF 50% COMPOST AND 1 PART EXISTING SOIL.

   STREETSCAPE LANDSCAPE / TREE PLANTING BEDS - DEEP TREE PLANTING MIX FROM SOIL BUILDING SYSTEMS OR APPROVED EQUAL. THIS PERTAINS TO ALL OF THE SOIL IN THE PLANTING AREA. IT IS NOT ALLOWABLE TO KEEP 2/3 NATIVE SOIL IN THE PLANTING AREA.

   LAWN - GUMBO BUSTER FROM SOIL BUILDING SYSTEMS OR APPROVED EQUAL. TILL IN 1 PART GUMBO BUSTER WITH PART NATIVE SOIL. NOTE THAT PLANTING AREAS WITH HEAVILY COMPACTED SOIL AND CONSTRUCTION DEBRIS MAY NOT QUALIFY AS NATIVE SOIL AND IMPORTED TOPSOIL MAY BE REQUIRED.

CITY IRRIGATION NOTES:

1. AN AUTOMATIC IRRIGATION SYSTEM THAT COMPLIES WITH THE TOWN'S IRRIGATION SPECIFICATIONS MUST BE INSTALLED IN THE PUBLIC R.O.W. ALL IRRIGATION WITHIN THE R.O.W. MUST BE CONTROLLED BY THE TOWN'S CENTRAL CONTROL SYSTEM. THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF ANY RADIO ANTENNAE THAT MAY BE REQUIRED.
2. ANY PLANTING DAMAGED IN ADJACENT MEDIANS AND PROPERTIES DURING CONSTRUCTION IS TO BE REPLACED AT NO COST TO THE OWNER.
3. ANY DAMAGED PLANT MATERIAL CAUSED BY A NON-FUNCTIONAL IRRIGATION SYSTEM WILL BE REPLACED AT THE COST OF THE CONTRACTOR.
4. PLANTINGS MAY NOT BE INSTALLED UNTIL THE IRRIGATION SYSTEM IS INSTALLED, HAS A WORKING POWER SOURCE AND IF FULLY OPERATIONAL. CONTRACTOR RESPONSIBLE FOR IRRIGATION TO PLANTING UNTIL TRANSFERRED TO THE CITY AFTER SUBSTANTIAL COMPLETION.

GENERAL NOTES:

1. WARNING!!!!!!!!! CALL BEFORE YOU DIG!!!!!! TOLL FREE 811
2. WRITTEN DIMENSIONS PREVAIL OVER SCALED DIMENSIONS. NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES.
3. THE CONTRACTOR BEARS ALL RESPONSIBILITY FOR VERIFYING ALL UNDERGROUND UTILITIES, PIPES, STRUCTURES, AND LINE RUNS IN THE FIELD PRIOR TO CONSTRUCTION. ANY DAMAGE TO UTILITIES THAT ARE TO REMAIN SHALL BE REPAIRED IMMEDIATELY AT NO EXPENSE TO THE OWNER. LANDSCAPE ARCHITECT ASSUMES NO RESPONSIBILITY FOR ANY NOT SHOWN ON PLANS.
4. THE LOCATIONS OF EXISTING UTILITIES AS SHOWN ON THESE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UNDERGROUND UTILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
5. ALL PROPOSED AND FINISHED GRADES ARE BASED ON INFORMATION PROVIDED BY THE OWNER'S SURVEY AND/OR CIVIL ENGINEER. ANY DISCREPANCIES IN ACTUAL FIELD MEASUREMENTS ARE TO BE REPORTED TO THE LANDSCAPE ARCHITECT IMMEDIATELY.
6. CONTRACTOR IS RESPONSIBLE FOR ALL QUANTITIES PER DRAWINGS AND SPECIFICATIONS. ANY QUANTITIES PROVIDED BY LANDSCAPE ARCHITECT ARE PROVIDED FOR CONVENIENCE ONLY CONTRACTORS ARE TO BID THEIR OWN VERIFIED QUANTITIES. NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES.
7. EASEMENTS SETBACKS, BUILDING, CURB AND GUTTER, UNDERGROUND UTILITIES HAVE BEEN SUPPLIED TO LANDSCAPE ARCHITECT BY THE PROJECT CIVIL ENGINEER. REFER TO CIVIL ENGINEERS DRAWINGS FOR ADDITIONAL INFORMATION.
8. STUDIO OUTSIDE ASSUMES NO RESPONSIBILITY FOR DAMAGES. LIABILITIES, OR COST RESULTING FROM CHANGES OR ALTERATIONS MADE TO THE PLAN WITHOUT THE EXPRESS WRITTEN CONSENT OF STUDIO OUTSIDE.

PLANTING NOTES:

1. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL UNDERGROUND UTILITIES, PIPES, STRUCTURES, AND LINE RUNS IN THE FIELD PRIOR TO THE INSTALLATION OF ANY PLANT MATERIAL.
2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ADVISE THE LANDSCAPE ARCHITECT OF ANY CONDITION FOUND ON THE SITE WHICH PROHIBITS INSTALLATION AS SHOWN ON THESE DRAWINGS. REF. CITY PLANTING NOTES FOR R.O.W. PLANTING.
3. ALL PLANT MATERIAL SHALL BE MAINTAINED IN A HEALTHY AND GROWING CONDITION AND MUST BE REPLACED WITH PLANT MATERIAL OF SAME VARIETY AND SIZE IF DAMAGED, DESTROYED, OR REMOVED.
4. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR FINE GRADING AND REMOVAL OF DEBRIS PRIOR TO PLANTING IN ALL AREAS.
5. FINAL FINISH GRADING SHALL BE REVIEWED BY THE LANDSCAPE ARCHITECT. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL TOPSOIL REQUIRED TO CREATE A SMOOTH CONDITION PRIOR TO PLANTING. REF. CITY PLANTING NOTES FOR R.O.W. PLANTING.
6. ALL PLANT QUANTITIES LISTED ARE FOR INFORMATION ONLY. IT IS THE CONTRACTORS RESPONSIBILITY TO PROVIDE FULL COVERAGE IN ALL PLANTING AREAS AS SPECIFIED IN THE PLANT SCHEDULE AND VERIFY ALL QUANTITIES.
7. LANDSCAPE CONTRACTOR TO PROVIDE STEEL EDGING (REFER TO MATERIALS PAGE) BETWEEN ALL PLANTING BEDS AND LAWN AREAS.
8. ALL PLANT MATERIAL SHALL CONFORM TO THE SPECIFICATIONS AND SIZES GIVEN IN THE PLANT LIST AND SHALL BE NURSERY GROWN IN ACCORDANCE WITH THE AMERICAN STANDARD FOR NURSERY STOCK. LATEST EDITION AMERICAN ASSOCIATION OF NURSERYMEN STANDARDS. ANY PLANT SUBSTITUTION SHALL BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO PURCHASE. REF. CITY PLANTING NOTES FOR R.O.W. PLANTING.
9. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR ANY COORDINATION WITH OTHER CONTRACTOR'S ON SITE AS REQUIRED TO ACCOMPLISH ALL PLANTING OPERATIONS.
10. ALL NEW PLANTING AREAS TO BE AMENDED PER SPECIFICATIONS.
11. ANY PLANT MATERIAL THAT DOES NOT SURVIVE SHALL BE REPLACED WITH AN EQUIVALENT SIZE AND SPECIES WITHIN THIRTY (30) DAYS.
12. PLANT MATERIAL SHALL BE PRUNED AS NECESSARY TO CONTROL SIZE BUT NOT TO DISRUPT THE NATURAL GROWTH PATTERN OR CHARACTERISTIC FORM OF THE PLANT EXCEPT AS NECESSARY TO ACHIEVE HEIGHT CLEARANCE FOR VISIBILITY AND PEDESTRIAN PASSAGE OR TO ACHIEVE A CONTINUOUS OPAQUE HEDGE IF REQUIRED.
13. LANDSCAPED AREAS SHALL BE KEPT FREE OF TRASH, WEEDS, DEBRIS, AND DEAD PLANT MATERIAL
14. ALL LIME STABILIZED SOIL & INORGANIC SELECT FILL FOR BUILDING SHOULD BE REMOVED FROM PLANTING AREAS TO A DEPTH OF 24" & REPLACED WITH ORGANIC IMPORTED TOPSOIL FILL.

IRRIGATION NOTES:

1. AN AUTOMATIC IRRIGATION SYSTEM SHALL BE PROVIDED FOR ALL PLANTING AREAS. OVER SPRAY ON STREETS AND WALKS IS PROHIBITED. REF. CITY IRRIGATION NOTES FOR R.O.W. IRRIGATION.
2. IRRIGATION SYSTEMS SHALL BE MAINTAINED AND REPLACED AS NECESSARY.
3. ALL PLANTING AREAS TO BE FULLY IRRIGATED.
4. IRRIGATION SYSTEM TO HAVE A FULLY AUTOMATED CONTROL SYSTEM.
5. ANY EXISTING PLANTING DAMAGED DURING CONSTRUCTION IS TO BE REPLACED AT NO COST TO THE OWNER.
6. IF THE EXISTING IRRIGATION SYSTEM IS DAMAGED OR TURNED OFF DURING CONSTRUCTION ACTIVITIES, IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO HAND WATER ALL PLANT MATERIAL AS NEEDED.

STREET TREE REQUIREMENTS:

	REQUIRED	PROVIDED
VITRUVIAN WAY 416 LF STREET FOOTAGE ALONG PROPERTY LINE	14 TREES 1 TREE / 30 LF PER TOWN LANDSCAPE REGULATIONS	19 TREES
MARSH LANE 545 LF STREET FOOTAGE ALONG PROPERTY LINE	18 TREES 1 TREE / 30 LF PER TOWN LANDSCAPE REGULATIONS	17 TREES
WESTGATE LANE 410 LF STREET FOOTAGE ALONG PROPERTY LINE	13 TREES 1 TREE / 30 LF PER TOWN LANDSCAPE REGULATIONS	12 TREES

LANDSCAPE REQUIREMENTS:

20' STREET LANDSCAPE BUFFER	PROVIDED
VISIBILITY TRIANGLES	REFER TO PLANS
OFF-STREET LOADING SCREEN	PROVIDED
PARKING LOT SCREENING	N/A

LANDSCAPE CALCULATIONS:

REQUIRED	PROVIDED
20% GROSS SITE LANDSCAPING	GROSS SITE SQ. FT.: 299,247 (6.8 ACRES) PROPOSED LANDSCAPE SQ. FT.: 91,849 (30% OF GROSS SITE SQ. FT.)

SUN CONDITION PLANT LEGEND

SYMBOL	PLANT ABBR.	COMMON NAME BOTANICAL NAME	MINIMUM SIZE	MINIMUM HEIGHT	MINIMUM SPREAD	MAXIMUM SPACING	COMMENTS
		CANOPY TREES					
	TD	Taxodium distichum BALD CYPRESS	4" CAL	18'-20'	12'-14'		STRONG CENTRAL LEADER, MATCHED, FULL, WELL BRANCHED T-O' CLEAR TRUNK
	QVH	Quercus virginiana HIGHRISE LIVE OAK	4" CAL	15'-16'	6'-7'		STRONG CENTRAL LEADER, MATCHED, FULL, WELL BRANCHED T-O' CLEAR TRUNK
	FPU	Fraxinus pennsylvanica 'Urbanite' URBANITE ASH	4" CAL	18'-20'	12'-14'		STRONG CENTRAL LEADER, MATCHED, FULL, WELL BRANCHED T-O' CLEAR TRUNK
		ORNAMENTAL TREES					
	VT	Vitex angus-castus PURPLE CHASTE TREE	T-8' HT, B&B/CONT	T-8'	4'-5'		FULL, WELL BRANCHED, LOW BRANCHING HABIT, SPECIMEN QUALITY
	SS	Sophora secundiflora TEXAS MOUNTAIN LAUREL	T-8' HT, B&B/CONT	T-8'	4'-5'		FULL, WELL BRANCHED, LOW BRANCHING HABIT, SPECIMEN QUALITY
	LI	Lagerstroemea indica CRAPE MYRTLE	T-8' HT, B&B/CONT	T-8'	4'-5'		FULL, WELL BRANCHED, LOW BRANCHING HABIT, SPECIMEN QUALITY
	CL	Chilopsis linaris DESERT WILLOW	T-8' HT, B&B/CONT	T-8'	4'-5'		FULL, WELL BRANCHED, LOW BRANCHING HABIT, SPECIMEN QUALITY
	CH	x Chitalpa tashkentensis CHITALPA	T-8' HT, B&B/CONT	T-8'	4'-5'		FULL, WELL BRANCHED, LOW BRANCHING HABIT, SPECIMEN QUALITY
	CKR	Cercis canadensis var. texensis 'Oklahoma' OKLAHOMA REDBUD	T-8' HT, B&B/CONT	T-8'	4'-5'		FULL, WELL BRANCHED, LOW BRANCHING HABIT, SPECIMEN QUALITY
	ID	Ilex decidua POSSUMHAW HOLLY	T-8' HT, B&B/CONT	T-8'	4'-5'		FULL, WELL BRANCHED, LOW BRANCHING HABIT, SPECIMEN QUALITY
		SCREENING SHRUBS					
	IN	Ilex x 'Nellie R. Stevens' NELLIE R. STEVENS HOLLY	30 GAL.	6'-7'	3'-4'	5'-0"	STRONG CENTRAL LEADER, MATCHED, FULL, WELL BRANCHED
	JV	Juniperus virginiana 'Brodie' EASTERN RED CEDAR 'BRODIE'	8'-T HT.	6'-7'	3'-4'	6'-0"	STRONG CENTRAL LEADER, MATCHED, FULL, WELL BRANCHED
	IC	Ilex cornuta 'Burfordii' BURFORD HOLLY	8'-T HT.	6'-7'	3'-4'	6'-0"	STRONG CENTRAL LEADER, MATCHED, FULL, WELL BRANCHED
		LARGE SHRUBS					
	ICD	Ilex cornuta 'Dwarf Burford' DWARF BURFORD HOLLY	7 GAL.	36"	24"	36"	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER,
	LJ	Ligustrum japonicum RAVELEY LIGUSTRUM	7 GAL.	36"	24"	36"	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER,
	MC	Myrica cerifera pumila DWARF WAX MYRTLE	7 GAL.	36"	24"	36"	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER,
	LP	Leucophyllum frutescens 'Green Cloud' GREEN CLOUD TEXAS SAGE	5 GAL.	24"	24"	AS SHOWN	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
		MEDIUM SHRUBS					
	LCR	Loropetalum chinense 'Ruby' RUBY LOROPETALUM	5 GAL.	24"	24"	30"	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
	HP	Hesperaloe parviflora RED YUCCA	5 GAL.	24"	24"	AS SHOWN	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
	YF	Yucca filamentosa GOLDEN SWORD YUCCA	5 GAL.	18"	18"	30"	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
	ARG	Abelia x 'Rose Creek' ROSE CREEK ABELIA	5 GAL.	18"	18"	30"	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
	BT	Berberis thunbergii BARBERRY	5 GAL.	18"	18"	30"	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
		SMALL SHRUBS					
	IV	Ilex vomitoria 'Nana' DWF. YAUPON HOLLY	5 GAL.	18"	18"	AS SHOWN	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
	MA	Malvaviscus arboreus var. drummondi TURK'S CAP	5 GAL.	18"	18"	AS SHOWN	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
	ND	Nandina domestica 'Harbor Dwarf' HARBOR DWARF NANDINA	5 GAL.	12"	12"	AS SHOWN	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
	SB	Spirea x bumalda 'Goldmound' GOLDMOUND DWARF SPIREA	5 GAL.	18"	18"	AS SHOWN	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
	AA	Agapanthus africana 'Queen Anne' QUEEN ANNE LILY OF THE NILE	5 GAL.	18"	18"	AS SHOWN	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
	RH	Rosa 'Meggli PP 18342 PEACH DRIFT ROSE	5 GAL.	18"	18"	AS SHOWN	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
		ORNAMENTAL GRASSES					
	NT	Nassella tenuissima MEXIAN FEATHER GRASS	1 GAL.	8"	12"	18"	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
	BG	Bouteloua gracilis 'Blonde Ambition' BLONDE AMBITION BLUE GRAMA	1 GAL.	12"	8"	AS SHOWN	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
	EG	Eragrostis curvula WEEPING LOVE GRASS	1 GAL.	12"	8"	AS SHOWN	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
	MSA	Miscanthus sinensis 'Adagio' 'ADAGIO' MAIDEN GRASS	1 GAL.	12"	8"	AS SHOWN	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
		GROUND COVERS					
	EF	Euonymus fortunei 'Coloratus' PURPLE WINTERCREEPER	1 GAL.	8"	12"	18"	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
	TA	Trachelospermum asiaticum ASIAN JASMINE	1 GAL.	8"	12"	18"	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
		TURF GRASSES					
	CD	Cynodon dactylon BERMUDA SOD	SOLID SOD	-	-	-	SEE SPECS
	SS	Stenotaphrum secundatum 'Del Mar' DEL MAR ST. AUGUSTINE SOD	SOLID SOD	-	-	-	SEE SPECS

SHADE CONDITION PLANT LEGEND

SYMBOL	PLANT ABBR.	COMMON NAME BOTANICAL NAME	MINIMUM SIZE	MINIMUM HEIGHT	MINIMUM SPREAD	MAXIMUM SPACING	COMMENTS
		ORNAMENTAL TREES					
	APB	Acer palmatum var. atropurpureum 'Bloodgood' BLOODGOOD JAPANESE MAPLE	T-8' HT, B&B/CONT	T-8'	4'-5'		FULL, WELL BRANCHED, LOW BRANCHING HABIT, SPECIMEN QUALITY
	APS	Acer palmatum 'Sangokaku' CORAL BARK JAPANESE MAPLE	T-8' HT, B&B/CONT	T-8'	4'-5'		FULL, WELL BRANCHED, LOW BRANCHING HABIT, SPECIMEN QUALITY
	CCFP	Cercis canadensis 'Forest Pansy' FOREST PANSY REDBUD	T-8' HT, B&B/CONT	T-8'	4'-5'		FULL, WELL BRANCHED, LOW BRANCHING HABIT, SPECIMEN QUALITY
	CD	Cornus drummondi ROUGHLEAF DOGWOOD	45 GAL.	8'-10'	6'-8'		FULL, WELL BRANCHED, LOW BRANCHING HABIT, SPECIMEN QUALITY
		LARGE SHRUBS					
	PH	Podocarpus macrophylus PODOCARPUS	7 GAL.	36"	24"	36"	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER,
	PTV	Pittosporum tobira 'Variegata' VARIGATED PITTOSPORUM	5 GAL.	24"	18"	36"	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
	FJ	Fatsia japonica FATSIA	5 GAL.	30"	24"	AS SHOWN	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
		MEDIUM SHRUBS					
	AJ	Aucuba japonica 'Variegata' GOLD DUST AUCUBA	5 GAL.	24"	18"	36"	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
	AE	Aspidistra elatior CAST IRON PLANT	5 GAL.	24"	18"	24"	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
	AE	Buxus microphylla japonica 'Winter Gem' WINTER GEM BOXWOOD	5 GAL.	24"	18"	24"	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
	YR	Yucca recurvifolia SOFT LEAF YUCCA	5 GAL.	24"	24"	30"	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
	MSC	Mahonia 'Soft Caress' SOFT CARESS MAHONIA	5 GAL.	24"	24"	30"	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
		SMALL SHRUBS					
	DE	Dryopteris erythrosora AUTUM FERN	5 GAL.	18"	18"	24"	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
	CF	Cyrtomium falcatum 'Rochfordianum' HOLLY FERN	5 GAL.	18"	18"	24"	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
	PT	Pittosporum tobira 'Wheeler's Dwarf' WHEELERS DWARF PITTOSPORUM	5 GAL.	14"	18"	24"	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
	PT	Loropetalum chinense 'Peack' PURPLE PIXIE LOROPETALUM	5 GAL.	14"	18"	24"	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
	GH	Cephalotaxus harringtonia 'Fiona' YEWTOPIA PLUM YEW	5 GAL.	14"	18"	24"	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
		ORNAMENTAL GRASSES					
	GL	Chasmanthium latifolium INLAND SEA OATS	1 GAL.	8"	8"	18"	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
	GT	Carex tumulicola BERKELEY SEDGE	1 GAL.	12"	12"	18"	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
		GROUNDCOVER					
	LM	Liriope muscari 'Evergreen Giant' GIANT LIRIOPE	1 GAL.	14"	14"	AS SHOWN	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
	OJ	Ophiopogon japonicus MONDO GRASS	1 GAL.	12"	12"	18"	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER
	AR	Ajuga reptans 'Valfredda' CHOCOLATE CHIP AJUGA	1 GAL.	6"	12"	8"	NURSERY GROWN, WELL ROOTED, FULL TO CONTAINER

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Robert P. St. John
(720) 348-7722
RStJohn@udr.com

Issues and Revisions:

No.	Date	Issues

REGISTERED LANDSCAPE ARCHITECT · BRADLEY W. GOODWIN · 2278 · STATE OF TEXAS

09.07.2018

Vitruvian West

PHASE II & III

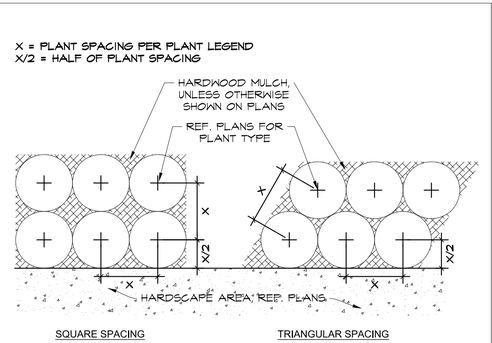
Addison, TX

Wilder Belshaw Project Number: 1807

Drawing Name:
GENERAL NOTES, PLANTING LEGEND & LANDSCAPE CALCULATIONS

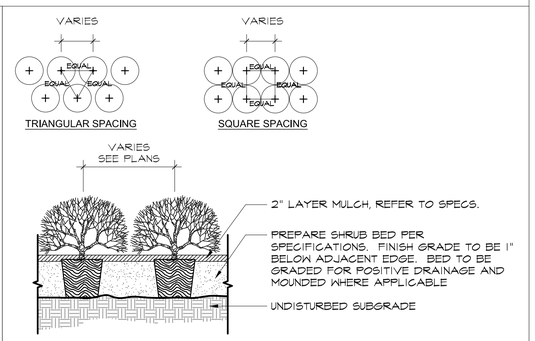
Sheet Number:
L100

2018 WILDER BELSHAW ARCHITECTS



Shrubs & Groundcovers @ Edge Condition | C

Scale: 1/2" = 1'-0"



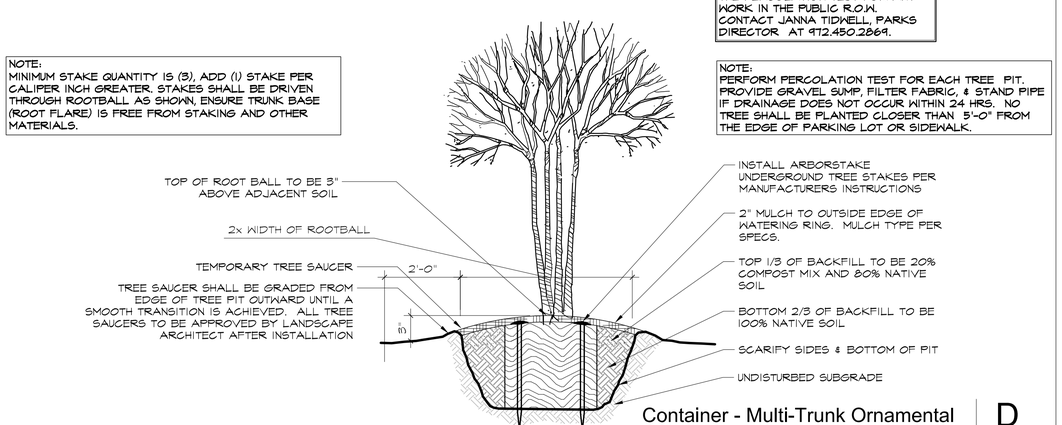
Shrubs & Groundcover | B

Scale: 1/2" = 1' - 0"

NOTE:
MINIMUM STAKE QUANTITY IS (3), ADD (1) STAKE PER CALIPER INCH GREATER. STAKES SHALL BE DRIVEN THROUGH ROOTBALL AS SHOWN. ENSURE TRUNK BASE (ROOT FLARE) IS FREE FROM STAKING AND OTHER MATERIALS.

NOTE:
THE TOWN'S PARKS DEPARTMENT MUST BE CONTACTED TO OBSERVE THE PERCOLATION TEST FOR ANY WORK IN THE PUBLIC R.O.W. CONTACT JANNA TIDWELL, PARKS DIRECTOR AT 972.450.2864.

NOTE:
PERFORM PERCOLATION TEST FOR EACH TREE PIT. PROVIDE GRAVEL SUMP, FILTER FABRIC, & STAND PIPE IF DRAINAGE DOES NOT OCCUR WITHIN 24 HRS. NO TREE SHALL BE PLANTED CLOSER THAN 5'-0" FROM THE EDGE OF PARKING LOT OR SIDEWALK.



Container - Multi-Trunk Ornamental | D

Scale: 1/2" = 1' - 0"

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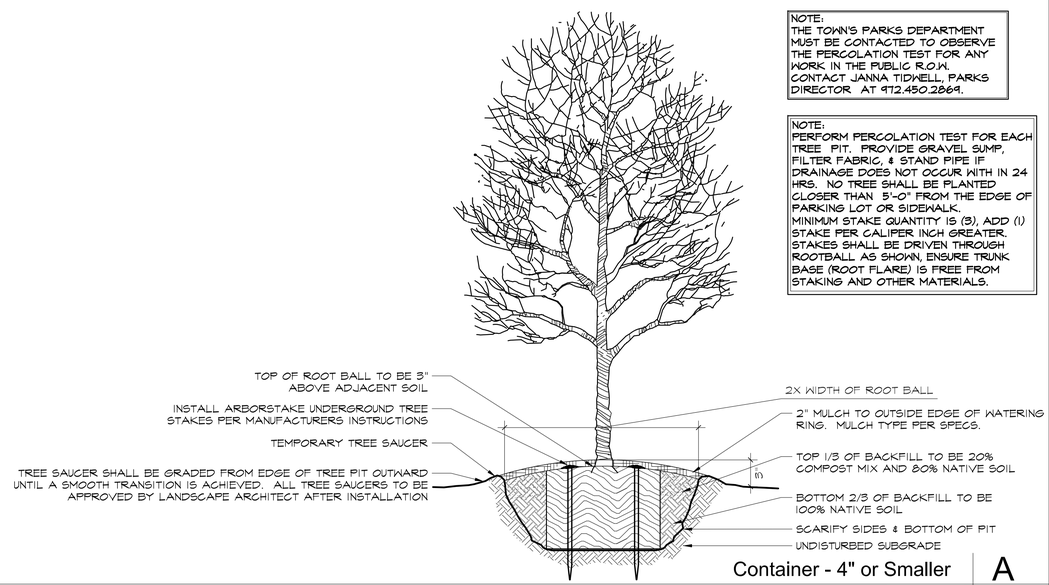
MINIMUM STAKE QUANTITY IS (3), ADD (1) STAKE PER CALIPER INCH GREATER. STAKES SHALL BE DRIVEN THROUGH ROOTBALL AS SHOWN. ENSURE TRUNK BASE (ROOT FLARE) IS FREE FROM STAKING AND OTHER MATERIALS.



Container - 4" or Smaller | A

Scale: 1/2" = 1' - 0"

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Issues and Revisions:

No.	Date	Issues

REGISTERED LANDSCAPE ARCHITECT
BRADLEY W. GOODWIN
2278
STATE OF TEXAS
09.07.2018

Vitruvian West
PHASE II & III

Addison, TX

Wilder Belshaw Project Number: 1807

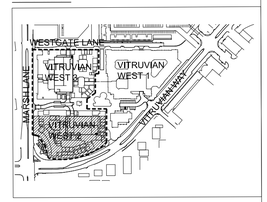
Drawing Name:

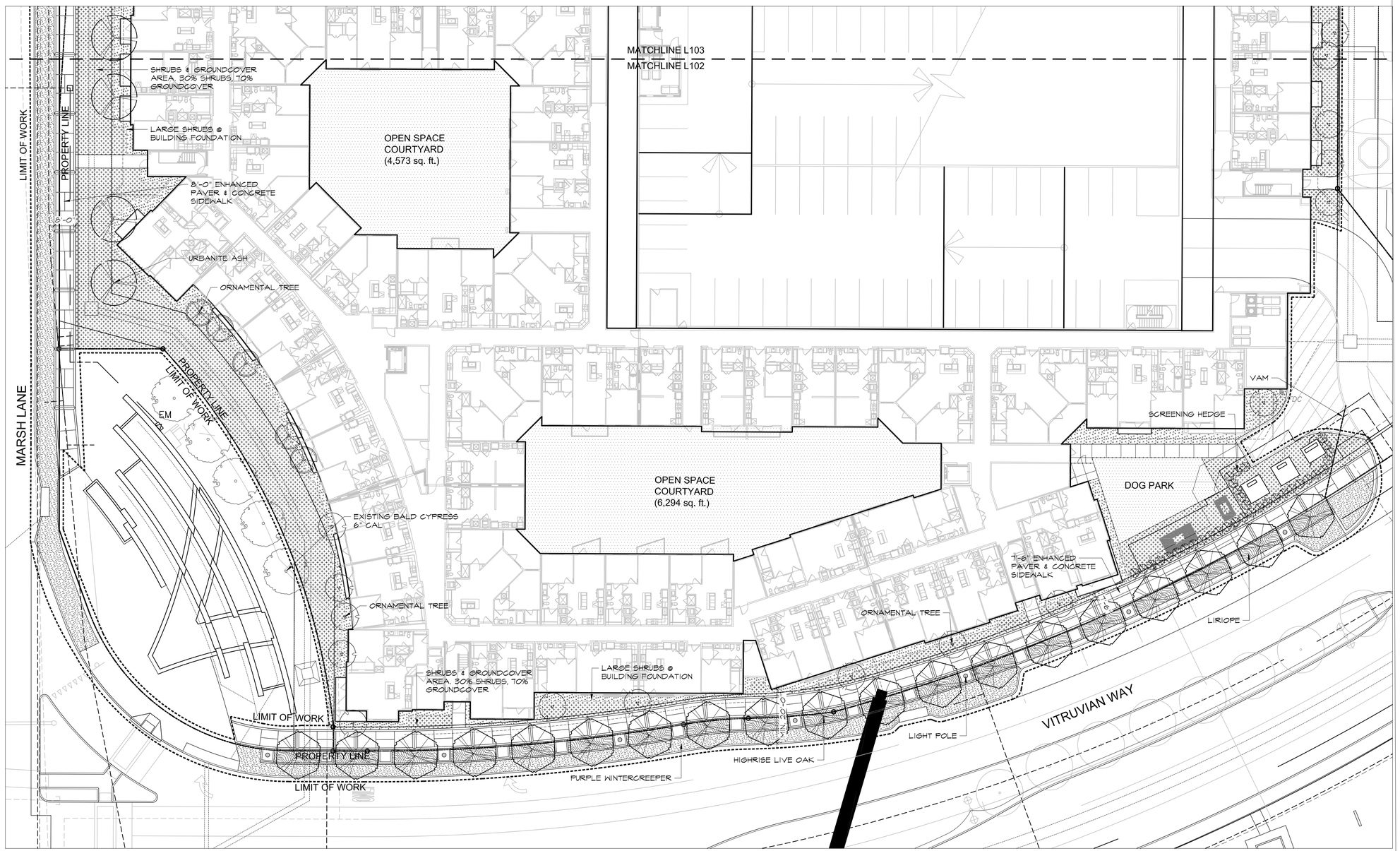
PLANTING DETAILS

Sheet Number:
L101

2018 WILDER BELSHAW ARCHITECTS

KEY MAP





0 20' 40'

NORTH

Landscape Plan A

Scale: 1"=20'

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Issues and Revisions:

No.	Date	Issues

REGISTERED LANDSCAPE ARCHITECT
BRADLEY W. GOODWIN
2276
STATE OF TEXAS

09.07.2018

Vitruvian West

PHASE II & III

Addison, TX

Wilder Belshaw Project Number: 1807

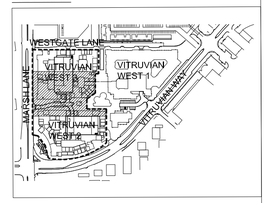
Drawing Name:

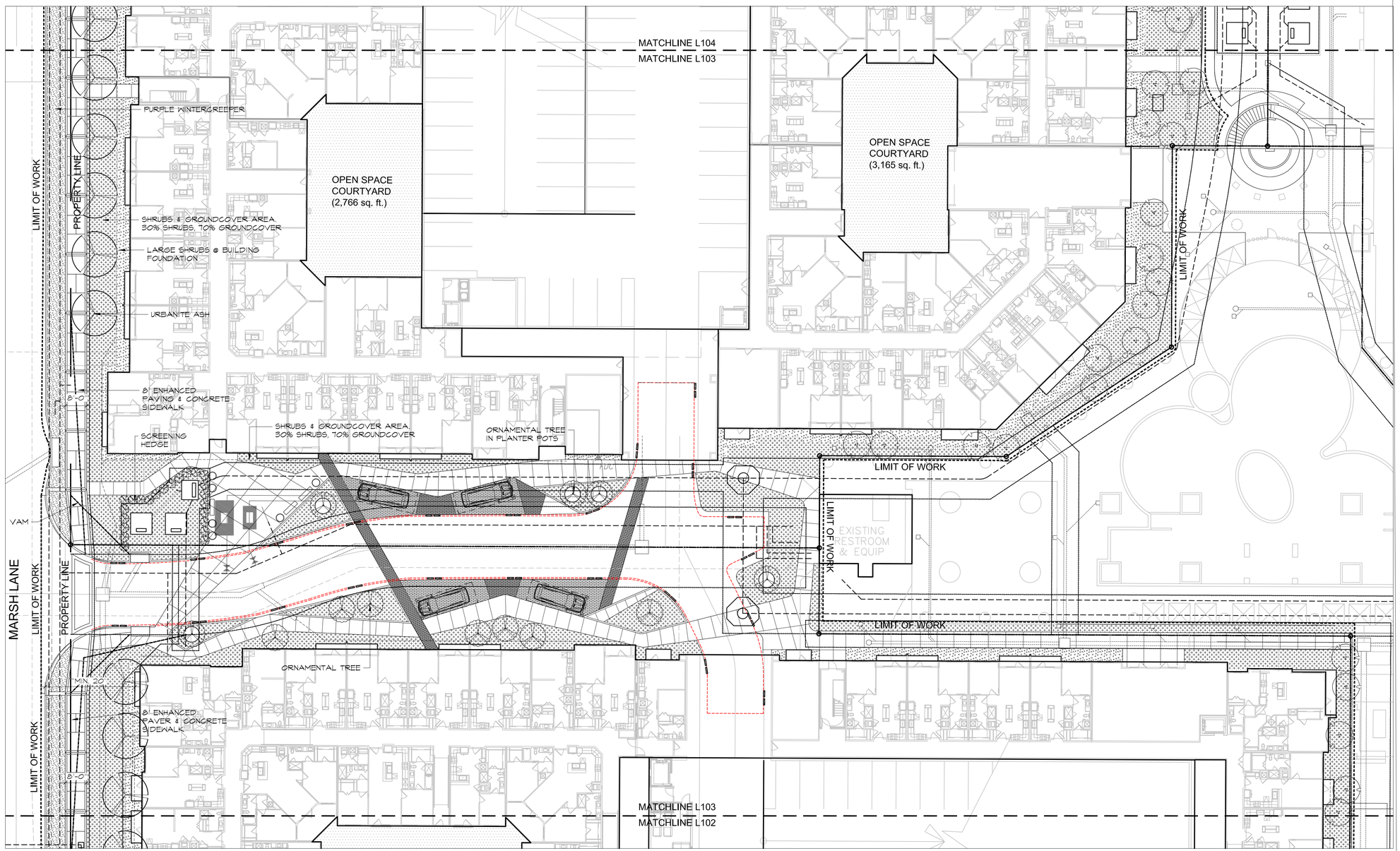
LANDSCAPE PLAN

Sheet Number:
L102

2018 WILDER BELSHAW ARCHITECTS

KEY MAP





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(720) 348-7722
RStJohn@udr.com

Issues and Revisions:

No.	Date	Issues

REGISTERED LANDSCAPE ARCHITECT
BRADLEY W. GOODMAN
2278
STATE OF TEXAS
09.07.2018

Vitruvian West

PHASE II & III

Addison, TX

Wilder Belshaw Project Number: 1807

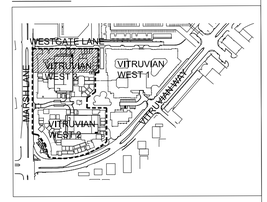
Drawing Name:

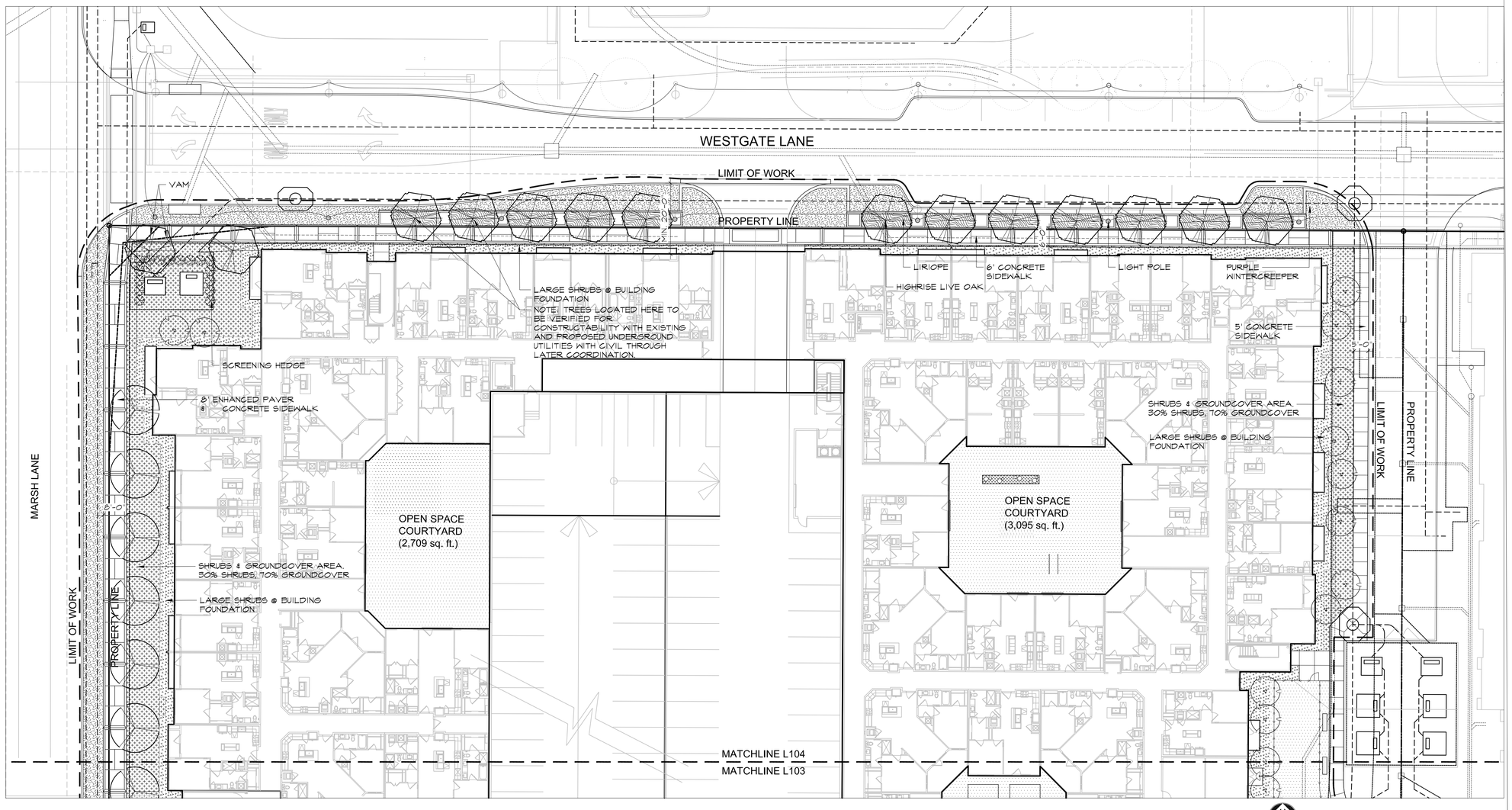
LANDSCAPE PLAN

Sheet Number:
L103

2018 WILDER BELSHAW ARCHITECTS

KEY MAP





Landscape Plan A

Scale: 1"=20'

Wilder Belshaw Architects
Dallas · Austin

Savoye2 at Vitruvian Park 3875 Ponte Ave
Suite 410Addison Texas 75001

The Arnold in East Austin 1621 E 6th Street
Suite 1151Austin Texas 78702

214 969.0500 phone www.wilderbelshaw.com

studioOutside

824 Exposition Avenue, Ste. 5
Dallas, Texas 75226
o214.954.7160
f214.954.7162

Project Owner:

UDR
3875 Ponte Ave, Suite 400
Addison, TX 75001

Contact Information:
Robert P. St. John
(720) 348-7722
RStJohn@udr.com

Issues and Revisions:

No.	Date	Issues

REGISTERED LANDSCAPE ARCHITECT BRADLEY W. GOEHNER 2276 STATE OF TEXAS

09.07.2018

Vitruvian West

PHASE II & III

Addison, TX

Wilder Belshaw Project Number: 1807

Drawing Name:

LANDSCAPE PLAN

Sheet Number:
L104

2018 WILDER BELSHAW ARCHITECTS

Work Session and Regular Meeting **15.**

Meeting Date: 11/13/2018

Department: Infrastructure- Development Services

AGENDA CAPTION:

Present, Discuss, and Consider Action on an **Ordinance Granting a Meritorious Exception from Various Sections of Chapter 62 of the Code of Ordinances for Flower Child Located at 5290 Belt Line Road Suite 100 on the South Side of Belt Line Road east of Montfort Drive in Order to Permit Additional Attached Signage and Window Signage.**

BACKGROUND:

Flower Child is the restaurant concept locating in the former Pollo Tropical building at 5290 Belt Line Road Suite 100. In addition to typical business identification signage, Flower Child is proposing to place a series of murals on the east, north, and western facades of the building. They are also proposing vinyl window signage in excess of what is permitted by the Town of Addison's Sign Code. Chapter 62 of the Code of Ordinances regulates signs in the follow manner:

Attached Signs:

Sec. 62-162. - Premises signs.

(c) There shall be only one sign for each facade for each tenant.

Sec. 62-163. - Area

(1) On an attached sign located at a height of up to 36 feet, the effective area is limited to one square fot of sign area for each linear foot of building frontage not to exceed 100 square feet.

In addition to a business identification sign on the eastern facing facade, Flower Child is requesting permission to install a wall mural that is 12 feet 9 inches by 36 feet, for an effective area of 459 square feet. With this mural and the business identification sign, the total effective area of signage for this side of the building would be approximately 531 square feet. This facade is 83 feet in length, and, therefore, signage on this facade is limited to 83 square feet. The proposed sign and mural exceed the ordinance requirements by 448 square feet.

On the western facade, Flower Child is proposing two smaller murals in addition to the business identification sign. The "burst" mural is proposed to be 16 square feet and the "lemon" mural is 9 square feet. The sign code instructs staff to draw a single rectangle around all signage elements to calculate the effective area of

the sign. By doing so, the effective area of signage on this facade would be 990 square feet. This facade is also 83 feet in length. Therefore, the signage should be limited to no more than 83 square feet. Based on the Code's instruction for measuring area, the sign exceeds the maximum allowable area by 907 square feet.

On the northern facade, Flower Child is proposing one mural in addition to the business identification sign. The proposed "peace sign" mural is 22.75 square feet. When measured with the business identification sign, the effective area of signage on this facade equals 392 square feet, but is limited to no more than 47 square feet.

Window Signage:

Sec. 62-146. - Window Signs.

(a) Signs in windows visible from public rights-of-way are limited to ten percent of the ground floor window area per facade.

Flower Child is requesting permission to install window signage in excess of the ten percent requirement for window signage on the north and western building facades. On the north side, the restaurant is proposing to cover approximately one third of the window area with signage. On the western facade, they would like to cover slightly more than oen third of the window area with signage.

Flower Child is requesting meritorious exceptions to allow them to install murals in excess of the area requirements for signs on three facades of the building and and to allow them to exceed the maximum allowable area for window signs.

Please see the attached application for Flower Child's justification and plans for the proposed signage.

RECOMMENDATION:

Administration recommends denial.

Attachments

Application with Plans - Flower Child

MERITORIOUS EXCEPTION APPLICATION

To be completed by Town staff:

Application date: 10/16/18 Application/Fee Received: 10-23-18 Fee paid: $600.00

APPLICANT CONTACT

I hereby certify that the information is this application is true and correct to the best of my knowledge.

Name: (printed) Meghan O'Malley, Design Project Manager for Flower Child

Company name: Flower Child (Fox Restaurant Concepts)

Address: 4455 East Camelback Road, Suite B100, Phoenix, AZ 85018

Phone: 480-304-4089 Email: momalley@foxrc.net

Status of Applicant: X Owner ___ Tenant ___ Contractor ___ Other: _____

Applicant's Signature: _____

INFORMATION ABOUT THE REQUEST

Address or location: 5290 Belt Line Road, Suite 100, Addison, TX 75240

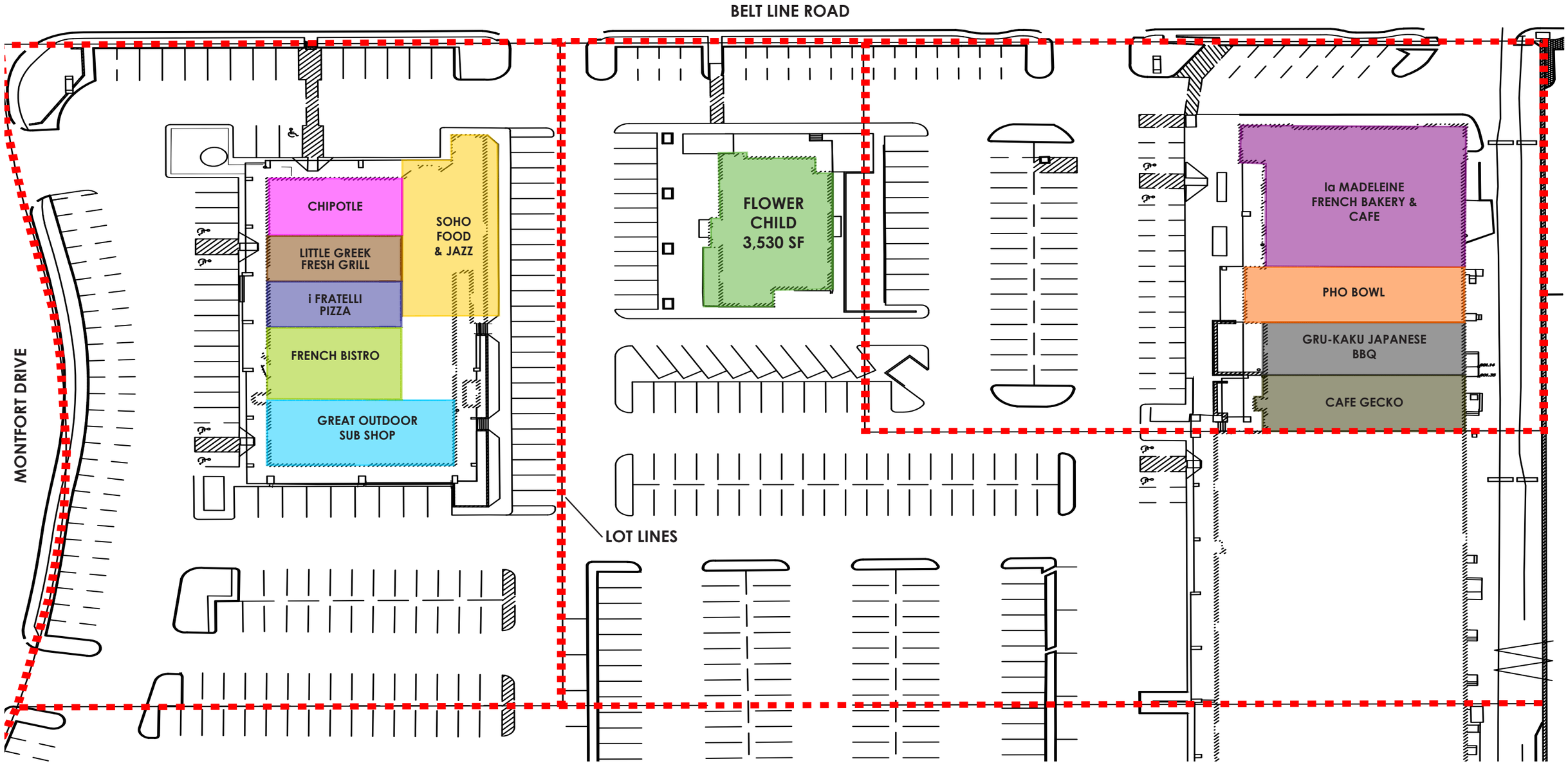
Reasons for Meritorious Exception: Flower Child restaurant requests approval to install external wall murals that have become symbiotic with the brand itself. The mural, "Flower Child", is present at nearly every Flower Child restaurant location and has become recognized as a "beacon" for the real estate hosting the beautiful art. Flower Child's artwork, whether it be, its dripping wall, watercolor peace signs or the Flower Girl, each have become synonymous with the brand and its presence so, expected by our guests that one out of every four of our social posts is related to these works of art. Addison being the place "where it all comes together", what better way to celebrate this point of difference then by celebrating this artful approach creating a memorable visitor and community experiences.

SUBMITTAL REQUIREMENTS

You must submit 3 paper copies (11x17) and a PDF of plans showing:

- Lot Lines
- Names of Adjacent Streets
- Location of Existing Buildings and Signs
- Proposed Signs
- Sketch of the Sign with Scale, Dimensions, and Setbacks Indicated

SITE



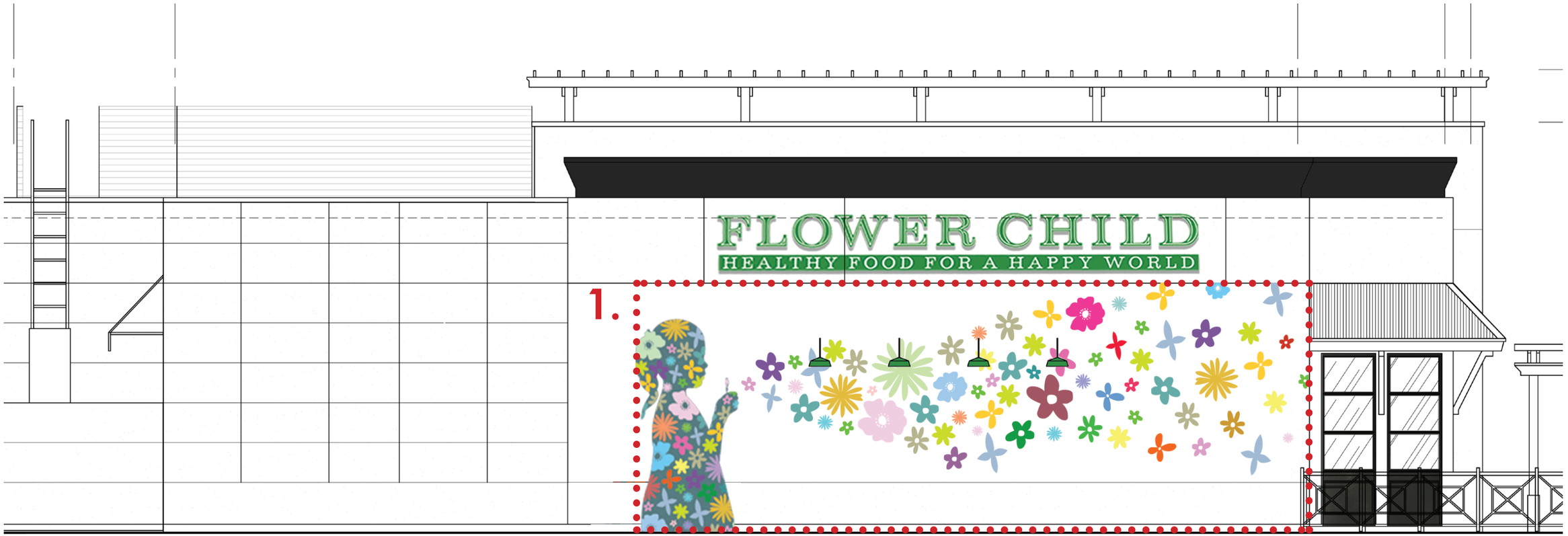
FLOWER CHILD, ADDISON

MERITORIOUS EXCEPTION APPLICATION & VISUALS

FRC | FLOWER CHILD

HEALTHY FOOD FOR A HAPPY WORLD

FLOWER CHILD PROPOSED MURAL: EAST ELEVATION



WE ARE PROPOSING TO INSTALL THE FLOWER CHILD MURAL TO OUR EAST ELEVATION OF THE PROPERTY.
*EXTERIOR SIGNAGE WAS SUBMITTED UNDER A SEPARATE PACKAGE FOR REVIEW AND APPROVAL

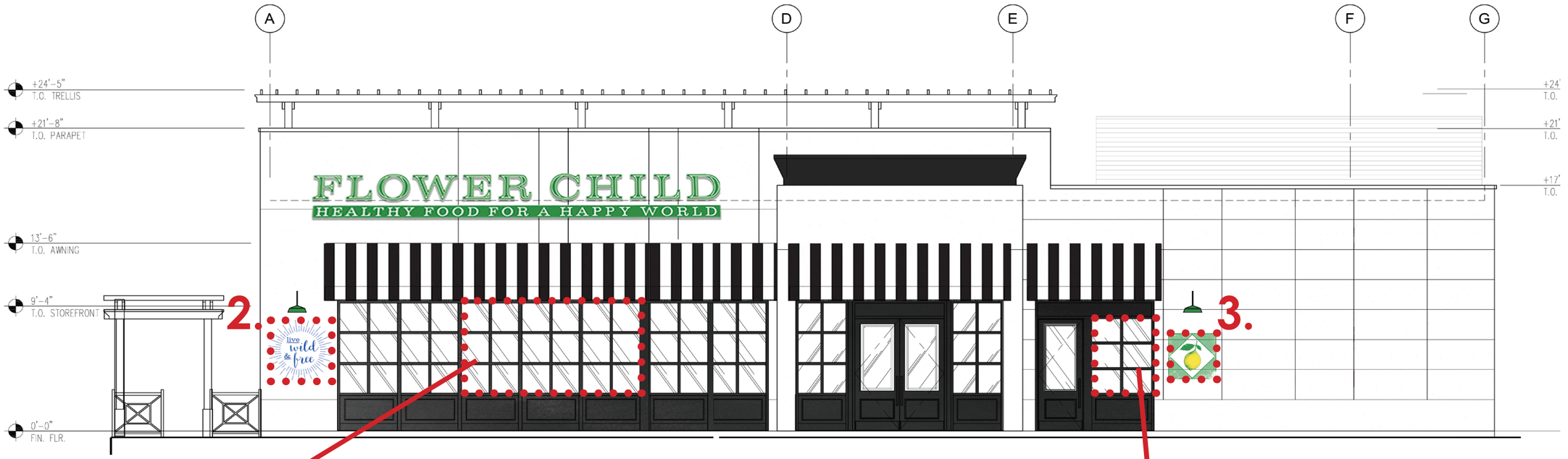
1. FLOWER CHILD MURAL: PROPOSED DESIGN

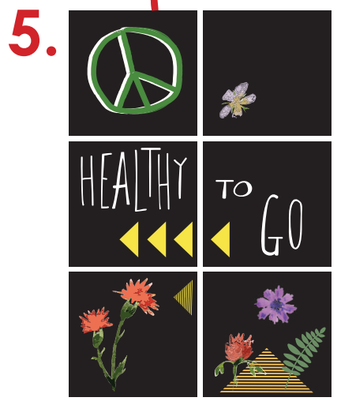
ALL MURALS ARE HAND PAINTED AND APPLIED BY ONE OF OUR LOCAL ARTISTS AS A WAY OF CONNECTING TO THE COMMUNITY AND ENCHANCING THE VISITOR'S EXPERIENCE.

WALL MURAL - MANUFACTURE AND INSTALL (459 SQ. FT)

GENERAL SPECIFICATIONS:
MANUFACTURE POUNCE PATTERN
MURAL INSTALLED/PAINTED BY TENANT VENDOR

FLOWER CHILD PROPOSED MURAL: WEST ELEVATION





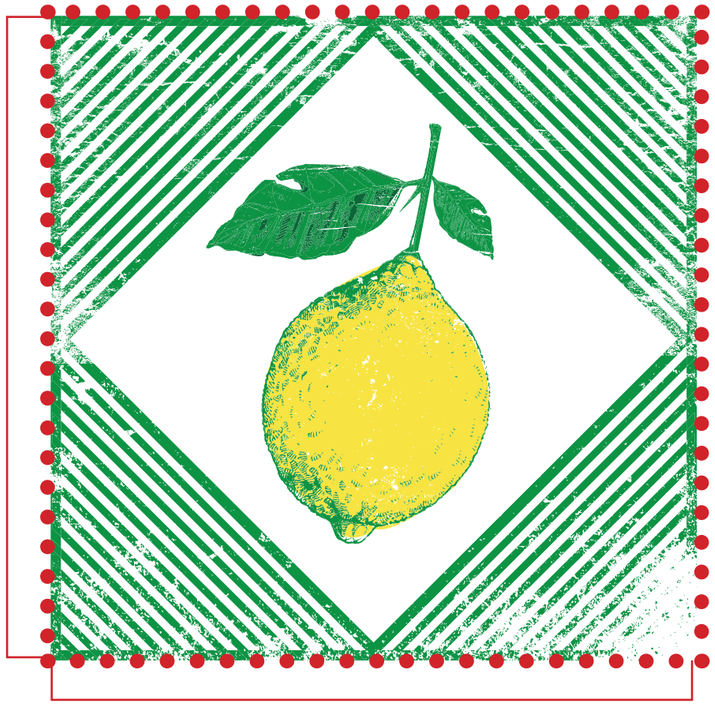
WE ARE PROPOSING TO INSTALL THE LEMON, BURST MURAL, AND WINDOW VINYLS TO OUR WEST ELEVATION OF THE PROPERTY.
*EXTERIOR SIGNAGE WAS SUBMITTED UNDER A SEPARATE PACKAGE FOR REVIEW AND APPROVAL

2. FLOWER CHILD MURAL: BURST

WALL MURAL - MANUFACTURE AND INSTALL (16 SQ. FT.)

GENERAL SPECIFICATIONS:
MANUFACTURE POUNCE PATTERN
MURAL INSTALLED/PAINTED BY TENANT VENDOR

3. FLOWER CHILD MURAL: LEMON



WALL MURAL - MANUFACTURE AND INSTALL (9 SQ. FT.)

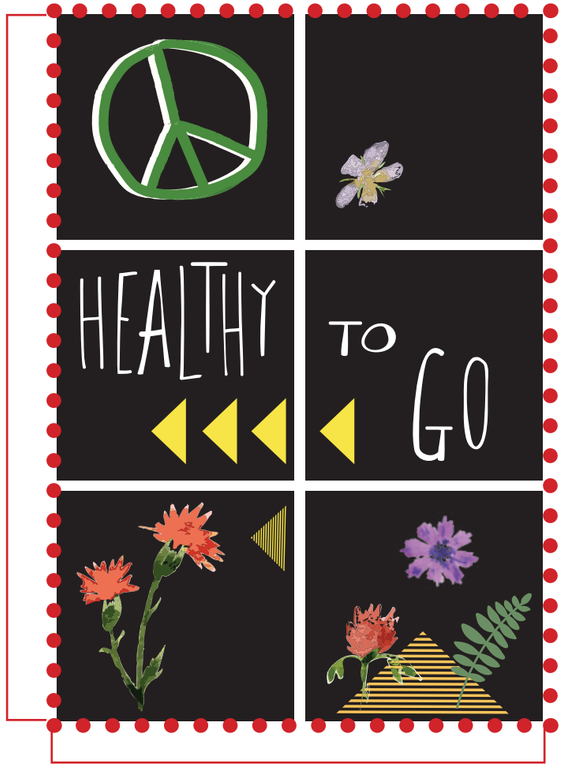
GENERAL SPECIFICATIONS:
MANUFACTURE POUNCE PATTERN
MURAL INSTALLED/PAINTED BY TENANT VENDOR

4. FLOWER CHILD WINDOW GRAPHICS: QUOTE

WINDOW VINYL - MANUFACTURE AND INSTALL (80 SQ. FT)

GENERAL SPECIFICATIONS:
MANUFACTURE POUNCE PATTERN
VINYL INSTALL BY TENANT VENDOR

5. FLOWER CHILD WINDOW GRAPHICS: HEALTHY TO GO



WINDOW VINYL - MANUFACTURE AND INSTALL (22.92 SQ. FT.)

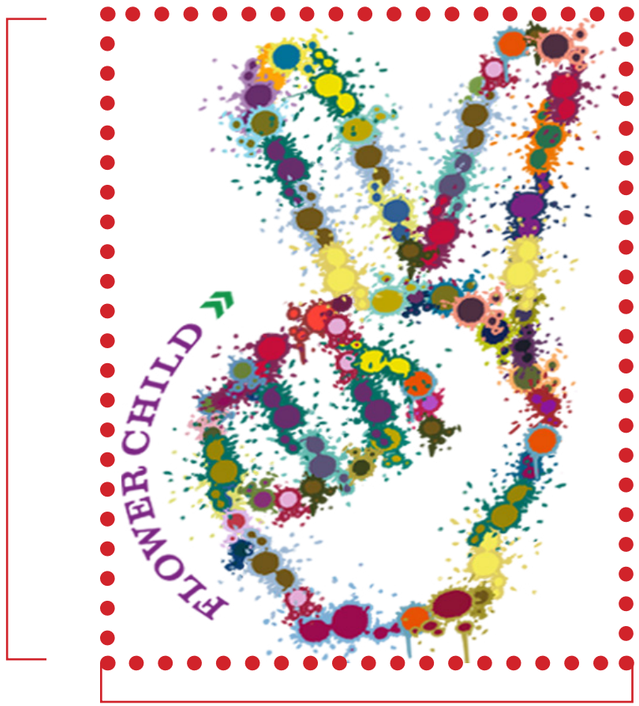
GENERAL SPECIFICATIONS:
MANUFACTURE POUNCE PATTERN
VINYL INSTALL BY TENANT VENDOR

FLOWER CHILD PROPOSED MURAL: NORTH ELEVATION

WE ARE PROPOSING TO INSTALL THE PEACE SIGN AND WINDOW VINYLS TO OUR NORTH ELEVATION OF THE PROPERTY.

*EXTERIOR SIGNAGE WAS SUBMITTED UNDER A SEPARATE PACKAGE FOR REVIEW AND APPROVAL

6. FLOWER CHILD MURAL: PEACE SIGN



WALL MURAL - MANUFACTURE AND INSTALL (22.75 SQ. FT.)

GENERAL SPECIFICATIONS:
MANUFACTURE POUNCE PATTERN
MURAL INSTALLED/PAINTED BY TENANT VENDOR

7. FLOWER CHILD WINDOW GRAPHICS: QUOTE

WINDOW VINYL - MANUFACTURE AND INSTALL (34.17 SQ. FT)

GENERAL SPECIFICATIONS:
MANUFACTURE POUNCE PATTERN
VINYL INSTALL BY TENANT VENDOR

8. FLOWER CHILD WINDOW GRAPHICS: QUOTE

WINDOW VINYL - MANUFACTURE AND INSTALL (34.17 SQ. FT)

GENERAL SPECIFICATIONS:
MANUFACTURE POUNCE PATTERN
VINYL INSTALL BY TENANT VENDOR

Work Session and Regular Meeting **16.**

Meeting Date: 11/13/2018

Department: Infrastructure- Development Services

Pillars: Excellence in Asset Management
Optimize the Addison Brand

Milestones: Review Town's ordinances and regulations to modernize them and facilitate redevelopment
Implement the Asset Management Plan

AGENDA CAPTION:

Present, Discuss, and Consider Action on a **Resolution for an Agreement with Infinity Contractors International, LTD., for Construction Operations and Installation Services on the Addison Athletic Club HVAC Project and Authorize the City Manager to Execute the Agreement** in an Amount not to Exceed $1,180,035.

BACKGROUND:

Work began on the Addison Athletic Club Master Plan in 2014 and was adopted by Council on October 11, 2016. A preferred list of renovation projects was finalized at Council's October 20, 2016 meeting and included the following items:

- Air Conditioning and Heating System
- Elevator Replacement
- General Painting
- Carpet Replacement
- Convert 2 Racquetball Courts to Exercise Space
- New Lighting in Gym

Bid #18-116 Addison Athletic Club HVAC Improvements was initiated on April 9, 2018 and closed on May 3, 2018. The Town received only one bid in the amount of $1,589,814, which significantly exceeded the budget that had been presented to Council. Staff presented this information at the May 22, 2018 Council meeting and recommended that Council reject the bid. Staff discussed options to re-bid the project with Council on August 14, 2018, and Council directed staff to move forward with re-bidding the project.

The design was completed in early September that included the development of a project base bid and a one set of additive alternates. The base bid includes:

- The replacement of the undersized packaged units for the expansion with an appropriately sized air-cooled chiller (200 ton)
- The replacement of high priority air handling units
- Installation of several high volume, low speed fans

The additive alternates include:

- The replacement of additional air handling units located within the facility
- Replacement of the duct work in the gymnasium
- Replacement of the dog house, air relief hood in the gymnasium

Bid #18-224 was initiated on September 20, 2018 and closed on October 18, 2018. The Town received four (4) bids, a more detailed analysis of those bids is provided below:

Contractor	Total Base Bid	Additive Alternate Bid	Total Base w/ Alternate
Infinity Contractors International, LTD.	$913,329	$266,706	$1,180,035
TDI Industries	$1,103,553	$280,245	$1,383,798
MIINC	$1,100,566	$374,750	$1,475,316
308 Construction	$2,675,000	$475,000	$3,150,000

Infinity Contractors International, LTD., has been determined to be the lowest responsible bidder. Staff has reviewed their references and finds them more than capable of performing this work. Infinity has a great reputation in the DFW area.

At the August 14, 2018 City Council meeting, staff presented updated cost estimates for the HVAC project. The updated estimate for the base bid was $1,119,293 and $484,025 for the additive alternates. The total estimated cost of the project at that time was $1,603,318. The low bid from Infinity is $1,180,035 for the base bid plus the additive alternates, a difference of $423,283, below the estimate that was presented in August.

Staff recommends the award of the base bid and the additive alternates. Doing the additive alternates at the same time as the base project takes advantage of the very competitive prices and lessens the disruption to the facility by doing all the work at the same time.

Staff recommends that additional monies in the amount of $363,088.63 be transferred from the General Fund - fund balance to pay the difference between the available budget and the actual project total. These additional monies will provide funding for the remainder of engineer's design contract, the construction additive alternates, the construction management agreement and will also provide a construction contingency. A more detailed cost breakdown is provided below:

Available Budget	**$1,004,640.00**
Base Bid (Infinity)	$913,329.00
Additive Alternate Bid (Infinity)	$266,706.00
Bid Sub Total	**$1,180,035.00**
Construction Contingency	$100,000.00
Remaining Design Funds (PGAL)	$20,973.63
Construction Management Contract (Eikon)	$66,720.00
Project Total	**$1,367,728.63**
Budget Reallocation Request	**$363,088.63**

Council may choose to authorize the base bid only. The total project amount for the base bid, remaining design contract and the construction management agreement is $1,001,022.63, which is within the available budget. The total cost for the base bid and additive alternates are $1,180,035 and is expected to take 5 months to complete upon approval of the HVAC submittals.

RECOMMENDATION:

Administration recommends approval.

Attachments

Resolution - Construction and Installation Agreement

Presentation - Athletic Club HVAC

Project Specifications - Athletic Club HVAC

Plans - Athletic Club HVAC

TOWN OF ADDISON, TEXAS

RESOLUTION NO. _____

A RESOLUTION OF THE CITY COUNCIL OF THE TOWN OF ADDISON, TEXAS APPROVING A CONTRACT AGREEMENT BETWEEN THE TOWN OF ADDISON AND INFINITY CONTRACTORS INTERNATIONAL, LTD., FOR CONSTRUCTION OPERATIONS AND INSTALLATION SERVICES ON THE ADDISON ATHLETIC CLUB HVAC PROJECT IN AN AMOUNT NOT TO EXCEED $1,180,035.00, 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 Infinity Contractors, LTD., for construction operations and installation services on the Addison Athletic Club HVAC Project in an amount not to exceed $1,180,035.00, 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 13th day of November 2018.

_____
Joe Chow, Mayor

ATTEST:

By: _____
Irma Parker, City Secretary

APPROVED AS TO FORM:

By: _____
Brenda N. McDonald, City Attorney

EXHIBIT A

SECTION CA

CONTRACT AGREEMENT

EXHIBIT A

CONTRACT AGREEMENT

STATE OF TEXAS

COUNTY OF DALLAS

THIS AGREEMENT is made and entered into this _____ day of _____, 2018, 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 Infinity Contractors International, LTD., of the City of Fort Worth, County of Tarrant, 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:

ADDISON ATHLETIC CLUB – HVAC IMPROVEMENTS

INFRASTRUCTURE AND DEVELOPMENT SERVICES BID NUMBER 18-224

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 and fifty **(150)** 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 One Million One Hundred Eighty Thousand Thirty-Five Dollars **($1,180,035.00)** 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.

EXHIBIT A

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: _____
City Manager

ATTEST:

By: _____

Infinity Contractors International, LTD.

By: _____
JB Salter - President 11/2/18

ATTEST:

By: _____

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

I, _____ certify that I am the secretary of the corporation named as CONTRACTOR herein; that _____, who signed this Contract on behalf of the CONTRACTOR is the _____ (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

Addison Athletic Club HVAC Improvements

November 13, 2018

History – Athletic Club HVAC Project

- August 14, 2018 – Staff presented updated cost estimate to Council
  - Estimated Base bid of $1,119,293
  - Estimated Additive alternate bid of $484,025
- August 2018 – September 2018 – Plans and specifications were updated
- September 20, 2018 – HVAC project re-bid was placed on Bidsync
- October 18, 2018 – HVAC project bid closed
  - Town received a total of 4 bids

Contractor	Total Base Bid	Additive Alternate Bid	Total Base w/ Alternate
Infinity Contractors International, LTD.	$913,329	$266,706	$1,180,035
TDI Industries	$1,103,553	$280,245	$1,383,798
MIINC	$1,100,566	$374,750	$1,475,316
308 Construction	$2,675,000	$475,000	$3,150,000

HVAC Base Bid and Additive Alternates

Existing Equipment	Base Bid Elements	Base Bid w/ Additive Alternates
Chiller	—	—
Cooling Tower	—	—
Boiler #1	✗	✗
Package Unit #1	✓	✓
Package Unit #2	✓	✓
Package Unit #3	✓	✓
Package Unit #4	✓	✓
Package Unit #5	✓	✓
Air Handling Unit #1	✗	✓
Air Handling Unit #2	✗	✓
Air Handling Unit #3	✗	✓
Air Handling Unit #4	✗	✗
Air Handling Unit #5	✓	✓
Air Handling Unit #6	✗	✓
Air Handling Unit #7	✗	✓
Air Handling Unit #8	✓	✓
Air Handling Unit #9	✓	✓
Air Handling Unit #10	✓	✓
Pump #8	—	—
Pump #9	—	—
Pump #10	✗	✗
(7) Large Diameter Ceiling Fans	✓	✓
Gym Ductwork	✗	✓
70 ton air cooled chiller	—	—
200 ton air cooled chillers	✓	✓
Sitework and tree removal	✓	✓
Total Improvements Cost	**$913,329.00**	**$1,180,035.00**

- Additive Alternates
  - Air Handling Unit's 1, 2, 3, 6, & 7
  - Replacement of the gymnasium duct work
  - Replacement of the roof mounted, air relief hood in the gymnasium
- Boiler, AHU 4, and pump 10 will not be replaced in either scenario

Budget Information

Available Budget	$1,004,640.00
Base Bid	$913,329.00
Add Alt Bid	$266,706.00
Subtotal	$1,180,035.00
Construction Contingency	$100,000.00
Remaining Design Payment	$20,973.63
Construction Management	$66,720.00
Project Total	$1,367,728.63
Funds Needed	$363,088.63

- August 2018 Estimate
  - Base bid - $1,119,293
  - Alternate bid - $484,025
  - Total bid - $1,603,318
- Staff recommends award of base bid and additive alternate bid
  - Utilize General Fund – fund balance
  - Additive alternates are competitively priced
  - Less overall disruption to the facility
- Base bid + design + construction management - $1,001,022.63
  - Can be done with current available funds

HVAC Project – Next Steps

- Contractor will prepare material submittals for review and approval
  - Is expected to take approximately 3 weeks
- Construction is expected to take 5 months from approval of the submittals
- Coordinate with the Athletic Club staff
- Provide communication to Athletic Club members

Questions?

ADDISON INFRASTRUCTURE & DEVELOPMENT SERVICES

SPECIFICATIONS AND CONTRACT DOCUMENTS

FOR THE RENOVATION OF THE

HVAC IMPROVEMENTS
ADDISON ATHLETIC CLUB

3900 BELTWAY DRIVE, ADDISON TX 75001

TOWN OF ADDISON, TEXAS
INFRASTRUCTURE AND DEVELOPMENT SERVICES
BID NUMBER 18-224

SEPTEMBER 17, 2018

PREPARED BY

PGAL

RWB

Reed, Wells, Benson & Company
Consulting Engineeers
Firm Registration #: F-2176

COIT CENTRAL TOWER SUITE 1100
12001 NORTH CENTRAL EXPWY
DALLAS, TEXAS 75243

PHONE: (972 788-4222
FAX: (972) 788-0002
WWW.RWB.NET

RWB PROJECT NO.: 17116-00

CONTACT: AARON MORKEN
EMAIL: amorken@rwb.net
PHONE: 972-788-4222

TOWN OF ADDISON, TEXAS

MAYOR

Joe Chow

COUNCIL MEMBERS

Ivan Hughes

Jim Duffy

Al Angell

Tom Braun

Paul Walden

Lori Ward

CITY MANAGER

Wesley S. Pierson

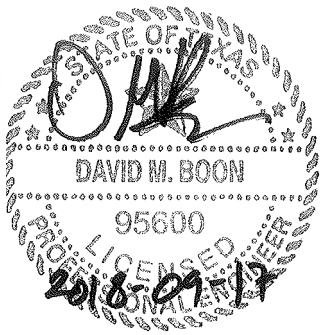
DIRECTOR OF INFRASTRUCTURE AND DEVELOPMENT SERVICES

Lisa Pyles

ASSISTANT DIRECTOR OF INFRASTRUCTURE SERVICES AND ENGINEERING

Jason Shroyer, P.E.

City of Addison Athletic Club



SPECIFICATION INDEX

SECTION NO. TITLE/DESCRIPTION

DIVISION 1 – GENERAL REQUIREMENTS

Section AB Advertisement for Bids
Section IB Instructions to Bidders
Section PF Proposal Form
Section BB Bid Bond
Section BQS Bidder Qualification Statement
Section CI Indemnification Agreement (Void – provided in Special Provisions)
Section CA Contract Agreement
Section PrB Performance Bond
Section PyB Payment Bond
Section MB Maintenance Bond
Section BP Contractor's Affidavit of Bills Paid
Section GP General Provisions - *Standard Specifications for Public Works Construction – North Central Texas*
Section SP Special Provisions
Section PS Project Sign (Void)

DIVISION 23 - HEATING, VENTILATING, AND AIR CONDITIONING (HVAC)

23 00 00 Heating, Ventilating, and Air Conditioning (HVAC) Work ..... 1 - 4
23 05 00 Common Work Results for HVAC ..... 1 - 8
23 05 13 Common Motor Requirements for HVAC ..... 1 - 2
23 05 14 Common Motor Starter Requirements for HVAC Equipment ..... 1 - 2
23 05 48 Vibration and Seismic Controls for HVAC Piping and Equipment ..... 1 - 2
23 05 53 Identification for HVAC Ductwork, Equipment and Piping ..... 1 - 2
23 05 93 Testing, Adjusting, and Balancing (TAB) for HVAC ..... 1 - 8
23 07 00 Insulation ..... 1 - 4
23 09 00 Controls and Instrumentation ..... 1 - 12
23 21 13 Hydronic Piping ..... 1 - 15
23 21 23 Centrifugal Pumps ..... 1 - 5
23 25 13 HVAC Water Treatment for Closed-Loop Hydronic Systems ..... 1 - 6
23 30 00 HVAC Air Distribution ..... 1 - 11
23 34 10 High Volume Low Speed (HVLS) Circulation Fans ..... 1 - 3
23 64 00 Packaged Water Chillers, Outdoor Air Cooled (36-200 Tons Capacity) ..... 1 - 6
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DIVISION 26 - ELECTRICAL

26 00 00 Electrical ..... 1 - 7
26 05 01 Electrical Demolition ..... 1 - 3
26 05 19 Low Voltage Electrical Power Conductors and Cables ..... 1 - 3
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26 05 26 Grounding and Bonding for Electrical Systems ..... 1 - 4
26 05 29 Hangers and Supports for Electrical Systems ..... 1 - 2
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26 24 16 Panelboards ..... 1 - 4
26 27 16 Electrical Cabinets and Enclosures ..... 1 - 2
26 28 16 Enclosed Switches and Circuit Breakers ..... 1 - 3

SECTION AB

ADVERTISEMENT FOR BIDS

ADVERTISEMENT FOR BIDS

1. The Town of Addison is requesting bids for the Bid of the Addison Athletic Club HVAC Improvements. **Bids will be accepted until 2:00 p.m., Thursday, October 18, 2018** at the Finance Building, 5350 Belt Line Rd., Dallas, Texas 75254 – Attention Purchasing Department, at which time responders names and bids will be publicly read aloud. Late bids will not be considered. The plans, specifications, quantities, pre-bid time and date, and other information are available on www.bidsync.com. The plans, specifications, and quantities for the work to be done are also on file with Lisa A. Pyles, Director of Infrastructure and Development Services, Town of Addison, 16801 Westgrove Drive, Addison, Texas 75001, and such plans, specifications, and quantities may be examined without charge. The Town of Addison reserves the right to waive any formalities, to reject any and all bids, and to select the proposal deemed most advantageous to the Town of Addison.

2. The Contractor shall identify his bid on the outside of the envelope by writing the words **INFRASTRUCTURE AND DEVELOPMENT SERVICES BID NUMBER 18-224, ADDISON ATHLETIC CLUB HVAC IMPROVEMENTS**

   PAPER BIDS SHALL BE REQUIRED.

3. Bids shall be accompanied by 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 specs and/or plans 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 formality in bids received and to select the proposal deemed most advantageous to the City.

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. The Bidder (Proposer) must supply all the information required by the Bidder Qualification Statement.

9. **An optional pre-bid meeting will be held on Tuesday, October 2, 2018 at 2:00pm at the Town of Addison Athletic Club, 2nd Floor Classroom, located at 3900 Beltway Drive, Addison, Texas 75001. A tour of the Addison Athletic Club will follow this meeting.**

10. For information on bidding or work to be performed, please submit all questions on Bidsync. **All questions must be received by 5:00 pm on Friday, October 12, 2018. All valid questions received by this deadline will be answered by 5:00 pm on Tuesday, October 16, 2018.**

11. The project consists of the replacement of existing package A/C units and related equipment; installation of a new packaged 200-ton air cooled chiller system with associated piping and components, new controls and thermostats; various ductwork improvements; added electrical service; installation of new high-volume, low-speed fans; and other related work.

SECTION IB

INSTRUCTIONS TO BIDDERS

INSTRUCTIONS TO BIDDERS

A. PROJECT: ADDISON ATHLETIC CLUB HVAC MPROVEMENTS in the Town of Addison. The bids will be evaluated as stated in Section "N" of these Instructions to Bidders.

B. PROJECT DESCRIPTION: The project consists of the replacement of existing package A/C units and related equipment; installation of a new packaged 200-ton air cooled chiller system with associated piping and components, new controls and thermostats; various ductwork improvements; added electrical service; installation of new high-volume, low-speed fans; and other related work.

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

D. DOCUMENTS: Bidding Documents include the Project Manual (consisting of the Advertisement for Bids, these Instructions to Bidders, Proposal Forms, Reference Form, Contract Agreement, Performance Bond, Payment Bond, Maintenance Bond, Contractor's Affidavit of Bills Paid, General Provisions, Special Provisions, Project Sign, and Technical Specifications), a 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 firsthand 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. Bidders shall contact Randy Rogers (Addison Athletic Club) at (972) 450-7048 for access to the site. 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.

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 questions to the Town of Addison, no later than by 5:00 pm on Friday, October 12, 2018. All valid questions received by this deadline will be answered by 5:00 pm on Tuesday, October 16, 2018. 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 will be the responsibility of each person who has been issued a set of bid documents to secure all Addenda from 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 released through www.bidsync.com 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: The selected contractor shall use the time period between the awarding of the contract at City Council and the date of Notice to Proceed to submit materials and shop drawings for approval. The MEP Engineer shall review and return these submittals in the most expedient manner possible to accommodate immediate material ordering.

a. Upon receiving Notice to Proceed, the selected contractor shall have **150 calendar days** to construct the project and achieve substantial completion. Substantial completion for this project includes the following items:
    i. Preliminary Punchlist walk-through with the Town performed;
b. After substantial completion is reached, the contractor shall have an **additional 20 calendar days** to achieve 100% final completion. Final completion for this project shall include:
    i. Punchlist items completed and approved by the Town;
    ii. Site clean-up;
    iii. Submittal of Record Drawings; and
    iv. Execution of Maintenance Bond.

J. 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 price written in the bid and that 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 CONTRACTORS CONVENIENCE TITLED "BID SCHEDULE BID 18-224". 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 OR 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.

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. Bidders shall submit proposals in an opaque, sealed envelope addressed to the Owner and plainly mark on the outside of the envelope the name and address of the bidder. The envelopes shall also be marked with the following project description:

ADDISON ATHLETIC CLUB HVAC IMPROVEMENTS BID NUMBER 18-224

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 bidsync.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. Bid number 18-224 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.

K. 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.

L. 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.

M. SUBMISSION OF POST-BID INFORMATION: Upon notification of acceptance, the selected bidder shall, within twenty-four (24) hours, 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.

N. 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 Operations & 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.

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, 5th Edition*, (hereinafter called SSPWC), "Change or Modification of Contract".

O. 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.

P. 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.

Q. COST PLUS TIME BIDDING: N/A

R. 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.

S. BONDS: A Performance Bond, a Labor and Material Payment Bond and a Maintenance Bond will be required by the Owner. The Performance Bond and Payment Bond 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. (Contractor shall confirm the legal names of obligees prior to execution of Bonds.)

T. BID SECURITY: Bids shall be accompanied by a bid bond in an amount not less than five percent (5%) of the total maximum bid price 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.

U. 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.

V. CONSTRUCTION STAKING: N/A

W. FINAL PAYMENT: The general provisions for Final Payment shall be as stated in Item 109.5.4 of the SSPWC 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 the Special Provisions.
4. A one (1) year Maintenance Bond in accordance with Section MB.
5. Acknowledgement that the project has been reviewed and accepted by TDLR.

X. 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.

Y. 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; Town of Addison Standard Drawings. This priority list shall take precedence over Item 105.1.1 of the SSPWC.

SECTION PF-1

PROPOSAL FORM

PROPOSAL FORM

_____ , 2018

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 _____

The following pages contain all bid items for:

BID SCHEDULE – ADDISON ATHLETIC CLUB HVAC IMPROVEMENTS.
BID NUMBER 18-224

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 for the construction of the project.

2. Prices must be shown in words and figures for each item listed in the Proposal. In the event of discrepancy, the words shall control.

3. 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.

_____

Name of Person Signing Bid

_____

Signature of Person Signing Bid

_____

Address

_____

Telephone No. Fax No.

_____

T.I.N. (Tax Identification or Employer's Number)

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 _____
(Corporation Name)

_____
(State of Incorporation)

By _____
(Name of Person Authorized to Sign)

_____
(Title)

(Corporate Seal)

Attest _____
(Secretary)

Business address: _____

_____

_____

Phone No. _____

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.)

BID SCHEDULE
Addison Athletic Club HVAC Improvements
BID NUMBER 18-224

Cardio Wing Base Bid Demolition Scope

Item No.	Quantity	Unit	Description and Unit Price in Words	Unit Price in Figures	Total Amount
1.01	5	LS	Removal of five (5) existing package A/C units and assocaited ductwork,condensate drains,duct heaters, t-stats and electrical connections. complete in place, the sum of _____ _____ Dollars and _____ Cents per Unit.		
1.02	1	LS	Removal of any landscaping including trees and lighting bollards. Provide new housekeeping pad for the new 200 ton chiller and associated pumps. complete in place, the sum of _____ Dollars and _____ Cents per Unit.		
1.03	1	LS	Removal all the existing supply grilles in the cardio spaces on the second floor. complete in place, the sum of _____ Dollars and _____ Cents per Unit.		
1.04	6	LS	Removal of all hanging circle grids below the lightings in each section of cardio space on the second floor. complete in place, the sum of _____ _____ Dollars and _____ Cents per Unit.		
1.05	1	LS	Provide a new 480V/3 phase electrical service with a 800 amp switchboard to serve the new chiller and duct heaters. complete in place, the sum of _____ _____ Dollars and _____ Cents per Unit.		
			Subtotal		

Cardio Wing Base Bid New Scope

1.06	1	EA	Provide a new packaged 200 ton air cooled chiller and associated inline chiller pumps, and 6" housekeeping pad. complete in place, the sum of _____ _____ Dollars and _____ Cents per Unit.		
1.07	1	LS	Provide six (6) new air handling units, associated supply/return ductwork, condensate drains, 1-1/4" CHS/R piping and electric duct heaters within the existing mechanical room on the ground floor. Provide new DCC controls and t-stats. Provide new 30/3/15 disconnect switch and reconnect to the existing panel. complete in place, the sum of _____ _____ Dollars and _____ Cents per Unit.		
1.08	1	LS	Provide one (1) new air handling unit suspended from the structure, associated CHS/R piping connections, and thermostats to serve the staff area. Provide new 30/3/15 disconnect switch and reconnect to the existing panel. complete in place, the sum of _____ _____ Dollars and _____ Cents per Unit.		
1.09	1	LS	Provide new 6" insulated CHS/R piping from the chiller routed to the ground floor to the new six (6) new AHU. The 6" CHS/R piping shall reduce to new 4" CHS/R after the staff area unit. The 4" CHS/R piping shall extend to the existing mechanical room in the original building and tie into the existing CHS/R piping. complete in place, the sum of _____ _____ Dollars and _____ Cents per Unit.		
1.10	1	LS	Provide new supply diffusers to replace the existing supply grilles that were removed within the demolition scope. complete in place, the sum of _____ _____ Dollars and _____ Cents per Unit.		

1.11	6	EA	Provide six (6) new high volume low speed fans in the middle of each cardio bay on the second floor. Provide new 2P25A circuit breakers from the existing electrical panel, conduit and motor thermal overload switch. Provide one recessed lockable panel for the main control panel operating the fans. (Work shall take place 45 days after notcie to proceed) complete in place, the sum of _____ Dollars and _____ Cents per Unit.		
1.12	1	LS	Repair gyp/lay in ceiling and walls damaged by the ceiling cassettes and construction. Match adjacent finishes and color. Paint the walls and ceiling in its entirety surface to avoid color matching issues. complete in place, the sum of _____ _____ Dollars and _____ Cents per Unit.		
				Subtotal	

Original Building Base Bid Demolition Scope

2.01	4	EA	Remove four (4) air handling units and associated pneumatic thermostat located within the existing mechanical room or above the existing lay in ceiling. Disconnect the existing electrical connection, supply ductwork, and return ductwork for reconnection to the new air handling unit complete in place, the sum of _____ _____ Dollars and _____ Cents per Unit.		
2.02	1	LS	Disconnect the electrical connection and lock the circuit breakers to the existing chiller, cooling tower and associated pumps. Equipment shall be taken out of service. complete in place, the sum of _____ Dollars and _____ Cents per Unit.		
				Subtotal	

Original Building Base Bid New Scope

2.03	1	EA	Provide four (4) new air handling units and reconnect the supply ductwork, return ductwork, and electrical connections. Provide new DCC controls and t-stats. complete in place, the sum of _____ _____ Dollars and _____ Cents per Unit.		
2.04	1	LS	Repair gyp/lay in ceiling and walls damaged by the air handling unit installation. Match adjacent finishes and color. Paint the walls and ceiling in its entirety surface to avoid color matching issues. complete in place, the sum of _____ Dollars and _____ Cents per Unit.		
			SubTotal		
			Base Bid Total		

Alternate Bid - Orignal Building Demoltion Scope

Item No.	Quantity	Unit	Description and Unit Price in Words	Unit Price in Figures	Total Amount
3.01	6	EA	Remove five (5) air handling units and associated pneumatic thermostat located within the existing mechanical room or above the existing lay in ceiling. Disconnect the existing electrical connection, supply ductwork, and return ductwork for reconnection to the new air handling unit. Provide new DCC controls and t-stats. complete in place, the sum of _____ Dollars and _____ Cents per Unit.		
3.02	1	LS	Remove the existing ductwork and supply grilles serving the gymnasium. complete in place, the sum of _____ Dollars and _____ Cents per Unit.		
			Subtotal		

Alternate Bid - Orignal Building New Scope

3.03	6	EA	Provide five (5) new air handling unit and reconnect the supply ductwork, return ductwork, and electrical connections. complete in place, the sum of _____ Dollars and _____ Cents per Unit.		
3.04	1	EA	Provide new fabric duct and cabling system serving the gymnasium. complete in place, the sum of _____ Dollars and _____ Cents per Unit.		
3.05	1	LS	Replace the existing roof mounted relief air hood within the gymnasium and install a motorized damper at the roof opening to modulate as required to maintain the building pressurization. complete in place, the sum of _____ Dollars and _____ Cents per Unit.		
3.06	1	LS	Repair gyp/lay in ceiling and walls damaged by the air handling unit installation. Match adjacent finishes and color. Paint the walls and ceiling in its entirety surface to avoid color matching issues. complete in place, the sum of _____ Dollars and _____ Cents per Unit.		
				Subtotal	
				Alternate Bid Total	
				Total	

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.

SECTION BQS

BIDDER QUALIFICATION STATEMENT

SECTION BQS

ALL BIDDERS ARE NOTIFIED THAT THE FOLLOWING QUALIFICATION STATEMENT MUST BE COMPLETED AND SUBMITTED WITH THE BID PROPOSAL

CONTRACTOR'S QUALIFICATIONS

The Contractor shall show that he has experience with similar projects that require working on HVAC and electrical construction and/or replacement projects in confined quarters in a fully operational public facility which will require the Contractor to plan his work efforts and equipment needs with these limitations in mind. The Contractor shall submit a complete list of ALL Municipal and Similar Non-Municipal current and completed projects for the past three (3) years for review. This list shall include the names of supervisors and type of equipment used to perform this work.

BIDDERS QUALIFICATION STATEMENT

INFRASTRUCTURE AND DEVELOPMENT SERVICES BID NUMBER 18-224, ADDISON ATHLETIC CLUB HVAC IMPROVEMENTS

Contractor:_____

Indicate One: _____Sole Proprietor _____Partnership _____Other

_____Corporation _____ Joint Venture

Name:_____Partner:_____

Title:_____Title:_____

Address:_____ Address:_____

City:_____ City:_____

State & Zip:_____ State & Zip:_____

Phone:_____ ___Phone:_____

State and Date of Incorporation, Partnership, Ownership, Etc._____

Location of Principal Office:_____

Contact and Phone at Principal Office:_____

Liability Insurance Provider and Limits of Coverage:_____

Workers Compensation Insurance Provider:_____

Surety (Performance and Payment):_____

Address:_____

Contact and Phone:_____

Superintendent and Backup Superintendent: (Work Resume - attach additional sheets.) (Safety Record – attached additional sheets; if needed show all verified safety violations.) The superintendent shall be able to communicate in English and not operate any equipment and have not had any verified job safety violations in the past five years. Any variations shall be reviewed by the OWNER for approval or denial. A job site shall be shut down if proper supervision is not provided.

Superintendent Name _____

Backup Superintendent Name _____

Safety Record – List ALL Verified Violations for Superintendent and Backup Superintendent with explanation, date and action taken to correct future safety violations:

Superintendent

_____

_____

_____

_____

Backup Superintendent

_____

_____

_____

_____

Total Number of Employees to be Associated with this Job:_____

Managerial_____ Administrative_____ Professional_____

Skilled_____ Semi-Skilled_____ Other_____

Percentage of work to be done by Bidder's Employees (Based on Dollars Bid): _____

Type(s) of work to be done by Bidder's Employees (examples: chiller installation, ductwork fabrication and installation, fan installation, structural steel, electrical work, etc.)

_____

_____

_____

Access to Tools and Equipment: Percent Owned____ Percent Rented____

Number of Years in Business as a Contractor on Above Types of Works:_____

Type(s) of Work to be done by Sub-Contractors
Include Name, Address, and Phone Number of Sub-Contractor.
Use additional sheets if needed.

Type of Work	Sub-Contractor

List Equipment to be used on this project (Make/Model/Age of Major Equipment) Any Equipment not listed shall be reviewed by the OWNER for approval or rejection prior to use of Equipment on this project. (Use additional sheets if necessary)

Type of Equipment	Make	Model	Age (years)

List of ALL Municipal and Similar Non-Municipal current and completed projects for the past three (3) years. (Use additional sheets if necessary.)

1. Project:_____

Current Status:_____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Project Description:_____

Owner/Agency:_____

Year Built:_____ Contract Price:_____

Contact Person:_____ Phone:_____

2. Project:_____

Current Status:_____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Project Description:_____

Owner/Agency:_____

Year Built:_____ Contract Price:_____

Contact Person:_____ Phone:_____

3. Project:_____

Current Status:_____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Project Description:_____

Owner/Agency:_____

Year Built:_____ Contract Price:_____

Contact Person:_____ Phone:_____

4. Project:_____

Current Status:_____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Project Description:_____

Owner/Agency:_____

Year Built:_____ Contract Price:_____

Contact Person:_____ Phone:_____

5. Project:_____

Current Status:_____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Project Description:_____

Owner/Agency:_____

Year Built:_____ Contract Price:_____

Contact Person:_____ Phone:_____

6. Project:_____

Current Status:_____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Project Description:_____

Owner/Agency:_____

Year Built:_____ Contract Price:_____

Contact Person:_____ Phone:_____

7. Project:_____

Current Status:_____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Project Description:_____

Owner/Agency:_____

Year Built:_____ Contract Price:_____

Contact Person:_____ Phone:_____

8. Project:_____

Current Status:_____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Project Description:_____

Owner/Agency:_____

Year Built:_____ Contract Price:_____

Contact Person:_____ Phone:_____

9. Project:_____

Current Status:_____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Project Description:_____

Owner/Agency:_____

Year Built:_____ Contract Price:_____

Contact Person:_____ Phone:_____

10. Project:_____

Current Status:_____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Project Description:_____

Owner/Agency:_____

Year Built:_____ Contract Price:_____

Contact Person:_____ Phone:_____

Trade references (List Company, Address, Contact Person, and Phone):

_____

_____

_____

Bank References (List Institution, Address, Contact Person, and Phone)

_____

_____

_____

Claims and Suits (if the answer to any of the following questions is yes, please attached details):

1. Has your organization ever failed to complete any work awarded to it?_____

2. Are there any judgments, claims, arbitration proceedings, or suits pending or outstanding against your organization or officers?_____

3. Has your organization filed any lawsuits or requested arbitration with regard to construction contracts within the last five years?_____

4. Within the last five (5) years, has any officer or principal of your organization ever been an officer or principal of another organization when it failed to complete a construction contract?_____

I,_____,being duly sworn deposes and says that the information provided herein is true and sufficiently complete so as not to be misleading.

Date this_____day of_____, 20_____.
Name of
Organization:_____

By:_____

Title:_____

STATE OF TEXAS

COUNTY OF DALLAS

BEFORE ME the undersigned authority, on this day personally appeared _____

_____, known to me to be the person whose name subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and considerations therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this ___day of _____ 20____.

_____

Notary Public in and for _____ County, Texas

SECTION CA

CONTRACT AGREEMENT

CONTRACT AGREEMENT

STATE OF TEXAS

COUNTY OF DALLAS

THIS AGREEMENT is made and entered into this _____ day of _____, 2018, 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 _____, of the City of _____, County of _____, State of _____, 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:

ADDISON ATHLETIC CLUB HVAC IMPROVEMENTS

INFRASTRUCTURE AND DEVELOPMENT SERVICES BID NUMBER 18-224

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 and fifty **(150)** 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 _____ _____ Dollars **($_____)** 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) **ATTEST:**

By: _____ By: _____
City Manager

(CONTRACTOR) ATTEST:

By: _____ By: _____

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

I, _____ certify that I am the secretary of the corporation named as CONTRACTOR herein; that _____, who signed this Contract on behalf of the CONTRACTOR is the _____ (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

SECTION PrB

PERFORMANCE BOND

PERFORMANCE BOND

STATE OF TEXAS }
COUNTY OF DALLAS }

WHEREAS, _____as principal ("Contractor") and _____, a corporation organized under the laws of _____ and being duly authorized to do business in the State of Texas, as surety ("Surety")(whether one or more), do hereby expressly acknowledge themselves to he held and bound to pay to the Town of Addison, Texas, a home-rule municipality organized and operating under the Constitution and laws of the State of Texas (the "Town"), its successors and assigns, and to all persons, firms, subcontractors and corporations who may furnish materials or labor under the contract as more fully described below, the sum of _____ Dollars in the lawful currency of the United States of America ($) for the payment of which Contractor and Surety are liable to the Town, jointly and severally; and

WHEREAS, Contractor has this day entered into a written contract with the Town to build and construct _____
_____
_____
which contract and the plans and specifications therein mentioned (collectively referred to hereinafter as the "Contract") are hereby expressly incorporated into and made a part hereof as though set forth at length; and

WHEREAS, this bond is given pursuant to Chapter 2253 of the Texas Government Code;

NOW, THEREFORE, if Contractor shall well, truly and faithfully perform all of the undertakings, duties, terms, conditions and agreements of the Contract; shall satisfy all claims and demands incurred under the Contract; shall fully indemnify and hold the Town harmless; shall reimburse and repay the Town for any outlay or expense which the Town may incur in making good any default, and shall promptly make payment to all persons, firms, subcontractors and corporations who may furnish materials or labor under the Contract, then this obligation shall be void; otherwise to remain in full force and effect. The obligations of Contractor and Surety under this bond apply both to the original Contract and to any extension or modification of the Contract and Surety agrees that no change, extension of time, addition, expansion or other modification of the Contract, the work to be done under the Contract, or the plans and specifications which are a part of the Contract shall in any manner affect the obligations of Surety under this bond, and Surety waives notice of any such change, extension of time, addition, expansion or other modification. The obligations of Contractor and Surety under this bond are performable and payable in Dallas County, Texas such that exclusive venue for any legal action pertaining to this bond shall lie in Dallas County, Texas. By their signatures below, the persons signing this bond warrant and represent that they are, respectively, duly authorized to sign on behalf of Contractor and Surety.

EXECUTED this the _____ day of _____, 2018.

CONTRACTOR: SURETY: 1

By:_____ By:_____

Title:_____ Title:_____

ACKNOWLEDGMENTS
[Contractor]

STATE OF TEXAS }
COUNTY OF DALLAS }

Before me _____ (insert the name of the officer) on this day _____ personally appeared _____ known to me (or proved to me on the oath of _____) or through _____ (description of identity card or other document) to be the person whose name is subscribed to the forgoing instrument and acknowledged to me that he/she executed the same for the purpose and consideration therein expressed.

Given under my hand and seal of office this _____ day of _____, 2_____.

_____ _____
Notary Public in and for the State of Texas Typed or Printed Name of Notary
My Commission Expires:_____

[Surety]

STATE OF TEXAS }
COUNTY OF DALLAS }

This instrument was acknowledged before me on the ____day of _____, 2_____ by _____ who is the _____ of the Surety, on behalf of Surety.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this the _____ day of _____, 2_____.

_____ _____
Notary Public in and for the State of Texas Typed or Printed Name of Notary

My Commission Expires:_____

1 Please see attached contact sheet for Surety and the Texas Department of Insurance.

Payment and Performance Bond Contact Sheet

(1) Claims:

All notices of claims shall be sent to the surety at the following address:

_____
(Name of surety)

_____
(Mailing address)

_____
(Physical address)

_____
(Phone number)

(2) Texas Department of Insurance Contact Number:

The address and contact information of the surety may otherwise be obtained by contacting the Texas Department of Insurance at the following toll free telephone number:

1-800-252-3439.

SECTION PyB

PAYMENT BOND

PAYMENT BOND

STATE OF TEXAS }
COUNTY OF DALLAS }

WHEREAS, _____, as principal ("Contractor") and _____, a corporation organized under the laws of _____ and being duly authorized to do business in the State of Texas, as surety ("Surety")(whether one or more), do hereby expressly acknowledge themselves to he held and bound to pay to the Town of Addison, Texas, a home-rule municipality organized and operating under the Constitution and laws of the State of Texas (the "Town"), its successors and assigns, and to all persons, firms, subcontractors and corporations who may furnish materials or labor under the contract as more fully described below, the sum of _____ Dollars in the lawful currency of the United States of America ($) for the payment of which Contractor and Surety are liable to the Town, jointly and severally; and

WHEREAS, Contractor has this day entered into a written contract with the Town to build and construct _____
_____

which contract and the plans and specifications therein mentioned (collectively referred to hereinafter as the "Contract") are hereby expressly incorporated into and made a part hereof as though set forth at length; and

WHEREAS, this bond is given pursuant to Chapter 2253 of the Texas Government Code;

NOW, THEREFORE, if Contractor shall promptly make payment to all persons, firms, subcontractors and corporations who may furnish materials or labor under the Contract, then this obligation shall be void; otherwise to remain in full force and effect. The obligations of Contractor and Surety under this bond apply both to the original Contract and to any extension of time or modification of the Contract and Surety agrees that no change, extension of time, addition, expansion or other modification of the Contract, the work to be done under the Contract, or the plans and specifications which are a part of the Contract shall in any manner affect the obligations of Surety under this bond, and Surety waives notice of any such change, extension of time, addition, expansion or other modification. The obligations of Contractor and Surety under this bond are performable and payable in Dallas County, Texas such that exclusive venue for any legal action pertaining to this bond shall lie in Dallas County, Texas. By their signatures below, the persons signing this bond warrant and represent that they are, respectively, duly authorized to sign on behalf of Contractor and Surety.

EXECUTED this the _____ day of _____, 2_____.

CONTRACTOR: SURETY: [1]

By:_____ By:_____

Title:_____ Title:_____

ACKNOWLEDGMENTS
[Contractor]

STATE OF TEXAS }
COUNTY OF DALLAS }

Before me _____ (insert the name of the officer) on this day _____ personally appeared _____ known to me (or proved to me on the oath of _____) or through _____ (description of identity card or other document) to be the person whose name is subscribed to the forgoing instrument and acknowledged to me that he/she executed the same for the purpose and consideration therein expressed.

Given under my hand and seal of office this _____ day of _____, 2_____.

_____ _____
Notary Public in and for the State of Texas Typed or Printed Name of Notary
My Commission Expires:_____

[Surety]

STATE OF TEXAS }
COUNTY OF DALLAS }

This instrument was acknowledged before me on the _____ day of _____, 2_____ by _____ who is the _____ of the Surety, on behalf of Surety.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this the _____ day of _____, 2_____.

_____ _____
Notary Public in and for the State of Texas Typed or Printed Name of Notary

My Commission Expires:_____

[1] Please see attached contact sheet for Surety and the Texas Department of Insurance

Payment and Performance Bond Contact Sheet

(1) Claims:

All notices of claims shall be sent to the surety at the following address:

_____
(Name of surety)

_____
(Mailing address)

_____
(Physical address)

_____
(Phone number)

(2) Texas Department of Insurance Contact Number:

The address and contact information of the surety may otherwise be obtained by contacting the Texas Department of Insurance at the following toll free telephone number:

1-800-252-3439.

SECTION MB

MAINTENANCE BOND

MAINTENANCE BOND – TWO YEAR

STATE OF TEXAS '

COUNTY OF DALLAS '

WHEREAS,_____, as principal ("Contractor") and _____, a corporation organized under the laws of _____ and being duly authorized to do business in the State of Texas, as surety ("Surety")(whether one or more), do hereby expressly acknowledge themselves to he held and bound to pay to the Town of Addison, Texas, a home-rule municipality organized and operating under the Constitution and laws of the State of Texas (the "Town"), its successors and assigns the sum of _____ Dollars in the lawful currency of the United States of America ($) for the payment of which Contractor and Surety are liable to the Town, jointly and severally; and

WHEREAS, Contractor has this day entered into a written contract with the Town to build and construct which contract and the plans and specifications therein mentioned (collectively referred to hereinafter as the "Contract") are hereby expressly incorporated into and made a part hereof as though set forth at length; and

WHEREAS, under the Contract it is provided that the Contractor will maintain and keep in good repair all work to be performed and done under the Contract for a period of **one (1) year** from the date of acceptance of the completed work by the Town, and to do and perform all necessary work and repair any defective condition, it being understood that the purpose of this maintenance bond is to insure all warranties, express or implied, made or given by the Contractor to the Town and to cover all defective, inadequate or non-conforming conditions arising by reason of any materials or labor installed, provided, constructed or performed by the Contractor and in case the Contractor shall fail to correct any such conditions it is agreed that the Town may make such corrections and charge the cost of making those corrections against the Contractor and the Surety on this obligation, and the Contractor and Surety shall be subject to the liquidated damages provided in the contract, the plans and the specifications for each day's failure on its part to comply with the terms and provisions of the Contract;

NOW, THEREFORE, if the Contractor shall keep and perform its obligation to maintain the work and keep the work in repair for the full maintenance period of two (2) year as herein provided, then these presents shall be null and void and have no further effect, but if default shall be made by Contractor in the performance of its obligations, then these presents shall have full force and effect, and the Town shall have and recover from the Contractor and its Surety damages in the premises as provided and it is further understood and agreed that this obligation shall be a continuing one against the Contractor and the Surety and that successive recoveries may be had hereon for successive breaches until the full amount of this bond shall have been exhausted; and it is further understood that the obligation under this bond to maintain the work shall continue throughout the maintenance period and shall not be changed, diminished, or in any other manner affected during the term of this bond. The obligations of Contractor and Surety under this bond apply both to the original Contract and to any extension or modification of the Contract and Surety agrees that no change, extension of time, addition, expansion or other modification of the Contract, the work to be done under the Contract, or the plans and specifications which are a part of the Contract shall in any manner affect the obligations of Surety under this bond, and Surety waives notice of any such change, extension of time, addition, expansion or other modification. The obligations of Contractor and Surety under this bond are performable and payable in Dallas County, Texas such that exclusive venue for any legal action pertaining to this bond shall lie in Dallas County, Texas. By their signatures below, the persons signing this bond warrant and represent that they are, respectively, duly authorized to sign on behalf of Contractor and Surety.

EXECUTED this the _____ day of _____, 2_____.

CONTRACTOR:	SURETY:
By:_____	By:_____
Printed Name:_____	Printed Name:_____
Title:_____	Title:_____
Address of Principal:	Address of Surety:
_____	_____
_____	_____
_____	_____

ACKNOWLEDGMENTS

[Contractor]

STATE OF TEXAS '
COUNTY OF DALLAS '

Before me _____(insert the name of the officer) on this day _____ personally appeared _____ known to me (or proved to me on the oath of _____) or through _____ (description of identity card or other document) to be the person whose name is subscribed to the forgoing instrument and acknowledged to me that he/she executed the same for the purpose and consideration therein expressed.

Given under my hand and seal of office this _____ day of _____, 2_____.

_____ _____
Notary Public in and for the State of Texas Typed or Printed Name of Notary
My Commission Expires:_____

[Surety]

STATE OF TEXAS '
COUNTY OF DALLAS '

This instrument was acknowledged before me on the ___ day of _____, 2_____ by _____ who is the _____ of the Surety, on behalf of Surety.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this the _____ day of _____, 2_____.

_____ _____
Notary Public in and for the State of Texas Typed or Printed Name of Notary
2-4-13 2 yr

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

ADDISON ATHLETIC CLUB HVAC IMPROVEMENTS

INFRASTRUCTURE AND DEVELOPMENT SERVICES BID NUMBER 18-224

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 _____, 201_.

_____
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, 5th Edition (2017)*, under Division 100, "General Provisions", as amended or supplemented and except as modified by the Special Provisions or Instructions to Bidders.

SECTION SP

SPECIAL PROVISIONS

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: Addison Athletic Club HVAC Improvements ("Project").

2. **GENERAL:** This Work shall conform to the requirements of the Specifications and the details as shown on the Plans. These Contract Documents are intended to be complementary. The Contractor shall do all work as provided in the plans, specifications, special provisions, bid and contract, and shall do such additional Extra work as may be considered necessary to complete the work in a satisfactory and acceptable manner. The Contractor shall furnish all labor, tools, materials, machinery, equipment, and incidentals necessary to the satisfactory prosecution and completion of the Work. Requirements of any of the Contract Documents are as binding as if called for by all. In the event of conflict between the Plans 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 Provisions 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 itself 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 Construction Details;

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 referenced specifications 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 the Contract 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. **HISTORICAL, SCIENTIFIC AND ARCHAEOLOGICAL DISCOVERIES:** Contractor shall immediately give an oral and written report to the Town of Addison of the discovery of any articles of historical, scientific, or archaeological significance. Contractor shall take all necessary steps to preserve the article and shall cease operations, which would affect the find until otherwise directed by the Town of Addison but continue with all other unaffected operations. The future operations of Contractor with respect to the discovery, including disposition of the articles, shall be decided by the Town of Addison. The Town of Addison shall have sole and exclusive title to any discovered articles.

The Town of Addison shall investigate the site conditions promptly after receiving the notice. If the conditions do materially so differ and cause an increase or decrease in Contractor's cost of, or the time required for performing any part of the work under the Contract, whether or not changed as a result of conditions, an equitable adjustment will be made and the Contract modified in writing accordingly.

No request by Contractor for an equitable adjustment to the Contract under this Section shall be allowed unless Contractor has given the written notice required. No request by Contractor for an equitable adjustment of the Contract for differing site conditions will be allowed or shall be made after final payment under the Contract.

ENVIRONMENTAL REQUIREMENTS: In addition to requirements set forth in other sections of the Contract, including the Plans and Specifications, Contractor shall ensure that the requirements of this Section are fulfilled and incorporated into its procedures and processes as well as those of any Subcontractors. All materials utilized

by Contractor on the Project shall comply with all applicable local, state and federal laws and regulations.

A. Contractor is responsible for compliance with any requirements included in the Contract Documents regarding Hazardous Materials. If Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by Contractor, Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Town of Addison in writing.

1. The term "Hazardous Materials" means any substance or compound, whether solid, liquid or gaseous: (i) which is listed, defined or regulated as a "hazardous substance", "hazardous waste", "extremely hazardous waste", "solid waste", "toxic substance", "hazardous substance", "hazardous material" or "regulated substance" or otherwise classified as hazardous or toxic, in or pursuant to any Environmental Law; or (ii) which is or contains asbestos, radon, any polychlorinated biphenyl, urea formaldehyde foam insulation, explosive or radioactive material, lead, or motor fuel or other volatile organic compounds; or (iii) which causes or poses a threat to cause a contamination or nuisance on the Project Site or any adjacent property, or (iv) which causes or poses a threat to cause a hazard to the environment or to the health, safety or welfare of persons on or about the Project Site.

2. The term "Environmental Law" means any federal, state or local law, statute, guidance or policy statement, ordinance, code, rule, regulation, license, authorization, decision, order, injunction or decree, which pertains to health, safety or the environment (including, but not limited to, ground, air, water or noise pollution or contamination, and underground or aboveground tanks) and shall include without limitation, the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, the Resource Conservation and Recovery Act of 1976, as amended, the Occupational Health and Safety Act, the Toxic Substances Control Act, the Texas Water Code and the Texas Solid Waste Disposal Act and any other state or federal environmental statutes.

B. If the material or substance was on the site prior to the issuance of the Notice to Proceed, the Town of Addison shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by Contractor and, in the event such material or substance is found to be present, to verify that it has been remediated to levels required by the Texas Commission on Environmental Quality. When the material or substance has been remediated, Work in the affected area shall resume upon written direction of the Town of Addison.

C. Except as provided in Subparagraph B., Contractor (with the Town of Addison's prior written approval of the laboratory) shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by Contractor and, in the event such material or substance is found to be present, the Town of Addison shall

determine whether Contractor or the Town of Addison shall have the substance remediated to levels required by the Texas Commission on Environmental Quality. When the material or substance has been remediated, Work in the affected area shall resume upon written direction of the Town of Addison. The Contract time shall be not be extended and the Contract Price shall not be increased, unless the material or substance to be remediated were not introduced to the Work Site by Contractor, and Contractor shall then pay for (or reimburse the Town of Addison for) the testing and remediation.

D. The Town of Addison shall not be responsible under this Section for materials or substances Contractor brings or introduces to the Project Site. Contractor shall be responsible for the fault or negligence in the use and handling of materials or substances of Contractor, Subcontractor, Sub-subcontractor, or anyone directly or indirectly employed by any of them.

E. Contractor shall indemnify the Town of Addison and its affiliates for any and all damages incurred by the Town of Addison as a result of Contractor's actions with respect to all applicable state and federal environmental laws related to materials or substances Contractor brings to the Project Site, including but not limited to fines, penalties, costs of remediation and reasonable attorney's fees. No time extension shall be granted for breach of this provision.

F. Contractor agrees that it shall not transport to, use, generate, dispose of, or install at the Project Site any Hazardous Materials, except in accordance with applicable environmental laws. Further, in performing the Work, Contractor shall not cause any release of Hazardous Materials into, or contamination of, the environment, including the soil, the atmosphere, any water course or ground water unless required by the Contract Documents. In the event Contractor engages in any of the activities prohibited in this Section or fails to stop Work as provided in this Section, to the fullest extent permitted by law, Contractor hereby indemnifies and holds the Town of Addison, its affiliates and their respective officers, agents, employees and tenants harmless from and against any and all claims, damages, losses, causes of action, suits and liabilities of every kind, including but not limited to, expenses of litigation, court costs, punitive damages and attorneys' fees, arising out of, incidental to or resulting from the activities prohibited in this Section or Contractor's failure to stop Work as required. Contractor shall obtain from manufacturers and furnish to the Town of Addison Materials Safety Data Sheets (OSHA Form 20) for all materials incorporated into the Project by Contractor. The Town of Addison hereby agrees that, as between the Town of Addison and Contractor, the Town of Addison will be responsible for Hazardous Materials on site which existed prior to Contractor performing Work on the Project Site or which are introduced to the Project Site by the Town of Addison, except as provided in this Section. Contractor will not be considered the generator of Hazardous Materials on site which existed prior to Contractor performing Work on the Work Site or which are introduced to the Project Site by the Town of Addison. If the Hazardous Materials were on the Project Site prior to Contractor's presence on the Project Site or were introduced to the Project Site by the Town of Addison, then, if appropriate, the Town of Addison will make an equitable adjustment to the Contract.

G. Include in all construction subcontracts exceeding $100,000, the following requirement: "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."

H. No request by Contractor for an equitable adjustment to the Contract under this Section shall be allowed unless Contractor has given the written notice required.

I. No request by Contractor for an equitable adjustment of the Contract for Hazardous Materials will be allowed or shall be made after final payment under the Contract.

7. **COMPLIANCE WITH LAWS:** The Contractor shall familiarize himself with the nature and extent of the Specifications, Plans, Project 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 and the Engineer harmless therefrom. No plea of ignorance or misunderstanding thereof will be considered.

8. **PERMITS, LICENSES. AND REGULATIONS:** Permits and licenses for the prosecution of the Work shall be secured and paid for by the Contractor. Any required permit fees will still be paid 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.**

9. **RIGHTS-OF-WAY AND EASEMENTS:** Rights-of-way and permanent easements, dedicated to the Town of Addison, will be 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 its 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 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 itself or its employees.

It shall be the responsibility of the Contractor, prior to the initiation of construction on easements through private property, to inform the property owner of its 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.

10. **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."

It is in the interest of the public safety and convenience for the Work under this Project to occur outside the standard Work hours. However, the contractor will must present a detailed Work schedule and obtain written approval from the Town.

11. **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.

12. **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.

13. **ANTITRUST LAWS:** The Contractor hereby assigns to the Town of Addison any and 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).

14. **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.

15. **DISCREPANCIES:** If the Contractor, in the course of the Work, finds any discrepancy between the Contract Documents and the physical conditions of the Project, or any errors or omissions in Plans 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.

16. **PREPARATION OF STORM WATER POLLUTION PREVENTION PLAN:** A Storm Water Pollution Prevention Plan (SW3P) will not be required for this project.

This specification is not all inclusive of the requirements for an SW3P. The Contractor shall comply with all requirements of the TCEQ TPDES permit and the local authorities' storm water ordinance and/or regulations.

17. **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 four (4) working days prior to the date set for the Bid opening. The ability to ask questions will close at **5:00 PM, Friday, October 12, 2018**. Answers to all such requests will be issued in the form of Addenda and a copy of such Addenda will be released through www.bidsync.com. It will be the responsibility of each person who has been issued as set of Bidding Documents to secure all Addenda from www.bidsync.com. 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 it be in doubt as to their meaning, it shall at once notify the Engineer in writing in order that a written addendum may be sent to all Bidders.

18. **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.

See bid item descriptions/reference specifications for details.

19. **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.

20. **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. Any repairs or replacement of items damaged during demolition or as a result of new construction will be considered subsidiary. Limits of all Work requiring repair will be determined by the Town of Addison staff or the inspector. Extreme care should be taken during all demolition and construction operations.

21. **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.

To be considered responsive, the apparent three lowest Bidders are required to submit the Statement of Experience per Section BQS "Bidder Qualification Statement" within 5 days.

The apparent low three Bidders will be notified by the Engineer to request the information.

AWARD AND EXECUTION OF CONTRACT: For the purpose of award, each bid submitted shall consist of three parts with the correct summation of the products of the estimated quantities shown in the proposal multiplied by their bid unit prices.

Bidders must fill bid proposal for all base bids and all additive alternates. The method of Award will be based on the lowest qualified bidder for all base bids plus any combination of the additive alternates depending on the availability of funds.

The Town reserves the right to accept whichever bid is determined to be in the best interest of the public and to reject all bids.

All payments will be based on actual quantities and bid unit prices.

22. **EXPLANATION OF CONTRACT TIME:** The term "Contract Time" as used in this Provision will mean 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.

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 Contract Time. In the event the Contractor and Town are unable to agree to the number of calendar days to extend the Contract Time, the Town shall unilaterally determine the number of calendar days to extend the 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.

Should the Contractor fail to complete the Contract on or before expiration of the Allowable Contract Time, as adjusted in accordance with the provisions above, the Town shall deduct from the moneys due the Contractor the Daily Value as shown in provision 78 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 pursuant to the statements above. 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) full-size copy and one (1) electronic copy of the Plans shall be furnished to the successful Contractor, at no charge, for construction purposes. Additional copies may be obtained at cost of $150.00 per set upon request.

24. **PRE-CONSTRUCTION CONFERENCE:** The successful Contractor, Engineer, and Town of Addison shall meet for a pre-construction 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:** See specification SS-120 included in the technical specifications.

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 (CPM) and submit to the Town of Addison and Engineer for approval. The CPM shall reflect all definable features of Work and activities 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. During all phases of construction access to all existing businesses must be maintained at all times unless otherwise authorized in writing by the Town of Addison or Addison Airport. Erosion control devices must be properly installed and maintained during all stages of construction.

The Contractor must comply with all work area restrictions as indicated in the Plans unless specifically authorized in writing by the Town of Addison.

The general intent is for the contractor to begin within one area and steadily progress limiting the area of construction to minimize disruptions to aircraft operations and businesses along the route.

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. The Contractor's representative must be available to meet and discuss construction related issues on site or at the Town's offices within 20 minutes of a request during working hours and throughout the entire construction period. Upon repeated failure of attendance at requested meetings, Contractor will be required to have a Project representative on-site at all times.

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 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

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 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 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 or emailed to purchasing@addisontx.gov.

2.7 All insurance policies, which name the Town 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-" VII 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.

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."

30. **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 Contract, 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 or other mutually agreeable mediator or arbitrator. 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.

31. **SHOP DRAWINGS:** The Contractor shall provide, review, approve and submit all shop drawings, product data and samples required by the Town of Addison, the Architect/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 shop drawings in PDF format for review by the Architect/Engineer, who will review, approve and forward to the Town of Addison for acceptance. Shop drawings shall include all items to be installed in the Project.

32. **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.

33. **SAMPLES AND TESTS OF MATERIALS:** 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. As a guide, 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.

34. **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.

35. **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.

36. **PROPERTY ACCESS:** Access to all public areas of the building shall be maintained at all times unless otherwise directed by the Architect/Engineer and/or Town of Addison.

37. **PLANT, PROCEDURES, 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 Contract. 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.**

38. **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. 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.

39. **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.

40. **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.

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 Town of Addison's acceptance of the Work. 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.

41. **HAULING ON TOWN OF ADDISON STREETS:** The Contractor shall receive approval of its 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.

42. **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 Work on this Project prior to beginning its 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.

43. **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.

44. **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 its 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 its 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.

45. **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 its operations to all existing utility lines, public property, and private property, whether it is below ground or above ground, and he shall defend and settle in total the cost of all lawsuits which may arise as a result of its 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.

46. **MAINTENANCE AND REPAIRS:** The Contractor shall maintain and keep in good repair all Work contemplated under these Plans, Specifications, and Plans 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 its 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.

47. **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.

48. **PUBLIC CONVENIENCE AND SAFETY:** In accordance with generally accepted construction practices, the Contractor shall be solely and completely responsible for conditions of the Project site, including safety of all persons and property during performance of the Work. This requirement shall apply continuously and not be limited to normal Work 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, its employees, agents or Subcontractors, or at any time due to defective Work or materials, or due to its 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 its 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 its surety shall reimburse the Town of Addison for all such costs.

49. **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 the Work and 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 protective measures, 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 its 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.

50. **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:

a. The Contractor shall be required to furnish barricades, flares, flagmen, etc., for the protection of the public, employees and the Work.

b. The Contractor shall prosecute its Work in such a manner as to create a minimum of interruption to traffic along adjacent roadways.

c. 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.

d. The Contractor shall not remove any regulatory sign, instructional sign, warning sign, street name sign or any other sign or signal which currently exists.

e. The Contractor shall provide a comprehensive Traffic Control Plan to the Town of Addison and Engineer for review, comment, and approval in the event the planned sequence of work is different in any way from that sequence of work provided for in the plans or where additional details are required. The Traffic Control Plan shall be designed in accordance with established standards and regulations and signed and sealed by a professional engineer, registered in the State of Texas. The plan should reflect the Contractor's proposed construction phasing and methodology and include the design layout for all proposed detour and traffic situations.

51. BARRICADES, WARNING SIGNS, DETOURS AND SEQUENCE OF CONSTRUCTION: 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 its Work sequence in a manner that will cause minimum interference with aircraft operations 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 its 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 its 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.

52. 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.

53. 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 Plans.

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).

54. **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.

55. **SUSPENSION OF WORK RELATED TO DANGER:** In addition to the other remedies for suspension of the Work as provided for in the General Provisions and Special Provisions, the Town of Addison has the authority to suspend all work immediately if, in the Town of Addison's opinion, there is imminent danger to workers or the general public. If there is no imminent danger to workmen or the general public, but trench conditions are not in compliance with Federal Regulations 29 C.F.R. 1926.650-1926.652, the Town of Addison shall warn the Contractor who shall then immediately order all workmen in and adjacent to the trench away from the area. The Contractor must then bring the trench into compliance with the regulations. If the Contractor does not make the required corrections, all work on the Contract shall cease and the Town of Addison will issue a letter of Temporary Suspension of Work. The only work authorized after issuance of this letter is work approved by the regulations. Other work shall not be permitted until the Town of Addison issues a letter of Release of Temporary Suspension of Work. The Contractor shall not be entitled to additional compensation, an extension of time or payment of damages as a result of a temporary suspension of work under this provision.

56. **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.

57. **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.

58. **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 its contract; or where sufficient contract funds are unavailable for this purpose, the Contractor or its surety shall reimburse the Town of Addison for all such costs.

59. **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 its construction operation.

60. **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.

61. **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 its own cost.

62. **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 Plans 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.

63. **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.

64. **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.

65. **TV INSPECTION OF SANITARY SEWER 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.

66. **TESTING REQUIREMENTS:** Testing shall be conducted in accordance with Town of Addison Specifications except as modified in the Special Provisions, Technical Specifications, or as on the plans. The Town of Addison will provide random testing. The Contractor shall coordinate construction with the Town of Addison, and shall provide assistance to the testing labs by providing trench safety, excavation, or other work 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 retesting shall be at the expense of the Contractor. As a general guide, the Contractor shall be responsible for providing the following tests:

(1) Density and associated tests on embedment and backfill.
(2) Compressive strength tests on concrete.
(3) Gradation soil tests on backfill as may be required.
(4) Providing test results from manufacturer as specified in Town of Addison Specifications.

67. **SILICONE JOINT SEALANT:** Silicone joint sealant must be used in all instances where joint sealant applies to Portland Cement Concrete pavement and curbs. Payment for the use of silicone joint throughout this Project will in all cases be subsidiary to this contract at no extra cost.

68. **CLAIMS FOR DAMAGES OR INJURY:** General Provision Item 1.24.3 - SMALL CLAIMS FOR DAMAGE OR INJURY is amended to read as follows: "If any person files a claim against the Town of Addison 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 its 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 109.4. 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.

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."

69. **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.

70. **MECHANICS AND MATERIALMEN'S LIEN:** The Contractor shall be required to execute a release of mechanics and materialmen's liens upon receipt of payment and shall ensure that the Project remains free and clear of all liens related to the Work. The Contractor shall have all liens removed by obtaining releases acceptable to the Town of Addison or shall bond around such liens by obtaining a discharge of all liens.

71. **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.

72. **PRODUCT RECORD DOCUMENTS:** The Contractor shall maintain record Plans 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 Plans, 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 Plans: 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 Plans.

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 Plans 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 its authorized representative.

73. OWNERSHIP OF WORK AND MATERIALS: All Work performed by Contractor pursuant to the Contract shall be the property of the Town of Addison. The Town of Addison shall own all construction, and any data, documents, plans, specifications, working papers, computer programs, photographs, or other material produced by Contractor pursuant to the Contract, and Contractor hereby assigns and transfers to the

Town of Addison any and all copyrights for such material. To the extent that such programs used are internal, proprietary programs used by Contractor in the performance of the Work, Contractor will provide the Town of Addison such access to the programs as is necessary for the Town of Addison to be able to use the products and documents generated by the program, but Contractor is not required to transfer the copyrights or other intellectual property rights to the program to the Town of Addison. As security for partial, progress, or other payments, title to work for which such payments are made shall pass to the Town of Addison at the time of the payment. To the extent that title has not previously been vested in the Town of Addison by reason of payments, full title shall pass to the Town of Addison at delivery of the Work at the location specified in the Contract.

Unincorporated Work to which the Town of Addison has received title by reason of progress, partial or other payments shall be segregated from other Contractor or Subcontractor materials and clearly identified as the Town of Addison property. The Contractor shall be responsible for all materials until they have been incorporated into the Work and the Work has been finally accepted by the Town of Addison. The title transferred as above shall in each case be good, and free and clear of any and all security interests, liens, or other encumbrances. The Contractor promises and agrees that it will not pledge, hypothecate, or otherwise encumber the items in any way that would result in any lien, security interest, charge, or claim upon or against said items. The transfer of title as provided above shall not imply acceptance by the Town of Addison, nor relieve Contractor from the responsibility to strictly comply with the Contract, and shall not relieve Contractor of responsibility for any loss of or damage to such items.

The Contractor shall insert provisions in its subcontracts sufficient to ensure compliance with the content of this Section.

74. **DRAWINGS AND OTHER DATA:** All documents developed by Contractor in the performance of the Contract shall become the sole property of the Town of Addison and may be used by the Town of Addison on any other project without additional compensation to Contractor. Use by the Town of Addison of these documents on other projects does not confer any liability on Contractor.

The Town of Addison shall be considered the "person for whom the work was prepared" for the purpose of authorship in any copyrightable work under 17 U.S.C. § 201(b). With respect thereto, Contractor agrees not to assert or authorize others to assert any rights or establish any claim under the design related patent and copyright laws. All design drawings, as-built drawings and specifications, in any form, shall contain a copyright mark of the Town of Addison.

75. **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 Plans are given to the Town of Addison.

76. **USE OF EXPLOSIVES:** The use of explosives by the Contractor to complete the Work shall be prohibited.

77. **POWER FOR CONSTRUCTION:** The Contractor shall contract with the local power provider and make the necessary arrangements for securing power required for the construction, including power required for temporary offices. There will be no separated pay item for connection into the existing power system or for the power required for construction purposes.

78. **LIQUIDATED DAMAGES:** If the Contractor fails to complete the Work within the time specified in the contract, the Contractor shall pay liquidated damages to the Town of Addison in the amount of $750 for each calendar day of delay until the Work is completed or accepted.

79. **CONTRACT DELAY:** 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 subcontractors, suppliers, or other contractors, actions by third parties, weather, weekends, holidays, or other such events, forces or factors sometimes experienced in 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 Contract time for completion. Further, any and all costs or impacts whatsoever incurred by the Contractor in accelerating the Work to overcome or absorb such delays or events in an effort to complete the Contract prior to expiration of the Contract time to complete, regardless of whether the Contractor does so or not, shall be the sole responsibility of the Contractor in every instance.

80. **SUBCONTRACTORS:** No subcontract shall relieve Contractor of any of Contractor's obligations or liabilities under the Contract. Contractor shall be fully responsible and liable for the acts or omissions of all Subcontractors, including persons directly or indirectly employed by them, their guests and invitees. Contractor shall have sole responsibility for managing and coordinating the operations of its Subcontractors, including the settlement of disputes with or between them. Nothing contained in the Contract shall be deemed to create a contractual relationship between any Subcontractor, and the Town of Addison.

Contractor shall provide to the Town of Addison one (1) copy of all executed subcontracts associated with the Contract, including any changes or modifications to the subcontracts, within three (3) days of their execution. No Subcontractor shall be permitted to perform work associated with the subcontract until the Subcontractor (or Contractor on the Subcontractor's behalf) is in compliance with the insurance requirements specified elsewhere in the Contract, and has furnished satisfactory evidence of insurance to the Town of Addison.

81. **PAYMENTS TO SUBCONTRACTORS:** Contractor shall comply with the provisions of applicable laws and regulations relating to Contractor's relations with Subcontractors. Payments by Contractor to Subcontractors associated with the Town of Addison

Contracts are subject to the time periods established in the Texas "Prompt Payment Act", contained in Chapter 2251 of the Texas Government Code.

All persons employed in the performance of the Work under the Contract, or any subcontracts hereunder, shall be paid not less than the general rates of per diem, holiday, and overtime wages prevailing in the locality of the Work of a similar character as detailed in the Special Provisions. Failure to comply with this provision shall subject Contractor to the penalties prescribed in Chapter 2258 of the Texas Government Code, as amended.

Contractor will include in each subcontract for property or services entered into by Contractor and a Subcontractor, including a supplier, for purposes of performing the Work under the Contract a payment clause that obligates Contractor to pay the Subcontractor for satisfactory performance under its subcontract within seven (7) days out of such amounts as are paid to Contractor by the Town of Addison under the Contract. A false certification to the Town of Addison under the provisions of the Payments clause may be a principal offense in violation of Section 37.10 of the Texas Penal Code.

82. **USE OF COMPLETED PORTIONS OF THE WORK:** Whenever, as determined by the Town of Addison, any portion of the Work performed by Contractor is in a condition suitable for use, and the best interests of the Town of Addison requires such use the Town of Addison may take possession of or use such portion of the Work. Such use by the Town of Addison shall in no case be construed as final acceptance, and shall neither relieve Contractor of any of its responsibilities under the Contract, nor act as a waiver by the Town of Addison of any of the conditions thereof. Contractor shall not be liable for the cost of repairs, rework, or renewals, which may be required due to ordinary wear and tear resulting from such use. However, if such use increases the cost or delays the completion of remaining portions of the Work, Contractor shall notify the Town of Addison in writing as required by the Contract and shall be entitled to such additional compensation or extension of time, or both, as determined in accordance with the Contract.

If in the course of such use, the Work proves to not be in compliance with the Contract, the Town of Addison shall have the right to continue such use until such portion of the Work can, without injury to the Town of Addison, be taken out of service for correction of defects, errors, omissions, or replacement of unsatisfactory materials, as necessary for such portions of the Work to comply with the Contract. Contractor shall correct the Work as soon as practical, but not later than one (1) month after notification by the Town of Addison.

Contractor shall not use any permanently incorporated materials unless such use is approved in writing by the Town of Addison. Where Contractor's request is granted for the use of certain materials, Contractor shall properly use and maintain and, upon completion of its use and at its own expense, recondition such materials to the satisfaction of the Town of Addison.

83. **COMPLETE AGREEMENT:** The Contract (including Attachments, the Special Provisions, other documents and manuals incorporated herein) is the full and complete agreement between the Town of Addison and Contractor with respect to the subject matter herein and supersedes any and all prior agreements between the parties hereto.

84. **WAIVER:** The waiver by the Town of Addison of the breach of any provision of the Contract by Contractor shall in no way impair the right of the Town of Addison to enforce the provision for any subsequent breach thereof. All remedies provided hereunder are cumulative and are in addition to all other remedies available at law or in equity.

85. **EXECUTION OF THE CONTRACT:** The Contract may be executed in multiple counterparts, each of which shall, for all purposes, be deemed an original but which together shall constitute one and the same instrument, and the signature pages from any counterpart may be appended to any other counterpart to assemble fully executed documents, and counterparts of the Contract may also be exchanged via electronic facsimile machines and any electronic facsimile of any party's signature shall be deemed to be an original signature for all purposes.

86. **DEFINITIONS:** The following definitions are added to the General Provisions and Special Provisions:

BIDDER: Any person, persons, partnership, company, firm, association, or corporation acting directly or through a duly authorized representative submitting a bid for the work contemplated.

PROJECT: The Town of Addison's overall objective and endeavor of which the Contract forms a part and ultimately creates, which encompasses all Contact Documents constructed to final completion and final acceptance.

WORKING DAY: A working day is defined as a calendar day not including Saturdays, Sundays, or legal holidays authorized in the list prepared by the City of Dallas for contract purposes, in which weather or other conditions not under the control of the Contractor shall permit the performance of the principal units of work underway for a continuous period of not less than 7 hours between 7 A.M. and 6 PM. A principle unit of work shall be that unit which controls completion time of the contract. Nothing in this definition shall be construed as prohibiting the Contractor from working on Saturdays, if the Contractor so desires and permission of the Town of Addison has been granted. Work on Sundays shall not be permitted except in cases of extreme emergency and then only with the written permission of the Town of Addison. If Saturday or Sunday work is permitted, working time shall be charged on the same basis as weekdays. Where the working time is expressed as calendar days or a specific date, the concept of working days shall no longer be relevant to the contract.

87. **MODIFICATIONS TO THE LANGUAGE OF THE GENERAL PROVISIONS:** The General Provisions are modified as follows:

A. Add the following words to the General Provisions before the word "Certificates" found on the fourth line of Section 103.4.1:

"When permitted by law,"

B. Delete the sentence "A model Certificate of Insurance is illustrated in Model Form A.6 in Appendix A." beginning on the ninth line of Section 103.4.1 of the General Provisions and replace with the following:

"Certificates of Insurance shall be provided on a state approved form."

C. Delete the following sentence beginning on the second line of the fifth subparagraph of Section 104.2.1 of the General Provisions:

"The foregoing notwithstanding, the total original Contract amount shall not be increased more than 25 percent; the CONTRACTOR, by submission of a bid and execution of the Contract, is deemed to consent to the OWNER'S right to reduce the total original Contract amount by more than 25 percent."

D. Add the following word before the word "decide" found on the second line of Section 105.7.1 of the General Provisions:

"initially"

E. Add the following word after the word "work" found on the fifth line of Section 105.7.1 of the General Provisions:

", subject to the agreement of the Owner"

F. Delete the following sentence beginning on the sixth line of Section 105.7.1 of the General Provisions:

"Engineer shall determine the amount and quality of work performed and materials furnished, and Engineer's decision and estimates shall be final."

G. Delete Section 105.9.3 of the General Provisions titled "Inspection Overtime" in its entirety.

H. Delete Section 107.2 of the General Provisions titled "Indemnification" in its entirety and replace with the following:

"THE CONTRACTOR AGREES TO INDEMNIFY, SAVE, PROTECT, DEFEND, AND HOLD HARMLESS THE OWNER, ITS AFFILIATES AND THEIR OFFICERS, DIRECTORS, AGENTS, INVITEES, AND EMPLOYEES

("INDEMNIFIED PARTIES") FROM AND AGAINST ANY AND ALL LIABILITY, COST, DAMAGE, EXPENSES, FINES AND ALL REASONABLE LEGAL FEES AND COURT COSTS, CLAIMS, LOSSES, CAUSES OF ACTION, SUITS, AND LIABILITY OF ANY KIND, INCLUDING ALL EXPENSES OF LITIGATION AGAINST THE INDEMNIFIED PARTIES, WHETHER OR NOT CAUSED IN PART BY ANY ACT OR OMISSION OF A PERSON OR ENTITY INDEMNIFIED HEREUNDER, OR WHETHER LIABILITY IS IMPOSED UPON SUCH PERSON OR ENTITY, FOR ANY LOSS, INJURY, DAMAGE OR DEATH ARISING FROM OR OUT OF THE CONTRACTOR'S ACTS OR OMISSIONS, INCLUDING, BUT NOT LIMITED TO CONTRACTOR'S NEGLIGENT OR GROSSLY NEGLIGENT PERFORMANCE OF THE WORK; NEGLIGENT OR GROSSLY NEGLIGENT USE OR MISUSE OF OWNER'S PROPERTY; NEGLIGENT OR INTENTIONAL ACTIONS, ERRORS OR OMISSIONS AND THOSE OF ITS EMPLOYEES, OFFICERS, DIRECTORS, AGENTS OR SUBCONTRACTORS; VIOLATION OF ANY FEDERAL, STATE OR MUNICIPAL LAWS, REGULATIONS AND/OR ORDINANCES; CONTRACTOR'S OR ITS SUBCONTRACTOR'S USE OF PROPERTY, EQUIPMENT, VEHICLES, OR MATERIALS; DEFECTIVE WORKMANSHIP; NEGLIGENT OR GROSSLY NEGLIGENT USE OR MISUSE OF UTILITIES; OR SUBCONTRACTORS', EMPLOYEES', AGENTS', OFFICERS', OR DIRECTORS' NEGLIGENCE OR INTENTIONAL TORTS. IT IS THE EXPRESS INTENT OF CONTRACTOR TO INDEMNIFY THE INDEMNIFIED PARTIES FROM THE CONSEQUENCES OF THEIR JOINT AND/OR CONCURRENT NEGLIGENCE AND/OR SOLE NEGLIGENCE. IN THE EVENT OF FAILURE BY THE CONTRACTOR TO FULLY PERFORM IN ACCORDANCE WITH THIS INDEMNIFICATION PARAGRAPH, EACH OF THE INDEMNIFIED PARTIES, AT ITS OPTION, AND WITHOUT RELIEVING CONTRACTOR OF ITS OBLIGATIONS HEREUNDER, MAY SO PERFORM, BUT ALL COSTS AND EXPENSES SO INCURRED BY ANY OF THE INDEMNIFIED PARTIES IN THAT EVENT SHALL BE REIMBURSED BY CONTRACTOR TO THE INDEMNIFIED PARTIES, OR ANY OF THEM, AND UNTIL REIMBURSED BY CONTRACTOR SHALL BEAR INTEREST, AT THE RATE OF INTEREST PROVIDED TO BE PAID ON JUDGMENT UNDER THE LAWS OF THE STATE OF TEXAS. THIS INDEMNIFICATION SHALL

NOT BE LIMITED TO DAMAGES, COMPENSATION OR BENEFITS PAYABLE UNDER INSURANCE POLICIES, WORKERS' COMPENSATION ACTS, DISABILITY BENEFIT ACTS OR OTHER EMPLOYEE BENEFIT ACTS.

IN THE EVENT THIS CONTRACT RELATES TO A PROJECT OTHER THAN A SINGLE FAMILY HOUSE, TOWNHOUSE, DUPLEX, OR LAND DEVELOPMENT DIRECTLY RELATED THERETO OR A PUBLIC WORKS PROJECT OF A MUNICIPALITY THEN THE INDEMNITY PROVISIONS INCLUDED HEREIN SHALL BE LIMITED SUCH THAT SUBCONTRACTOR SHALL NOT BE REQUIRED TO INDEMNIFY, HOLD HARMLESS OR DEFEND CONTRACTOR OR ANY THIRD PARTIES AGAINST A CLAIM CAUSED BY THE NEGLIGENCE OR FAULT, THE BREACH OR VIOLATION OF A STATUTE, ORDINANCE, GOVERNMENTAL REGULATION, STANDARD, OR RULE, OR THE BREACH OF CONTRACT OF AN INDEMNIFIED PARTY, ITS AGENT OR EMPLOYEE, OR ANY THIRD PARTY UNDER THE CONTROL OR SUPERVISION OF THE INDEMNIFIED PARTY, OTHER THAN SUBCONTRACTOR OR ITS AGENT, EMPLOYEE, OR SUBCONTRACTOR OF ANY TIER EXCEPT THAT SUBCONTRACTOR SHALL INDEMNIFY, HOLD HARMLESS AND DEFEND THE INDEMNIFIED PARTY AGAINST ANY CLAIMS FOR THE BODILY INJURY OR DEATH OF AN EMPLOYEE OF SUBCONTRACTOR, ITS AGENTS, OR ITS SUBCONTRACTORS OF ANY TIER.

NOTWITHSTANDING ANYTHING HEREIN TO THE CONTRARY, THE INDEMNITY PROVISIONS INCLUDED HEREIN SHALL BE LIMITED SUCH THAT CONTRACTOR SHALL NOT BE REQUIRED TO INDEMNIFY, HOLD HARMLESS OR DEFEND OWNER OR ANY THIRD PARTIES AGAINST A CLAIM CAUSED BY THE NEGLIGENCE OR FAULT, THE BREACH OR VIOLATION OF A STATUTE, ORDINANCE, GOVERNMENTAL REGULATION, STANDARD, OR RULE, OR THE BREACH OF CONTRACT OF THE INDEMNIFIED PARTIES, ITS AGENT OR EMPLOYEE, OR ANY THIRD PARTY UNDER THE CONTROL OR SUPERVISION OF THE INDEMNIFIED PARTIES, OTHER THAN CONTRACTOR OR ITS AGENT, EMPLOYEE, OR SUBCONTRACTOR OF ANY TIER EXCEPT THAT CONTRACTOR SHALL INDEMNIFY, HOLD HARMLESS AND DEFEND THE INDEMNIFIED PARTIES AGAINST

ANY CLAIMS FOR THE BODILY INJURY OR DEATH OF AN EMPLOYEE OF CONTRACTOR, ITS AGENTS, OR ITS SUBCONTRACTORS OF ANY TIER."

I. Add the following language after Section 103.3.1.4 of the General Provisions:

"**103.3.1.5. Maintenance Bond**. A good and sufficient bond in an amount not less than 10-percent of the approximate total of the Contract, as evidenced by the proposed tabulation, or conditioned on the full and proper maintenance and repair of the Work to be done and performed for a period of one year from the date of final acceptance of the Work and the Contractor will do all necessary backfilling that may arise on account of sunken conditions in ditches, or otherwise, and do and perform the necessary Work and repair any defective condition growing out of or arising from the improper laying or construction of same, or on account of any breaking of same caused by the Contractor in construction of same, or on account of any defect arising in any of the Work laid or constructed by the 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 Contractor."

J. Add the following language after Section 104.2.5. of the General Provisions:

"**104.2.6. Change Orders**. A Change Order is a written instrument and signed by the Owner, Contractor and Engineer stating their agreement upon all of the following:

(1) the change in the Work;

(2) the amount of the adjustment, if any, in the Contract Sum; and

(3) the extent of the adjustment, if any, in the Contract Time.

In the event the Contractor proposes a Change Order, the Contractor shall provide sufficient detail for such Change Order to allow analysis and review by the Engineer.

Agreement on any Change Order shall constitute final agreement on the Work which is the subject of the Change Order, including, but not limited to, all direct and indirect costs associated with such change and any and all adjustments to the Contract Sum and the Contract Time. In the event a Change Order increases the Contract Sum, the Contractor shall include the Work covered by such Change Orders in Applications for Payment as if such Work were originally part of the Contract Documents.

The Contractor, upon receipt of written notification by the Owner or the Engineer of a proposed item or change in Work, shall prepare as soon as possible a Change Order on the form provided by the Owner. If the Change Order is returned to the Contractor for additional information or if the scope of the proposed change in the Work is modified by additions, deletions or other revisions, the Contractor shall revise the Change Order accordingly and resubmit the revised Change Order to the Owner and Engineer."

K. Delete the language in Section 105.2.1 of the General Provisions and replace it with the following language:

"105.2.1. WORKMANSHIP: If the OWNER notifies the CONTRACTOR in writing of defective work, the CONTRACTOR shall correct the deficiencies within five (5) calendar days of the Notice at no additional cost to the OWNER. If the defective work is not corrected within five (5) calendar days, or the CONTRACTOR is not making satisfactory progress (in the opinion of the OWNER) to correct the deficiencies, the OWNER may withhold future payments for All Work until the defective work has been corrected to the satisfaction of the OWNER."

L. Add the following language after Section 105.10 of the General Provisions:

"**105.10.2. GUARANTEE AFTER COMPLETION**: Unless otherwise specified in the technical section of these specifications, the CONTRACTOR shall, after test and acceptance, and for a period of one year from date of final written acceptance by the OWNER or within such longer or shorter period of time as may be prescribed by law or by the terms of any other applicable special warranty on designated equipment or portions of work as required by the Contract Documents, rebuild, repair, or replace any and all items which have proven defective due to unsatisfactory material and/or workmanship. Upon written notice from the OWNER, the CONTRACTOR shall immediately make any repairs that may be ordered, or such repairs will be made by the Owner at the expense of the CONTRACTOR or the CONTRACTOR'S Surety. In case of an emergency where delay would cause serious loss or damage, the Owner may undertake to have the defects repaired without previous notice. The expense of all repairs, including all emergency repairs, shall be borne by the CONTRACTOR or the CONTRACTOR'S Surety, at no cost to the Owner. This obligation shall survive termination of the Contract.

105.10.3. OFFSET PROGRESS PAYMENTS: OWNER may, at its option, offset any progress payment or final payment under the Contract Documents against any debt (including taxes)

lawfully due to OWNER from Contractor, regardless of whether the amount due arises pursuant to the terms of the Contract Documents or otherwise and regardless of whether or not the debt due to OWNER has been reduced to judgment by a court.

105.10.4. FINAL ACCEPTANCE AND PAYMENT: This Project is subject to final inspection and final acceptance by the Owner. Whenever the Work provided for by the Contract shall have been completely performed on the part of the CONTRACTOR, including, but not limited to compliance with North Central Texas Council of Governments Standard Specifications for Public Works Construction, October 2004 Section 202.6.4.6., the CONTRACTOR shall notify the OWNER that the Work is ready for final inspection. The OWNER will then make such final inspection and if the work is satisfactory and in accordance with the specifications and contract documents, the OWNER shall issue a certificate of acceptance to the CONTRACTOR and submit a request to accept the Work performed by the CONTRACTOR and payment of a final estimate under the terms of which the OWNER will release 100% of the retainage, plus the unpaid portions of the final estimate as the OWNER deems advisable.

Whenever the improvements provided for by the Contract shall have been completely performed on the part of the Contractor, as evidenced in the certificate of acceptance, and all required submissions provided to the OWNER, a final estimate showing the value of the Work shall be prepared by the OWNER as soon as the necessary measurements and computations can be made. All prior estimates upon which payments have been made are subject to necessary corrections or revisions in the final payment. The amount of this final estimate, less any sums that have been previously paid, deducted or retained under the provisions of the contract, shall be paid the CONTRACTOR within 30 days after the final acceptance by the OWNER, provided the CONTRACTOR has furnished to the OWNER a consent of Surety and satisfactory evidence that all indebtedness connected with the Work and all sums of money due for any labor, materials, apparatus, fixtures, or machinery furnished for and used in the performance of the Work have been paid or otherwise satisfied, or that the person or persons to whom the same may respectively be due have consented to such final payment This requirement it not intended and shall not be construed to recognize subcontractors for the purpose of privity of contract, and no third party benefit rights shall be obtained through these provisions for final payment. The acceptance by the CONTRACTOR of the final payment as aforesaid shall operate as and shall be a release to the OWNER from all claims or liabilities

under the Contract, including all subcontractor claims, for anything done or furnished or relating to the Work under the Contract or for any act or neglect of said OWNER relating to or connected with the Contract.

All warranties and guarantees shall commence from the date of the certificate of acceptance. No interest shall be due the CONTRACTOR on any partial or final payment, or on the retainage.

105.10.5. RIGHT TO AUDIT CONTRACTOR'S RECORDS: By execution of the Contract, CONTRACTOR grants the OWNER the right to audit, at Owner's election, all of CONTRACTOR'S records and billings relating to the performance of the Work under the Contract. CONTRACTOR agrees to retain such records for a minimum of three (3) years following completion of the Work under this Contract. OWNER agrees that it will exercise the right to audit only at reasonable hours."

M. Add the following language after Section 107.5 of the General Provisions:

"**107.5.1. COMPENSATION AND ACKNOWLEDGEMENT OF WORK**: The CONTRACTOR shall receive and accept compensation, as herein provided, as full payment for furnishing all labor, tools, material, equipment and incidentals; for performing all Work contemplated and embraced under the Contract; for all loss or damage arising out of the nature of the Work, or from the action of the elements; for any unforeseen defects or obstruction which may arise or be encountered during the prosecution of the Work and before its final acceptance by the OWNER; for all risks of whatever description connected with the prosecution of the Work; for all expense incurred by or in consequence of suspension or discontinuance of such prosecution of the Work as herein specified; for any infringement of patents, trademarks or copyrights; and for completing the Work in an acceptable manner according to the Plans and Specifications."

N. Add the following language after Section 107.11 of the General Provisions:

"**107.11.1. COOPERATION OF THE CONTRACTOR**: The CONTRACTOR shall give to the work the consistent attention necessary to facilitate the progress thereof, and the CONTRACTOR shall cooperate with the OWNER, and with other CONTRACTORS in every way possible.

The OWNER and the OWNER'S representatives shall at all times have free access to the Work whenever it is in preparation or

progress and the contractor shall provide safe, convenient and proper facilities for such access and inspection."

O. Delete Section 107.4 of the General Provisions and replace it with the following:

"**107.4. VENUE AND CHOICE OF LAW**

The Owner, the Contractor, and the Contractor's sureties agree that this Contract shall be performed in Dallas, Dallas County, Texas, and if legal action is necessary in connection therewith, exclusive venue shall lie in Dallas County, Texas. The terms and provisions of the Contract Documents shall be construed in accordance with the laws and court decisions of the State of Texas."

P. Delete the following language (which is the first paragraph) from Section 109.5.1. of the General Provisions:

"Between the 25th day and the last day of each month, the Owner shall make an approximate estimate of the value of the work done during the month under the specifications. Whenever the said estimate or estimates of work done since the last previous estimate exceeds $100 in amount, a percentage of such estimate sum shall be paid the Contractor on or before the 15th day of the month next following. The monthly estimate may include acceptable nonperishable materials delivered to the work; such payment shall be allowed on the same percentage basis of the net invoice value as provided hereinafter. The percent retained by the owner shall normally be up to 10 percent at completion, unless otherwise stated. At the midpoint, or at any subsequent time, if the owner determines that the progress of the Contract is satisfactory in all respects, it may at its discretion cease to retain additional funds until the completion of the project, or until progress ceases to be satisfactory. The owner shall make the sole determination in this matter."

Q. Add the following language after Section 109.5.1. of the General Provisions:

"**109.5.1.1. Applications for Payment.** Applications for progress payment ("Application for Payment") will be submitted no more often than monthly and shall be submitted on the dates set forth in the Agreement. Each Application for Payment shall be (1) sworn to and notarized, (2) supported by such data substantiating the Contractor's right to payment as the Owner or Engineer may require, such as copies of requisitions from Subcontractors and material suppliers, and reflecting retainage if provided for in the Contract Documents, and (3) submitted by the Contractor for review to the Engineer in form and substance as mandated by the

Owner. The Contractor's Application for Payment shall be segregated and detailed in a manner satisfactory to the Owner.

In each Application for Payment, the Contractor shall certify that such Application for Payment represents a just estimate of portion of the Work that is complete as of the last day covered by the Application for Payment and shall also certify by sworn affidavit as follows:

> 'There are no known mechanics' or materialmen's liens outstanding at the date of this Application, all due and payable bills with respect to the Work have been paid to date or shall be paid from the proceeds of this Application for Payment, there is no known basis for filing of any mechanics' or materialmen's liens on the Work, and waivers from all subcontractors and materialmen have been or, at the time of payment, will be obtained in such form as to constitute an effective waiver of lien under the applicable laws of the State of Texas.'

109.5.1.2. Lien Waivers. Concurrent with each Application for Payment, the Contractor shall execute and furnish a waiver and release of its lien rights current through the effective date of such Application for Payment conditioned upon receipt of the payment that is the subject of the application. Beginning with the second Application for Payment, the Contractor shall also deliver with each such Application as a condition precedent to payment thereof, waivers of lien from each of the Subcontractors, Sub-subcontractors, and suppliers current through the effective date of the previous Application of Payment. The Contractor shall also execute and obtain any other reasonable forms as the Owner may require in order to assure an effective waiver and release of mechanics' and materialmen's liens in compliance with the laws of the State of Texas. The Contractor shall, if any Subcontractor, Sub-subcontractor or supplier refuses to furnish a release in full, furnish a bond satisfactory to the Owner to indemnify against any lien."

R. Delete Section 109.5.2 of the General Provisions and replace with the following:

> "Ten-percent (10%) retainage shall be withheld until 40 days after Final Completion."

88. **<u>CONTRACTOR REPRESENTATIONS</u>:** By entering into the Contract, the Contractor makes the following representations to the Town of Addison:

A. Contractor has examined and carefully studied the Bidding Documents and the related data identified in the Bidding Documents.

B. The Contractor has visited the Project site where the goods are to be installed or services will be provided and become familiar with and is satisfied as to the observable local conditions that may affect cost, progress, or the furnishing of goods and services, if required to do so by the Bidding Documents, or if, in the Contractor's judgment, any local condition may affect cost, progress, or the furnishing of goods and services.

C. The Contractor is familiar with and is satisfied as to all Laws and Regulations in effect as of the date of the bid that may affect cost, progress, and the furnishing of goods and services.

D. The Contractor has carefully studied, considered, and correlated the information known to the Contractor; information commonly known to sellers of similar goods doing business in the locality of the Project site where the goods will be installed or where services will be provided; information and observations obtained from the Contractor's visits, if any, to the Project site where the goods will be installed or services will be provided; and any reports and drawings identified in the Bidding Documents regarding the Project site where the goods will be installed or where services will be provided, with respect to the effect of such information, observations, and documents on the cost, progress, and performance of the Contractor's obligations under the Bidding Documents.

E. The Contractor has given the Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that the Contractor has discovered in the Bidding Documents, and the written resolution (if any) thereof by the Engineer is acceptable to the Contractor.

F. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for furnishing the goods and services for which the bid is submitted

G. The Contractor acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of bids, and final payment for all unit price bid items will be based on actual quantities, determined as provided in the Contract Documents. The Contractor also acknowledges that each unit price includes an amount considered by the Contractor to be adequate to cover the Contractor's overhead and profit for each separately identified item.

89. **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 set forth below in the Davis Bacon Act General Decision No. TX130035:

General Decision Number: TX130035 01/04/2013 TX35

Superseded General Decision Number: TX20120035

State: Texas

Counties: Archer, Callahan, Clay, Collin, Dallas, Delta, Denton, Ellis, Grayson, Hunt, Johnson, Jones, Kaufman, Parker, Rockwall, Tarrant and Wise Counties in Texas.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters , PLUM, indicate the international union and the four-digit number, 0198, that follows indicates the local union number or district council number where applicable , i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rates.

0000/9999: weighted union wage rates will be published annually each January.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union majority rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination

* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

90. **<u>BID ITEMS/REFERENCE SPECIFICATIONS:</u>** The requirements of NCTCOG standard specifications for Public Works construction 4th Edition dated 2004, and TxDOT

standard specifications for construction and maintenance of highways, streets and bridges, dated 2004, shall apply as described.

91. **NO BOYCOTT ISREAL:** Pursuant to Texas Government Code Chapter 2270, Contractor's execution of this Agreement shall serve as verification that the Contractor does not presently boycott Israel and will not boycott Israel during the term of this Agreement.

SPECIAL PROVISIONS

Note: The series of numbers shown after the description are for either the Texas Department of Transportation (TxDOT) Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges (2004), the North Central Texas Council of Governments (NCTCOG) Standard Specifications for Public Works Construction, Fourth Edition (October 2004), or technical specifications number provided with this document.

SP.1 PROJECT

The project covered by these specifications consists of the furnishing and installation of all material, supplies, appurtenances, equipment and labor and any other necessary items required to construct, test and complete, ready for use and operation by the Owner. Final clean up before acceptance by the Owner is included as a part of the project.

SP.2 NCTCOG CONSTRUCTION SPECIFICATIONS

NCTCOG shall be utilized for these areas:

- **Site Protection & Preparation** Division 200
- **Roadway Construction** Division 300
- **Roadway Maintenance & Rehabilitation** Division 400
- **Underground Construction** Division 500
- **Structures** Division 700
- **Misc. Construction & Materials** Division 800

Contractor shall notify owner and engineer with any discrepancies between the NCTCOG Specifications and technical specifications prior to starting construction.

SP.3 DISPOSAL OF SURPLUS MATERIAL

Surplus material not required for other parts of the work and not otherwise specifically covered by the drawings or specifications shall become the property of the Contractor for proper disposal by him.

SP.4 REMOVING OBSTRUCTIONS

Existing driveways, mailboxes, fences, sidewalks, landscaping, signs, and RCP or CMP drainage pipes shall be removed and replaced where necessary. The Contractor shall replace existing obstructions with equal or better materials. The Contractor shall coordinate any removal with the Property Owner.

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 Conference.

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 word "Addison!" 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 ADDISON

PLEASE PARDON THE TEMPORARY INCONVENIENCE DURING THIS PROJECT

"PROJECT NAME"

CONTRACTOR: _____

ESTIMATED COMPLETION DATE: XXX

AN ADDISON PROJECT

FOR MORE INFORMATION, PLEASE CALL (972) 450-2871

SECTION 230000 - HEATING, VENTILATING, AND AIR CONDITIONING (HVAC) WORK

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

A. The work in this Division covers all HVAC work specified in all Division 23 Specification Sections and as illustrated on the HVAC Drawings. Comply with other Division 23 Specification Sections as applicable. Refer to other Divisions for coordination of work with other trades.

B. Provide all labor, materials, equipment, transportation, tools and services, and perform all operations required for, and reasonably incidental to, the providing of mechanical system work described in this Division.

C. Contractor shall include providing instructions and demonstrations of the operation of each installed system in its totality to the Owner. Refer to Division 23 specifications for specific Owner training requirements. As a minimum include training of the Owner's Operating Personnel on:
   1. Safety Shut-Down of HVAC Equipment.
   2. Sequence of HVAC Equipment Operation.
   3. Operation and Maintenance of all HVAC Equipment.

D. The Conditions of the Contract, including the General Conditions and Supplementary Conditions, and Division 1 - General Requirements, apply to work covered by this section.

E. Refer to Specification Section for “Construction Progress Schedules”.

1.2 RELATED DOCUMENTATION

A. Section 01 60 00: Materials & Equipment.

B. Section 01 70 00: Contract Close-Out.

C. Section 01 73 00: Operation and Maintenance Data.

1.3 DESCRIPTION OF HVAC DEMOLITION WORK

A. Contractor shall remove several items of materials and equipment under this Section of the Specifications. Equipment and materials to be removed shall be as indicated and noted on the Drawings and as required to facilitate the new installations.

B. Generally, modifications to, replacing of, or making new connections into existing service lines shall be accomplished only during the times directed by the Owner's Representative.

PART 2 - EXECUTION

NOT USED

PART 3 - EXECUTION

3.1 INSTRUCTION OF OWNER'S PERSONNEL

A. Prior to Substantial Completion, fully instruct the Owner in the operation, adjustment, and maintenance of products, equipment, and systems; including, but not limited to all HVAC equipment, related accessories and components, temperature controls and the energy management system. Owner shall operate all systems in cooperation with Contractor for a period of at least five (5) working days prior to, or shortly after, Substantial Completion.

B. Arrange for services of qualified manufacturer's representatives to fully instruct Owner on specialized portions of installations, such as air handling units and automatic temperature controls.

C. Arrange for each installer of equipment that requires regular maintenance to meet with Owner to provide instruction in proper operation and maintenance. If installers are not experienced in procedures, provide instruction by trained manufacturer's representatives. Include detailed review of the following items:
   1. Operating and Maintenance Manuals.
   2. Record Documents.
   3. Spare Parts and Materials.
   4. Lubricants.
   5. Cleaning.
   6. Standard and Extended Warranties.
   7. Maintenance Requirements, Agreements, and similar continuing commitments.

D. As a part of these instructions for operating equipment, demonstrate the following procedures:
   1. Start-Up.
   2. Shut-Down.
   3. General System Operating Instructions.
   4. Emergency Operating Conditions.
   5. Noise and Vibration Adjustments, where applicable.
   6. Safety Procedures.
   7. Economy and Efficiency Adjustments.
   8. Effective Energy Utilization.

E. Return at first change of season for changeover from air conditioning to heating, or from heating to air conditioning, to demonstrate system operation in the opposite season.

F. Submit a complete record of instructions as a part of maintenance instructions and the data book (Operations and Maintenance Manual) given to Owner. For each instructional period, supply the following data:
   1. Date of Instruction.
   2. System or Equipment Involved.
   3. Names of Persons Giving Instructions.
   4. Other Persons Present.
   5. Time Period (in hours/minutes) Instruction Provided.

G. Amount of time to be devoted to instructional sessions shall be reasonable and consistent with the size and complexity of equipment and systems installed and as specified in other sections of these specifications.

3.2 TEMPORARY WORKING ACCESS

A. Each respective trade shall remove existing piping, equipment, fixtures, and other items to provide access for work in existing facilities and on the site. Contractor shall seek Owner's Representative approval prior to removal of any equipment and mechanical appurtenances.

B. Reinstall and refinish items removed, or otherwise damaged, to match existing adjacent surfaces, or new finishes where applicable, upon completion of the work.

3.3 DISRUPTION OF EXISTING FUNCTIONS

A. Access: Access to and use of the existing facilities and site will be restricted, and shall be under the direction and control of the Owner.

B. Disruptions: Maintain existing mechanical, and other existing systems, and maintain all existing functions in service except for those specific portions scheduled for disruption. Where existing functions to remain in use are disrupted, they shall be fully restored after disruption, in full compliance with this Division of the Specifications for new work, as quickly and as reasonably possible.

C. Scheduling of Disruptions: Seek and obtain approval by the Owner two (2) weeks in advance of each event. Failure to schedule such disruptions in advance will result in the Contractor being stopped or rescheduled by the Owner without added cost to the Owner.

D. Notice of Disruption: Date, time and duration of each disruption shall be subject to the Owner's prior written approval and shall include the following information in the form of a memorandum submitted by the Contractor to the Owner's Representative for approval by the Owner:

Facility/System	Date	Starting Time	Duration

E. Emergency Disruptions: When circumstances preclude obtaining advance approval as specified above; make request immediately on knowledge of the requirement, and perform the work so as to cause the minimum amount of disruption, for the minimum duration.

F. Notification: Notify the Owner's Representative and the Owner immediately, by telephone and then in writing, as changes and additions to the scheduled disruption requirements become known.

G. Duration:
   1. Complete as large a portion of the work as possible before initiating disruption.
   2. Maintain adequate personnel, supplies, materials, equipment, tools, and other resources at job site to avoid unnecessary delay in resumption of normal services.
   3. Keep duration of disruption as short as possible.
   4. During the disruption, perform only the amount of work that requires the disruption, so as to minimize duration of disruption.

3.4 MODIFICATIONS AND RELOCATIONS

A. Modify, remove, or relocate materials and items indicated on the Drawings or required by the installation of new facilities.

B. Relocations:

1. Repair and restore to good functional condition, equipment, materials and items scheduled for relocation, which are damaged during dismantling or reassembly operations.
2. Remove carefully, in reverse order to original assembly or placement, items which are to be relocated.
3. Protect items until relocation is complete.
4. Clean and repair items to be relocated, and provide new materials, fittings, and appurtenances required to complete the relocations as required to restore them to good operating order.

C. Perform the relocation work in accordance with applicable Sections of these Specifications, utilizing skilled workers.

3.5 SCHEDULE OF WORK

A. Reference Division 1 for Additional Scheduling Information.

B. Work under the various specification sections must be expedited and close coordination will be required in executing this work. Various system installers shall perform their portion of the work at such times as directed so as to insure meeting scheduled dates, and to avoid delaying the work of other trades.

C. The use of any type of fastening or hanging device which requires the use of shots or explosives of any nature shall not be used.

D. Where required by conditions at the site, Contractor shall perform portions of work at night or at other such times as may be required to insure completion of work on schedule. No additional compensation to the Contractor will be paid for such work or required utilities.

E. Contractor shall be available, as deemed necessary for job progress by the Owner, for weekly progress and coordination meetings with the Engineer, and other Owner's Representatives, when required. These meetings shall be used to monitor progress of submittals, receipt of materials, construction progress, cooperation of trades, field coordination by the Contractor, and to resolve unforeseen conditions in an expeditious manner. Failure to attend meetings, to respond in a timely manner to requests for information, or to progress at an acceptable pace to maintain the construction schedule shall constitute a delay by the Contractor and may be cause for assessment of fees to the Contractor as outlined in Division 1.

F. Provide all temporary connections as necessary to facilitate the phasing of construction, even where not specifically shown. Where temporary work is required it may be required that the Contractor produce a Shop Drawing or field sketch to illustrate the intended methods which shall be submitted for approval by the Engineer.

3.6 SALVAGE, DEMOLITION, AND RELOCATION

A. It shall be the responsibility of the Contractor to remove and store those items of existing equipment as indicated on the Drawings to be removed. All items of equipment or fixtures removed shall be protected from damage insofar as is practical.

B. Mechanical items to be removed, salvaged, or relocated shall be removed by the respective trade who would normally be responsible to install new work similar to that to be removed. This shall include whatever selective demolition is necessary to avoid
damaging other work of other trades. Each trade shall be responsible for their respective demolition. However, all trades shall keep informed as to the project schedule as it relates to the Demolition Scope of Work.

C. These items shall be stored on site for a minimum of two (2) weeks unless indicated otherwise by the Owner's representative to allow for inspection by the Owner. Deliver, all items tagged to be retained by the Owner to a designated storage location on site or to the Owner's designated Service Center or Warehouse. All items not retained by the Owner shall be removed from the site by the Contractor at no additional cost to the Owner.

D. The attendant piping, ductwork, hangers, foundations, etc., of those items of existing equipment to be removed, shall also be removed in their entirety. No piping, hangers, etc., shall be abandoned in place. Where branch lines are removed, the branch shall be capped as close to the main as possible.

E. Relocations:

1. Repair and restore to good functional condition materials and items scheduled for relocation and/or reuse and which are damaged during dismantling or reassembly operations.

2. New materials and items of like design and quality may be substituted for materials and items indicated to be relocated, in lieu of relocation, upon approval of shop drawings, product data and samples.
3. Remove carefully, in reverse to original assembly or placement, items which are to be relocated.
4. Protect items until relocation is complete.
5. Clean and repair and provide new materials, fittings, and appurtenances required to complete the relocation and to restore to good operative order.
6. Perform the relocation work in accordance with pertinent sections of the specifications, utilizing skilled workers.
7. Refer to Drawings for specific requirements of temporary services and relocated equipment and fixtures.

3.7 CLEAN UP

A. Remove all debris, rubbish, and materials resulting from cutting, demolition, or patching operations from the work area on a daily basis.
B. Where such work generates dust and debris take all precautions necessary to prevent dust and debris from accumulating in or on other mechanical and electrical equipment. This may require adding temporary filter media over ventilation air openings of certain types of equipment.
C. At the conclusion of this work clean all building materials, mechanical equipment and electrical equipment so that all items are dust free and operating properly. Where dust causes damage to equipment the Contractor shall make repairs to this equipment at no cost to the Owner.
D. Transport all demolished materials and equipment indicated above in approved containers and legally dispose of all debris off site in a manner approved by the Engineer and Owner.

END OF SECTION 230000

SECTION 230500 - COMMON WORK RESULTS FOR HVAC

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Conditions of the Contract including the General Conditions, Supplementary Conditions, and Division One, shall apply to work of this Division, whether attached or not.

B. The requirements specified in this Section shall be applicable to work specified in other Sections within this Division.

1.2 SCOPE OF WORK

A. All Division 23 sections of these specifications shall include all labor and material to complete the entire mechanical systems as specified and shown on the Drawings.

B. All work shown and specified shall be completely installed and connected by mechanics properly qualified to perform the work required. All work shall be left in a satisfactory operating condition as determined by the Owner and Owner's Representative.

C. Provide all services and perform all operations required in connection with, or properly incidental to, the construction of complete and fully operating systems with all accessories as herein specified and shown on the Drawings.

D. Refer to "Conditions of Work" in Division 1.

1.3 GENERAL

A. The accompanying Drawings show diagrammatically the sizes and location of the various equipment items and the sizes of the major interconnecting piping and ductwork, without showing exact details as to elevations, offsets, control lines, and other installation details. The Contractor shall carefully lay out his work to conform to the site conditions, to avoid obstructions and provide proper grading of lines. Exact locations of outlets, apparatus, and connections thereto shall be determined by reference to the Drawings, reviewed Shop Drawings, including equipment drawings, and rough-in drawings, by measurements at the building, and in cooperation with work specified in other sections of these specifications. Minor relocations necessitated by the conditions at the site or directed by the Engineer shall be made without any additional cost to the Owner.

B. These specifications and the accompanying Drawings are intended to describe and illustrate systems which will not interfere with the structures, which will fit into available spaces, and which will insure complete and satisfactorily operating installations. Contractor shall coordinate the proper fitting of all material and apparatus into the building and shall prepare larger scale installation drawings for all critical areas, areas with limited working clearances, and areas of significant congestion requiring a higher level of coordination illustrating the installation of work specified in Division 23 in relation to all other portions of work specified in other Sections of these Specifications. Interferences with other portions of work, or the building structure, shall be corrected before any work proceeds. Should changes become necessary on account of the failure of the Contractor to comply with these stipulations, Contractor shall make all necessary changes at no expense to the Owner.

C. All work shall be run parallel or perpendicular to the lines of the building unless otherwise noted on the Drawings.

D. It is the intent of the Contract Documents to provide an installation complete and operational in every respect. In the event that additional details or special construction may be required for work indicated or specified in this section, or work specified in other sections, it shall be the responsibility of the Contractor to provide same as well as to provide material and equipment usually furnished with such systems and required to complete the installation.

E. Contractor sets forth that all personnel have the necessary technical training and ability; and that all work specified in this Division will be installed to the best standard of each trade, and will be complete and in good working order. If any of the requirements of the Drawings and specifications are impossible to perform, or if the installation when made in accordance with such requirements will not perform satisfactorily, report same to the Architect promptly after discovery of the discrepancy.

F. No extra compensation will be allowed for extra work or changes caused by failure to comply with the above requirements.

1.4 EXAMINATION OF THE SITE

A. Contractor shall visit the site, verify all items indicated on the Drawings or specified, and familiarize himself with the work conditions, hazards, grades, actual formations, soil conditions, points of connection, utility locations, and local requirements.
B. Contractor shall take these conditions into consideration, and the lack of specific information on the Drawings shall not relieve the Contractor of any responsibility.
C. All site visits shall be coordinated and scheduled with the Owner.

1.5 CUTTING AND PATCHING

A. Excessive cutting of the building structure, walls, floors, ceilings, roof, etc., will not be permitted. No structural member shall be notched or cut unless specifically shown on the Drawings, or unless such cutting is authorized by the Engineer.
B. Provide for all holes or openings of proper size and shape as may be necessary for the proper installation of work specified in Division 23, consulting with the Engineer regarding proper locations and sizes.
C. Where deemed necessary, and after consulting with the Engineer, perform all cutting and patching required for the installation of piping, ductwork, etc. This shall include the cutting of concrete floors, concrete and tile floors, walls, ceilings, roofs, etc. It shall also include patching them as required to restore work to match existing finishes, following installation, testing, backfilling, insulation, etc.
D. Holes through concrete shall be drilled with "Mole", "Core-It', or other diamond point hole saw.
E. Refer to Section 01 04 50, Cutting and Patching.

1.6 CODE REQUIREMENTS

A. Contractor is required to comply with the requirements of all National, State, and local codes and utility companies having jurisdiction. In no case does this relieve the Contractor of the responsibility of complying with the requirements of these specifications and Drawings where specified conditions are of higher quality than the requirements of the above specified offices. Where requirements of the specifications and Drawings are below the requirements of the above offices having jurisdiction, the Contractor shall make installations in compliance with the requirements of the above offices and shall notify the Architect promptly.
B. Contractor shall comply with the requirements and standards set forth by, but not limited to, the following:
   1. (NFPA) National Fire Protection Association.
   2. (OSHA) Occupational Safety and Health Administration.
   3. (NEC) National Electric Code.
   4. (IECC) International Energy Conservation Code.
   5. Local Plumbing Code.
   6. Local Building Code.
   7. Local Mechanical Code.
   8. Local Fire Code.
   9. Local Energy Code.
C. Contractor shall obtain all permits, inspections, and approvals as required by all authorities having jurisdiction. Fees and costs incidental to these permits, inspections, and approvals must be assumed and paid by the Contractor.

1.7 RECORD DRAWINGS

A. Contractor shall, during the execution of work, maintain a complete set of “Record Drawings” upon which all locations of equipment, ductwork, piping, and all deviations and changes in the work shall be neatly recorded for use in producing "As Builts" at Project Close- Out. This shall include the incorporation of all Supplemental Drawings issued during the Construction Period.
B. All “Record Drawings” shall be reviewed monthly during the Construction Period, along with the monthly Pay Application Request.
C. Refer to Section 01 70 00, Contract Close-Out.

1.8 RECORDS AND INSTRUCTIONS FOR OWNER

A. Accumulate during the job's progress the following sets, in triplicate, in accordance with the provisions of Section 01 70 00 & 01 73 00:
   1. Warranties and guarantees and manufacturer's directions on equipment and material covered by the Contractor.
   2. Equipment and fixture brochures, wiring diagrams, and control diagrams.
   3. Copies of reviewed Shop Drawings, and material and equipment submittals. Copies of rejected submittals and Shop Drawings are not to be provided.

4. Operating instructions for heating and cooling and other mechanical systems. Operating instructions shall include recommended maintenance and seasonal change-over procedures.
5. Other data and drawings required during construction.
6. Repair parts lists of all major items and equipment including name, address, and telephone number of local supplier or agent.
7. Valve tag charts and diagrams specified elsewhere herein.
8. "As-Built" Record Drawings shall be provided in electronic format on a CD (provide two (2) copies) in a PDF or DWG format as determined by the Owner.
9. Provide copies of all City Inspection Certificates of Approval.
10. Provide Contractor's Certification Statement that all equipment furnished and all work performed is in compliance with all applicable codes referenced in these specifications, or those which are currently in effect.

B. Provide not less than one (1) days of operating instructions, during the adjustment and testing period, to the Owner's operating personnel in order to familiarize them with the proper care and operation of all equipment.
C. All of the above data should be submitted to the Engineer for approval at such time as the Contractor asks for his last payment request, just prior to his final payment request. In no case will any portion of retainage be released until these documents are submitted and accepted.
D. Refer to related portions of Division 1 for Project Close-Out requirements, Operation and Maintenance Data, Warranties, and other related certificates.

1.9 SHOP DRAWINGS AND SUBMITTALS

A. Contractor shall submit to the Engineer shop drawings, product submittals, and catalog data on all ductwork, equipment, and materials designated on the Drawings and specified herein. A minimum of three (3) copies of each shall be submitted or submittal shall be transmitted electronically. Additional copies will be required when indicated by the Engineer and as required for project coordination.
B. Each submittal will be reviewed for compliance with general requirements of design and arrangement only; it is not a contract document and acknowledgement of compliance does not relieve the Contractor from responsibilities for performance of the work in compliance with all provisions and requirements of the Contract Documents. Job measurements and the coordination of all dimensions for proper fit of all parts of the work and performance of all equipment supplied to meet specification requirements are, and remain, specific responsibilities of the Contractor.
C. Shop Drawings shall be furnished by the Contractor for the work involved after receiving approval on the make and type of material and in sufficient time so that no delay or changes will be caused. This is done in order to facilitate progress on the job, and failure on the part of the Contractor to comply shall render him liable to stand the expense of any and all delays, changes in construction, etc., occasioned by his failure to provide the necessary detailed drawings. Also, if the Contractor fails to comply with this provision, the Architect reserves the right to go directly to the manufacturer he selects and secure any details he might deem necessary; and, should there be any charges in connection with this, they shall be borne by the Contractor.
D. Shop Drawings submitted shall not consist of manufacturers' catalogues or tear sheets therefrom that contain no indication of the exact item offered. Rather, the submission on individual items shall designate the exact item offered and accessories as specified.
E. Shop Drawings are not intended to cover detailed quantitative lists of heating specialties, valves, air distribution devices, fixtures, and similar items, as the Drawings and specifications illustrate those items; and it is the Contractor's responsibility to procure the proper quantities required to comply with the established requirements.
F. Shop Drawings prepared to illustrate how equipment, piping, ducts, etc., can be fitted into available spaces will be examined under the assumption that the Contractor has verified the conditions shown. Review by the Architect shall not relieve the Contractor of responsibility in the event the material cannot be installed as shown on those Shop Drawings.
G. Various material submissions of such items as air devices, plumbing fixtures, drains, and other related items or accessories shall be assembled in brochures or in other suitable package form and shall not be submitted in a multiplicity of loose sheets. Cover sheets for each item submitted shall have sufficient bare space to allow for shop drawing review stamps.
H. Contractor shall process his submitted data to insure that it conforms to the requirements of the Drawings and specifications, and there are no omissions and/or duplications.
I. Shop Drawings and Submittals shall be accompanied by certification from the Contractor, and firm preparing such, that Shop Drawings have been checked for, and are in compliance with, the Contract Documents.

J. All Submittals and Shop Drawings shall have been submitted for review by the Architect and Engineer within 90 days after Contract Award Date.

1.10 PENETRATIONS THROUGH FIRE-RATED ASSEMBLIES

A. Seal voids around ducts and pipes penetrating fire-rated assemblies and partitions using fire-stopping materials and methods.

1.11 DRAWINGS

A. Drawings show diagrammatically the locations of the various pipes, ductwork, fixtures, and equipment, and the method of connecting and controlling them. It is not intended to show every connection in detail and all fittings required for a complete system. The systems shall include, but are not limited to, the items shown on the drawings. Exact locations of these items shall be determined by reference to the general plans and measurements at the building, and in full cooperation with work specified in other Divisions of these specifications; and, in all cases, shall be subject to the approval of the Engineer. The Engineer reserves the right to make any reasonable change in the location of any of this work without additional cost to the Owner.

B. Should any changes be deemed necessary in items shown on the Contract Drawings, the shop drawings, descriptions, and the reason for the proposed changes shall be submitted to the Architect for approval.

C. Exceptions and inconsistencies in plans and specifications shall be brought to the Engineer's attention prior to bids being submitted; otherwise, the Contractor shall be responsible for the cost of any and all changes and additions that may be necessary to accommodate the installation of any particular apparatus.

D. Lay out all work maintaining all lines, grades, and dimensions according to these Drawings with due consideration for the work of others. Verify all dimensions at the site prior to any fabrication or installation. Should any conflict develop or installation be found impractical, the Engineer shall be notified before any installation or fabrication, and the existing conditions shall be investigated and proper changes effected without any additional cost.

E. Titles of Sections and Paragraphs in these specifications are introduced merely for convenience and are not to be construed as a correct or complete segregation or tabulation of the various units of materials and work. The Engineer does not assume any responsibility, either direct or implied, for omissions or duplications by the Contractor due to real or alleged error in the arrangement of matter in the Contract Documents.

1.12 CONNECTION OF EQUIPMENT FURNISHED BY OTHERS

A. Equipment supplied as portions of work specified under other Divisions of these specifications shall be furnished with proper roughing-in diagrams and shall be installed as a part of Division 23.

B. Furnish materials and labor required for the connection of this equipment.

C. Contractor shall ascertain that all equipment so specified is included as part of this work.

1.13 COOPERATION

A. Coordinate all work indicated in Division 23 with work specified in other Divisions to assure proper and adequate interface with other portions of the work.

B. Maintain contact and be familiar with the progress of the general construction and the timely installation of sleeves and inserts, etc., before concrete is placed. Install the required systems in their several stages, at the proper time to expedite the work and avoid unnecessary delays in the progress of other portions of the work.

C. Should any questions arise between work specified in Division 23 with respect to other portions of work specified in other Divisions of the Specifications, reference shall be made to the Engineer for instructions.

1.14 MATERIALS AND EQUIPMENT

A. All materials and equipment purchased shall be new. No used or reconditioned equipment will be allowed.

B. Substitutions: Products of same functions, performance and design will only be considered if in full accordance with the requirements of Section 01 60 00, Material and Equipment. The products of other manufacturers will be acceptable; only if, in the opinion of the Engineer, the substitute material is of a quality as good or better than the material specified, and will serve with equal efficiency, maintainability, and dependability, the purpose for which the items specified were intended.

C. Listed Manufacturers:

1. Manufacturers listed in a product or system specification are those manufacturers considered capable of manufacturing products conforming to the specification requirements, and are listed therein to establish a standard.
2. The "listing" of a manufacturer does not imply "acceptance" or "approval" of any standard product of that manufacturer.
3. Products offered by listed manufacturers shall be equal to, or superior in all respects to, that specified by named products; and shall meet or exceed specification requirements.
4. The description of specific qualities takes precedence over the reference standards and the description of qualities and reference standards together take precedence over the named product of listed manufacturers.

D. Product Options:
1. Products specified only by Reference Standards or by Description only means that any product meeting those standards or descriptions, by any manufacturer, will be considered.
2. Products specified by naming several products or manufacturers means that only the manufacturers named will be considered.
3. Products specified by naming only one product and manufacturer means that no option exists unless a substitution is accepted. Submit a request for substitution for any product or manufacturer not specifically named.
4. Products specified by Description, Reference Standard, and naming several products or manufacturers means that any product and manufacturer named meeting those descriptions and standards will be considered. Submit a request for substitution for any product or manufacturer not specifically named.

E. Limitations or Substitutions:
1. During Bidding Period, Instructions to Bidders, in Division 1, will govern times for submitting requests for substitutions under requirements specified in this Section.
2. No later than ten (10) days prior to the bid date, Contractor shall notify the Engineer in writing of any desired substitutions of products in place of those specified. These requests will be considered; and, if a favorable response is determined, this will be documented in the form of an Addenda.
3. Substitutions will not be considered when indicated or implied on Shop Drawings or product data submittals without separate formal request, when requested directly by subcontractor or supplier, or when acceptance will require substantial revision of Contract Documents.
4. Substitute products shall not be ordered or installed without written acceptance.
5. Only one request for substitution for each product will be considered. If substitution is not accepted, Contractor shall provide specified product.
6. Architect will determine acceptability of any and all substitutions.

F. It is fully the Contractor's responsibility to assemble and submit sufficient technical information to fully illustrate that the material or equipment proposed for substitution is equal or superior, as the Engineer is under no obligation to perform the service for the Contractor. The proposal shall be accompanied by manufacturer's engineering data, specification sheet, and a sample, if practical or if requested or specified. In no event shall a proposal for substitution be cause for delay of work. This shall include a detailed comparison to each product specification paragraph.

G. Should a substitution be accepted under the above provisions, and should the substitution prove defective or otherwise unsatisfactory for the intended service, within the warranty period, the Contractor shall replace the substitution with the equipment or material specified, and on which the specifications required him to base his proposal.

H. No substitutions will be considered contingent upon pending certification and rating agency approvals. Such certifications and ratings shall be in effect at the time of bidding.

1.15 EQUIPMENT SIZES AND REQUIREMENTS

A. Space allocations in machinery and mechanical equipment spaces are based on equipment scheduled in each case. Should the Contractor request a substitution for equipment of another make that requires more space in any critical dimension, the Contractor shall submit, together with other submittal data on the equipment, prints of drawings indicating how the equipment may be installed, indicating room for servicing and revisions in piping or ducting and any other details necessary for the Engineer to form a judgement as to the suitability of the substitute material, as to performance, suitability for the space and other variables.

B. Duties of certain equipment items, horsepowers of driving motors and electrical characteristics are scheduled for equipment items of a particular make in each case. Should requests for a substitute material be accepted which has other requirements that would involve allied equipment or other portions

of work, the Contractor shall be responsible for all modifications required at no change in contract price. As examples:

1. If an accepted A/C Unit has a brake horsepower requirement above the motor horsepower scheduled, the Contractor shall be responsible for providing a larger motor and heavier drive and any change in size of the protective device, conduit run and conductors serving that motor. The latter shall be extended through an individual branch protective device and branch circuit on through the panel, feeder, feeder protective device, etc.
2. If accepted, heat exchangers, coils, etc., having greater pressure drops than those on which pumping heads were based, the Contractor shall be responsible for selecting proper pumps and drives and adjusting electrical service work accordingly.

C. Structural steel members are indicated to provide supports for certain specific sizes and weights of equipment. Should a substitution request involve other equipment, the spacing of the supports shall be varied to suite the equipment. Should the weight or size of a proposed substituted item of equipment require additional supporting steel members, the Contractor shall include documentation of the additional supports in the request for substitution and install them at no change in contract price if the substitution is accepted.

D. Various large apparatus to be installed may require that the apparatus be installed prior to the installation of portions of structural, walls, or door frames. Coordinate the installation of these items to insure that no demolition of general construction is necessary for equipment installation or that the apparatus does not have to be disassembled for installation.

1.16 STORAGE AND PROTECTION OF MATERIALS

A. Store and protect materials and equipment as specified in Section 01 60 00, Material and Equipment.

B. Contractor shall provide storage space for protection and storage of his materials and assume complete responsibility for all losses due to any cause whatsoever. All storage shall be within the property lines of the building site, and as directed by the Engineer. In no case, shall storage interfere with traffic conditions in any public or project thoroughfare.

C. All work and material shall be protected at all times. Contractor shall make good any damage caused, either directly or indirectly, by his workmen. He shall be responsible for safe handling of all mechanical equipment and shall replace, without charge, all items damaged prior to acceptance by the Owner.

D. On site storage shall not be inside the building during construction progress, but shall be in approved trailers or as specifically approved otherwise by the Engineer. Storage inside the building shall only be allowed when so allowed by the Engineer.

1.17 EXCAVATION AND BACKFILLING

A. Contractor shall do all necessary excavating and backfilling for the installation of his work. Trenches for underground conduits shall be excavated to required depths with bell holes provided as necessary to insure uniform bearing. Care shall be taken not to excavate below depth, and any excavation below depth shall be refilled with sand or gravel firmly compacted. Where rock or hard objects are encountered, they shall be excavated to a grade six inches (6") below the lowermost part of the piping and refilled to grade as specified. After the piping has been installed and reviewed by Engineer and local building authorities, trenches shall be backfilled to grade with approved materials, well tamped or puddled compactly in place. Where streets, sidewalks, etc., are disturbed, cut, or damaged by this work, the expense of repairing same in a manner approved by Engineer shall be a part of this contract.

B. Contractor shall bear sole responsibility for design and execution of acceptable trenching and shoring procedures, in accordance with State of Texas Regulations. On trench excavations in excess of five feet (5') in depth, Contractor shall pay a qualified engineer to prepare detailed Drawings and specifications directing Contractor in the safe execution of trenching and shoring. It is understood that trench safety systems constitute a means and method of construction for which the Engineer and Owner are not responsible. Accordingly, such documents when prepared, shall be separately issued by Contractor's Consultant, independent of project contract Documents.

1.18 WIRING

A. Unless otherwise noted, all wiring for motors, starters, and equipment is specified in Division 26.

B. Wiring of temperature controls shall be performed in accordance with the requirements of Division 26 but shall be performed as outlined in other sections of these specifications.

C. All power for control circuits required for the Temperature Control System shall be provided and installed where indicated on the Division 26 Drawings, but shall otherwise be provided as indicated in other sections of these specifications.

D. Each supplier of equipment requiring control shall have wiring diagrams furnished with submittals. This shall be used to determine conduit layouts required to complete the electrical portions of the instrumentation and control systems.
E. All motors furnished as a portion of work specified in Division 23 shall be wired as specified in Division 26.
F. Except where combination starter-disconnects are specified elsewhere herein or in Division 26, all motors shall be provided with safety disconnect switches in accordance with the National Electrical Code as specified in Division 26.
G. Furnish all necessary wiring diagrams for equipment specified in Division 23, as a part of equipment submittals, for installation under other sections of these specifications.

1.19 EQUIPMENT STANDARDS
A. All basic materials and equipment shall be standard catalog products of a reputable manufacturer and shall essentially duplicate equipment which has been in satisfactory service for at least one (1) year.
B. First of a kind new technology devices will not be considered.
C. Accessory equipment that is required to make a complete and functioning system that is not of the same manufacturer furnishing the basic materials or equipment shall carry the guarantee of the basic material or equipment manufacturer and repair and replacement parts shall be available through normal trade channels locally.

1.20 CLEAN UP
A. Contractor shall be responsible for cleaning up after and during all work performed under this Division of the Specifications.
B. Contractor shall, on a daily basis, remove construction trash and debris accumulation to minimize the entrance of dust, dirt, and debris in piping, ductwork, and mechanical equipment.
C. At the completion of construction, just prior to Substantial Completion and sustained operation of equipment, thoroughly clean the inside of piping, ductwork, and equipment.
D. Refer to Division 1.

1.21 FINAL CONSTRUCTION REVIEW
A. Schedule: Upon completion of the work specified in Division 23, there shall be a final construction review of the completed mechanical systems installations. Prior to this walk-thru, all work specified in this Division shall have been completed, tested, adjusted, and balanced in its final operating condition and the preliminary test report shall have been submitted to and approved by the Engineer.
B. Personnel: A qualified person representing the Contractor must be present at this final construction review to demonstrate the system and prove the performance of the equipment.
C. Building mechanical systems shall have been in operation for a minimum of 15 days and Test and Balance work shall be substantially complete prior to this review.
D. Exceptions to the aforementioned requirements will be considered on a case-by-case basis dependent on the size and type of project, as well as construction schedule limitations.

1.22 CERTIFICATIONS
A. Before receiving final payment, the Contractor shall certify that all equipment furnished and all work done is in compliance with all applicable codes mentioned in these Specifications.
B. Provide copies of all applicable approved notices and inspection certifications from the various inspections conducted by the Local Code Enforcement Authorities.

1.23 GUARANTEE
A. The guarantee provision of this specification requires prompt replacement of all defective workmanship and materials occurring within one year of final job acceptance, Substantial Completion, or as defined by Extended Warranty Contracts. This includes all work required to remove and replace the defective item and to make all necessary adjustments to restore the entire installation to its original specified operating condition and finish at the time of acceptance.
B. The Contractor shall also guarantee that the performance of all equipment furnished and installed under this Division of the Specifications shall be at least equal to the performance as called for in the specifications and as stated in the equipment submittals. Should there be indication that the equipment and installation is not producing the intended conditions, the Contractor shall make further tests as the Owner's Representative may direct to demonstrate that the equipment installed meets the specifications and is delivering the capacity specified or called for on the Drawings.

C. If there is any indication that the equipment does not meet the specified quantities, the Contractor shall, at his expense, institute a program to demonstrate the adequacy of the installation. This program shall include all necessary testing and testing equipment. Should the Contractor not have the equipment or technical skill to perform the tests, it shall be his responsibility to employ recognized experts to perform the tests and shall provide certified laboratory tests, certified factory reports and work sheets, or other certified data to support results of any tests required.

END OF SECTION 230500

SECTION 230513 - COMMON MOTOR REQUIREMENTS FOR HVAC

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS
- A. Comply with Division 1 - General Requirements and referenced documents.
- B. Comply with Division 23 Sections, as applicable. Refer to other Divisions for coordination of work with other trades, as required.

1.2 SYSTEM DESCRIPTION
- A. Provide motors for all mechanical equipment furnished under Division 23, as indicated herein and as illustrated on the Contract Drawings.
- B. All motors shall be of the same manufacture for like pieces of equipment; i.e., air handling units shall have motors of the same manufacturer. Pumps shall have motors of the same manufacturer, but both types of equipment are not required to have the same motor manufacturer.

1.3 SUBMITTALS
- A. Submit shop drawings and product data under provisions of Section 01 30 00 and 23 05 00.
- B. Indicate on submittal the motors proposed for each system of equipment to be installed. This shall be in tabular form in one location for each type of equipment submitted. The lack of this information will be grounds for rejection of equipment submittals.
- C. Product Data shall be furnished which shall include:
  1. Motor Manufacturer.
  2. Motor Type; Open Drip Proof, Totally Enclosed (Fan Cooled or Air Over).
  3. Model of Manufacturer.
  4. Motor Horsepower.
  5. Motor RPM.
  6. NEMA Motor Efficiency at 25%, 50%, 75%, and 100% of Full Load Rating for motors served by variable frequency drives; 100% only for constant speed motors 1 HP and larger.
  7. Power Factor at 25%, 50%, 75%, and 100% of Full Load Rating for motors served by variable frequency drives; 100% only for constant speed motors 1 HP and larger.
  8. Service Factor.
- D. Certification: Provide manufacturer's literature indicating NEMA premium motor efficiency as tested in accordance with IEEE Standard 112, Test Method B. Provide documentation to verify motors served by variable frequency drives meet NEMA MG1, Part 30 for 6-step drives and Part 31 for PWM drives.
- E. Provide closeout documents as required in Division 1.

1.4 QUALITY ASSURANCE
- A. Comply with all regulatory requirements in the following order of precedence:
  1. Codes, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction over installation, inspection, and testing, including local codes.
  2. Provisions specified in this Section of Specifications.
  3. Applicable provisions of standards of National Electric Code (NEC).
- B. Manufacturer shall have been manufacturing the motors as described herein for a minimum of ten (10) years.

PART 2 - PRODUCTS

2.1 ELECTRICAL MOTORS, GENERAL
- A. All motors furnished under any of the several sections of these specifications shall be of a recognized manufacturer, be of adequate capacity for the loads involved, and wound for the electrical characteristics indicated on the Drawings and specified herein. Verify all job site voltages and power source available before submitting, ordering and installing any motor or related controls.
- B. Motors shall conform to the standards of manufacture and performance of the National Electrical Manufacturer's Association (NEMA) as shown in their latest publication.
- C. Motors shall be furnished with an open-frame, unless otherwise noted, or required by the NEC for the service conditions encountered. Motors exposed to weather shall be the totally enclosed type suitable for

installation in ambient conditions for exposure to the sun, heat, and rain. Provide explosion proof motors where indicated and as required for the hazard in which to be installed.

D. Unless otherwise noted, fractional motors rated at 1/2 horsepower and less shall be single phase, the motors rated at larger than 1/2 horsepower shall be three phase. Single phase motors shall be arranged for across-the-line starting.

E. Single phase motors shall be capacitor start, induction run type, and shall be furnished with motor controller with pilot light where scheduled or indicated. Refer to Section 23 05 14.

F. All motors shall be of the same manufacturer on similar equipment furnished by the same manufacturer, unless they are an integral part of the piece of equipment to which they are attached, such as a chiller. Air Handling Units shall have motors of the same manufacture and pumps shall have motors of the same manufacture; but, pumps and air handling units are not required to have motors of the same manufacturer.

G. Where other sections of specifications do not call for premium efficiency motors this section shall apply to motor requirements. Where premium efficiency motors are required in the other Sections of these Specifications refer to Article 2.2 herein.

H. Motor manufacturers shall be Reliance, Baldor, General Electric, A.O. Smith or U.S. Motors. Other manufacturers will not be considered.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Motors shall typically be furnished by the manufacturer of the equipment which the motor will serve.

B. Motors shall be factory installed in the equipment and be mounted on equipment bases, wired to a terminal box, connected to the mechanical device to be rotated, and factory run tested.

C. When project schedules will not allow the above due to excessive lead time requirements, the Contractor shall do one of the following all at no additional cost:

1. Locally procure the specified motors, while meeting all of the above requirements, and field install the motors on the equipment in accordance with the manufacturer's installation instructions.
2. Accept factory installed standard efficiency motors and replace with high efficiency motors as noted above.

D. Motors disconnects will be furnished and installed under Division 26, unless integral with, or specified to be a part of, the equipment as indicated elsewhere in other sections of these Specifications. The wiring to the motor and installation of the motor controller, if not specified to be integral with the equipment, as furnished under other sections of these specifications, shall also be installed under Division 26.

E. Interlock and control voltage wiring shall be installed as outlined in other Sections of these Specifications.

END OF SECTION 230513

SECTION 230514 - COMMON MOTOR STARTER REQUIREMENTS FOR HVAC EQUIPMENT

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS
- A. Comply with Division 1 - General Requirements and referenced documents.
- B. Comply with Division 23 Sections, as applicable. Refer to other Divisions for coordination of work with other trades, as required.

1.2 SYSTEM DESCRIPTION
- A. Provide a complete system of motor starters as indicated herein and as illustrated on the contract Drawings.
- B. Provide other devices as indicated for control of motors and interface with automation or control systems, and as further required by the local authorities having jurisdiction.

1.3 SUBMITTALS
- A. Submit shop drawings and product data under provisions of Section 23 05 00.
- B. Indicate on submittal the starter type proposed to be used for each system and for the various sizes of motors required to be installed. This shall be in tabular form with attached cut sheets.
- C. Product Data:
  1. Snap Action Manual Motor Starters.
  2. Magnetic Across-the-Line Motor Starters.
  3. Control Transformers.
  4. Hand-Off-Automatic Switches.
  5. Pilot Lights.
  6. Number and Type of Auxiliary Contacts.
  7. NEMA Enclosure Type.
  8. Power and Control Wiring Diagrams.
- D. Provide closeout documents as required in Division 1 at Substantial Completion.

1.4 QUALITY ASSURANCE
- A. Regulatory Requirements: Comply with requirements in following order of precedence:
  1. Codes, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction over installation, inspection, and testing, including local codes.
  2. Provisions specified in this Section.
  3. Applicable provisions and standards of the National Electric Code (NEC).
- B. Manufacturer shall have been manufacturing the product proposed to be used as described herein for a minimum of ten (10) years; or it shall essentially duplicate a product line that has been manufactured for that length of time.
- C. Source Quality Control:
  1. Manufacturer's tests to meet applicable Underwriters' Laboratories, Inc., Standards.
  2. Equipment designed and manufactured to meet applicable ANSI, NEMA, and IEEE Standards.

PART 2 - PRODUCTS

2.1 MOTOR STARTERS
- A. Except as specified otherwise, a starter providing overload protection shall be furnished with each motor provided in Division 23, under this section of the specifications, unless:
  1. Starters are provided in Division 26 as part of a motor control center, or
  2. Starters are furnished under Division 26 as a combination motor starter-disconnect.
  3. Disconnects on fractional horsepower motors are not substitutes for a motor controller (starter). However, a motor controller on these size motors may substitute for a disconnect only where the required location for both is in the same location.
  4. Unit heater and ceiling fan fractional horsepower, motors, 1/8 HP or smaller, with inherent thermal overload protection are not required to have motor starters.
- B. Each starter furnished herein shall have a NEMA horsepower capacity rating within the required limits of the motor which it serves.

C. Unless otherwise indicated, starters mounted indoors shall be furnished with NEMA Type 1 enclosures, and those exposed to the weather shall be furnished with NEMA Type 3 enclosures.
D. Each three phase starter shall be provided with three thermal overload protection relays, one in each phase, be of the full voltage, across-the-line, non-reversing, single or two-speed, magnetic controller type. Overload relays shall be reset from outside the starter enclosure by means of an insulated bar or button.
E. Starters shall have auxiliary contacts as required to comply with provision for electrical interlocks as defined hereinafter. Provide a minimum of one (1) normally open (N.O.) and one (1) normally closed (N.C.) auxiliary contacts with each three (3) phase starter.
Where used, the secondary side of the control transformer shall be grounded and the other side shall be fused. Where starters are interlocked, the starter holding coils shall be of one voltage. Where starter line voltages are different and above 120 volts to ground, provide control voltage transformers in the starters that are interlocked. The control systems installer shall supply all electrical power supply and transformers as needed to serve control circuit requirements for temperature controls. Control voltage in each starter shall be not more than 120 volts to ground, with an individual control transformer provided in each interlocked starter. Control safety circuits shall de-energize the respective motors served via holding coils in the respective starter.
F. Manual starters for fractional horsepower single phase motors shall be on-off, or snap action switch type combined with thermal overload device. The switch shall be so constructed that it cannot be held closed under a sustained motor overload. This shall be equal to an Allen Bradley No. 600-TAX216, toggle switch with neon pilot light and NEMA 1 enclosure unless indicated otherwise for severe duty.
G. Provide starter covers with Hand-Off-Auto Switch and pilot light where equipment is interlocked or remotely controlled. Provide starter covers with Start-Stop buttons and neon pilot lights where equipment is locally controlled.
H. The Hand-Off-Auto Switches shall be so wired that, when in automatic position, the control of their motors is transferred to the control system as outlined elsewhere herein; and, when in hand position, they themselves assume control of their motors irrespective of the remainder of the equipment, although the temperature control sequences shall operate the same while in either the "Hand" or "Auto" position. Safety devices will not be bypassed when in "Hand" position.
I. Coordinate the purchase of all starting equipment, insofar as practical, such that all starting equipment on the project shall be of the same manufacturer.
J. Starters shall be a regularly manufactured product to meet the intent of all requirements specified herein.
K. Acceptable starters and controllers shall be manufactured by
    1. Allen-Bradley.
    2. General Electric.
    3. Cutler-Hammer.
    4. Square D.

PART 3 - EXECUTION

3.1 INSTALLATION
A. All starters furnished under this section of the Specifications shall be installed under Division 26 of the specifications.
B. Securely mount all starters level against walls where shown to be fully accessible and convenient for use. Where not specifically shown locate in a convenient and fully accessible location in a Mechanical Closets, Electrical Room, Janitor Closet, Storage Room or above accessible lay-in ceiling when no higher than six inches (6") above the finished ceiling height and mounted to a wall or physically secure and stable surface.
C. Where no wall exists for installation, furnish a unistrut fabricated stand secured to the floor, or other suitable structure. Use corrosion resistant fasteners.
D. Where motor starters are ganged together, mount, insofar as is practical, all at the same distance from the floor, or other referenced point, to the bottom of the starters.
E. Refer to manufacturer's wiring diagrams for proper wiring procedures.
F. Wire all safety devices in series to be active in both the "Hand" and "Auto" position.
G. Coordinate starter type and size with motor manufacturer's data for equipment actually installed.
H. Field verify correct sizes of replaceable thermal overload elements for each motor actually installed. Do not over or under size elements.

END OF SECTION 230514

SECTION 230548 - VIBRATION AND SEISMIC CONTROLS FOR HVAC PIPING AND EQUIPMENT

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS
- A. Comply with Division 1 - General Requirements and referenced documents.
- B. Comply with all other Division 23 Sections, as applicable. Refer to other Divisions for coordination of work with other portions of work.

1.2 SYSTEM DESCRIPTION
- A. A complete system of vibration isolation for all mechanical equipment subject to the transmission of noise and vibration to the building.

1.3 QUALITY ASSURANCE
- A. All equipment and materials shall be new and of the best quality and have been manufactured by a firm with a minimum of five (5) years of experience in this field.
- B. All equipment and materials shall be installed in a workmanlike manner by experienced mechanics and as recommended by the equipment and vibration isolation manufacturers.

1.4 SUBMITTALS
- A. Product Data: Submit manufacturer's descriptive literature and installation instructions for all vibration isolation equipment.
- B. Shop Drawings: Submit in accordance with Section 23 05 00.

1.5 PRODUCT HANDLING
- A. Cover and protect material in transit and at site. Material not properly protected and stored and which is damaged or defaced during construction shall be rejected.
- B. Storage and protection of materials shall be in accordance with Section 23 05 00.
- C. Install materials and equipment at the proper time to keep pace with the general construction and the work of other trades involved so as not to delay the project completion schedule.

PART 2 - PRODUCTS

2.1 GENERAL
- A. Objectionable vibration or noise created in any part of the building by the operation of any equipment furnished and/or installed under Division 23 will not be permissible.
- B. Contractor shall take all precautions against the same by isolating the various items of equipment, pipes, and ducts from the building structure and by such other means as may be necessary to eliminate the transmission of excessive vibration and objectionable noise produced by any equipment installed thereby.
- C. Design all foundations, supports, etc., for equipment, piping and ductwork with this end in view.
- D. Contractor shall supervise and instruct the construction of all foundations and supports, in order that they may be constructed in such manner as to prevent the transmission of noise and vibration.

2.2 APPLICATIONS
- A. Isolating material shall be selected in each case in accordance with the manufacturer's recommendations and the latter shall be prepared to demonstrate, upon request of the Architect, the isolation effectiveness of the material which has been installed upon his recommendation.
- B. Isolators shall be so selected that when all the items in each of the mechanical rooms are in simultaneous operation, the vibration transmission to the building at the lowest disturbing frequency shall be limited to a maximum of 10% for a mechanical equipment room floor that is on the ground and 5% for all other building surfaces, including those in fan rooms, from all the equipment when the various items are in harmony.
- C. For all curb mounted roof-top units and condensing units use two inch (2") wide x 3/8" thick neoprene isolation strips to be in continuous contact at all curb to equipment contact areas.
- D. Condensing units or other equipment to be installed on housekeeping pads shall be mounted on ribbed neoprene pads equal to Amber Booth Ampad Type NR or NRC, Style B isolators.

2.3 MANUFACTURER
A. Isolating material used shall be equivalent to Amber-Booth, Peabody, Korfund Vibration Mountings, or Mason.

PART 3 - EXECUTION

3.1 PERFORMANCE OF ISOLATORS
A. Comply with recommendations set forth by the American Society of Heating, Refrigerating and Air Conditioning Engineers for the selection and application of vibration isolation materials and units.
B. Comply with manufacturer's recommendations for selection and application of vibration isolation materials and units.
C. Place isolators where indicated and where specified herein. Coordinate all isolator selections with approved equipment and other pertinent shop drawings of exact equipment to be isolated. Verify to ensure accuracy of load points and take into account any accessory devices adding to equipment loads to be supported by isolators.

END OF SECTION 230548

SECTION 230553 - IDENTIFICATION FOR HVAC EQUIPMENT AND PIPING

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS
- A. Comply with Division 1 - General Requirements and referenced documents.
- B. Comply with all other Division 23 Sections as applicable. Refer to other Divisions for coordination of work with other portions of the work.

1.2 SYSTEM DESCRIPTION
- A. Provide a complete system of Piping and Equipment Identification as specified herein for each of the systems as described herein.
- B. Provide a complete system of equipment identification tags as described herein.

1.3 QUALITY ASSURANCE
- A. The installation of all mechanical system identification devices shall be performed under this Section of the Specifications using materials which are the product of reputable manufacturers. The application of the materials shall be in strict accordance with the published standards of the manufacturer of the materials, using any special materials as required by these specifications and by those published standards.
- B. Manufactured Piping Identification markers, equipment name plates and valve tags shall be a product of Seton Name Plate Corporation, EMED Company, Inc., or Craftmark Identification to meet all ANSI Standards pertaining thereto.

1.4 SUBMITTALS
- A. Product Data: Submit manufacturer's descriptive literature and installation instructions in accordance with Section 23 05 00.
- B. Shop Drawings:
  1. Submit a list of all piping systems to be identified, color of background to be used, legend or wording to be displayed for each system, and the intended location of all markers to be displayed.
  2. Submit a list of equipment to receive identification tags, cut sheets and proof copies of tags which indicate location of tag and wording to be engraved thereon.
  3. Submit a list of valves with location, indicate type of service, type of tag, tag number and proposed valve tag chart as specified herein.
  4. Submit a list of units and areas served per ground source loop.

1.5 PRODUCT HANDLING
- A. Cover and protect material in transit and at site. Material not properly protected and stored and which is damaged or defaced during construction shall and will be rejected.
- B. Storage and protection of materials shall be in accordance with Section 23 05 00.

PART 2 - PRODUCTS

2.1 PIPING IDENTIFICATION SYSTEM
- A. Furnish piping identification markers for all insulated and uninsulated piping systems in sizes and colors in accordance with ANSI Standard A13.1. Markers shall be as manufactured by Seton Name Plate Corporation similar to their vinyl plastic "Setmark" pipe markers with flow arrows. For systems with overall outside diameters under 6" use the snap-around markers. For systems with overall diameters 6" and over use strap-around markers attached with nylon ties.
- B. Markers shall be provided as a minimum for the following systems:
  1. Drains (Green background), for all insulated drains not contained in one space or roof; i.e., an A/C condensate drain in a fan room shall not require identification, whereas, as drain extending to another space would.
  2. Refrigerant Suction Piping (Yellow background).
  3. Refrigerant Liquid Piping (Yellow background).
- C. Refer to Section 09 90 00 for color code paint requirements for all exposed mechanical equipment and piping.

2.2 EQUIPMENT IDENTIFICATION

A. This Contractor shall provide identification plates similar and equal to Seton Name Plates, Style 15671(M4564).

B. Name plates shall be a minimum of 1/16" thick flexible multi-layered acrylic and be 1" X 3" in size with beveled edges. The surface shall be a black satin with a white core for lettering. Other color combinations may be used for specific systems where warranted. Each plate shall be drilled with two mounting holes sized for 3/8" No. 3 round head nickel plated steel screws. Lettering shall be a minimum of 3/16" high and lettering shall be cut through the black surface to the white core and be “Gothic Normal”. Only name plates equal to those specified will be considered. No punched plastic tape or engraved aluminum plates are acceptable. Stick-on only plates are not acceptable.

C. Provide and install identification plates on the cover of all starters or disconnects or combination starter-disconnects, where not mounted directly on the equipment, delivered by the mechanical system installer to the electrical systems installer and on each piece of Mechanical Equipment to include but not necessarily limited to:
   1. Roof-Top Units.
   2. Exhaust Fans.
   3. Split DX A/C Units.
   4. Condensing Units.
   5. Condensate Pumps.

D. Name plates shall have complete words describing equipment type, use and service. As an example, air handlers shall be designated "AHU-S-X MEP Shop" to designate the equipment as an air handler, number of air handler and area served. Use multiple or larger name plates as required to fulfill this requirement.

E. Provide and install an additional identification plate mounted on the ceiling grid (lay-in Clg) or on access door (Hard Clgs.) for all above ceiling mounted equipment.

PART 3 - EXECUTION

3.1 PIPE MARKER INSTALLATION

A. Provide flow arrows at each marker location.

B. Markers shall be spaced not more than 30 feet on center and at each change of direction but not more than 4 feet in each direction from each elbow and tee. Markers not required on piping runouts less than four feet (4') in length and 1-1/4" or smaller in size.

C. Identification markers shall be installed on all new piping; indoors, outdoors and in the crawl space except for drain and waste lines 3/4" and smaller.

D. Install markers on exposed piping systems only after jacketing systems and finish paint coats are complete. Refer to Sections 09 90 00 and 23 07 00.

3.2 IDENTIFICATION TAG INSTALLATION

A. Secure tags level and in a conspicuous location with adhesive on equipment starters or combination starter disconnects and on the equipment where starters are not immediately adjacent to the equipment served.

B. Additionally, secure all tags with screw fasteners after secured with adhesive.

C. Provide and install an additional identification plate mounted on the ceiling grid (lay-in Clg) or on access door (Hard Clgs.) for all above ceiling mounted equipment.

END OF SECTION 230553

SECTION 230593 - MECHANICAL SYSTEMS TESTING, ADJUSTING, AND BALANCING (TAB)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. This Section shall be related to the General Provisions of the contract, including General and supplementary conditions.

B. Refer to Section 23 05 00 for general provisions.

1.2 SCOPE OF WORK

A. The work included in this Section consists of the furnishing of all labor, instruments, tools and services required in connection with the Testing, Adjusting and Balancing (TAB) of the Heating, Ventilating and Air Conditioning (HVAC) systems as described in the mechanical specifications and shown on the mechanical Drawings, or reasonably implied therefrom, to include the overall commissioning of systems and subsystems such as verification of operation of each control device and all equipment sequences of operation.

B. TAB of the HVAC systems will be performed by an impartial independent Technical Firm who is a member of the Associated Air Balance Council (AABC) and whose operations are limited only to the field of professional TAB work. The firm selected shall not be engaged in any contracting, manufacturing or engineering services. TAB services shall be included in the Contractor's Base Bid.

C. TAB Firm is responsible to and shall submit all reports directly to the Architect/Engineer and as requested to the Owner.

D. TAB services shall result in the optimum temperature, humidity, airflow, pressurization, ventilation rates, and noise levels in the conditioned spaces of the building.

E. The following basic components of the HVAC systems shall be tested, adjusted and balanced:
   1. Air distribution systems.
   2. Air moving equipment.
   3. Cooling systems.
   4. Heating systems.
   5. HVAC control systems verification to include end devices, control sequences of operation and energy management system control and monitoring point verification.

F. Document Review
   1. The TAB Firm shall be responsible for reviewing the HVAC Drawings and specifications relating to the TAB services for proper arrangement and adequate provisions of devices for testing, adjusting and balancing.
   2. TAB Firm shall review HVAC manufacturer's submittal data relative to suitable provisions to allow system to be balanced
   3. TAB Firm shall review submitted HVAC automatic temperature control sequences for conformity to the specifications.

G. Two (2) hard bound copies and three (3) .PDF file copies sent electronically of final report shall be submitted to the owner, or representative thereof, indicating a summary of actual operating data and any abnormal operating conditions. The report will contain all required information as described within this specification. The files shall also include copies of HVAC drawings annotated to reflect tags used for air and water components balanced.

1.3 SERVICES OF CONTRACTOR

A. Contractor shall start up and test all materials and equipment which normally require testing. All piping, ductwork, etc., shall be tested to meet code requirements and the specification requirements, whichever is the more stringent. All equipment shall operate a sufficient length of time at the Contractor's expense to prove to the Engineer, and Owner that the equipment is free from mechanical defects, runs smoothly and quietly and performs satisfactorily to meet the requirements set forth in the Mechanical Drawings and Specifications.

B. In order that all HVAC systems can be properly tested, adjusted and balanced, the Contractor shall operate the HVAC systems at their expense for the length of time necessary to properly verify their completion and readiness for TAB, and shall further operate and pay all costs of operation during the TAB period if not otherwise specifically addressed to be paid by the Owner. Operating expenses to be paid for

by the Contractor (not TAB firm) will include, where applicable, but not necessarily be limited to, the following:

1. Utility costs; electrical, gas, etc., as applicable.
2. Personnel costs to start, operate and stop all HVAC equipment.
3. All start-up labor and materials costs.
4. All maintenance costs.

C. The drawings and specifications have indicated dampers and miscellaneous adjustment devices for the purpose of testing, adjusting and balancing the HVAC systems to obtain optimum operating conditions. It will be the responsibility of the Contractor to install these devices in a manner that will leave them fully accessible and readily adjustable to include access to allow recording of all motor and fan nameplate data. The TAB firm shall be consulted if there is a questionable arrangement of a control or adjustable device. Should any such device not be readily accessible, the Contractor shall provide access as required by the TAB firm.

D. Contractor shall provide and coordinate the services of qualified, responsible sub-contractors, suppliers, and personnel as required to correct, repair or replace any and all deficient items or conditions found before and during the TAB period.

E. As a part of this Project Contract, the Contractor shall make any changes in the sheaves, belts, motors, dampers and valves, or the addition of dampers and valves as required, to correctly balance the HVAC systems as required by the TAB firm at no additional cost.

F. Provide sufficient time in Project Contract completion schedule to permit the completion of TAB services prior to Owner occupancy of the project.

G. Contractor shall furnish, without charge to the TAB Firm, the following (Digital and Hard Copies):

1. One (1) complete set of project specifications to include all mechanical sections.
2. One (1) complete set of Contract Drawings.
3. All pertinent change orders and all Addenda.
4. Two (2) complete sets of mechanical plans with latest revisions.
5. Any "As-installed" and shop drawings.
6. Approved HVAC system control diagrams.
7. Approved manufacturer's submittals for all HVAC equipment to be included in the TAB scope of work.

H. Have all HVAC systems complete and in operational readiness prior to notifying the TAB Firm that the project is ready for TAB services. So certify in writing to the Architect, Engineer, and Owner that such a condition exists. Complete operational readiness prior to commencement of TAB Services shall include the following:

1. Construction status of building shall permit the closing of doors and windows, ceilings installed, etc., to permit the obtaining of projected actual operating conditions. Preliminary air testing may be conducted without ceiling tiles and completion of the facility. However, final air testing requires that ceilings be completely installed so that air pressurization relationships can be properly verified.
2. Air Distribution Systems:

    a. Verify installation for conformity to design of all supply, return and exhaust ducts. Document and certify that all duct leakage tests as required by the mechanical specifications have been performed and the test results are within specified limits (provide copies of leakage test results). TAB firm shall be notified of the time when all leakage tests are to be conducted to allow them to witness as needed.
    b. Verify that minimum outside air, maximum outside air, return air and relief air dampers provide tight closure, open fully and operate smoothly and freely.
    c. Verify that all supply, return, exhaust and transfer air diffusers, grilles and registers are installed as indicated on the mechanical Drawings.
    d. Verify that the correct size and type of terminal boxes are installed as indicated on the mechanical Drawings, and that they are fully operational.
    e. Verify that all built-up type air handling systems, air handling units, etc. and associated apparatus such as heating coils, cooling coils, filter sections, access doors, etc., have been blanked and sealed to eliminate the bypass of air around the coils, filters, etc. or leakage of air into or out of the unit.
    f. Install the specified type and quantity of clean filters at each air handling unit and maintain these filters for the complete period that the subject system is being tested, adjusted, and

balanced. Refer to Section 23 30 00. New filters shall be installed just before air balance work is performed to insure clean filters are the basis of the test data provided.

g. Verify that all (supply, return, relief and exhaust) fans are operational including proper fan rotation, operates free from vibrations, belts are properly aligned, and belt tension is proper.
h. Verify that all motor starter overload heater elements are of proper size and rating; nameplate amperage to be within the range of the heater element size.
i. Make a record of actual motor amperage and voltage, for each phase, and verify that they do not exceed nameplate ratings.
j. Verify specified vibration isolation accessories are correctly installed and adjusted.
k. Insure that all fan drive components, motors, belts, sheaves, and fan wheels are all accessible to allow for servicing and verification of name plate data, sizes, and model and serial numbers, as applicable.
l. Provide additional air balance dampers, water balance valves, and replacement sheaves and belts as required to successfully complete TAB work.
m. Flag all air balance dampers with fluorescent, or other high visibility tape, leaving a minimum of one inch (1") wide by three inches (3") long exposed to view.

I. Automatic Controls:
1. Verify that all control components are installed in accordance with project requirements and are functional as intended by these specifications, including all electrical interlocks, damper and valve sequences, air and water temperature resets, firestats, duct smoke detectors, high limit pressure sensors, freezestats, safeties, etc.
2. Verify that all controlling instruments are calibrated and set for design operating conditions with the exception of room thermostats which shall be calibrated at the completion of TAB services in full cooperation between TAB Firm and controls system installer.
3. Automatic temperature control and/or energy management system installer shall thoroughly check all controls, sensors operators, sequences of operation, etc. before notifying the TAB agency that the automatic temperature controls and energy management system are operational. Automatic temperature control and/or energy management system installer shall provide technical support staff (technicians and necessary hardware and software) to the TAB agency to allow for a complete check out of these systems; controls personnel to be on site with TAB firm as needed to assist the TAB firm in completing the TAB work.
4. The controls system installer shall also provide trending reports with the specific points and trend intervals, as requested by the TAB firm or engineer, when abnormal conditions are experienced.
5. The scope of the TAB work, as defined herein, is indicated in order that the contractor will be apprized of their responsibility regarding the coordination and assistance required to complete the project requirements for final TAB. The TAB Firm will be responsible to the Engineer, and Owner for the satisfactory execution of the TAB services.

1.4 SERVICES OF THE TAB FIRM

A. TAB Firm Qualifications:
1. TAB Firm shall be one which is organized to provide independent professional testing, adjusting and balancing services. The firm shall have one (1) Professional Engineer licensed in the State of Texas, with current registration, on their staff. TAB Firm shall have operated a minimum of ten (10) years, under its current firm name.
2. All personnel used on the job site shall be either TAB engineers or TAB technicians, who shall have been permanent, full-time employees of the Firm for a minimum of one (1) year prior to working on this specific project.
3. TAB Firm shall submit the following to the Engineer and/or Owner for approval prior to commencing services:

a. Name and biographical data of the firms Professional Engineer and all other key personnel to be assigned to this project.
b. Proof of company operation for a minimum of ten (10) years.
c. Current AABC certification.
d. Documentation of number of full time staff size, specifically those personnel who perform or supervise the performance of TAB work.

B. TAB Firm Responsibilities:
   1. Liaison: The TAB personnel on the job shall act as liaison between the Architect, Engineer, Owner and Contractor.
   2. Inspect the installation of mechanical piping systems, sheet metal work, temperature controls and other component parts of the HVAC systems during the early construction stages, and at other appropriate stages, for the purpose of reviewing that part of the work relating to proper arrangement and adequate provisions for TAB.
   3. When performing inspection services prepare a punch list to be copied to the Architect, Engineer and Contractor noting observed deficiencies that would prevent adequate access to equipment and components installed or missing that would prevent the TAB Services from being carried out successfully.
   4. Witness the first duct static pressure test performed on duct systems rated over 3.0 Inches W.G. to verify proper testing procedures are followed and documented. Include time for witnessing approximately 20% of all tests performed. Should the initial testing be unsatisfactory, then witnessing of the retest will be required. Document tests witnessed in writing.

C. TAB Firm Services:
   1. TAB personnel shall, upon completion of the installation and start-up of the mechanical equipment systems, test, adjust and balance the HVAC systems to provide optimum temperature, airflow and noise conditions in the conditioned spaces in the building while the HVAC equipment is operating efficiently.
   2. The Firm shall be responsible for testing, adjusting, balancing and logging actual data on all air distribution and air moving equipment, water distribution and water circulating equipment, fans, pumps, heating and cooling equipment and the operating conditions of all motors, etc. as indicated in this specification.

      a. Air Distribution Devices:

         1) Preset all volume dampers in the 100% open position.
         2) Determine and verify proper air pattern deflection devices have been installed.
         3) Verify size and types of all air devices installed, versus, the sizes and types indicated on the Drawings, to include neck sizes of diffusers.
         4) Read out all air distribution devices served by their source (VAV Terminal, FPB Terminal, Constant Volume Air Handling Unit, Supply Fan, Exhaust Fan, etc.)
         5) Balance all air distribution devices proportional to design CFM.
         6) Adjust source to design CFM.
         7) Verify that all air distribution devices are balanced to within plus or minus 10% of design (and all proportional to one another, + 10% from high to low, on each system even if the total can not be within 10% of design).
         8) Tolerances for 100% outside air ducts and outside air introduced through air handling equipment shall be +5% to -10%.

      b. Supply/Exhaust Fans:

         1) Verify correct fan rotation.
         2) If belt driven, verify proper belt tension and that fan and motor sheaves are properly aligned.
         3) Verify that all safeties and interlocks are operational.
         4) Verify correct size and rating of motor overload protection.
         5) Verify fan motor is not overloaded; amperage readings do not exceed nameplate rating, for each phase, as applicable.
         6) Determine total air quantities of system served by the respective fan. Air quantities to be determined by duct traverse if duct configuration permits and air velocity is 800 to1000 feet per minute or greater. If the duct main is not suitable for traverse then traverse branch ducts as required to total air flows supplied by the system.
         7) If air volume is less than design and motor capacity is available, adjust fan to design CFM. If new sheave or sheaves and belts are required, data will be submitted to Contractor.

8) Witness positive pressure duct leakage tests performed by the contractor on large exhaust systems to minimize duct leakage in these systems.
9) Balance air distribution system (see Air Distribution Devices).

c. Rooftop Air Conditioning Units (RTU) and Split DX AC Units:

1) Verify that the outside, return and relief air dampers are operational and move freely.
2) Verify that filters are new and clean at the time of testing.
3) Verify correct evaporator and return or relief air (as applicable) fan rotation.
4) If belt driven, verify proper belt tension and that fan and motor sheaves are properly aligned. If direct drive, verify that motor is a multi-speed motor and adjust speed setting for air balance purposes unless a single speed fan is used in conjunction with a variable frequency drive.
5) Verify that all equipment safeties are operational, as applicable, (low and high pressure limit switches, freezestat, high static pressure, anti-recycle timer, etc.).
6) If applicable, verify that unit air volume control (static pressure) on VAV type units is operational. Set fan volume control device for 100% capacity (terminal boxes set at 100% capacity). Set point shall be slightly higher than the minimum pressure required to obtain design air flow at all terminals.
7) Verify correct size and rating of motor overload protection for each supply, return and relief fan motor.
8) Verify each fan motor above is not overloaded; amperage readings do not exceed motor nameplate rating.
9) Determine total supply and return air. Air quantities to be determined by duct traverse if duct configuration permits and air velocity is 800-1000 feet per minute or greater.
10) Balance air distribution system (see Air Distribution Devices).
11) If air volume is less than design and motor capacity is available, adjust fan or fans, to obtain supply and return design CFM quantities to within + 10% of design. If new sheave or sheaves and belts are required, data will be submitted to Contractor for change out. For direct drive fans, adjust fan speed setting. For fans served by variable frequency drives record fan speed and drive hertz at 100% design air flow. After adjustments are made, retest units to determine final air balance quantities.
12) Test and adjust the minimum outside air up to any maximum values scheduled, for demand controlled ventilation, and return air CFM relationship to design.
13) Verify all temperature control devices are set and calibrated at design set points. Document sensor values as compared to a calibrated temperature test instrument and further record Energy Management System offsets programmed to obtain calibration requirements specified herein.

d. Cooling and Heating Coils:

1) Verify that all coils and heat exchangers are installed properly.
2) Verify that all cooling and heating coils have filters installed upstream of coils.
3) Verify operation of all safety devices.
4) Record entering and leaving air dry bulb temperatures, as applicable, to determine actual air temperature drop or rise as compared to the design value for all equipment tested. Additionally, for cooling coils, record the entering and leaving wet bulb temperatures for each component.

3. During the balancing process, all abnormalities or malfunctions of equipment or components discovered by the TAB personnel, will be reported promptly to the Architect, Engineer, Owner and Contractor so that the condition can be corrected expediently.
4. The temperature controls will be verified for calibration and proper relationship between control devices. The Contractor will be advised of any instruments out of calibration so that the Automatic Temperature Controls (ATC) contractor can recalibrate, using data supplied by the TAB Firm as required.

5. Thoroughly test the Energy Management System (EMS), as applicable. The testing of the Energy Management System shall include all HVAC controls, sensors, operators, sequences, etc. The tests shall include verification that commands introduced at the EMS console actually occur and temperatures, pressures, etc. indicated at the EMS console correlate with the actual reading at the sensing point. The ATC and EMS contractor shall provide technical support to the TAB Firm for a complete check out of the HVAC temperature controls and the Energy Management System. The EMS workstation console and field direct digital control panel displays of measured variables such as temperature, relative humidity, and pressure shall have the displayed values offset through software to be within 0.3 Deg.F. of the temperature, 5.0 percent for relative humidity 20 parts per million for carbon dioxide and 0.01% for pressure of the actual variables measured in the field, with recently calibrated test equipment, at the sensor locations.
6. After testing, adjusting and balancing to the design conditions, if comfort conditions are not being maintained, the air conditioning system shall be rebalanced within the limitations of the equipment installed to obtain comfort conditions. If comfort conditions cannot be obtained, a report will be submitted giving specific data regarding the trouble area.
7. Make not less than three (3) inspections within ninety (90) days after occupancy of the building, and make adjustments if required, to insure that satisfactory conditions are being maintained throughout. Inspections are to be coordinated with Architect, Engineer, and Owner; and shall be documented with a supplemental report containing data and information, as required, after each visit, to document in writing that such visit took place and to note any unusual operating conditions.
8. Make an inspection during the opposite season from that in which the initial adjustments were made and at that time make any necessary modifications to the initial adjustments required to produce optimum operation of the systemic components to produce the proper conditions in each conditioned space. The opposite season inspection shall be coordinated with the Architect/Engineer and Owner. This inspection shall be documented with a supplemental report containing any pertinent data and information regarding readings and adjustments made.
9. Include testing and verification of domestic water centralized thermostatic mixing valves where connected to a pumped re-circulating system as well as TAB on the associated pumps and water balance stations on each separate system.

1.5 TAB REPORT

A. TAB report shall incorporate all performance data for the HVAC systems. The intent of the final report is to provide a reference of actual operating conditions for the Owner's operating personnel.
B. All measurements and recorded readings (of air, electricity, etc.) that appear in the report must be made on site by the permanently employed technicians or engineers of the TAB Firm.
C. TAB report shall include but not be limited to the following:
   1. Index.
   2. Preface: A general discussion of the system, an outline of normal and ventilation modes of operation, any unusual operating conditions and any deficiencies not corrected as of the time the report was written.
   3. Instrumentation List: A list of instruments used by type, model, range and calibration date. All instruments must be calibrated within six (6) months prior to the starting date of TAB services. Test probes used in domestic water system testing shall be sterilized before being used in these systems.
   4. Air Distribution Devices (Supply, Exhaust, Return, and Relief Air type where Balance Dampers are Used):
      a. Manufacturer, model and size; include neck sizes for diffusers.
      b. Location (Room name and number, ceiling, wall, etc.).
      c. Design and actual CFM (cooling and heating).
      d. Air distribution devices, where a velocity indicating instrument is used to determine CFM; provide the required and actual velocity in FPM (when an air flow hood is used to determine CFM, only CFM is required to be recorded.)
   5. Supply/Exhaust Fans:
      a. Manufacturer, model and size; include neck size where different than the designated device size.
      b. Location (Room name and number, above ceiling, roof mounted, etc.).
      c. Design and actual CFM.

d. Design and actual fan RPM.
e. Design and actual static pressure (leaving minus entering).
f. Motor nameplate data.
g. Motor starter data and motor overload protection (heater) sizes and rating.
h. Actual motor amperage and voltage (all phases).

6. Coils and Heat Exchangers:

a. Manufacturer, model, size and serial number where available.
b. Design and actual CFM.
c. Design and actual entering and leaving air static pressures.
d. Design and actual entering air dry bulb temperatures. Provide design and actual entering air wet bulb temperatures for each cooling coil.
e. Design and actual leaving air dry bulb temperatures. Provide design and actual leaving air wet bulb temperatures for each cooling coil.
f. Actual outside air temperature, dry and wet bulb, during testing.

7. Electric Heating Coils:

a. Manufacturer, Model Number, size and serial number.
b. Design and actual CFM where duct mounted.
c. Design and actual entering and leaving static air pressures.
d. Design and actual entering air temperatures.
e. Design and actual leaving air temperatures.
f. Heater sizes; design and actual Kw to include number of stages.
g. Unit nameplate data versus actual, volts and amps per phase with heater fully energized, and per stage.
h. Actual outside air temperature during testing.

8. Split System Indoor Units:

a. Manufacturer, Model, Size, and Serial Number.
b. Design and actual CFM (supply, return, and outside air).
c. Design and actual evaporator motor RPM.
d. Static pressure entering and leaving filters, coils, furnaces, and fans.
e. Evaporator motor name plate data.
f. Evaporator motor starter data and motor overload protection size and rating, or setting, for adjustable devices.
g. Actual evaporator motor amperage and voltage (all phases).
h. Filters; type, thickness, sizes, quantities of each size, and condition (new, clean, dirty, loaded, wet, etc.).

9. Condensing Units:

a. Manufacturer, Model, Size, and Serial Number.
b. Location.
c. Actual unit name plate data.
d. Actual unit (compressor and condenser unit motors) amperage and voltage, all phases.
e. Ambient air temperature entering condenser during indoor and outdoor unit testing.

10. Rooftop Air Conditioning Units:

a. Manufacturer, model, size and serial number.
b. Design and actual CFM (Supply, Return and Outside Air).
c. Design and actual Evaporator Fan RPM.
d. Static air pressure entering and leaving filters, coils, heaters, control dampers, and evaporator fan.
e. Evaporator, Return and Relief Air (as applicable) motor nameplate data.

f. Evaporator, Return and Relief Air (as applicable) fan motor starter data and motor overload protection heater sizes and rating (for each phase).
g. Actual evaporator motor amperage and voltage (all phases).
h. Filters; type, manufacturer, model, MERV rating, thickness, sizes, quantities of each size, actual static pressure drop across filters and condition (new, clean, dirty, loaded, wet, etc.).
i. Total unit Nameplate data (Volts, Amps, and overcurrent protection required).
j. Actual Unit volts and amps, for each phase, and actual overcurrent protection device rating, with the unit operating in full cooling.
k. Actual outside air temperature, dry and wet bulb (or relative humidity) during testing.
l. Condenser coil entering and leaving air dry bulb temperatures at full cooling.

D. Instructions to Operating Personnel: TAB Firm shall instruct the operating personnel regarding the following:
1. Systems Operation.
2. Unusual Operating Conditions
3. System Troubleshooting Procedures.

E. Guarantee: Provide extended warranty of twelve (12) months after occupancy during which time the Engineer and/or Owner may, at his discretion, request check of the balance of any HVAC equipment. Provide TAB technicians to assist as required in making such tests. When any device is found not balanced in accordance with the mechanical plans and specifications, that HVAC system shall be completely rebalanced as directed by the Architect/Engineer and/or Owner at the TAB Firm's expense.

END OF SECTION 230593

SECTION 230700 - INSULATION

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS
- A. Comply with Division 1 - General Requirements and referenced documents.
- B. Comply with all other Division 23 Sections as applicable. Refer to other Divisions for coordination of work with other portions of work.

1.2 SYSTEM DESCRIPTION
- A. Provide the systems of insulation which are specified for the control of heat transfer, sound control, and prevention of condensation.
- B. Provide protective devices to prevent compression abrasion or puncture of the piping insulation systems installed to include inserts, pipe shields, PVC jacketing and aluminum jacketing as specified herein.
- C. Provide piping identification systems as specified in Section 23 05 53, Identification for Equipment and Piping.

1.3 QUALITY ASSURANCE
- A. The installation of all thermal insulation shall be performed by a single firm regularly engaged in the insulation business, using skilled insulation mechanics and using insulation materials which are the product of reputable manufacturers. The application of the materials by the insulator shall be in accordance with the published standards of the manufacturer of the materials, using any special materials as required by these specifications and by those published standards.
- B. Materials shall be manufactured by Schuller, Pittsburg Plate Glass, Owens-Corning, Foster, Certainteed, Johns Mansville, or Knauf.

1.4 SUBMITTALS
- A. Product Data: Submit manufacturer's descriptive literature and installation instructions to allow review of Materials and Methods to ensure complete compliance with specifications.

- B. Shop Drawings: Submit materials to be used and method of application for each system in tabular form. General statements not specifically identifying means or methods to be used shall be cause for rejection. Include descriptive data and cut sheets on each type of insulation material, sealing method, adhesives used, insert types, shield sizes, and PVC or aluminum jacketing as specified.

1.5 PRODUCT HANDLING
- A. Cover and protect material in transit and at site. Material not properly protected and stored and which is damaged or defaced during construction shall and will be rejected.
- B. Promptly replace all damaged, deteriorated or wet insulation materials.
- C. Storage and protection of materials shall be in accordance with Section 23 05 00.

PART 2 - PRODUCTS

2.1 PIPING AND EQUIPMENT INSULATION MATERIALS
- A. Waste, Drain and Miscellaneous Lines:
  1. The drain from each piece of Air Handling Equipment condensate drain pan and all refrigerant suction piping shall be insulated with foamed plastic, Armacell Armaflex or Aeroflex Aerocell slipped on while the piping is being fabricated, and with all joints, butt type, sealed using an adhesive recommended by the manufacturer of the plastic. The insulation shall be continuous from the drain opening in the Air Handling equipment condensate pan to the point of discharge with an open sight air gap over a drain. All formed plastic insulation shall meet ASTM E-84 requirements. Provide 1/2" thick insulation on condensate drains and 1-1/2" thick insulation on refrigerant suction piping.
- B. Refrigerant Lines and Gas Flue Condensate Lines Exposed to the Outdoors:
  1. Insulate as described in A.1 above.
  2. Cover with an 0.016 inch thick aluminum with locked seams and banded joints made watertight. Jacketing shall be equivalent to Childers Aluminum roll jacketing conforming to ASTM B-209, with smooth mill finish.

3. Cover mechanical couplings and fittings with prefabricated aluminum jacketed fitting covers with factory applied moisture barriers to thickness to match that on piping and band in place. Fitting covers shall be equivalent to Childers ELL-JACS., Tee-Jacs, Flange-JACS, and Valve-JACS. Seal ends to prevent moisture penetration and to make completely weatherproof

2.2 DUCTWORK INSULATION MATERIALS

A. Duct Insulation - External:
1. Concealed (above ceilings) external duct insulation shall be glass fiber blanket-type insulation of not less than 3/4 lb. per cu. ft. density with a factory applied flame-retardant vapor barrier facing. Facing shall consist of a layer of aluminum foil, reinforced layer of glass fibers, and a layer of kraft paper all bonded together with fire-retardant and adhesive. Insulation, adhesives, and tapes shall be rated in accordance with U.L. 181A or 181B. Minimum ductwrap insulation thickness shall be two inches (2") thick and be equal to Certainteed Type IV duct wrap.
2. All insulation systems shall meet the requirements of the 2015 version of the International Energy Conservation Code, which requires a minimum installed R-value of 6.0 for conditioned, cooled or heated, and outside air system ductwork and plenums when located inside buildings or spaces. Increase insulation thicknesses as required to comply.
3. Water Vapor Permeance shall be no greater than 0.05 Perms per ASTM-E-96.
4. Fire Hazard Classification of installed duct insulation systems shall meet the requirements of ASTM-E-84; Flame Spread of 25, or less; Smoke Developed and Fuel Contributed of 50, or less. All insulation systems, adhesives, mastics, sealants, and tapes shall be U.L. rated for the application. All tapes used shall be acrylic based.
5. All external duct insulation shall be a regularly manufactured product of one of the following:
    a. Knauf.
    b. Owens Corning.
    c. Johns Manville.
    d. Certainteed.

B. Duct Insulation - Internal:
1. Internal duct insulation, liner, shall be in thicknesses as indicated herein, and be as specified in Specification Section 23 30 00. Duct liner shall be one inch (1") thick on all return, transfer, and relief air ducts, and on portions of general exhaust air ductwork systems as specified elsewhere herein. Internal duct insulation on all conditioned, cooled or heated, supply, all outside air ductwork systems and all mixed air plenums shall be 1-1/2" thick duct liner.
2. All duct liner shall be made of glass fiber coated with a bonded mat on the air stream side of the insulation. Coating shall be neoprene based meeting the requirements of NFPA-90A and U.L. Standard 723. Insulation shall not be less than 1.5 lbs. per cu.ft. density, and have a K-value of 0.28 per ASTM-C-177 at a mean temperature of 75 Deg.F.
3. All insulation systems shall meet the requirements of the 2015 version of the International Energy Conservation Code, which requires a minimum installed R-value of 6.0 for conditioned, cooled or heated, supply and all outside air system ductwork and mixed air plenums when located inside buildings or spaces. Increase insulation thickness as required to comply.
4. Fire Hazard Classification of installed duct insulation systems shall meet the requirements of ASTM-E-84; Flame Spread of 25, or less; Smoke Developed and Fuel Contributed of 50, or less.
5. All insulation systems, adhesives, mastics, sealants, and tapes shall be U.L. rated for the application.
6. All duct liner shall be suitable for the air velocities to be encountered in each system, and shall generally be suitable for velocities of up to 6000 FPM.
7. Acceptable duct lining manufacturers shall be:
    a. Certainteed.
    b. Knauf.
    c. Owens Corning.
    d. Johns Manville.

PART 3 - EXECUTION

3.1 GENERAL

A. Apply insulation and pipe covering after all of the piping system to be insulated has been pressure tested, found to be completely tight (without leaks), and accepted as such. All extended handles and caps should be installed prior to commencing with insulation. Thoroughly clean and dry all surfaces prior to being covered.

B. All insulation shall be continuous through wall and ceiling openings and sleeves. Use exterior duct wrap insulation on the outside of smoke and fire damper sleeves. Create a secondary sleeve around the primary sleeve to allow a complete insulation system as allowed by the local authority having jursidiction.

C. All insulation and accessories shall have composite (insulation, jacket and adhesive used to adhere the jacket to the insulation) fire and smoke hazard ratings as tested under procedure ASTM E-84, NFPA 255, and UL 723 not exceeding:

Flame Spread	25
Smoke Developed	50
Fuel Contributed	50

D. Unsightly work shall be cause for rejection, including poor application of adhesives and coatings beyond the insulation which coats valves or other piping specialties.

E. Damage or Modification to Insulation: Where new insulation is disturbed or damaged during the process of installing other new materials, making new connections, etc., it shall be repaired or replaced to return it to its original condition and appearance. Where lines are removed and connections to insulated lines are capped, insulate those caps as well as repairing damaged insulation. Materials shall match those presently installed in thickness, density, insulating value, jacketing, etc.

F. Miscellaneous Lines: Piping connected to chilled or hot water lines through which there might be fluid flow on occasions such as the lines connected to air vents, lines running to compression tanks, etc. shall be insulated as described for other piping in those systems.

G. Hanger and Support Locations: At the location of hangers or supports for pipes run above ground and finished with a vapor seal insulation, provide rigid sections of cork, Foamglas, calcium silicate or high density polyurethane, at least the same thickness as the adjacent insulating material to adequately support the pipe without compression of the insulating material and cover with a vapor seal that is bonded to the adjacent insulation as described for fittings in the lines. Where the insert has an insulating value less than the adjacent pipe insulation the thickness of the insert shall be increased to equal the insulating value of the adjacent pipe insulation. Wood inserts shall not be allowed. Hangers and supports for piping insulation to receive a vapor barrier shall be installed exterior to the insulation.

H. Material Changes: Wherever there is a change in materials on lines that are vapor sealed, apply a suitable adhesive that is compatible with both materials, tapes, etc., as required to maintain the vapor barrier.

I. The following describes materials, thickness and finishes for insulation on piping. In the following "exposed" shall mean any line or duct exposed below the finished ceiling and structure where no ceiling is installed, in any room space, area, mechanical rooms, closets, and any line or duct run exterior to the building, including above the roof. "Concealed" shall mean any line or duct located above ceilings, in furrings, in chases, in crawl spaces, and buried in direct contact with the soil.

J. All insulation materials and jacketing shall exhibit the following characteristics:
   1. Water sorption, per ASTM C 1104, shall be less than 0.02%.
   2. Linear shrinkage, per ASTM C 356, shall be negligible.
   3. Stress corrosion, per ASTM C 795, shall not cause corrosion.
   4. Corrosiveness, per ASTM C 665, shall not be any greater than sterile cotton.
   5. Resistance to fungi, mold and mildew and bacteria, per ASTM C 665, shall be rated as not promoting growth of fungi and bacteria. Inhibitors shall be added to specified products to meet these requirements.

3.2 DUCTWORK

A. Duct Insulation - Internal: Provide sound absorbing and thermal insulation to the interior surface of the following duct systems: Line the first 10 feet from the unit of allrectangular low pressure supply, return, relief and transfer, air ducts and supply, mixed, and return air plenums, unless noted, otherwise on the drawings. All lined ductwork shall be increased in size to maintain the clear inside (air stream) dimensions designated on the Drawings.
   1. Duct liner shall be applied in accordance with the manufacturer's recommendations, with the coated, or mat-faced, surface located away from the metal (exposed to air stream). It shall be adhered to

the metal with Foster 85-10 or 85-15 adhesive applied to the entire inner surface of the duct. The liner shall be further secured to the duct with Graham Insulating Pins and Clips or other metal clips of the type which do not protrude through the duct. Those clips shall be installed on not greater than 12" centers both ways. All seams and openings in the liner shall be carefully sealed with adhesive.

2. Paint all joints in liner and butter the edges of sections where sections of ductwork will be joined using Foster No. 30-35, or equivalent adhesive.
3. Where damper rods occur, suitable metal bushings shall be provided on each end of the damper rod inside the duct, to provide clearance between the damper blade and the lining.
4. Refer to Section 23 30 00, HVAC Air Distribution.
5. Due to the 2015 version of the International Energy Conservation Code, conditioned air, heated or cooled air (includes outside air intake ductwork), ductwork insulation located inside the building envelope shall have a minimum installed R-value of 6.0. For lined ductwork, this shall be accomplished by using 1-1/2" thick duct liner. Coordinate insulation requirements with other Sections of these Specifications.

B. Duct Insulation - External:
1. Externally insulate all rectangular and round supply, return, and outside air ducts not containing internal lining (Kitchen make-up air ducts shall not contain internal lining and shall always be externally insulated).
2. Additionally insulate the outside of all fire, fire-smoke, and smoke damper sleeves penetrating walls and floors to insure a continuous insulation system.
3. External insulation shall be applied in accordance with the manufacturer's recommendations by impaling over pins using speed clips or be secured with adhesive.
4. Seal all joints, breaks, fastener penetrations and punctures with a 3" wide vapor barrier strip similar to that of facing materials secured with adhesive. Pins shall be spaced 12" on center both ways. Adhesive shall cover the entire duct surface.
5. Blanket type insulation shall generally be used on concealed ductwork only with rigid insulation board being used exclusively on exposed ductwork, which shall also receive a PVC jacket when located 12'-0", or less, above the finished floor.
6. Mastic seal all jacketing penetrations with a vapor barrier coating with a maximum perm rating of 0.02 Perms.

3.3 SHIELDS AND INSERTS

A. Metal saddles, shields, shall be applied between hangers or supports and the pipe insulation. Saddles shall be formed to fit the insulation and shall extend up to the centerline of the pipe and the length specified for hanger inserts. Shields shall be made of galvanized sheet metal and shall be of sufficient size and length to prohibit the crushing of the insulation materials. Saddle shields shall be as follows:

Pipe Size	Metal Saddles	
	Metal Gauge	Length
3/4" to 3"	18	12"
4" to 6"	16	12" - 18"
8" to 10"	14	24"
12" & Larger	12	24"

END OF SECTION 230700

SECTION 230900 - INSTRUMENTATION AND CONTROLS FOR HVAC

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS
- A. Comply with Division 1 - General Requirements and referenced documents.
- B. Comply with Section 23 0500, General Provisions, and all other Division 23 Sections, as applicable.
- C. Refer to other divisions for coordination of work with other trades.

1.2 SYSTEM DESCRIPTION
- A. The scope shall include the furnishing and installing of an electronic controls system with new direct digital controllers, all local and remote control panels, temperature control field devices, appurtenances, etc., to accomplish specific control sequences specified herein, to provide fire and freeze protection; sensing and indicating devices; pressure and temperature indicating instruments; supporting structures, and other required components for a complete and operating system.
- B. The scope shall include all new electric connections to new thermostats, sensors, dampers and actuators, and relays, and all other new components of the system requiring electric connections.
- C. **The controls contractor shall be contracted by the Mechanical Contractor.** Mechanical contractor shall coordinate all required control interface connections with this contractor.
- D. Provide all software programs as required to implement the sequences of control, monitoring, reporting, etc., as indicated herein.
- E. The new system installed shall be fully automatic, subject to various types of remote surveillance, routine remote adjustments, remote status, remote alarms, remote data collection for trending/historical files, and other operations as indicated herein, from a new local remote microprocessor-based Local Area Network (LAN), with the local system capable of stand-alone operation. **The new system shall be expandable and will eventually control and operate the entire facility**.
- **F. This system of equipment and software shall be provided and installed by the single local factory trained and authorized sales, installation and service agent of Trane, Logical Solutions Inc. (LSI), Johnson Controls Inc. (JCI), Reliable Controls, and Delta Controls.**
  1. Trane
  2. Logical Solutions Inc. (LSI)
  3. Johnson Controls Inc. (JCI)
  4. Reliable Controls
  5. Delta Controls
  6. Alerton
- G. The existing pneumatic system will continue to operate and control the existing building central plant and air handling units. Refer to the air handling unit schedule for the air handling unit replacement schedule. The controls contractor shall reuse as much of the pneumatic system as possible for the replacement air handling units.

1.3 QUALITY ASSURANCE
- A. The equipment provided under this Section of the Specifications shall be installed, calibrated, adjusted, and put in completely satisfactory operation by a Control Systems installer experienced in this type of work.
- B. The successful Control Systems installer shall meet the following requirements:
  1. All spare parts must be locally stocked and readily available within a 24 hour period.
  2. Service personnel shall be available, on call, on a 24 hour a day, year round basis, or service personnel will respond by visitation to the site within four (4) hours of a service call considered serious in nature or classified by the Owner as an emergency.
  3. Be able to provide evidence of having successfully installed similar sized and types of systems for a minimum of ten (10) years.
- C. All control devices shall be as specified in the technical portion of this section of the specifications. The system shall be installed by workmen skilled, experienced, and specifically trained in the application, installation, calibration, adjusting, and testing of instrumentation of the type specified.
- D. A service representative of the installer shall check the instrumentation for proper installation, calibrate all instruments and make all adjustments necessary to insure proper operation of the system in full cooperation with the Testing, Adjusting, and Balancing (TAB) Firm. Refer to Section 23 0593. All instruments required for checking, calibrating, and proving the system shall be provided under this

Section of the Specifications. The service representative shall spend sufficient time with all of the Owner's Representatives after the system is installed and properly functioning to instruct the Owner's Representative (Operations and Maintenance Personnel) in the operation of the system for a minimum of eight (8) hours for the basic Controls System. At final completion of the installation provide personnel and instruments of satisfactory quality available to check the calibration of all instruments, and to demonstrate system operation as described in "Sequences of Operation".

E. All basic control devices, parts, and other materials, shall be standard catalog products of a single reputable manufacturer and shall essentially duplicate equipment which has been in satisfactory service for at least one (1) year. All materials and parts shall be items in current production by the manufacturers. First of a kind new technology devices will not be considered. Accessory equipment that is required to make a complete and functioning system that is not of the same manufacturer furnishing the basic control equipment shall carry the guarantee of the basic control equipment manufacturer and repair and replacement parts shall be available through normal local trade channels.

F. All software updates and enhancements which evolve during the first year warranty period following system acceptance, "Substantial Completion", shall be furnished to the Owner without additional cost. This shall include the local stand-alone direct digital controllers and the building network manager computer(s).

G. All controllers shall be Native “ASHRAE BACNET” and shall communicate to an “ASHRAE BACNET” Building Level “Front End” controller at the building network level.

1.4 SYSTEM START-UP AND COMMISSIONING

A. After completion of the installation, Contractor shall place the system in operation and shall perform all necessary testing and debugging operations of the basic systems.

B. An acceptance test shall be performed in the presence of the Testing, Adjusting, and Balancing (TAB) Company, to verify correct sequences of operation, calibration, and operation of the Controls, when installed, with every part of the system functioning satisfactorily and having been fully commissioned, and with no outstanding items requiring completion or correction, the system will be accepted by the Architect and Owner for "Substantial Completion", and will then be placed under Warranty.

C. The Automatic Temperature Controls Installer shall thoroughly check all controls, sensors, operators, sequences, etc., before notifying the TAB Agency that the Automatic Temperature Controls are operational. The Automatic Temperature Controls Installer shall provide technical support (technicians and necessary hardware and software) to the TAB Agency to allow for a complete check-out of these systems.

1.5 SUBMITTALS

A. Submittals shall be complete and be in full accordance with Section 23 0500, General Provisions.

B. Submittals shall include complete, continuous line, point to point wiring diagrams including tie-in points to equipment with written sequences of control adjacent to pertinent control diagrams. Specification sheets shall be submitted on each piece or type of equipment in a separate brochure and show sufficient detail to indicate compliance with these specifications. Drawings and Specification sheets shall show setpoints, throttling ranges, actions, proportional bands, and integration constants, where applicable. Complete brochures shall include the wiring diagrams as well as operating and maintenance instructions on the equipment.

C. Complete and approved shop drawings shall be obtained prior to commencing installation work, unless otherwise approved by the Owner or Owner's Representative.

D. Tag numbers, as shown or specified, shall appear for each item on the wiring diagrams and data sheets. Data sheets shall properly reflect in every detail the specific item submitted.

E. After completion of the work, Contractor shall prepare and furnish maintenance brochures for the Owner. The maintenance brochures shall include operating instructions, specifications, and instruction sheets for all instruments and a complete set of "As-Built" control drawings. After approval of submittal, completion of all installation work, software checkout, and system commissioning in conjunction with the Testing, Adjustment and Balance (TAB) Firm, furnish to the Owner the following:

1. Three (3) sets of Blue or Black line prints of "As-Built" drawings, half size (11" X 17"), inserted in a three ring binder.
2. Three (3) copies of the final approved Shop Drawings in suitably sized three ring binders.
3. Provide a complete replacement spare parts list to the Owner, three (3) copies.
4. Two (2) CD’s with PDF files of all items furnished under items 1, 2 and 3 above, along with all operations and maintenance manuals.

1.6 PRODUCT HANDLING

A. Cover and protect material in transit and at site. Material not properly protected and stored, and which is damaged or defaced during construction shall be rejected.
B. Cover control panels, open ends of control piping and open ends of control valves stored on site until just prior to installation of wiring and valves respectively.
C. Storage and protection of materials shall be in accordance with Division 1.

PART 2 - PRODUCTS

2.1 TEMPERATURE SENSORS

A. Temperature sensors shall be nickel wire thermistor, 10,000 or 30,000 ohm resistance, or RTD Type, with 1000 ohms resistance at 70 Deg.F., and a 3 ohms/per degree F temperature coefficient.
B. Ambient temperature limits shall be minimum of 0-125 Deg.F. with a +/- 0.50% accuracy of nominal resistance at 70 Deg.F.
C. Mixed air temperature sensors shall be the averaging capillary type to sense duct temperature across the full duct width. Minimum sensor length shall be 15 feet and include adequate supports for element within the duct or at the face of the coil, maintain minimum one inch (1") separation from coil.
D. Furnish sensors with maximum 6 to 9 inch insulated pigtail leads.
E. All sensor actions shall be the same for the entire building.
F. Mount all room wall sensors at 48" inches above finished floor to comply with A.D.A., unless indicated or approved otherwise by the Architect or Owner's Representative.
G. Wall space temperature sensors shall include the following accessories, features and functions:
    1. Impact Resistant Lexan type cover material.
    2. Local override pushbutton to energize controlled equipment for after-hours operation.
    3. Local operator interface communication service jack compatible with mobile trouble shooting terminal unit. Alternately, provide spare service jack on terminal equipment controller on controlled terminal equipment.
    4. Temperature increase/decrease adjustment capability.
H. Sensors shall be as manufactured by General Eastern, ACI, or Reliable.

2.2 RELATIVE HUMIDITY SENSORS

A. Provide a 100% solid state copolymer wafer, of bonded layer hygrometric materials, humidity sensor and transducer. Sensor shall require no periodic maintenance or recurring calibration. Sensor shall be linear and temperature compensated.
B. Sensor shall have +/-2% Relative Humidity (RH) accuracy over a 100% RH range and +/-1% over the 30-80% RH range.
C. Sensor shall produce outputs of 4-20 ma or 1-11 vdc.
D. Sensor shall be in an impact resistant cover with ventilating openings in occupied spaces. Provide duct or remote mount probes as required for the application.
E. Wall mounted sensors shall be mounted 48 inches above finished floor to comply with A.D.A., unless indicated or otherwise approved by the Architect or Owner's Representative.
F. Acceptable Manufacturers:
    1. Vaisala ($\pm$2% to 3% acceptable).
    2. General Eastern ($\pm$2 to 3% acceptable).
    3. Alerton, Reliable, Delta or Honeywell Controls ($\pm$2% only).

2.3 CARBON DIOXIDE SENSORS

A. Furnish and install “CarboCap” technology (Vaisala) or Single Beam, dual wavelength, Infrared type technology (Tel-Aire) carbon dioxide sensors where indicated and as specified elsewhere herein.
B. Sensors shall accurately sense carbon dioxide levels from 250-2000 Parts Per Million (PPM) with an accuracy of $\pm$ 60 ppm ($\pm$ 2% of range (2000 PPM) and $\pm$ 2% of reading (use 1000 PPM)), repeatability of $\pm$ 2% of full scale, maximum drift of $\pm$ 5% of full scale in five (5) years, $\pm$ 1% of full scale in six (6) months, and linearity of less than $\pm$ 3% of full scale.
C. Sensors shall be suitable for operation in environments of 60 Deg.F. to 104 Deg.F. and 15-95% relative humidity, non-condensing, and air velocity ranges of 200 to 2750 feet per minute when located in ductwork. Wall mount sensors shall be able to sense accurately with air velocities as low as 20 feet per minute.
D. Sensors shall be calibrated at the factory at 1,000 PPM, $\pm$ 50 PPM; at 72 Deg.F, $\pm$ 4 Deg.F.; and at 50% relative humidity, $\pm$ 5%.

E. Power requirements shall be 24 colts AC with a power consumption not to exceed 5 watts.
F. Wall mount sensors shall be mounted at 48-54 inches above the finished floor.
G. Sensors shall be as manufactured by:
   1. Vaisala, Model GMD/W20 or equals by;
   2. Tel-Aire(Model 8101/8102), or
   3. Alternate equal models by Veris Industries.

2.4 COMBINATION SENSORS
A. Where space temperature and relative humidity sensors are all designated to be located in the same location for control or monitoring purposes combination sensors are desired such that one wall mounted device and single back box is required.
B. Where combination sensors are required the specified levels of accuracy will be required. The use of combination sensors does not relieve these requirements.

2.5 SMOKE DETECTORS
A. One (1) smoke detector shall be furnished and installed under Division 26 for each new unit over 2,000 CFM of airflow or unit 2,000 CFM of airflow to be mounted in the return air stream, which shall stop the fan motors upon detection of smoke.
B. Coordinate with Division 26 requirements to insure sampling tubes are provided suitable to the width of duct in which installed.
C. Detectors shall be supplied with 120 volts, or 24 volts, power supply under Division 26. Control circuit interlock wiring shall be under this section of specifications.
D. Acceptable duct detectors, where not specified elsewhere, shall be THORN-DH-22, BRK-DH2851AC, or Gamewell MS-69433, suitable for single station operation.

2.6 AUTOMATIC DAMPERS
A. Provide all control dampers, under this Section of the Specifications, of the types and sizes indicated on the Drawings, including but not limited to outside air intakes, return, relief, and other motorized air control dampers where shown, or where not an integral part of the equipment furnished and specified in other sections of these specifications. All dampers shall be special low leakage extended performance type.
B. Damper frames shall be not less than 16 gauge galvanized steel formed for extra strength with mounting holes for flange and enclosed duct mounting.
C. Dampers shall be available in two-inch size increments from 8" horizontal and vertical to 48". Requirements for dampers over 48" in size shall be met by using standard modules with interconnecting hardware to limit damper blade length to a maximum of 48". Provide separate actuator for damper modules exceeding 32.0 square feet and as required for smaller sizes due to torque requirements.
D. All damper blades shall be not less than 16 gauge galvanized steel roll formed for high velocity performance. Blades on all dampers must be not over 6" wide.
E. Blade bearings shall be nylon or oilite with 1/2" zinc plated steel shafts.
F. All blade linkage hardware shall be of corrosion-resistant finish and readily accessible for maintenance after installation.
G. Provide continuous replaceable neoprene or butyl rubber edging seals for all outdoor and relief air dampers where blade edges meet when dampers are closed. Spring loaded stainless steel side jamb seals shall be provided for all dampers.
H. Dampers and seals shall be suitable for temperature ranges of -20 degrees F to 200 degrees F at specified leakage ratings.
I. Dampers used for proportional control shall have opposed blades.
J. Leakage rates for all controlled dampers shall not exceed 5 CFM of air flow per square foot of face area based on a 16 square foot damper, at 1.0" W.C. differential, rated in accordance with AMCA 500. Furnish test data with Submittals.
K. Acceptable manufacturers (No other manufacturers will be allowed):
   1. Johnson Controls, Inc.
   2. Honeywell, Inc.
   3. American Warming and Ventilating, Inc.
   4. Ruskin.

2.7 ELECTRIC DAMPER ACTUATORS
A. All control valves and dampers shall receive electric actuators.

B. Electronic direct-coupled actuation devices shall be provided.
C. Electric Actuators shall be direct-coupled over the shaft, enabling it to be mounted directly to the damper shaft without the need for connecting linkage. The fastening clamp assembly shall be of a "V" bolt design with associated "V" shaped toothed cradle attaching to the shaft for maximum strength and to eliminate slippage.
D. Spring return actuators shall have a "V" clamp assembly of sufficient size to be directly mounted to an integral jack shaft of up to 1.05 inches when the damper is constructed in this manner. Single bolt or set screw type fasteners are not acceptable.
E. Actuators shall have electronic overload or digital rotation sensing circuitry to prevent damage to the actuator throughout the entire rotation of the actuator. Mechanical end switches or magnetic clutch to deactivate the actuator at the end of rotation are not acceptable.
F. For power-failure/safety applications, an internal mechanical spring return mechanism shall be built into the actuator housing. Non-mechanical forms of fail-safe operation are not acceptable. This applies to all dampers directly connected to outside and relief air systems. Heating water valves serving coils on air handling equipment directly connected to an outside air intake shall have spring return. All spring return actuators shall be capable of both clockwise or counterclockwise spring return operation by simply changing the mounting orientation.
G. Proportional actuators shall accept a 0 to 10 VDC or 0 to 20 mA control input and provide a 2 to 10 VDC or 4 to 20 mA operating range. An actuator capable of accepting a pulse width modulating control signal and providing full proportional operation of the damper is acceptable. Floating point type control is acceptable on fan coil units, unit heaters and variable air volume terminals. All actuators shall provide a 2 to 10 VDC position feedback signal.
H. All 24 VAC/VDC actuators shall operate on Class 2 wiring and shall not require more than 10 VA for AC or more than 8 watts for DC applications. Actuators operating on 120 VAC power shall not require more than 10 VA.
I. All non-spring return actuators shall have an external manual gear release to allow manual positioning of the damper or valve when the actuator is not powered. Spring return actuators with more than 60 in-lb torque capacity shall have a manual crank for this purpose.
J. All modulating actuators shall have an external, built-in switch to allow the reversing of direction of rotation.
K. Actuators shall be provided with a conduit fitting and a minimum three-foot electrical cable and shall be pre-wired to eliminate the necessity of opening the actuator housing to make electrical connections.
L. Actuators shall be Underwriters Laboratories Standard 873 listed.
M. Actuators shall be designed for a minimum of 60,000 full stroke cycles at the actuator's rated torque and shall have a minimum 2-year manufacturer's warranty, starting from the date of substantial completion.
N. All actuators connected to all sequenced dampers shall have independent control and adjustment from one another to emulate a pilot positioner.
O. Acceptable Manufacturer's:
    1. Belimo.
    2. Johnson Controls, Inc.
    3. Siemens.
    4. Invensys.
    5. Honeywell, Inc.

2.8 CURRENT SENSING STATUS RELAY

A. Prove current sensing status relays for motor operation status monitoring as specified elsewhere herein.
B. Sensors shall be 100% solid state, no mechanical parts, and have no calibration drift.
C. Sensors shall have an adjustable trip level, be isolated, have single set point adjustment, require no external power (power induced from conductor), and have integrated adjustable wall or floor mounting bracket.
D. Sensors shall be suitable for motor loads from 0 to 100 HP, with a supply current of 1 ampere up to 135 amperes, 600 VAC RMS, set point adjustable to +/-1% range from 0-95% non-condensing relative humidity.
E. Sensors shall be as manufactured by Veris Industries.

2.9 LOCAL CONTROL PANELS

A. New local equipment control panels shall be installed in each equipment room, or other locations as indicated or as required, for new electric equipment and control devices. They shall be totally enclosed, pre-piped, and wired to labeled terminals to house all associated controllers, thermometers, relays,

switches, etc. serving that equipment. Provide one cabinet for each air handling unit or group of units in the same room.

B. Panels shall be mounted at a convenient height for access. Acceptable locations include mechanical equipment rooms, storage closets, electrical rooms, or other spaces as indicated on the Drawings. Above ceiling locations are not acceptable.
C. Thermometers, pilot light switches, and gauges shall be flush mounted on panel surface.
D. Cabinet frames shall be extruded aluminum sections with riveted corners supported by internal angle brackets. Door shall have continuous hinged door, with latch and key lock.

E. Sub-Panel and face panel shall be removable for ease of installation and replacement. Face panel shall be of a finished color with a finished frame.
F. Knockouts for 1/2" x 3/4" EMT connection and 1-1/2" x 1-1/2" trough shall be provided at top and bottom of panel.
G. Identify each panel, switch, and device by an engraved, bolt-on, black phenolic nameplate with white lettering securely attached. Identify all control devices inside panels similarly. Embossed plastic tape will not be acceptable on panel front faces but will be allowed on panel interiors.
H. Switches and pilot lights shall be mounted on the panel face with all other devices mounted inside the panel. Devices inside panels shall be wired to numbered dual terminal strips.
I. Start-Stop Pushbuttons and Pilot Lights, where called for, shall be of the low voltage and neon type. Pushbuttons shall be heavy duty type. Pilot lights shall be interlocked with starter auxiliary contacts except fans and pumps which shall have differential pressure sensors to indicate run status.
J. Each new control panel installed shall have a minimum of 25% consolidated spare/extra space available inside the panel for mounting of control devices for future system modifications or changes. This space shall be indicated on the panel shop drawing.
K. All wiring inside panels shall be concealed in a wiring harness.
L. Permanently affix inside each panel a final "as-built" control drawing of the piping and wiring of the panel.
M. All panels shall be factory assembled, piped and wired.

2.10 ELECTRICAL WIRING

A. All wire, wiring, and conduit required for the operation of the control system shall be the responsibility of this section of the specifications and shall be installed as described and in full accordance with the requirements of Division 26 of these Specifications. Conduit down in walls to space sensors and back to accessible ceiling space to be provided by Division 26. Automatic Controls Contractor to coordinate installation of conduit of space sensors with Division 26 and provide if nto provided by Division 26.
B. The control manufacturer shall be responsible for supplying complete and approved wiring diagrams and installation supervision of the wiring of the control system and shall perform all necessary set-up and calibration labor.
C. Starters, furnished in other sections of these specifications, shall be installed under Division 16, but all wiring from auxiliary contacts or relays shall be under this section of the specifications.
D. All wiring, including Class 2 signal wiring, shall be installed as a Class 1 electrical system as defined by the National Electrical Code (NEC).
E. All control conduits with #8 conductor or smaller (cross-sectional area) shall have one (1) spare conductor each run in conduits carrying 5 or more conductors. Spare conductor shall be same size as the majority of conductors sized in the conduit. Conduits with 9 or more conductors shall have two spare conductors. Terminate spare conductors at control panels in an acceptable manner and tag wires as “spare”.
F. The electrician shall be licensed by the City and local authorities having jurisdiction over the area in which the work is to be performed.
G. All class 1 control wiring conduit shall be run with not more than 30% fill based on inside conduit diameters and cross-sectional area. This provision is for future modifications or additions to the control system.
H. All conduit carrying shielded twisted pair cabling, communication, or signal, Class 2 wiring, shall be sized for a maximum of 40% fill based on inside conduit diameter and cross-sectional area. This provision is for future modifications or additions to the control system.
I. All wiring shall be run in conduit. All Class 1 power wiring shall be run in conduit. All Class 2 signal wiring, low voltage control type, shall be run in conduit. No exposed wiring of any kind will be allowed. Class 2 signal wiring may be installed without conduit but only when installed above fully accessible lay-in ceilings and if run-in plenum rated cable supported independently from structure and run parallel and perpendicular to the structure.

J. All conduit shall be 3/4 inch size minimum, except raceways terminating at control devices manufactured with 1/2" knock-outs, i.e., conduit from junction box to smoke or fire detectors (local single device wiring only).

K. Electrical Systems Installer on project may perform temperature control conduit and wiring installation on project only that this portion of work shall be bid directly to the Temperature Control Systems Installer, and all work in relation to temperature control wiring shall be done subordinate to this Section of the Specifications. Wiring terminations shall be under this Section of the Specifications.

L. Under this Section of Specifications, coordinate the furnishing and installation (by the job site electrician), at an early stage of construction (when walls are being constructed) galvanized steel back boxes for all wall mount space sensors, suitably secured with 3/4" EMT routed to four inches (4") above an accessible ceiling. This will also require the installation of pull wire for installation of sensors and related wiring at a later stage of construction under this Section of Specifications.

M. Work Not Included Under this Section of Specifications: The Electrical Systems Installer shall provide:
   1. Branch circuit and motor feeder circuit conductors, raceway, connections, and overcurrent protection for each motor or item of equipment furnished by the Owner or other Contractors.
   2. Installation of motor controllers furnished by the Owner or other Contractors, along with branch circuit and motor feeder circuit conductors, raceway, and connections in accordance with the manufacturer's approved wiring diagrams.
   3. Disconnect switches, where indicated on the drawings or required by codes, except as provided as an integral part of manufactured equipment.
   4. Power supply conductors, raceway, connections, and over-current protection for input power to HVAC Temperature Controls, HVAC Automation, and HVAC Energy Management Systems in accordance with approved rough-in and connection diagrams furnished by the system suppliers only when shown on Division 26 Drawings.
   5. The above represents an outline of the work for the purpose of describing one division of the work which is acceptable to insure that all work is contained within the General Contract. The Contractor is fully responsible for the installation of complete, operating systems in accordance with the functional intent of the specifications.
   6. Nothing herein shall be construed to confine the Contractor from assigning the work to any single member or group of systems installers deemed best suited for executing the work to effect completion of the contract. Refer to specific bidding instructions of the General Contract for the actual division of the work.
   7. Installation of all control conduit in walls to accessible above ceiling space.

N. Work Included Under this Section of the Specifications: The Mechanical Systems Installer shall provide:
   1. Motors and equipment, erected in place and ready for final connection of power supply wiring, along with manufacturer's approved wiring diagrams.
   2. Motor controllers, in suitable enclosures and of the type and size in accordance with the manufacturer's recommendations and NEMA requirements, along with properly sized overload elements or devices which are normally provided as part of manufactured equipment.
   3. Disconnecting switches or devices which are normally provided as a part of manufactured equipment.
   4. Rough-in and connection diagrams for input power supply and connections for the HVAC Temperature Control, HVAC Automation, and HVAC Energy Management Systems.
   5. The above represents an outline of the work for the purpose of describing one division of the work which is acceptable to insure that all work is contained within the General Contract. The Contractor is fully responsible for the installation of complete, operating systems in accordance with the functional intent of the specifications.

O. Contractor, under this Section of the Specifications, shall insure the furnishing and installation of:
   1. All new branch circuit wiring, conduits, protective devices and accessories for power wiring to serve new control panels, control transformers, electric control dampers and valve actuators, combination fire-smoke dampers and any other control system power requirements where not shown to be performed by others. Field verify spare electrical circuits available where applicable. Do not tap into existing branch circuits without approval by the Owners Representative. Run all new circuits back to electrical feeder panels.
   2. Conductors and raceways for the HVAC temperature control, HVAC automation, and HVAC Energy Management System in accordance with approved rough-in and connection diagrams furnished by the system suppliers.
   3. Termination of all conductors, raceways, devices, and connections for low voltage systems for the HVAC Temperature Control, HVAC Automation, and HVAC Energy Management Systems in

accordance with the provisions of Division 26, and approved systems shop drawings to provide complete operating systems in accordance with the functional requirements of the specifications.

P. Wire all safety devices in series to include freezestats, firestats, smoke detectors, and static pressure high limit controls; any single device when tripped, shall de-energize air handling equipment.

Q. Wiring Requirements shall also include the following:
   1. The conduit/wiring system required for the basic electric controls and Energy Management System shall be a complete and operating system. Conduit sharing with other unrelated electrical systems is not permitted.
   2. All wiring shall be labeled at both ends and at any spliced joint in between. Wire and tubing shall be tagged using 3M, Scotch Code Write On Wire Marker Tape Identification System; product number SWD-R-11954 with 3/4" x 5/16" write-on area or SLW 12177 with 1" x 3/4" write-on area and with 3M Scotch Code SMP Marking Pen. In addition to tagging at field device end and at spliced joints, a tag shall be placed 6" after entering each DDC panel. Identification and tag information shall be included in engineering/wiring submittal which must be submitted for Owner approval prior to beginning work. Tag information shall coincide with equipment/point information as written in the specification Input/Output summary.
   3. Digital Input (D.I.) wiring (Class 2) may be run in a common conduit with Digital Output (D.O.) Wiring (Class 1) where local codes permit.
   4. Analog Input (A.I.), Analog Output (A.O.), Digital Input (D.I.), and Network Communications Trunk (N.C.T.) wiring may be run in a common conduit.
   5. Digital Output (D.O.) wiring run in a common conduit with Analog Input (A.I.), Analog Output (A.O.), or Network Communication Trunk (N.C.T.) is not permitted under any circumstances.
   6. AC line power to DDC panel shall be #12 THHN.
   7. Digital Output (D.O.) wiring shall be #14 THHN.
   8. Digital Input (D.I.), Analog Input 4-20 mA (A.I.) and Analog Output (A.O.) wiring shall be #18 TSP (twisted shielded stranded pair with drain wire).
   9. Analog Input or voltage types (A.I.) wiring shall be #18 TSP (twisted shielded stranded pair with drain wire).

2.11 GENERAL

A. System shall be installed complete with DDC panels, remote panels, thermostats, sensors, control dampers, all actuators, switches, relays, alarms, etc., in accordance with the extent of the sequences of operation. Provide all auxiliary equipment required. All controls shall be installed under this section of work, with the exception of automatic dampers and pressure sensing devices which shall be installed under Section 23 3000.

B. Control Systems manufacturer shall submit a complete and final check list verifying final calibration and set points for each system prior to final construction review.

C. Complete control drawings shall be submitted for approval before field installation is started. The submittals shall give a complete description of all control devices and show schematic piping and wiring, as well as a written sequence for each operation.

D. All control dampers shall be furnished by Control manufacturer and shall be set in place, under other sections of the specifications, and be adjusted for proper operation, including the installation of necessary linkages with actuators under this section of specifications. Contractor shall also furnish, under other sections of the specifications, install any necessary blank-off plates required to fill duct when damper size is smaller than the duct. All outside and relief air damper frames and blank-off plates shall be caulked air tight with non-hardening silicone caulking to the ductwork or frame opening.

E. Work under this section shall regulate and adjust the control system, including all thermostats, relays, motors, and other equipment provided under this contract. They shall be placed in complete operating condition subject to the approval of the TAB firm. Contractor shall cooperate fully with the balancing agency in the testing, check-out and adjustment of the various systems. Contractor, under other sections of these specifications, shall install all and automatic dampers.

F. Control system herein specified shall be free from defects in workmanship and material under normal use and service. If, within twelve (12) months from the date of "Substantial Completion", any of the equipment herein described is proven to be defective in workmanship or material (except electrical wiring done by others), it shall be adjusted, repaired, or replaced free of charge.

PART 3 - EXECUTION

3.1 SEQUENCE OF OPERATION - AIR COOLED CHILLER

A. The liquid chiller system shall be energized by the Energy Management System and software interlocked to run when any air handling unit or group, as designated by the Engineer, or fan coil units served with chilled water is energized, requires cooling and the economizer cycle cannot meet load demand. Provide manual disconnect for each control circuit.

B. Provide a primary chilled water return temperature sensor set at 52 degrees F., adjustable, to energize the primary chilled water pump and the chiller.

C. Chiller capacity shall be controlled by individual chilled water discharge thermostats for each chiller, set at 42 degrees F. (adjustable).

D. Chiller safety and operating controls shall be master over auxiliary controls.

E. Chiller shall be turned on only after the primary pump has started and proof of flow is made in both the evaporator. Flow switches are differential pressure type furnished under other Sections of these Specifications. Chillers shall be turned off 15 minutes, adjustable, prior to the respective primary pumps being de-energized unless the chiller manufacturer allows this time to be decreased.

F. Provide differential pressure flow switches, under this Section of the Specifications, if not specified to be furnished with the chillers, in the chilled water lines to prevent chiller operation unless flow is proven. Flow switches shall be located between isolation valves and chillers. Utilize McDonnell & Miller differential pressure type switches.

G. Provide other interlocking relays to de-energize pump as required by safety controls of chiller manufacturer, under this section of the specifications.

H. A variable frequency drive (VFD) shall be utilized, for control of primary chilled water pump, and shall be provided under other Sections of these Specifications. Control and interlock wiring through motor controllers shall be performed under this Section of the Specifications. Wiring shall be such that the pump shall be capable of turning "On" in the hand position without energizing the chiller or other interlocks that should operate only when turned on in the automatic position. However, all safety devices shall be wired to operate in both the "Hand" and "Auto" positions.

I. A flow meter shall be installed in the chilled water return piping upstream of the pump. A bypass line between the chilled water supply and chilled water return piping with a modulating 2-way Control Valve that is normally closed will be utilized to maintain the minimum water flow to the chiller.

3.2 SEQUENCE OF OPERATION - CHILLED WATER DISTRIBUTION PUMP

A. Chilled Water Distribution Pump CHP-1 shall distribute chilled water to the building for cooling effect.

B. Provide manual disconnect for the control circuit. Additionally provide for Hand-Off-Automatic (H.O.A.) switch control through the individual motor controller, controllers furnished under other Sections of these Specifications, for each pump. Only the pump served shall operate through the "Hand" position, to include full functioning of all safety devices. In the "Auto" mode, both safety and interlock wiring shall function as specified. This wiring shall be performed under this Section of the Specifications.

C. Chilled Water Distribution Pump CHP-1 shall operate anytime an air handling unit, or group of units, or designated group of fan coil units is operating and requiring cooling, during building cool-down, night set-up and during the freeze protection mode. Each pump shall be started at minimum pump manufacturers recommended speed and ramp up to maintain the system design differential pressure set point.

D. Provide one (1) differential pressure sensors with transmitters at the chilled water coil of AHU-4 in the second floor Mechanical Room. The design differential of greatest demand shall be maintained through the variable frequency drive modulating the speed of the active distribution pump. The design differential shall be the combined pressure drop of the control valve and the cooling coil, and shall be field determined by the Testing, Balancing and Adjusting (TAB) Agency. Utilize a 30 PSIG range differential sensor. Provide test tee with gauge cock for TAB firm testing.

E. During chilled water distribution system freeze protection, all inactive air handling unit and fan coil unit chilled water valves shall be open to the coil and the chilled water distribution pump shall be activated and maintain the design differential water pressure set point. This sequence shall be activated by software any time the outside air temperature is below 35 Deg.F., the building is secured (generally unoccupied); air handling and fan coil units are generally all off, and not operating in a night set-back or morning warm-up mode.

3.3 SEQUENCE OF OPERATION - AIR HANDLING UNITS (4 PIPE)

A. The fan control circuit shall include all safety controls, an H.O.A. Switch, timer (EMS) energized controls, and a manual disconnect switch.

B. Safety controls shall consist of but not be limited to the following:
   1. Building fire alarm relay as required by local code.
   2. Return air duct smoke detectors.

C. With all safety controls closed and the H.O.A. Switch in the "auto" position, the fan circuit shall be controlled by the EMS. Start chilled or heating water system, if not already operating, whenever any air handling unit is started.

D. A low limit thermostat in the mixed air stream is required as the outside air is not preheated prior to delivery to the air handling equipment.

E. Ionization smoke detectors shall be provided in the return air ducts and shall stop the air handling unit whenever products of combustion are sensed for units over 2000 CFM in capacity.

F. The supply fan is of the constant volume type and space temperature shall be controlled by a room temperature sensor which will modulate a two or three-way, normally closed, control valve on a chilled water coil sequenced with a heating water coil two or three-way, normally open, control valve, no simultaneous heating and cooling. Both valves shall close when the fan is de-energized except during the freeze protection mode; in which case, they shall both open (fan off). The cooling set point shall be 74 Deg. F. and the heating set point shall be 71 Deg. F. The offset shall be a minimum of 2 Deg. F. All set points shall be adjustable.

G. A minimum outside air pressure independent single duct constant volume terminal damper (N.O.) shall open when the fan is energized and close when de-energized. No vent cycle to be provided.

H. When the O.A. temperature is sensed below 30 degrees F., close the O.A. damper.

I. Provide for a normal, morning warm-up, morning cool-down, night set-up and night set-back modes of operation as indicated elsewhere herein. Outside air damper to remain closed during all but the normal mode of operation.

3.4 SEQUENCE OF OPERATION - AIR HANDLING UNITS (2 PIPE - ELECTRIC HEAT)

A. The fan control circuit shall include all safety controls, an H.O.A. Switch, and timer (EMS) energized controls.

B. Safety controls shall consist of but not be limited to the following:
   1. Building fire alarm relay as required by local code.
   2. Manually reset adjustable freezestat(s).
   3. Return air duct smoke detector, manually reset.

C. With all safety controls closed and the H.O.A. Switch in the "auto" position, the fan circuit shall be controlled by the EMS. Start chilled system, if not already operating, whenever any air handling unit is started.

D. A low limit thermostat in the mixed air stream, upstream of the water coil, shall stop the air handling unit when the temperature falls below setpoint, field adjustable, of 40 Deg.F. Freezestat shall have a minimum 20 feet long element and shall be sensitive to temperature changes along any 12 inch length. Element shall be installed in a serpentine fashion with element parallel to the horizontal. The element shall extend across the unit cross-section (coil width) a minimum of three times. If this cannot be achieved with one element, then multiple freezestats shall be used. All freezestats and other safety devices shall be wired in series.

E. Ionization smoke detector shall be provided in the return air duct and shall stop the air handling unit whenever products of combustion are sensed.

F. Each supply fan is of the constant volume type and will be served by a variable frequency drive to allow the unit to be switched from off to 50% speed or up to 100% speed based on load and dependent on whether the unit is in either the cooling or heating mode. Space temperature shall be controlled by a room temperature sensor which will first start the AHU initially at 50% speed after which a two-way, normally closed to the coil, chilled water coil control valve shall modulate, as required, to meet the cooling set point. With the AHU fan operating at 50% speed, the chilled water control valve at 100% open, adjustable, and upon a further increase in demand for cooling in the space the fan speed shall be increased to 100%. The cooling control valve shall continue to modulate as required to satisfy set point. When the load decreases such that the corresponding chilled water control valve closes to a 40% open, adjustable, or less position, then the fan speed shall be reduced back to 50% speed. Once the chilled water valve closes fully and there becomes a demand for heat, the fan shall go to full (100%) speed. The heating control valve shall modulate as required to satisfy set point, however, the discharge air temperature shall be limited to 85 Deg.F., adjustable, during the heating mode. A normally closed (N.C.) minimum outside air damper shall open when the fan is energized in the normal mode and close when de-energized.

G. Provide interlocks for minimum outside air and ventilation cycle control as follows:
   1. When the AHU is energized and operated in the occupied mode the normally closed minimum outside air control damper, shall open to minimum quantity scheduled except during morning warm-up, morning cool down, night-setback or night set-up as described elsewhere herein in which case it shall be closed. The minimum outside air control dampers shall be closed when the respective AHU served is not operating.
   2. Maximum outside air control for the ventilation cycle shall consist of the sequenced opening of the separate normally closed (N.C.) maximum O.A. dampers, and the closing of the normally open (N.O.) return air dampers to maintain the space temperature set point. Ventilation cycle shall be energized when the outside air temperature drops to 55 Deg.F., field adjustable. Normally closed (N.C.) relief air dampers shall be interlocked to operate in sequence with the maximum O.A. dampers or based on the space pressurization control sequence.
   3. Provide a low limit mixed air plenum thermostat, separate from the system freezestat(s), serpentined capillary sensor, to override the ventilation cycle controls to prevent supply air less then 52 Deg.F. from entering the system. This shall include modulated closing of the maximum outside air dampers to maintain the set point.
   4. Provide for independent control and adjustment for each of the minimum and maximum outside air dampers and the return and relief air dampers to provide for maximum flexibility in optimizing system performance.
   5. The economizer cycle shall be the optimized type such that the chilled water valve shall remain closed until the economizer is utilizing 100% outside air for cooling and it cannot satisfy the designated cooling set point.

H. When O.A. temperature is sensed below 30 degrees F., adjustable, close the O.A. dampers and fully open the return air dampers.

I. Provide normal (occupied), morning warm-up and cool-down (unoccupied), and night set-back and set-up (unoccupied) modes of operation similar to that specified elsewhere herein. Outside air dampers shall remain closed during all but the normal occupied mode of operation.

J. Whenever the outside air temperature is above 57 Deg.F., adjustable, the air handling unit is operating in the normal occupied mode, and the space relative humidity level rises to above 60% R.H., adjustable, the chilled water control valve shall modulate open to effect further dehumidification regardless of whether the space temperature set point is satisfied. Should over-cooling of the space occur, the electric duct heater shall modulate to maintain the normal heating set point.

3.5 SEQUENCE OF OPERATION - FAN COIL UNITS (4 PIPE)

A. The fan control circuit shall include all safety controls, an H.O.A. Switch, timer (EMS) energized controls, and a manual disconnect switch.

B. Safety controls shall consist of but not be limited to the following:
   1. Building fire alarm relay as required by local code.
   2. Return air duct smoke detectors.

C. With all safety controls closed and the H.O.A. Switch in the "auto" position, the fan circuit shall be controlled by the EMS. Start chilled or heating water system, if not already operating, whenever any air handling unit is started.

D. A low limit thermostat in the mixed air stream is required as the outside air is not preheated prior to delivery to the air handling equipment.

E. Ionization smoke detectors shall be provided in the return air ducts and shall stop the air handling unit whenever products of combustion are sensed for units over 2000 CFM in capacity.

F. The supply fan is of the constant volume type and space temperature shall be controlled by a room temperature sensor which will modulate a two or three-way, normally closed, control valve on a chilled water coil sequenced with a heating water coil two or three-way, normally open, control valve, no simultaneous heating and cooling. Both valves shall close when the fan is de-energized except during the freeze protection mode; in which case, they shall both open (fan off). The cooling set point shall be 74 Deg. F. and the heating set point shall be 71 Deg. F. The offset shall be a minimum of 2 Deg. F. All set points shall be adjustable.

G. A minimum outside air pressure independent single duct constant volume terminal damper (N.O.) shall open when the fan is energized and close when de-energized. No vent cycle to be provided.

H. When the O.A. temperature is sensed below 30 degrees F., close the O.A. damper.

I. Provide for a normal, morning warm-up, morning cool-down, night set-up and night set-back modes of operation as indicated elsewhere herein. Outside air damper to remain closed during all but the normal mode of operation.

3.6 SEQUENCE OF OPERATION - NIGHT SET-BACK

A. A night set-back mode shall be provided to keep equipment from operating except as needed to heat the space to protect the building systems from freezing and potential water damage.
B. Designate a space temperature sensor, to be located on an interior partition within 8 feet of a Northern exposure, selection as recommended by the balancing agency, to be used for night set-back control. Sensor, adjustable, shall be set for 55 Deg.F. Provide one per AHU or system.
C. Below set-back set point, respective Split DX A/C units shall receive a control signal and shall be started if not already energized.
D. Lockout cooling systems, ventilation cycles, morning warm-up and cool-down modes, night set-up mode, close all outside and relief air dampers and de-energize all EMS controlled toilet and locker exhaust fans located in the spaces served.

3.7 SEQUENCE OF OPERATION - MORNING WARM-UP MODE

A. A warm-up mode shall be provided to warm the building, or area served by a system, to within 1 Deg.F. of the normal occupied heating setpoint, adjustable of 71 Deg.F., through the building Energy Management System optimized start feature.
B. Warm-up shall function the same as night setback, except the set point shall be as noted above.
C. Lockout the warm-up mode after the cycle is completed until the following scheduled cycle, generally not to occur more than once per day.
D. Lockout cooling systems, ventilation cycles, night set-back, morning cool-down, night set-up, close all outside and relief air dampers and de-energize all EMS controlled toilet and locker exhaust fans.

3.8 ELECTRICAL INTERLOCKS

A. Certain electrical interlocks shall be as listed herein and in other sections of these specifications.
B. All electrical interlocks shall be made by means of auxiliary contacts on motor starters or shall be accomplished with separate relays unless indicated otherwise. No motor power lead shall be utilized in an interlock circuit, unless indicated otherwise. Each separate control power lead serving a starter shall be provided with a disconnecting switch suitably identified and housed, which may be a toggle switch or other suitable disconnecting device, of proper capacity and number of poles.

3.9 TEST, ADJUST, AND BALANCE SUPPLEMENTARY PROVISIONS

A. Under this section of the specifications, provide a temperature test port adjacent to all duct mounted EMS sensor locations. Additionally, furnish any other permanent test tees or wells for sensor calibration and for verification of all system monitoring data.
B. Under this section of the specifications, provide all pressure taps, sensors, wiring/cabling, etc., to be connected to the Energy Management System to include all points necessary for the sequence of operations specified hereinafter.
C. Assist the TAB Agency in all sensor calibration and during all functional performance testing of controls, basic and devices and EMS controlled equipment.

3.10 DDC CONTROL

A. Provide complete DDC Control for all equipment as indicated elsewhere herein.
B. Not more than one local unitary direct digital controller shall be utilized per AHU/piece of equipment. Each DDC controller used for Global System control and for air handling units shall have their own real time clock.

END OF SECTION 230900

SECTION 232113 - HYDRONIC PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
- A. Comply with Division 1 - General Requirements and referenced documents.
- B. Comply with all other Division 23 Sections, as applicable. Refer to other divisions for coordination of work with other portions of Work.

1.2 SYSTEM DESCRIPTION
- A. Furnish and install all piping of every kind required, specified, or shown on the Drawings for the installation of the work specified in Division 23. The location, direction, and size of the various lines are indicated on the Drawings.
- B. Piping systems shall include all appurtenances shown on the drawings and specified herein.
- C. Valves or cocks shall be installed to control the flow of water to each of the various systems, to segregate individual items of equipment and parts of fluid circulating or supply systems, and to permit draining of systems or portions thereof, to blow-off strainers, etc., as directed on the Drawings and specified.
- D. The work shall include the furnishing and installing of all supporting structures and members for pipes, ducts, and equipment.
- E. Support devices and members shall include vibration and noise isolating devices and assemblies. Penetrations of walls to structure shall be sealed off to limit noise transmission through sleeves.

1.3 QUALITY ASSURANCE
- A. All equipment and materials shall be new and of the best quality.
- B. All equipment and materials shall be installed by experienced mechanics certified and trained for the work performed.

1.4 SUBMITTALS
- A. Product Data: Submit complete manufacturer's descriptive literature and installation instructions in accordance with Division 1 for all piping materials to be used for each system, valves and hydronic specialties as specified herein.
- B. Shop Drawings:
  1. Submit in accordance with Division 1 and 23 05 00.
  2. Submit 1/4" = 1'-0" Scale HVAC and Plumbing Piping Shop Drawings.
  3. Overlay piping Shop Drawings over other Shop Drawings of other trades to include electrical and sheet metal Shop Drawings.
  4. Plan views of congested areas and sections thereof shall be drawn at a scale of 3/8" = 1'-0".
- C. Fully coordinate all piping shop drawings with sheet metal shop drawings and other trades. Failure to submit shop drawings in a timely manner, as required to keep pace with the construction and work of all other trades, will result in delays, and possible stoppage, of payment to the Contractor. Additionally, no work may proceed until such shop drawings are submitted, reviewed, and found to be acceptable by the Engineer.

1.5 PRODUCT HANDLING
- A. Cover and protect material in transit and at site. Material not properly protected and stored and which is damaged or defaced during construction shall and will be rejected.
- B. Storage and protection of materials shall be in accordance with Section 23 05 00.
- C. Take special precautions to protect control valve internals from construction dirt and debris. If valves are stored on site cover valve openings until just prior to installation but in no case shall valves be unprotected for more than 48 hours.
- D. Openings in piping system, coil headers, boilers, pumps, valves and other heat exchangers shall be covered during the construction period to protect the interior accumulation of dirt and debris in these systems until immediately prior to connection to these components to similarly protected systems.

PART 2 - PRODUCTS

2.1 PIPING MATERIALS

A. In general, the following listed materials shall be used in fabricating the piping systems. Where special classes of piping are involved and are not listed, the Contractor shall request instructions as to the class of material involved and the method of fabricating it before ordering the materials. Steel pipe 2-1/2" and larger shall generally have plain ends to be assembled by welding and pipe 2" and smaller shall generally have screwed ends, except where special requirements dictate otherwise.

1. Chilled and Heating Water Lines:

   a. Schedule 40 black steel pipe conforming to ASTM A-53, Type “F” for sizes 2" and smaller, and Grade “B”, Type “ERW, for all sizes 2-1/2" and larger. Piping 12" and larger weight piping.

   b. For pipe sizes two inches (2") and smaller the Contractor may use Type "L" copper, with soldered joints, in lieu of threaded black steel pipe, using dielectric unions as specified elsewhere herein.

2. Miscellaneous drains from Air Handling Units, Fan coil units, Pump Bases, strainer blow-offs, backflow preventors and compression tanks: Type "M" or DWV (1-1/4" and larger) hard drawn copper.

3. Miscellaneous Lines: Pilot, bleed, control, sampling, and equalizing lines, and similar auxiliary lines shall be fabricated of the material used in the system to which they are connected in each case. Drains from appurtenances installed in copper lines shall be of Type "L" hard drawn copper tubing. Drains from air vent valves installed in steel piping systems shall be Schedule 40 black steel pipe. Other drains shall similarly match the piping system materials.

4. Chemical treatment piping and valves shall be Schedule 80 PVC or Type "L" hard drawn copper, up to final connections to the main system which shall be schedule 40 black steel or Type "L" hard drawn copper.

B. Steel pipe shall be made and tested in accordance with the latest edition of the "Standard Specifications for Welded Steel Pipe" of the National Tube Company, or Youngstown Sheet and Tube Company. Piping 2" and smaller shall be manufactured by LeClede, Sawhill, or Wheatland. Piping 2-1/2" and larger shall be manufactured by Tex-Tube, Paragon, U.S. Steel, Wheatland or Armco. Unless otherwise specified, all pipe shall be Schedule 40 of ASA Standard B36.10.

C. In general, fittings used for the various piping systems shall be as listed below. Special fittings shall be used where required by job conditions and when approved for particular use.

1. Welding Fittings: All fittings in welded lines shall be factory fabricated welding fittings of the same material and the same schedule or weight as the piping system in which installed.

   a. All elbows, reducers, tees, caps and special fittings shall be standard factory fabricated butt welding fittings, conforming to ANSI B16.9, with the following exceptions: Branch takeoffs from lines 2-1/2" in size and larger and where the size of the takeoff does not exceed two-thirds of the nominal diameter of the mains to which connected may be made with shaped nipples or with Bonney or Grinnell Weldolets or Threadolets as required by the class of fabrication. Mitering of pipe to form elbows, notching of straight runs to form tees, or any similar construction will not be permitted.

   b. Welding fittings shall be Weldbend Corporation, Tube Turn, Hackney, or approved equals. Welding and fittings shall have the same bursting pressure as pipe of the same size and schedule. All elbows shall be the long radius type unless noted otherwise.

D. Screwed Fittings in Steel Lines: 150 lb. black malleable iron banded pattern screwed fittings made by Grinnell Company, Crane Company, or Walworth Company. All screwed fitting elbows shall be the long radius type unless noted otherwise.

E. Fittings for copper tubing shall be Chase Sweat Fittings, Nibco, Elkhart, or Mueller Brass Company's "Streamline" type solder fittings. Drainage type fittings shall be used wherever possible in drainage systems only. All solder for copper tubing shall be 95-5, Silfos or Eutectic No. 180F. All piping shall be installed according to the manufacturer's instructions. All joints shall be thoroughly cleaned before connecting. Silfos solder shall be used on all refrigerant piping. All elbows shall be the long radius type unless noted otherwise.

F. Miscellaneous Fittings: Provide all reducers, increasers, adapters, bushings, etc., as required to properly inter-connect the various items, to change sizes, etc. Steel fittings shall be used in steel lines, and copper and red brass fittings shall be used in copper lines.
G. All piping materials and fittings shall be manufactured in the United States.

2.2 GROOVED PIPE AND FITTINGS

A. Grooved steel pipe and fittings shall comply with all requirements specified above in Paragraph 2.1 except as otherwise stated herein.
B. Grooved steel piping shall only be allowed for the following systems:
   1. Chilled Water Lines located outdoors.
   2. Chilled and Heating Water Lines inside Mechanical Equipment Rooms (Air Handling Equipment) only.
   3. Chilled Water Lines located in areas outside Mechanical Rooms.
C. For pipe sizes 2" through 12" the Contractor shall use roll grooved pipe and installation-ready, angled bolt-pad Victaulic couplings with grade “EHP” gaskets that are rated to NDF 61 for hot and cold water systems. For pipe sizes 14" and larger Contractor shall use Victaulic advanced grooved system couplings with grade “E” gaskets that are rated to the NSF 61 for hot and cold water systems. Rigid type couplings shall be used except to accommodate thermal expansion/contraction or elimination of expansion loops, vibration attenuation to eliminate flex connectors, or accommodating seismic movement.
D. Grooved Fittings: All fittings in grooved piping systems shall be of the same manufacturer as the grooved couplings.
E. All elbows, reducers, tees, caps and special fittings shall be ASTM A 536, Grade 65-45-12 ductile iron: ASTM A 47/A 47M, Grade 32510 malleable iron; ASTM A 53/A53M, Type F, E or S, grade fabricated steel: or ASTM A 106, Grade B steel fittings with grooves or shoulders constructed to accept grooved-end couplings; with nuts, bolts locking pin, locking toggle, or lugs to secure grooved pipe and fittings. All elbows shall be the long radius type unless noted otherwise.
F. Grooved Fittings to Flange Adapters: For use with grooved steel pipe and fittings to mate up to ANSI Class 125/150 flanges. Use Vitaulic Style 641/741/W741 adaptors.
G. In lines assembled with grooved mechanical couplings and/or screwed joints, use a Victaulic type (Style 47) dielectric nipple, or coupling, to separate dissimilar metals (steel to copper/brass).
H. All grooved pipe, fittings, gaskets, valves and accessories shall be rated for -30 to +250 Deg.F. for pipe sizes 2" to 12" and -30 to +230 Deg.F. for pipe sizes 14" - 24", with pressure ratings up to 200 PSIG at the highest temperature rating.
I. Valves in grooved pipe systems may be the grooved type where suitable grooved style valves exist. All grooved style valves shall meet all of the same valve requirements specified for the same size valves specified in Paragraph 2.6.
J. Grooved style plug valves shall be Victaulic Series 377 or approved equals only.
K. Grooved style check valves in pump discharge lines shall be non-slam type silent check valves, Victaulic - Series 716/779/W715, or approved equals only.
L. Grooved Style Swing Check valves 2-1/2" and larger shall be the swing-type, Victaulic - Series 712/713, or approved equals only.
M. Grooved style butterfly valves shall be Victaulic Series 608/761/W706/W715, or Nibco GD4765 Series or approved equals only.
N. Grooved style pump suction diffuser/flow straighteners, at the Contractor’s option, shall be the grooved model Victaulic Series 731/W731, or approved equals only.
O. Grooved style triple duty valves, at the Contractor’s option, shall be the Victaulic grooved-end triple service assembly that incorporates the combination of shut-off, throttling and non-slam check-balancing valve or venture check valve.
P. Grooved style wye stainers shall be FDA approved, heat fused epoxy coated (interior and exterior) “Y” pattern type bodies, unless shown or specified otherwise, and shall be Victaulic Series 732/W732/730/W730 or Engineer approved equals only.

2.3 FLANGES

A. Flanges in welded lines for water systems shall be 150 pound forged steel, welding neck flanges, except where cast iron fittings are used as specified elsewhere in these specifications, and except as otherwise shown.
B. Flanges in screwed ferrous lines shall be 125 pound cast iron or 150 pound forged steel screwed flanges.
C. Where ferrous flanges connect to flat faced flanges on valves, items of equipment, etc., the companion flange shall be flush faced and where the flanges on items of equipment are raised face flanges, the companion flanges shall have raised faces.

D. Flanges in copper lines shall be solder joint type cast brass flanges.
E. Flange bolts and nuts shall conform to the applicable requirements of the latest edition of the Code for Pressure Piping.
F. Slip-on welding neck flanges are prohibited.
G. Flanges shall be Weldbend, Tube Turn, Hackney, or approved equals.

2.4 GASKETS
A. Install gaskets between flanges of all flanged joints. Where used with brass or bronze flanges or with flat face ferrous flanges, they shall be full face type. For all other flanges they shall be ring gaskets properly cut to fit within the inside edges of the bolts.
B. Gaskets in water lines shall be Garlock No. 24 Wire Insertion Red Rubber Sheet Packing, 1/16" thick and for any other systems use special materials suitable for the duty as recommended by their manufacturer.

2.5 INSULATING FITTINGS
A. Except that no dielectric fitting shall be installed in connections between copper or brass and sanitary cast iron waste, drain and vent lines, wherever an interconnection is made between ferrous pipes or vessel and copper tubing or brass pipe, or vice versa, install a dielectric fitting.
B. In lines assembled with screwed or soldered joints, use insulating couplings (unions) suitable for the intended service and where flanged connections are required, use insulating gasket material between flange faces, insulating grommets between bolts and holes in flanges and insulating washers under both bolt heads and nuts.
C. PVC couplings of any kind shall not be acceptable for insulating couplings.
D. Insulating fittings shall be suitable for the service medium, operating pressure and temperature. Fittings shall be rated for 1.5 times the normal system operating temperature and pressure in which installed.
E. Insulating fittings shall be as manufactured by EPCO, Watts, Zurn or Mueller Streamline.

2.6 VALVES
A. All valves of any one type shall be of the same make throughout and insofar as practicable all valves in a given category shall be of the same make.
B. All valves shall be so located as to be readily accessible for operation and maintenance.
C. Furnish and install all valves indicated on the Drawings, specified herein, and required to control the flow of water to and from various parts of the systems and to isolate various pieces of machinery and equipment and to isolate various parts of the systems.
D. Each valve for installation in a line to be insulated shall have sufficient clearance between the valve body and the operating handle or device to accommodate the insulation.
E. All valves shall be designed for re-packing under pressure when fully opened and shall be equipped with packing suitable for the service.
F. Valves shall generally be installed with stems up; but, in no case, less than horizontal and whenever possible shall be grouped together in a uniform manner.
G. Except where special valves are specified elsewhere herein or as required by special conditions or class of work, valves shall be equivalent to the following Crane Co. valve numbers listed herein.
H. All gate valves 2" and smaller shall be Class 125SWP and 200 PSI CWP rated for up to 200 Deg.F. and be bronze construction. All valves 2-1/2" and larger shall be Class 125SWP and 200WOG rated for 200 degrees F., be of the flanged design, be made of cast iron with bronze trim, and have an outside screw and yoke design.
   1. Valves shall have rising stem, screwed bonnet or union bonnet, solid wedge and manufactured in accordance with MSS-SP-80.
   2. Body, bonnett and wedge shall be manufactured of ASTM B-62 alloy for valves 2" and smaller and ASTM A126, Class B, cast iron for valves 2-1/2" and larger.
   3. All valves shall have ductile or malleable iron handwheels.
   4. Stems shall be made of dezincification resistant silicon bronze ASTM B-371 or low zinc alloy B-99.
   5. All valves shall be supplied with non-asbestos packing, amarid fibers or approved equal.
   6. Where higher operating pressures approach 150 psi, Class 150 Union bonnet valves of similar construction shall be used.
   7. Class 125 valves 2" and smaller shall be one of the following:
      a. Nibco - T/S111.
      b. Crane - 428/1330.
      c. Jenkins - 810J.
      d. Hammond IB640.

e. Milwaukee 148.

8. Class 125 valves 2-1/2" and larger shall be one of the following:

a. Nibco - F-617-0.
b. Crane - 465 1/2.
c. Jenkins - 454J.
d. Hammond IR1140.
e. Milwaukee 2885A.

9. Class 150 valves shall be one of the following:

a. Nibco - T/S134.
b. Crane - 431UB.
c. Jenkins - 47CUJ.
d. Hammond IB629/IB648.
e. Milwaukee 1169/1151.

I. Where cocks are required, they shall generally be brass, screwed pattern up to 2" and cast iron flanged pattern 2-1/2" and larger plug cocks suitable for the system pressure. Also provide and install all special cocks required such as pet cocks, gauge cocks, etc.

J. Check valves in pump discharge lines shall be flanged non-slam type silent check valves. Valves shall have a cast-iron body and be bronze fitted with stainless steel springs. Valves shall be rated for 125 PSIG WOG and be one of the following products:
1. Nibco - F-910-B Series.
2. Combination Pump Valve (CPV) Manufacturing, Inc.- 20D Series.
3. APCO - 600 Series.

K. Swing Check Valves 2" and smaller shall be the Y-pattern swing-type manufactured in accordance with MSS-SP 80, and be Class 125 rated to 200 Deg.F. or below, have bronze ASTM B-62 bodies with bronze discs. Swing check valves 2" and smaller shall be of the following:
1. Nibco - T/S-413-B.
2. Crane - 37 or 1340.
3. Jenkins - 4037J or 997AJ.
4. Hammond - IR1124.
5. Milwaukee - 2974A.

L. Swing Check valves 2-1/2" and larger shall be the swing-type manufactured in accordance with MSS-SP71, be Class 125 rated for 200 Deg.F. or below, be flanged, have ASTM A126, Class B, cast iron bodies with bronze trim, and have non-asbestos gaskets. Swing Check valves 2-1/2" and larger shall be one of the following:
1. Nibco - F-918-B.
2. Crane - 373.
3. Jenkins - 588J.
4. Hammond - IB904.
5. Milwaukee - 509.

M. Contractor may furnish butterfly valves in lieu of gate valves, where gate valves are indicated, and shall furnish them elsewhere as indicated on the Drawings. Generally, all isolation valves in chilled and heating water lines 2-1/2" and larger shall be the butterfly type.
1. They shall have ductile iron bodies with aluminum bronze discs, 416 stainless steel shafts and shall be generally as specified for plug valves above as to materials, trim, tightness of closing, etc.
2. Liner shall generally be resilient EPDM with brass bushings and collar. Liner and seats shall be rated for 225 Deg. F at 150 PSIG.
3. Valves 2-1/2" and larger shall have lug bodies and resilient seating or have a resilient faced plug.
4. Valves shall be rated for end of line service, without the need for a downstream flange, and be bubble tight to a minimum of 150 PSI with bi-directional flows.
5. Where butterfly valves are used for balancing, only where shown, use infinite position lever lock handles with memory stops similar or equal to Nibco LD/WD 2000/3000. Valves shall be able to have the handles padlocked in the open, closed or balanced positions. Handles shall be polymer coated iron with lever lock and throttling plates made with zinc plated steel. No aluminum die cast lever handles allowed.

6. Valves 6" and over shall be provided with heavy duty cast iron hand wheel gear operator with indicator. Where these valves are also used for balancing provide with a memory stop. Provide with babbit sprocket (and chains) only where specified elsewhere herein. Operators shall be suitable for all weather conditions and shall be the self-locking worm gear type.
7. Provide two inch (2") extension necks for insulated lines.
8. Butterfly valves shall be as manufactured by

    a. Nibco LD Series in 2" - 12" sizes and LD1000-5 Series for 14" - 24" sizes.
    b. Dezurik (or SMG) BRS-C1-EPDM-EPDM-BZ-S4.
    c. Demco NE-C Series in 2" - 12" sizes and NF-C Series for 14" - 24" sizes.
    d. Keystone AR2 Series.
    e. Grinnell Series 8000.
    f. Apollo LD 141 Series.
    g. Milwaukee ML233E in 2"-12" sizes only; larger valves not allowed.

N. Where shown on the Drawings, Contractor shall provide ball valves. In lieu of gate valves, where shown, unless indicated otherwise, the Contractor may furnish ball valves. In chilled and heating water lines 2" and smaller, Contractor shall furnish ball valves without exception as follows:
1. Ball valves shall be on the following products (All bronze bodies only):

    a. Nibco T-585-70-66 or S-585-70-66.
    b. Apollo 77C-140 Series or 77C-240 Series.
    c. Hammond 8303-A or 8311-A.
    d. Milwaukee BA400 or BA4505 (Not allowed on chilled water systems).

2. Ball valves may also be used in lieu of plug valves for balancing purposes for lines 2" and smaller and only when provided with memory stops.
3. Ball valves shall be full port design with stainless steel ball and stem.
4. All ball valve body pieces and stems shall be manufactured from a dezincification resistant material with less than 15% zinc.
5. All ball valves shall have a threaded packing gland. Each ball valve will not require the handle and handle nut to be installed in order to keep the valve packing in place.
6. Provide memory stops where used for balancing or as shown and where detailed.
7. Provide extended lever handles for all valves installed in insulated lines.
8. Ball valves installed on chilled water piping shall be provided with an extended "T" handle with insulation insert and collar that creates a vapor seal to prevent condensation while allowing adjustment of memory stops and valve packing maintenance without disturbing the insulation. Insulated "T" handles shall be equal to Nib-Seal as manufactured by NIBCO. No extended metal handles are allowed.

O. All valves, valve packing material, gaskets, pipe threading compound, etc., shall be compatible with ethylene glycol, without exception. Typically, use PTFE (Teflon) or EPDM valve packing materials. Indicate packing materials used for compliance on submittals.

2.7 PIPE HANGERS

A. Pipe hangers, except for fire protection types, shall be as manufactured by Anvil International, Inc. and be of a type suitable for each use. Approved equals by Mason Industries, Inc., B-Line, Erico Caddy, and PHD Manufacturing, Inc. will be considered.
B. For cast-iron pipes up to three inches (3") in size, use Anvil Fig. 104 malleable iron, adjustable, split ring, swivel hanger, or Anvil Fig. 590 steel clevis hanger. For cast iron plumbing piping four inches (4") and larger, use only Anvil Fig. 590 steel clevis hanger.
C. Heating and air conditioning piping (chilled and heating water piping) 3/4" in size up to and including twelve inches (12"), shall be Anvil Fig. 260, adjustable clevis hangers. Hangers shall be sized to be on the outside of the insulation.
D. Where several pipes are routed parallel to each other and at the same elevation, trapeze hangers may be used. Where trapeze hangers are used, the pipes shall be supported on rollers where rollers are called for elsewhere by these specifications.
E. For bare copper pipes (uninsulated only) up to and including three inches (3") in size, use Anvil Fig. CT-109 malleable iron, copper plated, split ring, hangers or Anvil Fig. CT-65 copper plated clevis hangers. For uninsulated copper pipes larger than three inches (3"), use Anvil Fig. CT-65 copper-plated clevis hanger.

F. Hanger rod sizes shall conform to the following schedule:

Pipe up to, and including 2"	3/8" rods
Pipe 2-1/2", 3", and 3-1/2"	1/2" rods
Pipe 4" and 5"	5/8" rods
Pipe 6”	3/4” rods

G. Unless shown otherwise on the Drawings, all horizontal runs of ferrous piping shall be suspended from the floor or roof construction, as the case may be, by means of hangers with the following maximum spacing:

Pipe up to, and including 1-1/4"	8 feet
Pipe 1-1/2" and 2"	10 feet
Pipe 2-1/2" and 3"	12 feet
Pipe 3-1/2" and 4"	14 feet
Pipe 5" and 6"	* 8 feet

* Maximum 8 foot spacing for pipe supports for pipes 5" and larger due to structural considerations.

H. Unless shown otherwise on the Drawings, all horizontal runs of copper piping shall be suspended from the floor or roof construction, as the case may be, by means of hangers with the following maximum spacing:

Pipe up to 3/4" in size	6 feet
Pipe 1" and 1-1/4"	8 feet
Pipe 1-1/2" and 2"	10 feet
Pipe 2-1/2" and larger	12 feet

I. There shall be a hanger within two feet (2') of each elbow or tee. Additional supports shall be provided for valves, strainers, etc. Cast iron pipe shall have not less than one hanger per length of pipe. Vertical risers shall be supported by approved riser clamps. Vertical pipes within a space shall have not less than two (2) supports. Where the vertical run of pipe in a space exceeds 14 feet then three (3) supports shall be required.

J. Supports and hangers shall be installed to permit free expansion and contraction in the piping systems. Hangers shall permit vertical adjustment to maintain proper pitch. Where necessary to control expansion and contraction, the piping shall be guided and firmly anchored. No piping shall be self-supporting; nor shall it be supported from equipment connections.

K. Inserts shall be used where piping or equipment is to be hung from concrete construction. Inserts shall be Anvil Fig. 281, wedge type, concrete inserts. All inserts shall be pre-treated to prevent rusting. After the forms are removed, clip off all nails flush with the exposed surface of the inserts.

L. Expansion bolts shall be Ackerman-Johnson.

M. Beam clamps suitable for the use with the type of steel construction involved shall be an Anvil product or an approved equal as indicated elsewhere herein.

N. No perforated straps shall be used to support any mechanical equipment item or piping of any kind.

O. Chilled water, heating water, condensate drains, shall be sized to go around the insulation with shields being provided to protect the insulation. Shields shall be Anvil Fig. 167.

P. All steel hangers, base plates, supports, nuts, bolts, and all thread rod located outdoors, in crawl spaces, and exposed to the weather, shall be made of galvanized steel or equally suitable corrosion resistant steel alloy or aluminum. Where steel components are allowed and used under these conditions they shall be painted with an equivalent protective coating similar to a two-part epoxy.

Q. For pipe sizes 8" and under use Anvil Fig. #93 and 94 beam clamps.

2.8 SLEEVES AND ESCUTCHEONS

A. Generally where pipes pass through interior building walls or floors above the first floor (out of the ground), 22 gauge galvanized sheet metal sleeves shall be used. Sleeves shall extend a minimum one inch (1") above a floor or beyond the wall, as applicable.

B. All pipes penetrating grade beams, exterior walls, concrete structural members, or concrete slabs of mechanical equipment rooms on the first floor shall generally use standard weight galvanized steel pipe as the sleeving material.

C. For concrete or masonry walls, sleeves shall be inserted into the masonry, decking or form work prior to the pouring or placement of concrete or masonry units to create a leave out.

D. The sizes of all sleeves shall be such as to permit the subsequent insertion of the intended pipe of the proper size with adequate clearance for movement due to expansion and contraction. In the case of insulated lines, the diameter of the sleeves shall be at least 1/2" greater than the outside walls of the pipe with specified thickness of insulation. This will require that the inside diameter of galvanized steel pipe sleeves be at least 1/2" greater than the outside diameter of the service pipe with insulation. Galvanized steel pipe sleeves set in floors shall project two inches (2") above the floor.

E. After the pipes are installed, fill the annular space between the pipe, and insulation as required, and its sleeve with an approved mastic or caulk. Use loose fibrous insulation packing as required to accomplish this. In all cases the annular spaces around the pipes within the sleeved openings shall be filled with loose fibrous insulation and then sealed with an approved caulking or expanded foam insulation.

F. Escutcheons, except as specifically noted or specified, shall be installed on all pipes passing exposed through floors, walls, or ceilings. Escutcheons shall be equal to the Crane No. 10, chrome plated sectional floor and ceiling plates, and shall fit snugly and neatly around pipe or pipe insulation or insulated lines. Solid chrome plates with set screws shall be used if sectional plates do not fit properly or stay in place. Where multiple pipes penetrate floors or walls in close proximity in concealed areas, shop made sheet metal escutcheons may be used.

G. Pipes sleeved through grade beams open to basements, crawl spaces or void spaces below grade shall additionally receive "Link Seal" or equal closures made of interlocking synthetic rubber links. Seals shall provide for absolute water tightness. Seal shall be constructed to insulate electrically pipe from wall. Install as recommended by manufacturer. Provide Century-Line sleeves with water stop and anchor collar for pipes penetrating grade beams designated to be anchored.

2.9 ACCESS DOORS

A. Wherever access is required above inaccessible ceilings, in walls, furrings, chases or soffits to physically reach concealed piping, ductwork, fire/smoke dampers or mechanical equipment installed under Division 23, provide access doors of sufficient size to maintain, repair, replace or suitably access devices intended to be adjusted as indicated herein.

B. Provide an access door or panel for each of any valves, group of valves, damper pull rods, splitter dampers, manual volume dampers, actuators or other controlling mechanism installed under Division 15 which would otherwise be concealed in the building construction with no access.

C. All access doors in toilet rooms, locker rooms, showers, kitchens, or other similar wet areas shall be the flush mounted type and be made of brush or satin finish stainless steel as manufactured by Milcor.

D. All access doors shall be minimum 12" x 12" in size unless otherwise approved in writing in advance by the Engineer. Doors shall be increased in size as required to allow for a person to reasonably access, adjust, maintain, service, inspect or replace the largest single component concealed. Provide special sizes of access doors as required.

E. Coordinate the final location of all concealed equipment and devices requiring access with the final location of the required access panels or doors. Allow ample space for the removal of all parts and equipment that require replacement or servicing.

F. Where mounting heights are not detailed or dimensioned, install mechanical piping and overhead equipment to provide the maximum headroom possible while maintaining reasonable access and service to those items being accessed.

G. Extend all equipment grease fittings to an accessible location which shall be within reach (maximum of 18") from the access door.

H. Install all access doors in locations to suit the intended purpose but have each location reviewed and approved by the Architect. In no case shall access doors be located such that the intended purpose is rendered useless.

I. Access doors shall all have spring concealed hinges, screwdriver operated cam latches, be the flush mounted type, open up to, but not more than, 175 degrees, be made of steel, or stainless steel to suit the application, be fire rated (U.L. rated) to match the rating of the surface where the door is placed, and have

a powder coated electrostatic primer paint on all steel doors. Furnish the following access door types as described below:

1. Milcor Style DW - Flush drywall type with frame made of 16 gauge steel, panel door made of 14 gauge steel, galvanized steel drywall bead on frame, and removable hinge pins for removal of panel door. Provide minimum of two hinges (12" x 12" and larger) up to 24" x 24" in size and three hinges on access doors above this size. Provide one cam for access doors 14" x 14" and smaller and a minimum of three cams on larger sizes.
2. Milcor Style K - Flush plaster wall or ceiling type made similar to Style DW except with a 22 gauge expansion casing bead, one hinge on 12" x 12" access doors, two hinges on larger doors with either side no larger than 24", three hinges on doors with any dimension of 24" or larger, minimum one cam on doors with no dimension larger than 18" and two or more cams on larger access doors.
3. Milcor Style M or MS - Flush drywall, masonry or tile type made similar to Style DW except with 14 gauge steel frame and doors (16 gauge when made of stainless steel-satin finish), one hinge on access doors up to 18" x 18" in size, two hinges on sizes 20" x 24" and 22" x 22", three or more hinges on sizes 24" x 24" and larger, and the number of cams as standard with the manufacturer.
4. Provide other types of access doors suitable for the application to include surface mount, double leaf for access doors exceeding 36" in any dimension, louvered where indicated on the Drawings, fire rated, recessed or security/detention types as required and compatible with the surface penetrated.

2.10 STRAINERS

A. Strainers shall be of the "Y" pattern type bodies, unless shown or specified otherwise. Body ends shall be screwed or flanged to match the type of joints in the piping in which the strainers are installed. Strainers shall have a 125 lb. ANSI pressure rating except that steam and steam condensate, gravity or pumped, system strainers shall be rated for 250 lb.

B. Each strainer, screen, or mesh shall be of Type 304 Stainless steel, brass, or monel construction. Screen or mesh sizes shall be as scheduled below:

Pipe Size	Screen/Mesh Size
1/2" - 2"	20 Mesh
2-1/2" - 3"	0.045 Perforations
4" - 12"	0.125 Perforations

C. Where vertical space does not permit the installation of the "Y" strainer, install an equivalent basket strainer.

D. Where strainers are used in domestic water supply systems they shall be coated (all wetted parts) with an FDA approved epoxy coating.

E. Strainers for screwed piping shall be Sarco Type IT (cast iron body) with optional bronze plug for steel piping or Sarco Type BT (cast bronze body) for copper piping; for flanged piping shall be Sarco Type CI-125 or F-125 and CI-250 or F-250 (cast iron bodies) as suitable for the pressures and temperatures encountered. Equivalent as manufactured by the following will be considered:
   1. Grinnell.
   2. Crane.
   3. Lesley.
   4. McAlear.
   5. Keckley.
   6. Mueller.
   7. Nibco.

2.11 GAUGES AND GAUGE COCKS OR NEEDLE VALVES

A. Provide the following pressure gauge cock or needle valve connections:
   1. At the suction and discharge of each water pump.
   2. At the inlet and outlet of each water coil.
   3. At water balance stations and any other points indicated or detailed on diagrams on the Drawings.

B. Where gauge connections are installed in insulated lines, install gauge cocks or needle valves on a nipple of sufficient length that the gauge cock or needle valve handle will be free of the pipe insulation. Position

each gauge cock in relation to surrounding piping and equipment so that the gauge may be easily read and so that a gauge having a 4-1/2" diameter dial can be screwed into and out of the piping nipple where the gauge cock or needle valve is installed. All gauge cocks shall be of the tee-handle type. Needle valves shall be a Weksler AV32, AV34, or BBV4.

C. Install gauge cocks or needle valves at pumps at the pump suction and discharge flange connections at the pre-drilled and tapped gauge connections as provided by pump manufacturer.

D. Furnish and install a pressure gauge suitably calibrated at each of the following locations:
   1. The suction and discharge of each water pump.
   2. At other points indicated on the Drawings.

E. Gauges shall be of the bourdon tube type, and shall be selected to operate at about the midpoint of their full range, i.e., for a 50 PSI operation, select a gauge of 0 to 100 psi. Accuracy shall be +/- 1%. Each gauge shall be provided with a brass lever handle union cock or brass handle needle valve. Cases shall be Phenol or Steel, not less than four and one-half inches (4-1/2") in diameter.

F. Pressure gauges shall be equal to Weksler "Regal" series Industrial gauges with an aluminum safety case with bottom or lower connection, phosphor bronze bourdon tube with brass socket and all 300 Series stainless steel movement, 4-1/2" white enameled aluminum dial with black graduations and numbers on a 270 degree arc, 1/4" male NPT thread size; and be equipped with a geared micrometer adjustment pointer (balanced). Provide each gauge with scale range suitable for the duty. Gauges shall be Weksler Model BA14 or equal.

G. Provide pulsation dampeners, adjustable snubbers, or piston type pressure snubbers in line with all pump gauges.

H. Cocks and gauges shall be manufactured by:
   1. Weksler.
   2. Trerice.
   3. Weiss.
   4. Miljoco.
   5. Marsh.
   6. Crosby.

2.12 THERMOMETERS AND THERMOMETER WELLS

A. Furnish and install brass or stainless steel closed separable thermometer wells for all thermometer and controller bulbs which are designed for liquid measurements. Whenever a thermometer or controller bulb is inserted in a pipe for either remote or local temperature indication or control, locate the thermometer well so that it will be completely surrounded by flowing fluid. Such thermometer locations as are shown on the Drawings are diagrammatic only. Install thermometer wells for maximum effectiveness and in the case of locally indicating instruments, for easy readability.

B. Supply each brass test well for use with the stem thermometers, a threaded brass plug and keeper chain. Install these test wells in the following locations such that they can be filled with oil to facilitate temperature measurements:
   1. At the inlet and outlet of each water coil.
   2. At the inlet and outlet of each heat exchanger, evaporator and condenser.
   3. At other locations as specified herein or shown on the Drawings.

C. Where thermometer wells are called for, furnish and install brass wells with the tip of the well extending into the water stream. The well shall have a plug attached to it with a short length of chain. The wells shall be installed in the vertical or at 45 degree angle up.

D. Thermometers shall be of the industrial type with red spirit filled liquid (no mercury allowed), bronze enameled aluminum cases, glass fronts, 9" scales, separable sockets; straight or angle pattern so selected that they can be read from the floor. Straight type equal to Weksler Type 105 and angle type equal to Weksler Type 115, Type 125, or Type 135, depending upon the angle and aspect. Furnish thermometers with 2-1/2" stem extensions where they are installed in insulated lines. Select scale ranges for maximum readability at the design temperature of the medium being measured.

E. Thermometers shall be installed in the following locations:
   1. At the discharge of each pump.
   2. At the inlet and outlet of each heat exchanger, evaporator and condenser.
   3. At other locations as specified herein or shown on the Drawings.

F. Thermometers and thermometer wells shall be as manufactured by:
   1. Weksler.
   2. Trerice.
   3. Marsh.

4. Taylor.
5. Miljoco.
6. Weiss.

2.13 TEMPERATURE AND PRESSURE TEST PORTS

A. Temperature and Pressure Test Ports, or Pete's plugs, shall be dual valve type with valve pocket between valves, retaining cap with gasket and cap "saver" connector.
B. These ports may be used at water coil connections in lieu of gauge cocks or needle valves and thermometer test wells.
C. Pete's plugs shall have the pipe nipple extended to beyond the insulation thickness to make the plug fully accessible and a minimum of one inch (1") above the pipe insulation.
D. Ports shall be as manufactured by:
   1. Pete.
   2. Autoflow.
   3. Flowset.

2.14 AUTOMATIC FLOW CONTROL VALVES

A. Valves shall be rated for up to 200 psi and 200 Deg.F.
B. Body shall be of wrought copper, brass or ductile iron construction with AISI Type 300 series passivated stainless steel parts, electroless nickel plated brass, and 17-7 PH spring.
C. Provide label on body to indicate flow rate, model number, PSID range and flow rate. Information shall be on minimum 3" x 3" aluminum tag.
D. Flow shall automatically be controlled within + 5% of rated flow.
E. Provide Y-Type strainers with blowdown valve upstream of all flow control valves made of bronze or cast iron with a bronze or cast iron cap rated for temperature and pressure same as valve. Screen shall be stainless steel with 0.055 inch diameter holes. Refer to Para.2.9, Strainers.
F. Provide brass P/T ports with extensions for insulated piping for each flow control valve.
G. Automatic flow control valves shall be as manufactured by:
   1. Griswold Controls.
   2. "Autoflow" by Flow Design, Inc.

H. It is the intent of this article to specify single devices which will be field piped per Schematics shown on the Drawings. Pre-piped assemblies of multiple piping accessories are not allowed, unless otherwise indicated elsewhere herein.

2.15 RELIEF VALVES

A. All closed water systems shall be protected with a relief valve. Valves shall be spring operated, all brass, and shall meet A.S.M.E. requirements for discharge capacities. Discharge lines shall be piped to the nearest floor drain.
B. Relief valves shall be as manufactured by Watts, Klipfel, McAlear, or McDonnell and Miller.
C. Provide atmospheric relief piping routed to the outdoors as required by local code for all steam and natural gas systems.

2.16 AIR VENTS

A. Provide and install air vents, air eliminators, where shown and at any high points or traps in water circulating lines where air might collect.
B. Each such air vent shall be installed with a valve at its inlet and shall discharge through an integral check valve. The waste lines from the discharge from air vents shall be collected and piped to the nearest floor drain in each case.
C. All automatic air vents shall have cast or ductile iron bodies with corrosion resistant bolts, Buna-N or EPDM seating materials to meet system pressure and temperature requirements, and all stainless steel internal control components.
D. Provide manual air vent cocks, or needle valve, for all water coils where not integral or supplied with coil by manufacturer.
E. Automatic air vents shall be rated for a maximum working pressure of 150 psig and 250 Deg.F.
F. Automatic air vents shall be as manufactured by:
   1. Hoffman Model No. 792.
   2. Armstrong Model No. AV.
   3. Bell & Gossett Model No. 107A.
   4. Or equivalent by Amtrol.

PART 3 - EXECUTION

3.1 PIPING - GENERAL

A. Where special classes of piping are involved and are not listed, the Contractor shall request instructions from the Owner's Representative as to the class of material involved and the method of fabricating it before ordering any material. All steel lines 2-1/2" and larger shall be assembled by welding. All steel lines 2" and smaller may be assembled either by welding or by screwed fittings as specified.

B. Welding shall be done by mechanics who satisfy qualification requirements of the American Welding Society. The pipe ends to be welded shall be machine beveled wherever possible. Gas cuts shall be true and free from all burned metal. Before welding, surfaces shall be thoroughly cleaned. The piping shall be carefully aligned and no metal shall project within the pipe. Fully ream, to the full inside pipe diameter dimensions, the inside of all piping to be welded. Miter joints will not be allowed in any case. All headers, connections, elbows, reducers, flanges, and special flanges and special fittings shall be made using forged steel welding fittings of the same weight as the pipe to which they are attached. All unions and connections to valves 2-1/2" and larger shall be made by the use of welded flanges.

C. Branches in lines where the branch side is equal to 2/3 of the size of the main or smaller may be connected by using Weldolets or Threadolets; where the sizes are greater than 2/3 of the main, standard weight seamless tees as manufactured by Tube-Turns or Grinnell, A.S.T.M. Standard A-234 shall be used.

D. The location, direction, and size of all lines are generally indicated on the drawings. Branch connections in general are indicated and shall be so installed as to provide proper grades.

E. All lines shall be made up straight and true at proper grades. All water filled and condensate drain lines shall grade down to drains.

F. Piping shall follow as closely as possible the routes shown on the plans and take into consideration conditions to be met at the site. Should any unforeseen conditions arise, lines shall be changed or rerouted as required after proper approval has been obtained.

G. All piping shall be installed with due regard to expansion and contraction and so as to prevent excessive strain and stress in the piping, in connections, and in equipment to which the lines are connected.

H. All headers shall be assembled as indicated using welding fittings throughout.

I. All screw joints shall be made with taper threads, properly cut. Joints shall be made tight with graphite and oil applied to the pipe threads only and not to the fittings.

J. Dielectric couplings shall be installed where ferrous pipe joins copper lines and shall be rated for the intended medium pressure and temperature or service.

K. Provide and install unions at proper points to permit removal of pipe and various equipment and machinery items without injury to other parts of systems. No unions will be required in welded lines or lines assembled with solder joint fittings except at equipment items or coils, machinery items and other special pieces of apparatus. Unions in 2" and smaller lines shall be ground joint and unions 2-1/2" and larger shall be flanged unions. Unions shall be the same material and strength as other fittings in the lines. Companion flanges on lines at various items of equipment, machines, and pieces of apparatus shall serve as unions to permit removal of the particular item.

L. All piping shall be supported by hangers independently of equipment connections. The weight of the piping and it's contents shall not be imposed on the equipment in any way.

M. Mitering of pipe to form elbows, notching of straight runs to form tees, or any similar construction will not be permitted.

N. Swing joints or expansion loops shall be provided wherever shown on the Drawings or wherever else necessary to allow for the expansion and contraction of piping. This shall be accomplished in an approved manner and this Contractor shall be responsible for any damage which may occur as a result of expansion and contraction of his piping.

O. Nipples shall be of the same size and material as the piping in the system in which the nipples are installed, except that "close", or "all thread" nipples shall not be used.

P. Keep all open ends of piping in each system plugged or capped to prevent dirt or other debris from entering the pipe at any and all times during construction and before fixtures or equipment is connected. All piping shall be flushed clear prior to connection to the central building systems.

Q. The ends of all piping furnished and installed in all systems shall be thoroughly reamed to the full inside diameter of the respective pipe.

R. Exposed and concealed lines shall be run parallel with, and perpendicular to building lines and wherever possible shall be grouped together for easy service and identification. Whenever possible, horizontal and vertical runs shall be held as close as possible to the walls, ceilings, struts, members, etc., so as to occupy the minimum space consistent with the proper installation requirements for insulation, conduit, ductwork, lighting fixtures, etc., and the expansion requirements of each of these items and the building

proper or the removal of the respective or adjacent pipes, conduits, and ductwork, and to allow for necessary access to valves, other pipes, conduits, dampers, etc.

S. Valves required for control or isolation of any part of the various systems shall be provided and shall be located in approved or accessible positions or made accessible through removable panels, etc., and where several valves are related as to function, they shall be grouped in a battery. Request approval from Owner's Representative for proper location of all access panels required for valves, etc.

T. All automatic control valves shall be installed such that the valve stem is pointed upwards, vertical, and in no case shall it be mounted at less than a 45 degree angle from the vertical position unless specifically approved by the Engineer prior to installation. There will be no exception for chilled water type systems.

U. All shut-off and isolation valves shall generally be installed with valve stems pointed vertically upwards. In no case shall valve stems be pointed downwards or less than in a horizontal position. Chilled water system valve stems shall not point less than 45 degrees below vertical in any case.

V. Where new lines are indicated to connect into existing lines, careful coordination shall be exercised to determine exact elevations and locations of existing lines, to establish grades of interconnecting new lines, to establish procedures to interconnect lines, and to establish other details.

W. Pre-assembled water coil piping assemblies are not allowed unless specifically indicated otherwise elsewhere herein. The intent of these Specifications is to have individual piping valves and specialties field assembled per the Schematic Diagrams illustrated on the Drawings and to meet all other installation requirements indicated elsewhere herein.

3.2 GROOVED PIPE AND FITTINGS

A. Where grooved piping and fittings are specified elsewhere herein follow the installation guidelines specified below:
   1. Assemble all grooved joints with coupling and gasket, lubricant, and bolts.
   2. Roll grooves (cut grooves not allowed) in ends of pipe based on pipe and coupling manufacturer’s written instructions for pipe wall thickness used. Pipe ends shall be clean and free from indentations, projections, and roll marks in the area from pipe end to groove.
   3. The gasket style and elastomeric material (grade) shall be verified as suitable for the intended service as specified.
   4. All grooved components (couplings, fittings, valves, gaskets, and specialties) shall be of one manufacturer (Victaulic), or others as specified elsewhere herein, or approved equals only.
   5. Grooved manufacturer shall provide on-site training for contractor’s field personnel by a factory trained representative in the proper use of grooving tools, application of groove, and product installation. Factory trained representative shall periodically visit the job site and inspect the installations.
   6. Contractor shall remove and replace any improperly installed products.
   7. All fittings shall be insulated with pre-molded insulation per system requirements and be as specified in other sections of these specifications.

B. Victaulic’s Commissioning Service shall be hired by the installing contractor to provide visual examination of all installed Victaulic couplings when deemed necessary by the Consultant/Owner. Installation review will be conducted in accordance with Victaulic Pipe Joint Visual Examination Standard ES 1091. A report confirming the visual examination results shall be provided to the Contractor and the Consultant/Owner’s representatives.

3.3 CROSS CONNECTION AND INTERCONNECTIONS

A. No plumbing fixtures, device, or piping shall be installed which will provide a cross connection or interconnection between a distributing water supply for drinking or domestic purposes and a polluted supply such as drainage system, or a soil or waste pipe which will permit or make possible the backflow of sewage, polluted water, or waste into the water supply system.

3.4 EXCAVATION AND BACKFILLING

A. Provide necessary excavating and backfilling for the installation of work specified in this Division as specified in Section 23 05 00.

3.5 PIPE INSULATION INSERTS AND SHIELDS

A. Provide a section of Foamglas insulation, calcium silicate, or urethane of thickness specified at hanger support locations and provide No. 16 gauge galvanized steel protection shield minimum 12" long. Shield shall be full half cylinders equal to Grinnell Fig. 167.

B. Refer to Section 23 07 00, Insulation.

3.6 UNDERGROUND PIPING PROTECTION

A. Protect the entire surface of all underground steel piping against rust and corrosion.
B. For piping and nuts and bolts, such as those on mechanical joint piping systems, not specified elsewhere to be furnished with factory applied pipe corrosion resistant wrapping, the piping and fastener surfaces shall be cleaned of rust, dirt, etc., with a wire brush and shall be free of oil and grease and be completely dry.
C. Brush on, or otherwise apply as recommended by the manufacturers, a heavy full coating of TC Mastic (Tape Coat Company, Evanston, Illinois) or Reilly Protective Tar Enamel No. 3302 (Reilly Tar and Chemical Company, Indianapolis, Indiana). Dry coating shall be not less than twelve 12 mils thickness. Protect freshly covered surfaces from dirt or moisture for at least 12 hours as recommended by the manufacturer to allow it to dry before backfilling. Depending on the weather the systems may be carefully backfilled as determined by the Owners representative.

3.7 SAFETY GUARDS

A. Furnish and install all safety guards required in order to obtain certificates of inspection from all authorities having jurisdiction.
B. All belt driven equipment, projecting shafts and other rotating parts shall be enclosed or adequately guarded.

3.8 TESTING AND REPAIRING

A. During the progress of each portion of the work or upon its completion, make such tests of this work as herein specified, or as required by the Architect, or by State or Municipal Bureaus having jurisdiction and under their supervision.
B. Provide all apparatus, temporary piping connections, or any other requirements necessary for such tests. Take all due precautions to prevent damage to the building and its contents incurred by such tests as will be required to repair and make good, at no cost to the Owner, any damage so caused. Testing of piping to be insulated shall be done before insulation is applied.
C. Perform any other tests as may be required by the Owner's Representative to indicate the fulfillment of specification requirements.
D. All water piping shall be hydrostatically tested to a pressure of 150 psig or to 1-1/2 times the operating pressure, whichever is the greatest, for six (6) hours.
E. Systems shall be tested in portions as required by the construction schedule and the portions being tested shall be effectively isolated and sealed off. When previously tested sections are connected into other sections, tests shall be rerun to include the new connections.
F. Partial systems shall be tested prior to connecting into existing lines.
G. Leaks in screwed joints shall be repaired by tightening the joint until the leak has stopped, or by remaking the joint if tightening fails to stop the leak. Leaks in welded joints shall be repaired by chipping out the weld around the leak and rewelding until it is stopped. Leaks in caulked joints shall be completely stopped by additional caulking of the joint, but, if that fails, the joint shall be re-made. A leak in a compression joint shall be repaired by remaking the joint using a new seal, compression ring, coupling, etc., as required. Leaks in soldered joints shall be repaired by remaking the joint and no soldering or brazing over existing joints will be permitted. Any defective piping shall be replaced.
H. Additional testing shall be as specified in the individual Sections of these Specifications.
I. During testing and cleaning of piping systems, use a fine mesh, 20 mesh or smaller, start-up strainer screen for all strainer pipe sizes. After piping system is cleaned each strainer shall be taken apart, cleaned, and final strainer mesh shall be placed back in strainer for normal operating conditions.

3.9 SEALING PENETRATIONS

A. Seal all pipe and duct penetrations through walls run to structure, ceilings, floors and roofs. Fill the annular space between the insulation on the pipe, or the pipe only where uninsulated, or duct and its sleeve, with neoprene or non-hardening sealant.
B. No pipe or duct shall be allowed to contact its surrounding sleeve or the wall, floor, or ceiling. Effective isolation shall be provided as described in Section 23 05 48 to the end that no vibration or direct noise transmission shall be transmitted. Vibration transmission limits shall be as established in Section 23 05 48. Use special materials as may be required to comply.
C. Firestop pipe and duct floor and wall penetrations as specified in Section 07 84 00 and 23 05 00.

3.10 CONTROLS AND INSTRUMENTATION

A. Section 23 09 00, Controls and Instrumentation, requires thermowells, pete's plugs, and test ports for water temperature and pressure measurement and monitoring purposes for temperature controls and for

verification purposes by the Testing, Adjusting and Balancing Firm (TAB), which shall be installed under this section of the specifications. These devices shall be located as verified by the TAB Firm.

B. Temperature control valves shall be furnished as specified in Section 23 09 00, and installed as a part of this Section of the Specifications.

C. Where pressure gauge cocks and pressure/temperature test ports are shown on the Drawings and allow for TAB firm verification additional devices are not required. It is not the intent to provide redundant test ports. However, where sensors are installed in thermowells or other mounting devices separate test ports are required such that sensors do not have to be removed to calibrate or test.

3.11 PAINTING

A. All equipment specified in Division 23 shall be delivered to the site with suitable factory finishes as specified elsewhere herein.

B. Items with factory applied finishes shall be protected during installation and other construction work. Damaged factory applied finishes shall be refinished to match the original finish appearance.

C. Field painting of items specified and installed in Division 23 shall be as specified in Section 09 90 00.

D. All ferrous metals that are not galvanized or made of a corrosion resistant alloy shall be painted. This shall include steel pipe hangars, trapeze supports, pipe stands, all thread hangar rods and other miscellaneous systems.

END OF SECTION 232113

SECTION 232123 - CENTRIFUGAL PUMPS

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS
- A. Comply with Division 1 - General Requirements and referenced documents.
- B. Comply with all other Division 23 Sections, as applicable. Refer to other Divisions for coordination of work with other portions of work.

1.2 SYSTEM DESCRIPTION
- A. Provide water circulating pumps of the type, rotational speed, and arrangement indicated.
- B. Each pump shall be rated to deliver the capacity indicated in the tabulation on the Schedule against the head of the system in which it operates.
- C. Pumps specified in this section of specifications shall handle chilled, heating or condenser water at no higher than 250 Deg. F. or lower than 10 Deg. F.

1.3 QUALITY ASSURANCE
- A. All equipment and materials shall be new and of the best quality.
- B. All equipment and materials shall be installed in a workmanlike manner by experienced mechanics and as recommended by the pump manufacturer.

1.4 SUBMITTALS
- A. Product Data: Submit manufacturer's descriptive literature and installation instructions together with pump curves and head calculations. Head calculations required when piping installation and equipment utilized is significantly different from that shown as determined by the Engineer.
- B. Shop Drawings: Submit in accordance with Section 23 05 00.
- C. Submittals to include pump and motor efficiencies at full load and at 60 Hertz. For variable speed applications submit on the same at 15 Hertz, 30 Hertz and 45 Hertz.

1.5 PRODUCT HANDLING
- A. Cover and protect pumps in transit and at site. Pumps not properly protected and stored and which are damaged or defaced during construction shall be rejected.
- B. Cover suction and discharge openings to prevent entrance of dirt and debris until final piping connections are made.
- C. Storage and protection of materials shall be in accordance with Section 23 05 00.

PART 2 - PRODUCTS

2.1 GENERAL
- A. The head capacities indicated in the schedules are listed for bidding purposes only. Calculate the operating head at each pump, taking into consideration the actual routing of the various lines, pressure drops in heat exchangers and coils, exact lengths of pipe, fittings, etc. Submit these calculations, together with copies of manufacturer's performance curves, as shop drawings on each pump. Clearly mark the curves for each pump to indicate the diameter of the impeller and the selection point.
- B. Motors shall be constant speed, open drip proof type and shall be so sized with relation to the pump impeller that the required brake horsepower shall not exceed the rated motor horsepower at any point on the pump curve. Pumps operating in parallel shall not cavitate when operated alone.
- C. Provide each pump with a constant speed motor wound for the electrical characteristics indicated on the Drawings. Motors shall be of the nominal starting torque, low starting current, ball bearing, horizontal, 40 Deg. C. ambient, drip-proof squirrel cage induction type. Motors over 1 H.P. shall be high efficiency type equal to G.E. Energy Saver, Baldor Super "E" or A.O. Smith "E" Plus III. All motors on all pumps shall be of the same manufacture. Refer to Section 23 05 13.
- D. Provide each centrifugal pump with an enclosed impeller whose diameter is 90% or less of the maximum impeller which the manufacturer shows in their published curves for that pump.
- E. Provide pump casings and mechanical seals suitable for operation under static and dynamic heads for that pump.

F. Pump baseplates shall be constructed of welded structural steel shapes. Provide with raised lip drip pans with threaded drain connection where handling fluids with operating temperatures below 60 Deg. F., such as chilled water. Furnish baseplates with 1/8" thick steel drain pan of sufficient width to extend under, and a minimum of two inches (2) beyond, and catch any drip from connecting flanges. Removable attachments will not be acceptable. Cover pans with rust inhibitive paint.
G. Coupling shall be of the flexible type, capable of withstanding shock, misalignment and end float as manufactured by "Woods".
H. Motor and pump alignment shall be field adjustable, but shall be factory aligned on a common base plate. Supplier shall furnish adequate shims or other alignment accessories necessary to complete field alignment.
I. Coupling Guard: Coupling guard shall be all metal and fastened to baseplate. Guard shall be removable. All exposed moving parts shall be guarded from all sides.
J. Name Plates: Furnish stainless steel data plates permanently secured to the pump.
K. Bearings shall be the heavy duty ball type on both ends of frame and be regreasable.
L. Provide 1/4 inch gauge tappings, fitted with pipe plugs, at each pump flange.
M. Provide minimum 1/2 inch tappings, fitted with pipe plugs, for a casing air vent and drain on the pump volute.
N. Provide extended lubrication lines with universal grease gun stop check fittings for greasing bearings without requiring disassembly of the pump, guards, or other auxiliary devices.
O. All pumps and materials of construction shall be compatible with ethylene glycol.

2.2 DOUBLE SUCTION PUMPS

A. Double suction pumps shall be bronze fitted, horizontally split case type with flanged inlet and outlet. Flanges shall be rated at 125 PSI. Pumps shall be designed to allow complete removal of the impeller, shaft, and bearings.
B. Each pump and motor shall be mounted on a common baseplate, and shall be connected through a spacer type flexible coupling.
C. The casing bearing bracket, bearing cover and gland shall be of cast iron, ASTM A-48, Class 25A.
D. The shaft shall be of stainless steel construction.
E. The impeller shaft sleeve and casing wearing rings shall all be made of bronze (bronze fitted).
F. Seals shall be John Crane, Type 21, or equivalent, mechanical shaft seals.
G. Bearings shall be grease lubricated ball type, selected to the carry radial and thrust loads required based on the scheduled requirements.
H. Pumps shall be as manufactured by Aurora, PACO, Bell & Gossett, or TACO.

2.3 END SUCTION PUMPS (CENTRIFUGAL PUMPS)

A. End suction pumps shall meet all requirements same as Double Suction Pumps. Pumps shall be frame mounted type.

2.4 IN-LINE CIRCULATING PUMPS

A. Pumps shall be of the in-line, direct coupled, single stage design with attached motor. Pump models shall be furnished as shown on the Plans and installed in accordance with the manufacturer's recommendations. Each pump shall be capable of delivering the scheduled gallons per minute when operating at the scheduled total developed head of feet. The pump shall be capable of operating continuously at temperatures from 5 Deg. F. to 250 Deg. F. (-15 Deg. C. to 121 Deg. C.) with working pressures of 145 psi (10 Bars). Pump shall have flanges and be ANSI B16.1, 125 pound flat face, rated.
B. Pump body shall be of Class 30 cast iron, rated 175 psi working pressure, with gauge ports at nozzles, and with vent and drain ports.
C. Impeller shall be non-ferrous material, enclosed type, dynamically balanced, keyed to the shaft and secured by a locking cap screw or nut.
D. The liquid cavity shall be sealed off at the motor shaft by an internally-flushed mechanical seal with ceramic seal seat, and carbon seal ring, suitable for continuous operation at 225 Deg. F. A non-ferrous shaft sleeve shall completely cover the wetted area under the seal.
E. Pump bearing bracket shall have oil lubricated bronze journal and thrust bearings. Bracket shaft shall be alloy steel having ground and hardened thrust bearing faces. A flexible coupling to dampen starting torque and torsional vibration shall be employed.
F. Motor shall meet NEMA specifications and shall be the size, voltage, and enclosure called for on Plans.
G. Each pump shall be factory tested. It shall then be thoroughly cleaned and painted with at least one coat of high grade machinery enamel prior to shipment.

2.5 TWO-STAGE VERTICAL TURBINE PUMPS

A. Vertical turbine pumps shall be bronze fitted and be water lubricated with an enclosed impeller. These pumps shall be designed for deep well line shaft applications with an above ground discharge flanged connection.

B. Pumps shall have a vertical line shaft turbine with suitable galvanized steel clip-on basket strainer. The strainer free area shall be 5 times that of the flow area of the pump.

C. The column assembly shall be 6" x 1" for a total approximate pump length of eight feet (8'). The column assembly shall be made of threaded and coupled pipe with type 416SS line shaft with no intermediate line shaft bearings required.

D. All discharge connections shall be rated for 150 psi and be flanged cast iron. Discharge head shall be water lubricated, be complete with seal housing and mechanical seal, head shaft and motor coupling. Line shaft bearings shall be lubricated by the water being pumped which shall require a suitable driver and accessories. The water being pumped is condenser water which by its nature will have a significant amount of particulate.

E. Pump and motor shall be a common assembly to be mounted on the floor or concrete pad extension covering the basin. Motor shall be 1770 RPM with vertical hollow shaft motor with WP-1 (weatherproof) enclosure. Motors shall be the heavy duty premium efficiency type, NEMA design B, and have a 1.15 service factor. Motor shall have a non-reversing feature to prevent reverse rotation of any rotating element. A suitable thrust restraint shall be incorporated in the upper end of the motor to protect the installed assembly from the hydraulic thrust load of the pump and the weight of all rotating parts. Refer to Section 15131 for general motor efficiency and construction requirements.

F. Pump construction shall comply with the following:

1. Intermediate bowls, suction bowl, and discharge adapter shall be the flanged type constructed from close grained cast iron and shall conform to ASTM designation A48, class 30. They shall be free from sand holes, blow holes, or other faults and must be accurately machined and fitted to close tolerances. Intermediate bowls shall have vitra glass lined waterways for maximum efficiency and wear protection. All intermediate bowls shall be of identical design for interchangeability. A discharge adapter shall be used to connect bowls to the discharge column. Threaded connecting bowls will be allowed on bowl sizes 8" and smaller.
2. Impellers shall be constructed from ASTM B584 Silicon Bronze and shall be the enclosed type. They shall be free from defects and must be accurately cast, machined, balanced, and filed for optimum performance and minimum vibration. Impellers shall be the standard product of the pump manufacturer and not contain special workmanship to temporarily increase efficiency. Securely fasten impellers to the bowl shaft with taper locks of type 416 stainless steel. Impellers shall be adjustable by means of a top shaft adjusting nut.
3. Suction bowl shall be provided with a non-soluble grease packed bronze bearing, and a bronze sand collar shall be incorporated in the pump design to protect this bearing from abrasives. Bearing housing shall have a sufficient opening at the bottom for easy removal of the bearing.
4. Wear rings on pumps 6" and larger shall not be fitted with replaceable wear rings of bronze material in the suction bowl and intermediate bowls. Wear rings shall have the minimum practical clearance to the mating cylindrical surface of the impeller to provide adequate sealing independent of vertical positioning of the impellers.
5. Bowl shaft shall be constructed from ASTM A582 type 416 stainless steel. It shall be precision turned, ground and polished and shall be supported by water lubricated bronze bearings.

G. Water Lubricated Column Assembly shall have the following features:

1. Pump speeds up to 3600 RPM shall have intermediate column lengths and line shaft bearing spacing not to exceed 5 feet.
2. The column pipe shall be grade “A” steel pipe with the ends machined with 8 threads per inch with 3/16" taper and faced parallel to butt against the centering spiders. Inside diameter of the pipe shall be such that the head losses shall not be over 5 feet per 100 feet of pipe and shall be Schedule 40 pipe. Pipe shall be connected with threaded sleeve type steel couplings.
3. Line shaft shall be of ample size to operate the pump without distortion or vibration. Diameter of the shaft shall be such that it does not exceed the scheduled horsepower limitations. Shaft shall be furnished in interchangeable sections not over ten feet in length, and shall be coupled with extra-strong threaded steel couplings machined from solid bar steel. Line shaft shall be type 416 stainless steel.
4. Bronze centering spiders of the drop-in type shall be furnished for shaft stabilization at each column pipe coupling. Bearings shall be fluted rubber retained in the spider by a shoulder on each end of the bearing.

H. Water Lubricated Discharge Head Assemblies shall have the following features:
   1. Discharge head shall be of the high profile type and be a suitable base of high grade cast iron, ASTM A48-30, or fabricated steel. It shall be provided for mounting the motor with a discharge elbow having an above ground flanged discharge outlet. The design shall have sufficient capacity to carry the combined weight of the column assembly. The design shall allow the top shaft to couple above the stuffing box. The head shall have a 1/2" NPT connection for a pressure gauge.
   2. The stuffing box shall be cast iron and shall contain a minimum of five rings of packing. It shall have a pressure relief connection. The packing gland shall be a bronze split type secured in place with non-corrosive studs and nuts. The bearing shall be SAE660 bronze. A rubber slinger shall be secured to the shaft above the packing gland.

I. Acceptable manufacturers:
   1. Bell & Gossett, or
   2. Flowserve, or
   3. Peerless.

2.6 SPARE PARTS KIT
A. Furnish one (1) spare parts kit for the pumps furnished under this section of specifications.
B. Spare parts kit shall be as standard with the manufacturer but shall include the following as a minimum:
   1. Shaft Sleeve Ring
   2. Wear Out Brass Rings
   3. One (1) Bronze Impeller.
   4. Gaskets and 'O' rings (one (1) set)

PART 3 - EXECUTION

3.1 INSTALLATION - BASE MOUNTED PUMPS
A. Prior to performing any installation work inspect pumps to confirm that no damage has occurred from shipping or handling.
B. Compare the motor nameplate electrical information to the power supplied to the pump to confirm the proper power supply is provided. Confirm that the overload relays and fuses or circuit protection rating provided for each pump is proper based on the motor nameplate full load amperage.
C. In mounting pumps verify alignment of driver to pump (horizontal pumps only) and confirm there is no strain on the suction and discharge pipe connections (flanges should meet squarely).
D. Manually turn coupling to insure free rotation of the pump and motor.
E. Insure system is free of foreign matter which could damage pump.
F. Level all frame base mounted pumps by using various thickness steel shims or steel wedges on each side of each mounting bolt set beneath the baseplate on top of the foundation, or inertia base, as per the manufacturer's instructions, without exception.
G. After the baseplate is bolted down, erect forms around the foundation and fill with approved grout. Exercise care to be sure that the entire space under the baseplate is filled with grout. After grout is thoroughly hardened, remove wedges and fill holes with non-shrinking grout. Tighten bolts.
H. Check levelling and alignment and correct, if necessary, with shims under pump or motor feet.
I. Make final connections of piping to pump and support piping independently of the pump. It is imperative that piping be installed in such a manner as not to impose any strain on the pump casing.
J. Connect gauge cocks and gauges to gauge tappings.
K. Connect a gauge cock to the volute air vent connection.
L. Pipe a drain to the drip pan and volute drain and route to the nearest floor drain.
M. Connect power supply and control wiring to disconnect and motor controller.
N. After each unit has been run under actual operating conditions, shut it down and again check its alignment and adjust as necessary.
O. Follow all manufacturer recommended installation instructions to include following and completion of all recommended Pre-start and Post-Start checklists.

3.2 IN-LINE PUMPS
A. Suspend or support in-line pumps from structure as required, independent of the piping with pump installed level and motor upright (vertical).

3.3 VERTICAL TURBINE PUMPS

A. Mount as recommended by the manufacturer. Secure floor covering basin with bolts to suitable anchors.

END OF SECTION 232123

SECTION 232513 - HVAC WATER TREATMENT FOR CLOSED-LOOP HYDRONIC SYSTEMS

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS
- A. Comply with Division 1 - General Requirements and referenced documents.
- B. Comply with all other Division 23 Sections as applicable. Refer to other Divisions for coordination of work with other portions of work.

1.2 SYSTEM DESCRIPTION
- A. Install closed chilled and heating water piping systems complete including water distribution lines, compression tanks, pumps, strainers, air control fittings, flow and pressure regulating valves, relief valves, specialties, insulation, hangers and supports, and appurtenances as shown on the Drawings, as specified herein, and as specified in other Sections of these Specifications.
- B. Provide water treatment equipment, chemicals and treatment testing services to treat the closed water piping systems to be cleaned, flushed, and chemically inhibited from corrosion.

1.3 QUALITY ASSURANCE
- A. All equipment and materials shall be new and of the best quality.
- B. All equipment and materials shall be installed in a suitable manner by technicians experienced in the work described.
- C. All piping cleaning, flushing, and chemical treatment work shall be performed by the piping system installer as specifically directed and supervised by trained and qualified representatives of the firm providing the chemicals and as specified elsewhere herein.
- D. Chemical treatment companies providing chemicals, supervision, cleaning, and flushing instructions and chemical testing and adjustment services shall have a minimum of ten (10) years experience in the local area, located within a 25 mile radius of the project site, in the performance of these services for projects of this size and type. Acceptable firm shall be one of the following:
  1. Garratt Callahan.
  2. Nalco.
  3. Betz.

1.4 SUBMITTALS
- A. Product Data: Submit complete manufacturer's descriptive literature for each item specified herein, instructions for water piping flushing and cleaning, and chemical treatment procedures.
- B. Include Material Safety Data Sheets on all chemicals to be used.
- C. Shop Drawings: Submit in accordance with Section 23 05 00.

1.5 PRODUCT HANDLING
- A. Cover and protect material in transit and at site. Material not properly protected and stored and which is damaged or defaced during construction shall be rejected.
- B. Storage and protection of materials shall be in accordance with Section 23 05 00.

PART 2 - PRODUCTS

2.1 WATER PIPING AND FITTINGS
- A. Refer to Section 23 21 13, Hydronic Piping.
- B. All chemical treatment, make-up water and expansion piping shall be Type "L" hard drawn copper with wrought fittings using 95-5 solder. Use dielectric unions where connected to dissimilar materials.
- C. All piping and isolation valves of every kind required for application of the chemical treatment system shall be furnished and installed by the piping system installer. Refer to Specification Section 23 21 13.

2.2 VERTICAL PRESSURIZED BLADDER TANKS
- A. Vertical pressurized bladder type compression tanks for chilled and heating water piping systems shall be furnished and installed in the sizes and where indicated on the Drawings.
- B. Tanks shall be made of carbon steel with ASME Boiler and Pressure Vessel Code Section VIII, Division 1 stamp, rated for a minimum 240 Deg.F. design temperature and 125 PSIG design pressure.

C. Bladder shall be made of a heavy duty butyl rubber or full volume flexible elastomer, and shall be replaceable. Bladder material shall be suitable for use in glycol systems.
D. Each tank shall be primed and painted.
E. Provide each tank with floor support ring base, lifting rings, 3/4" drain tapping, air charger valve assembly, and 1", 40 gallon or smaller tanks, or 1-1/2", over 40 gallon tank capacity system connection.
F. Acceptable Manufacturers shall be:
   1. Bell and Gossett Type Series "B" Pressurized Vertical Tank,
   2. TACO,
   3. AMTROL,
   4. Or the John Wood Company.

2.3 COMPRESSION TANKS
A. Compression Tanks for chilled and heating water piping systems shall be of the size and type as indicated on the Drawings.
B. Tanks shall be made of carbon steel with an ASME Boiler and pRessure Vessel Code Section V111, Division 1 stamp, rated for a minimum 240 Deg.F. design temperature and 125 PSIG design pressure.
C. Each tank shall be primed and painted.
D. Provide each tank with a site glass, angle valves, mounting saddles, drain tapping, drain air charger valve assembly, Airtrol tapping and tank air control fittings.
E. Acceptable Manufacturers shall be:
   1. Bell and Gossett Type ATF.
   2. TACO.
   3. AMTROL.

2.4 BUFFER TANKS, VERTICAL CHILLED WATER TYPE
A. Vertical chilled water buffer tanks shall be furnished in the sizes, gallons of storage capacity and approximate diameter, and locations where shown on the Drawings.
B. Each tank shall be manufactured of minimum 1/4" thick plate steel with 1/4" thick ASME Code 80:10 heads. The shell and heads shall be constructed from SA-516, Gr 70, steel. All pipe couplings and flanges shall be made from SA-105 steel. Each manway shall be made from SA-106C steel.
C. Tanks shall be supported on a minimum six inch (6") high steel skirt welded to the bottom of the tank.
D. The tank inlet and outlet nozzles shall have Type RFSO 150# Series flanges in the sizes to match the pipe sizes shown on the Drawings. Each nozzle shall be centered on opposite sides of the tank near the top of the shell (as high as possible).
E. Each tank shall have a Pressure Relief tapping centered at the top of the tank, minimum 3/4" in size, and shall be a Type FC, Series 3000#, coupling.
F. Each tank shall have two (2) drains, one (1) on each side of the internal baffle, with each drain being a minimum 1- 1/ 2" in size, located approximately centered on each side of the baffle at the low point of each half side. Tank drains shall be a Type HC, Series 3000#, coupling, each made of Type 304L stainless steel.
G. Each tank shall include one manway for access to the inside of the tank. Manways shall be made from minimum 3/4" thick steel, be 12" x 16" (oval) in size and be rated for 300 pounds.
H. All tanks shall be constructed to meet ASME Section VIII, Division 1, requirements and be rated at 125 PSI at 300 Deg.F. Each tank shall be hydrostatically pressure tested to no less than 160 PSI. Each tank shall bear the ASME stamp/label. Tanks shall not require radiograph testing.
I. All tanks shall be provided with two (2) lifting lugs for use in shipping and installation of each tank.
J. Tanks shall be coated on the outside with a red primer suitable for painting. The inside of all tanks (all steel surfaces) shall receive a two part tnemec epoxy coating. In lieu of providing this coating provide a bottom shell, and the bottom 12" of the baffle connecting to the shell, both to be made from Type 304L stainless steel.
K. Each tank shall include a minimum 3/16" thick steel internal baffle plate that extends to the top of the tank and which extends to near the bottom of shell (within 12"). The baffle plate shall be perpendicular to the nozzles. The plate design shall force water to flow through the entire tank without short circuiting.
L. Completely factory insulate the exterior of each steel tank, to include the shell, heads, manway, couplings, and nozzles with minimum two inch (2") thick heavy density fiberglass insulation board, cut and contoured to the shape of the tank. Fully jacket insulation with either a minimum 14 gauge metal jacket finished with a primer coating or use a 0.016 inch thick aluminum jacketing neatly cut and contoured to the shape of the tank. Seal all insulation and jacketing seams and joints to be water and vapor proof. Loose fibrous insulation is not acceptable. Make couplings and nozzles fully accessible for making field connections without damaging insulation and jacketing system.

M. Buffer tanks shall be as manufactured by:
1. Wendland Manufacturing Corporation.
2. The John Wood Company.
3. Or approved equals only.

2.5 IN-LINE AIR SEPARATORS

A. In-line type centrifugal air separators shall be furnished for each of the chilled and heating water systems where indicated on the Drawings.

B. Separators shall be line size as a minimum and have 150 pound ANSI Standard flanged connections on the inlet and outlet connections on sizes 2-1/2" and larger, NPT on sizes 2" and smaller. Separators shall be sized as follows:

Pipe Size	Maximum System Flow	B&G Separator Size (Model RL)
2"	45 GPM	2
2-1/2"	72 GPM	2-1/2
3"	130 GPM	3
4"	240 GPM	4
5"	425 GPM	5
6"	680 GPM	6
8"	1250 GPM	8
10"	2100 GPM	10
12"	3000 GPM	12

C. Separators shall have internal stainless steel air collector tubes to direct air to the top of the separator which shall include a NPT vent, air release connection; minimum size of 1-1/4".

D. Provide a NPT blow down connection at the base of each separator to facilitate blow down of debris from within the separator; minimum size of one inch (1").

E. Tanks shall be primed and painted carbon steel same as compression or pressurized bladder tanks.

F. Air separators shall be designed, constructed, and stamped for a minimum 125 PSIG design pressure at 350 Deg.F., design temperature, in accordance with Section VIII, Division 1 of the ASME Boiler and Pressure Vessel Code.

G. Maximum pressure drop of each separator shall not exceed 2.0 feet of water and the air elimination rate shall be a minimum of 50% on one pass. Submit data to verify compliance with all requirements specified herein.

H. Acceptable Manufacturers shall be:
1. Bell & Gossett Rolairtrol Model RL (No Strainer),
2. TACO,
3. The John Wood Company, or
4. American Wheatley.

2.6 PRESSURE REDUCING VALVES

A. Pressure reducing valves shall be furnished at the make-up water connection to each of the chilled and heating water systems where indicated on the Drawings.

B. Valves shall have an adjustable range of 10 to 25 PSIG. TAB Agency to determine final setting.

C. Valve size shall be a minimum of 3/4" in size.

D. Valves shall have a brass body, low inlet pressure check valve, and integral strainer, which must be removable without system shut down.

E. Acceptable Manufacturers:
1. Bell and Gossett,
2. TACO.
3. American Wheatley.

2.7 PRESSURE RELIEF VALVES

A. Furnish and install individual pressure relief valves at the make-up water connections for each of the chilled and heating water systems where indicated on the Drawings. Combination valves are not acceptable.
B. Valves shall have brass bodies with brass internal parts designed for a maximum operating pressure of 125 PSIG, at a maximum operating temperature of 225 Deg.F.
C. Valves shall be equipped with an EPDM diaphragm to assure positive operation of the valve and to protect non-wetted parts from system fluid.
D. Valves shall be minimum one-half inch (1/2") in size, and have a relief pressure setting of 30 PSIG.

2.8 CHEMICAL SHOT (BYPASS-FILTER) FEEDERS

A. Provide and install one shot type chemical feeders for each of the chilled and heating water systems where indicated on the Drawings.
B. Feeders shall be complete with wide mouth (minimum 3-1/2 inch) secured cap, inlet and outlet taps, and drain tapping, as detailed on the Drawings. Provide a dome shaped top and bottom on all feeders.
C. Shot feeders shall have a minimum five (5) gallon capacity, and be made of cast iron or carbon steel with a 200 PSIG rating at 200 Deg.F. Body shall be painted with an enamel finish.
D. Feeders shall include accommodations for the insertion of filter bags. Provide one (1) initial set of filter bags for each feeder and five (5) additional replacement filter bags per feeder. Filters shall be rated for 25 microns.
E. Feeders and filter bags shall be furnished by the chemical treatment services firm and installed by the piping system installer
F. Acceptable Manufacturers shall be:
    1. Garratt-Callahan,
    2. Nalco,
    3. J. L. Wingert Co.,
    4. or Neptune.

2.9 AIR VENTS

A. Refer to Section 23 21 13, Hydronic Piping.
B. All air vent purging systems shall be furnished and installed by the piping system installer.

2.10 WATER TREATMENT CHEMICALS

A. Chemical treatment service provider shall furnish one (1) year’s supply of the recommended formulas for scale and corrosion protection for all closed system chilled and heating water systems. This shall commence at Substantial Completion, wherein, the project is complete and operational and the Owner has taken over beneficial occupancy or use of the facility. Once the water system is filled, circulated, flushed, and cleaned, additionally provide sufficient chemicals for treatment up to the period of Substantial Completion. This will result in chemical quantities sufficient to treat the system over a 15-18 month period. Include this cost in the Base Bid Amount.
B. All closed chilled and heating water systems shall be chemically cleaned with an alkaline, phosphate formulation, containing dispersants, iron sequestrants, and surface- active materials that remove excess oil, lift solids from metal surfaces and suspend solid particles, and then be thoroughly flushed. After flushing is complete, each closed system shall be treated with a liquid nitrite-borate and/or silicate corrosion inhibitor based formulation, with 600-800 Parts Per Million (PPM) nitrite levels in the chilled water systems and 800-1200 PPM in the heating water systems. For systems with high make-up water flow rates use a molybdate/silicate blend of chemicals and maintain a molybdenum residual range of 48-60 PPM. Once the recommended chemical residual is achieved and documented, provide additional chemicals as required to retreat the system due to water loss on a monthly basis as indicated above (over 15-18 month period).
C. The glycol chilled water loop shall be treated with an addition of a 25%, by volume, of ethylene glycol. The glycol-chilled water system shall contain a glycol mixture of a maximum of 25% Dow SR-1 or Union Carbide UCAR-17 ethylene glycol with corrosion inhibitors. Insure all new system materials are compatible with this mixture. Furnish anti-foaming agent with glycol. Install corrosion inhibitors in the glycol system as recommended by the chemical supplier.
D. All flushing and cleaning and feeder filter bag replacement work shall be performed by the piping system installer at the direction of the chemical treatment firm.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Piping system Installer shall lay chilled and heating water piping on an even slope throughout to insure freedom from air locks and traps. Grade each system downward to low points. At each such low point provide a service drain, discharging above a floor drain, where reasonably practical, to permit the complete drainage of the system. Where it is impractical to route such drain to a floor drain, hub drain, or janitor sink, then provide a valve with hose connection with brass cap and label as "Drain". Such drains, where not routed to a floor or similar drain, shall only be allowed where approved by the Owner's Representative, or where indicated on the Drawings.

B. Automatic air vents shall be provided at all high points in the piping system and where air might collect in closed water systems on a recurring basis. Each automatic vent shall have a valve at its inlet, a valved bypass and discharge line to the nearest floor drain or janitor sink. At all other locations in the piping system where air might collect and need purging on system fill, and where deemed necessary by the Test and Balance Firm, provide a manual valve or pet cock, with removable cap, for manual venting.

C. Piping system Installer shall provide drains from each pump base, air separator, backflow preventors, compression tanks, and other system components with drain connections to the nearest floor drain in each case. Provide any other drain lines indicated on the Drawings in conjunction with the water circulating system or specified elsewhere herein.

D. Piping system Installer shall install valves where required to segregate individual items of equipment or sections of the piping systems as required for project phasing, partial system pressure testing, for temporary bypasses and where indicated on the Drawings.

3.2 FLUSHING, CLEANING, AND CHEMICAL TREATMENT

A. The chilled and heating water systems, existing and new, shall be flushed and pre-cleaned after successful completion of pressure tests and all leaks discovered are repaired.

B. System flushing shall encompass filling the entire system with water, purging all air from the system at high points of the piping and at equipment; and, then, circulating water throughout the entire piping system with all isolation and control valves open to full flow through their respective coils and equipment. Operate multiple system pumps, primary and secondary, as required, to insure water flow throughout all parts of the system. Once water has been circulated for a minimum of 24 hours, the piping system installer shall, starting at the most remote location of the system, quickly open and close coil and equipment drain and strainer blow-down valves, to flush all silt, dirt, sediment, scale, grease, solder, debris, weld slag, and foreign material out of the main and run-out piping, coils, and equipment. Once all such system valves are blown-down, the system water shall be completely drained at each item of equipment and low point drains.

C. Once the system is flushed, refill with fresh water, and purge of air; same as the procedure utilized before initial flushing, as described above. Then, add the specified solution of alkaline, or approved equal, pipe cleaner as provided by the Chemical Treatment Supplier, to be submitted for review for equivalency (to include detailed written cleaning and flushing instructions). This solution shall be circulated in each system for a minimum of 72 hours. During this 72 hour period flush the system by opening and closing each blow down and low point drain valves in the entire system to be cleaned for at least three (3) minutes once every eight (8) hours but not less than eight (8) times total. Following cleaning the system, crack open the blow-down valve at the circulating pump strainer to gradually bleed off the cleaning solution at a rate of approximately 1 gallon per minute which should not exceed the make-up rate while providing make-up water to the system and keeping the system air free. Continue to bleed off the cleaning solution until the discharged water alkalinity, at a remote point in the system, is approximately equal to that of the make-up water. Iron content should be less than 0.1 parts per million (ppm) and total dissolved solids should be within 10% of the make-up water. Testing for these levels shall be performed by the Chemical Treatment Service firm. Additional flushing may be required by the piping system installer should these levels not be accomplished. All strainer screens at pumps and water coils, existing and new, shall be removed and cleaned at completion of this flushing and cleaning process.

D. After system cleaning and flushing is complete, the Chemical Treatment Company shall provide and apply an initial system treatment of corrosion inhibiting chemicals as specified herein, for all closed chilled and heating water systems, existing and new, consistent with system operating temperature and piping materials installed based on local water analysis.

E. During the construction period after initial system treatment, up until "Substantial Completion" and for the one (1) year warranty period following "Substantial Completion", the Chemical Treatment Company shall provide a continuing water treatment service to include a monthly system analysis and addition of

chemicals, as required, to maintain adequate protective treatment concentrations. Log all analysis and chemical additions, during this period.

F. The Chemical Treatment Company shall provide a two (2) hour training session on operation and maintenance to Owner's maintenance personnel beyond normal system start-up.

G. All chilled and heating water system chemicals shall be compatible with the existing system treatment as the new system is an extension of an existing Central Plant System and will be directly connected to the same. Field verify compatibility.

H. Piping System Installer shall physically remove and clean all existing system pump and water coil strainer screens from their bodies at the completion of system flushing and cleaning. Reinstall screens in strainer bodies. Opening and closing of blow-off, drain and blow down connections is not a satisfactory substitute for this requirement. All are required.

I. The glycol-chilled water system shall be charged with a 3-part water and 1-part glycol solution, mixed throughly in a separate tank or container before it is put into the system. Test the glycol solution concentration with a refractometer or equivalent after the system has been filled and circulated for 24 hours. If the solution's glycol concentration is less than 25% (or above 11 Deg.F.), draw off a sufficient amount of mixture and add pure glycol to achieve a 25% concentration.

J. Provide a full 50 gallon drum of the specified 75% water and 25% glycol mixture in a chemical drum after the system is filled and fully charged with the same mixture for future use by the Owner.

3.3 COMPRESSION TANKS

A. Support horizontal compression tanks from the overhead structure using Unistrut, Fahmet channels (back-to-back channels welded to tubing), or steel angles suitable for the expected component weights. These supports shall span not less than three (3) joists and rest on the bottom chord of steel joists using adequately sized support rods with double nuts. Tanks shall rest on sections of Unistrut, Fahmet channel or angles on specified saddles.

END OF SECTION 232513

SECTION 233000 - HVAC AIR DISTRIBUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Comply with Division 1 - General Requirements and referenced documents.

B. Comply with all other Division 23 Sections as applicable. Refer to other Divisions for coordination of work with other portions of work.

1.2 SYSTEM DESCRIPTION

A. The scope shall include the furnishing and installation of all ductwork as shown on the Drawings; acoustical and thermal linings; flexible ducts and connections; duct access doors; air diffusers, grilles and registers; air volume control devices; hangers and supports; plenums and casings; turning vanes; air filters; installation of temperature control dampers, and other appurtenances necessary for a complete and operational system.

B. All work shall be preceded by taking measurements at the job site, fully coordinating all work with other trades, verifying available spaces for ductwork, and developing Shop Drawings illustrating such.

1.3 QUALITY ASSURANCE

A. All equipment and materials shall be new and of the quality as specified herein. All work shall comply with the most recent Local Building Code, Mechanical Code, Fire Code, and all other applicable National, State and Local Codes or ordinances.

B. All equipment and materials shall be installed in a workmanlike manner by trained and experienced sheet metal technicians and mechanics as recommended by the manufacturers of the products installed.

C. Where the standards and requirements of this specification exceed those of the Sheet Metal and Air Conditioning Contractors National Association (SMACNA) the requirements herein shall govern. As a minimum all ductwork shall be constructed to meet all functional criteria defined in Section 11 of the 2005 SMACNA “HVAC Duct Construction Standards, Metal and Flexible,” Third Edition. However, all ductwork shall comply with all code requirements noted above to include meeting deflection limits established in the local Mechanical code.

D. The work shall be guaranteed for a period of one (1) year from and after the date of acceptance of the job, "Substantial Completion", against noise, chatter, whistling, or vibration, and free from pulsation under all conditions of operation. After the system is in operation, should these defects occur, they shall either be removed and replaced or reinforced as directed by the Owner's Representative.

E. Air quantities shown on the Drawings, or specified, are based on air at 75 Deg.F. dry bulb, 50 percent relative humidity, and 29.92 inches H.G. barometric pressure.

F. Except where specified otherwise, all sheet metal used shall be constructed from prime galvanized steel sheets or coils up to 60 inches in width. Each sheet shall be stenciled with manufacturer’s name and gauge. Coils of sheet steel shall be stenciled throughout on 10 foot centers (fabricate with stencils to the outside of the ductwork so they are visible when installed) with manufacturer’s name and gauge tolerances in inches:

Gauge No.	Nominal Thickness	Minimum Thickness
26	0.0217	0.0187
24	0.0276	0.0236
22	0.0336	0.0296
20	0.0396	0.0356
18	0.0516	0.0466

G. Contractor shall comply with this specification section in its entirety. If during a field observation, the engineer of record finds changes have been made without prior written approval, the contractor shall make the applicable changes to comply with this specification at the contractor’s expense.

H. At the discretion of the Engineer of Record, sheet metal gauges and reinforcing may be randomly checked to verify all duct construction is in compliance with this is specification section.
I. All ductwork and fittings shall have a computer generated label affixed to each section detailing all applicable information including the duct dimensions, gage, reinforcement type/class, and connector type of the systems manufacturer. In addition, galvanizing thickness and country of origin shall be clearly stenciled on each duct section.

1.4 SUBMITTALS
A. Product Data: Submit manufacturer's descriptive literature and installation instructions in all items specified herein in accordance with Section 23 05 00.
B. Shop Drawings shall be submitted on all items of sheet metal work specified herein. Shop drawings of ductwork shall be submitted at a minimum scale of 1/4" equal to one foot except that the Congested Areas and all Air Handling Unit Mechanical Rooms shall be submitted at a minimum scale of 1/2" = 1'-0". Provide sections for all Congested Areas and Mechanical Room Plans.
C. Shop Drawings shall include the reflected ceiling plan, screened back, overlaid onto the floor plan indicating the proposed installation of all light fixtures; ductwork layout; duct fittings; duct connection details; offsets; bottom of duct elevations; all sheet metal dimensions (sizes); overall air device sizes, air device neck sizes, air device air flow quantities, and device type; duct pressure classifications; all mechanical piping; any conflicts discovered and unresolved through the use of transitions and offsets in the available space; turning vanes; manual volume dampers; automatic control dampers; smoke and fire dampers; duct access doors; flexible connections; and all mechanical fans and equipment.
D. Sheet metal shop drawings shall be overlaid on piping shop drawings and other shop drawings for other portions of work specified in other sections of these specifications for complete coordination of all work prior to commencing with any installation. These Shop Drawings shall not be prepared directly on the Shop Drawings of other trades; they will be separate from all other shop drawings. Coordination Drawings shall be prepared in accordance with Specification Sections 01 30 00.
E. Shop Drawings shall be based on actual field measurements taken at the job site and shall take into consideration all obstacles and be fully coordinated with all piping, conduits, structure, equipment, and general construction features.
F. Shop Drawings shall be generated by a computer aided design and drafting (CADD) system as a CADD drawing. CADD files with Architectural Backgrounds and Mechanical design drawing files will only be provided when requested, if this privilege has not been previously abused, after a Release of Liability Form has been completed.
G. Include a brochure, with individually assembled cut sheets, and details of all sheet metal fittings, duct construction standards proposed for each system, air volume control devices, and other accessories proposed to be used for job duct construction standards. This shall be done prior to submission or preparation of any sheet metal shop drawings.
H. Should any ductwork installation commence without approved ductwork shop drawings or written approval by the Engineer of Record, the Contractor assumes all liability, to include all costs, in revising any portion of the sheet metal work that is deemed unacceptable by the Owner's Representative to include any conflicts discovered in installation that could have been resolved through the Shop Drawing process.

1.5 GUARANTEE
A. The work shall be guaranteed for a period of one (1) year from and after the date of acceptance of the job, “Substantial Completion”, against noise, chatter, whistling, or vibration, and be free from pulsation under all conditions of operation. This guarantee shall include defects in material, equipment and workmanship.
B. After the system is in operation, should these defects occur, they shall either be removed and replaced or reinforced as directed by the Owner’s Representative. This shall include repair of damages to building materials related to these deficiencies.

1.6 PRODUCT HANDLING
A. Cover and protect material in transit and at site. Material not properly protected and stored, which has been damaged or defaced, or which has gotten wet during storage or construction shall be rejected.
B. Prior to ductwork being installed the roof system, or floor above the ductwork, must be sufficiently installed to protect ductwork from rain water entering ductwork. All openings in the ductwork shall be covered with minimum three (3) MIL thick plastic during construction. All open ends shall be covered in plastic at the end of each construction day. Whenever the system is operated with the ducts open the open ends must be covered with a pleated media fabric fastened to the open end (use MERV11 for these filters and only remove the filters to make final tie-ins).

C. Storage and protection of materials shall be in accordance with Section 23 05 00.

PART 2 - PRODUCTS

2.1 DUCTWORK

A. General:

1. All ductwork shown on the Drawings, specified or required for the heating, ventilating, and air conditioning systems, shall be constructed and erected in a first-class workmanlike manner by trained and skilled sheet metal workers.
2. All ducts shall be erected in the general locations shown on the Drawings, but must conform to all structural and finish conditions of the building. Before fabricating any ductwork, Contractor shall check the physical conditions of the job site, and shall make all necessary changes in cross sections, offsets, etc., whether they are specifically indicated or not.
3. Before starting shop drawings or fabrication of any ductwork, the Contractor must have an approved reflected ceiling plan with which he can coordinate location of air outlets, lights, tile patterns, etc.
4. The sizes of ducts indicated on the Drawings are the required net internal air stream dimensions, and where ducts are lined, the sheet metal sizes shall be increased three inches (3") in both dimensions to accommodate the linings (1-1/2" thick lining, unless indicated otherwise). Assume all rectangular ducts are lined (one inch (1") thick) unless noted otherwise.
5. Ductwork shall be classified, for construction standards, as follows:

    a. All constant volume ductwork (supply, return relief and outside air) served by split DX A/C units and Roof-Top units, and all transfer air and exhaust air ducts shall be constructed to meet one inch (1") W.G. standards.

6. Except as noted otherwise, ducts, plenums, and casings shall be constructed of new lock forming quality galvanized prime grade steel sheets. The gauges of metal to be used, duct construction details, and the construction and bracing of joints shall be in accordance with the latest edition of the published standards of the ASHRAE Handbook or in accordance with the latest editions of Sheet Metal and Air Conditioning Contractors' National Association (SMACNA) "Duct Construction Standards Manual, Metal and Flexible".
7. Plenum chambers shall be constructed of 18 gauge sheets thoroughly braced with 1-1/2 inch angle irons. All duct panels in rectangular galvanized steel ducts which are 12 inches and wider and which are not lined shall be crossbroken.
8. Make square elbows where shown or required, with factory fabricated double thickness turning vanes. Job fabricated vanes will not be acceptable. Except as otherwise specified or indicated on the drawings, make all other changes in direction with rounded elbows having a centerline radius equal to 1-1/2 times the width of the duct in the plane of the bend.
9. Make transformations in duct shape or dimension with gradual slopes on all sides. Normally, make increases in dimension in the direction of air flow, with a maximum slope of one inch (1") in seven inches (7") on any side. Where conditions prevent the normal slope specified above, a maximum slope of one inch (1") in four inches (4") will be allowed only where conditions necessitate.
10. Where a transition must be made with less slope than that noted above, install single thickness guide vanes to insure proper air flow, and to minimize air pressure drop. Transitions that require less slope than that noted above shall be noted on Shop Drawings, and require review and approval by the Engineer prior to installation.
11. Ducts shall be routed in conjunction with all types of pipes, electrical conduits, ceiling hangers, etc., so as to avoid interferences insofar as possible. When duct penetrations are unavoidable, provide streamline-shaped sleeves around such material penetrations, made airtight at duct surfaces, except that such sleeves are not required at tie rods. When the Contractor believes such penetrations are unavoidable, notify the Owner's Representative for approval prior to commencing with such work. Otherwise all such penetrations are not expected to occur and are not allowed. Such penetrations will not be allowed for the convenience of, or lack of coordination by, the Contractor. Where obstructions necessitate, are approved by the Owner's Representative, and are of a size exceeding 10% of the total duct area, the duct shall be transformed to maintain the same original duct area.
12. Where each duct passes through a fan room wall, it shall be wrapped with not less than 1/2" thick closed cell neoprene tightly fitted to the outer surface of the duct all around and sealed. In lieu of this method, completely fill the annular space between the duct and penetration by packing with fibrous insulation and seal the perimeter of the penetration around the duct, on both sides of the penetration, with a flexible non-hardening sealant, to be fire rated when applicable.

13. All outlets or grilles in ceilings shall be supported rigidly from ceiling construction with suitable adapters or bucks installed as necessary and as shown to insure outlets and grilles will be accurately trued up with ceiling.
14. Ductwork shall be fabricated in a manner to prevent the seam or joints being cut for the installation of grilles or diffusers.
15. All sheet metal ductwork shall be securely hung from the building construction. All ducts shall be hung adjacent to the seam in the duct and shall be secured in a suitable manner to both the duct and the building construction. All vertical riser ducts shall be supported at each floor with angle iron secured to the ducts and set on the structure members. These angles shall be the same size as specified for bracing.
16. All holes in ducts for damper rods and other necessary devices shall be either drilled or machine punched (not pin punched), and shall not be any larger than necessary. All duct openings shall be provided with sheet metal caps if the openings are to be left unconnected for any length of time. All panels of uninsulated ducts twelve inches (12") and larger shall be crossbroken. In general, sheet metal screws shall not be used in duct construction unless the point of the screw is in the air stream unless specifically indicated otherwise elsewhere herein.
17. Manual dampers shall be installed as shown and as required to afford complete control of the air flow in the various duct systems. In rectangular supply ducts, a splitter damper shall be installed at each point where a branch is taken off and additional volume dampers shall be installed where shown or required to achieve the final air balance. No splitter dampers shall be installed in medium pressure ductwork, unless specifically shown on Drawings.
18. Splitter dampers and volume dampers of the "butterfly" type, installed in rectangular ducts, shall be constructed of 16 gauge galvanized steel riveted or welded to square operating rods. Dampers shall have brass, bronze, or approved plastic bearings. The length of any splitter damper blade shall be 1-1/2 times the width of the smaller split in the duct, but shall be not less than twelve inches (12"). Where splitter dampers exceed 12 inches in height two (2) pull rods shall be used. Splitter dampers 12 inches (12") in height or less shall have one (1) pull rod.
19. Butterfly damper blades in round ducts shall be the full width of the duct in which they are installed. Dampers shall be constructed of a minimum 22 gauge metal. Dampers over twelve inches (12") in diameter shall be constructed of 20 gauge metal, have a continuous rod with end bearings opposite the damper handle, and a quadrant type locking handle.
20. The operating rods of all dampers shall be fitted with Young Regulators and the operating head shall be securely fastened in place so as to be accessible in the finished building unless shown otherwise. Operators shall be attached to duct where regulator occurs above a lay-in ceiling. Use a Ventlock No. 555 locking quadrant on accessible concealed splitter dampers. Where dampers occur above or behind plaster or other inaccessible ceilings, walls, chases or furrings, the regulator shall be the concealed type with adjustable cover plate equal to Young Regulator Company Type 315 with maximum 2-1/2" diameter cover plate and required accessories. Young Regulator bearings shall also be provided on the opposite end of each operating rod.
21. Behind each ceiling supply outlet, provide and install a turning vane or approved equalizing grid, where noted or scheduled. Where adjustable air pick-ups are indicated at points branch ducts meet trunk ducts, they shall be Titus AG-45 or approved equal with operator adjustable from the duct exterior.
22. Rectangular opposed blade volume dampers shall be as manufactured by American Warming and Ventilating or Ruskin. Blades shall not exceed 48 inches in length or twelve inches (12") in width, and shall be the opposed interlocking blade type. The blades shall be of not less than No. 16 gauge steel supported on one-half inch (1/2") diameter rustproofed axles. Axle bearings shall be the self-lubricating ferrule type.

B. Low Pressure Ductwork:
   1. Rectangular low pressure ducts, for systems designated to be operating at up to one (1) inches W.G., shall be constructed of the following gauges:

Largest Dimension of Duct	U.S. Gauge of Metal	Maximum Reinforcement Spacing
Up to 36"	26	5'-0"
37" to 48"	24	5'-0"
49" to 60"	24	4'-0"
61" to 72"	22	4'-0"
73" to 84"	20	4'-0"
85" to 96"	18	4'-0"
Over 96"	18	2'-6"

The above rectangular ducts shall be constructed in accordance with Section 1 the latest edition of the "Duct Manual" published by the Sheet Metal and Air Conditioning Contractors National Association. However, the gauge thickness of the ductwork shall meet that as scheduled above.

2. Round low pressure ducts shall be spiral wound as manufactured by United Sheet Metal Company or have grooved seams with flat snaplock longitudinal seams. Spiral seam round duct gauge thicknesses shall be that standard by the manufacturer for the pressure rating of the system. Gauges for snaplock shop fabricated ducts shall be as follows, without exception:

Largest Dimension of Duct	Gauge of Metal	Gauge of Longitudinal Seams and Fittings
Up thru 8" in Diameter	26	26
9" to 14"	26	24
15" to 26"	24	22
27" to 36"	22	20
37" to 50"	20	18
51" to 60"	18	16

Elbows shall have a centerline radius of 1-1/2 times duct diameter or width and for round ducts may be smooth elbows or 5 piece 90 degree elbows and 3 piece 45 degree elbows. Joints of round ducts shall be slip type with a minimum of three (3) sheet metal screws.

3. All low pressure ductwork shall be externally sealed using water based products to include, United McGill Corporation United Duct Sealer, Hardcast "Iron-Grip 601", Foster 32-19 or Polymer Adhesive Sealant Systems, Inc. "Air Seal No. 11" duct sealer installed in the joints after closure. All sealants shall be U.L. rated. Externally seal all transverse and longitudinal joints, all fitting connections, and all accessories. Do not seal control or manual balance damper control rods. All systems shall meet a Class “A” Seal.
4. Low Pressure Duct Supports:
   a. All horizontal ducts up to and including 40 inches in their greater dimension shall be supported by means of No. 18 U.S. gauge band iron hangers attached to the ducts by means of screws, rivets or clamps, and fastened above to inserts, toggle bolts, beam clamps or other approved means. Duct shall have at least one pair of supports 8'-0" on centers. Clamps shall be used to fasten hangers to reinforcing on sealed ducts.

b. Horizontal ducts larger than 40 inches in their greatest dimension shall be supported by means of hanger rods bolted to angle iron trapeze hangers. Duct shall have at least one pair of supports 8'-0" on centers according to the following:

Angle Length	Angle	Rod Diameter
4'-0"	1-1/2" x 1-1/2" x 1/8"	1/4"
6'-0"	1-1/2" x 1-1/2" x 1/8"	1/4"
8'-0"	2" x 2" x 1/8"	5/16"
10'-0"	3" x 3" x 1/8"	3/8"

c. Vertical ducts shall be supported where they pass through the floor line with 1-1/2" X 1-1/2" X 1/4" angles for ducts up to 60". Above 60" the angles must be increased in strength and sized on an individual basis considering space requirements.

5. All low pressure ductwork shall be reinforced to maintain a maximum reinforcement spacing as scheduled with the rigidity classification as needed to meet the specification construction standard. Reinforcement spacing shall be reduced as required to meet the construction standard specified using the gauge thickness scheduled.

C. Round Flexible Insulated Ductwork:
1. All round flexible insulated ducts, low and high pressure type, shall be factory fabricated and insulated as manufactured by Therma Flex or Flexmaster USA, Inc. Flexible ducts shall be equal to Thermaflex factory insulated type "MK-C" or Flexmaster “Type 3M”.
2. Flexible duct thermal conductance shall be based on a 75 Deg.F. mean temperature and an aged condition (not out of the box value). Flexible duct insulation shall be a minimum nominal two inches (2.0") in thickness with a minimum 0.75 lb. density. The completed duct assembly shall have a minimum R-value of 6.0. To verify compliance with the Energy Conservation Code in effect, the minimum R-value of 6.0 will need to be documented on the outside of the jacket to allow field verification of compliance with this requirement.
3. The core liner of the flexible duct system shall be a tri-laminate aluminum foil, made with fiberglass and aluminized polyester, or a PVC coated fiberglass cloth. The outer liner shall be a polyester reinforced aluminized foil jacket.
4. Flexible ducts shall be U.L. Listed in accordance with U.L. 181 as a Class I insulated air duct, and shall comply with NFPA Standard 90A and 90B. Flexible ducts shall have a maximum flame spread of 25 and maximum smoke developed rating of 50.
5. Flexible ducts shall be suitable for operating temperatures of -20 up to 250 Deg.F.
6. Flexible ducts shall be suitable for negative pressures of minus one inch W.G. in sizes up to 16" in diameter; and positive pressures up to 10 inches W.G. for sizes up to 16" in diameter. Maximum operating duct velocity rating shall be a minimum of 4,500-5,500 feet per minute.
7. Maximum vapor transmission rating shall be 0.05 Perms as rated in accordance with ASTM-E-96.
8. Unless otherwise noted, the maximum length of flexible duct shall be limited to five feet (5').
9. Securement of flexible ducts to air devices shall consist of sliding the duct onto the air device collar or connector and securing it with plenum rated nylon or teflon panduit band on the inner liner which shall be U.L rated for the application. Fold insulated outer vapor barrier jacket liner over the first band and secure with a second plenum rated panduit band. Make connection vapor tight with a vapor barrier seal using polyester reinforced aluminized duct tape that is two inches (2") wide, wrapped 2 times around the duct, or by the use of a fiberglass mesh wrapped in a similar fashion and coated with a vapor barrier coating, Foster’s Vapor Safe 95-90 or 95-96 mastic or Childers CP-38. Coating must adhere to MIL-PRF-19565C with a permeance rating of less than 0.02 perms per ASTM-E-96, procedure B. No cloth backed duct tape is allowed. All duct tapes used shall be acrylic based. All fasteners, adhesives, and duct tape used shall be U.L. rated for the application.

2.2 FLEXIBLE CONNECTIONS

A. Where ducts connect to fans, including roof exhausters, flexible connectors shall be made that are fire-resistant, (up to 200 Deg. F.), waterproof, mildew-resistant and essentially airtight, and shall weigh approximately thirty ounces (30 oz.) per square yard.

B. There shall be a minimum of one-half inch (1/2") slack in these connections, and a minimum of two and one-half inches (2-1/2") distance between the edges of the ducts for a total of three inches (3"). There shall also be a minimum of one inch (1") of slack for each inch of external static pressure on the fan system for medium pressure systems.

C. Acceptable Manufacturers:
   1. Vent Fabrics "Ventglas", or approved equals by:
   2. Duro-Dyne.

2.3 ACCESS DOORS

A. Furnish and install hinged, low leakage access doors in ductwork or plenums to provide access to all fire, smoke and combination fire - smoke dampers, mixed air plenums, automatic dampers, coils, filters, and elsewhere as detailed on the Drawings.

B. Where the ducts are insulated, the access doors shall be double skin doors with a minimum one inch (1") of insulation in the door. The insulation shall have a minimum R-value of 6.0. Increase the thickness of the insulation as needed to comply. Where the access door is installed in non-insulated ductwork the access door shall be unlined sheet metal of the same gauge thickness as the duct.

C. In no case shall access doors be smaller than eight (8") by eight inches (8"). Access doors shall be sized to permit testing or servicing of duct mounted components, such as, for coil cleaning, installation of control devices, resetting of fusible links, filter replacement, etc., as applicable and suitable for the application.

D. Where duct access doors are above a suspended, normally non-readily accessible ceiling, such as plaster, gypboard or spline type ceilings, Contractor, under this Section of Specifications, shall be responsible for the proper location, and furnishing of, ceiling access doors, or panels, to make duct access doors easily accessed through the ceiling system. Ceiling access doors, or panels, shall be rated, where applicable, to match the fire rating of the ceiling system penetrated. Ceiling access doors, or panels, shall be installed under other Sections of these Specifications. Ceiling access doors, or panels, shall be centered directly beneath duct access doors or immediately adjacent thereto when duct access is through the side of the duct.

E. In rectangular grease exhaust ducts, install access doors every twenty feet (20') maximum, center to center, and at all 90 degree elbows, when the total developed length exceeds forty feet (40'). Install access doors at every other floor level for vertical grease exhaust duct risers.

F. All access doors shall be fully double gasketed, door to frame and frame to duct, and include a sash type or compression latches for sizes under eighteen inches (18") by eighteen inches (18"). Use one (1) sash type latch per twelve inches (12") of height or width. Access doors 18" x 18" and larger shall have quarter turn handle latches; provide one handle per 24" section, height or width, of door. As an example, provide two (2) handle type latches for a 48" tall access door.

G. Provide a minimum of two (2) heavy loose pin hinges for each access door unless indicated otherwise herein. Piano style hinges will be an allowed substitute.

H. Where the installation conditions prohibit suitable access with hinged access doors, then non-hinged access doors may be used in conjunction with a corrosion resistant cable or chain, of suitable length, attached to the access door and duct.

I. For duct systems constructed to 2 inches W.G standards, or less, provide standard access doors meeting all requirements specified herein, which have a tested air leakage rating of less than 4.0 CFM at a test pressure of 2 inches W.G., and as manufactured by:
   1. Ventlok with hinges and No. 90 or No. 99 latches (less than 18" x 18"), or No. 100 or No. 140 latches (18" x 18" and larger), as applicable, or approved equals by:
   2. Ductmate, or
   3. Duro Dyne DDIAD-0806, or
   4. NCA Manufacturing ADH-T-1, or
   5. Pottorff HAD or CAD, or
   6. Nailor 08SH with HP Seal, or 0890, or
   7. Cesco Products HDG, or
   8. Ward Sandwich Style Access Doors, DSA or DDA, for round ductwork.

2.4 DUCT LINER

A. Where indicated on the Drawings or specified herein, all rectangular transfer ducts; except kitchen grease hood, kitchen dishwasher and fume hood exhaust ducts; shall be lined with Fiberglass mat faced duct liner in the thicknesses, type, and locations as indicated elsewhere herein.

B. Kitchen grease hood exhaust, kitchen dishwasher exhaust, kitchen hood make-up air, and fume hood make-up air and other industrial type exhaust air ducts shall not be lined. Line all other general building exhaust air ducts within 10'-0" on each side of each in-line exhaust fan with one inch (1") thick liner. Roof mounted exhaust fan ductwork shall also be lined, one inch (1") thickness, but only for the first 10'-0" of ductwork from the roof curb toward the occupied space.

C. All transfer air ducts shall be lined with one inch (1") thick duct liner.

D. The liner insulation system shall be one and one-half inches (1.5") in thickness on all conditioned air, heated or cooled, as well as outside air intake ducts, and mixed air plenums to obtain a minimum R-value of 6.0 thereon.

E. All ductwork systems are required to meet the most recent version of the International Energy Conservation Code.

F. All duct liners shall comply with NFPA 90A and 90B and ASTM C 1071, Type I, for ducts and Type II for plenums (rigid liner). Liner shall consist of flexible, matt faced insulation made of inorganic glass fibers bonded by a thermosetting resin with an encapsulant edge coating, and shall be a rotary style duct liner product with a water repellant ingredient on the mat face to help keep moisture from penetrating the air stream surface. Other technical requirements shall include:
   1. Be suitable for temperatures up to 250 Deg.F. per ASTM C 411.
   2. Be suitable for air velocities up to 6,000 FPM per ASTM C 1071 for Type I products and 5000 FPM for Type II products.
   3. Water vapor sorption shall be less than 3% by weight per ASTM C 1104.
   4. Air stream surface mat facing shall be tested with an EPA registered anti-microbial agent to aid in the prevention of fungal and bacterial growth. Mat face, as treated, shall not support the growth of mold, fungi, or bacteria per ASTM C 1338, ASTM G 21 and ASTM G 22.
   5. Does not exceed a Flame Spread of 25 and Smoke Developed and Fuel Contributed of 50 per ASTM E 84, NFPA 225, and UL 723.
   6. Conductance of 0.24 (R-value of 4.2) for a 1.5 PCF or 2.0 PCF duct liner at a 75 Deg.F. mean temperature per ASTM C177 for a one inch (1") thick product.
   7. Greenguard Compliant (Greenguard Environmental Institute).
   8. Noise Reduction Coefficient (NRC) of 0.70 or higher for a one inch (1") thick product and 0.80 for a two inch (2") thick product per ASTM C 423, type A mounting.

G. All duct liners shall be able to be cleaned in accordance with the North American Insulation Manufacturers Association (NAIMA) “Cleaning Fibrous Glass Insulated Air Duct Systems Recommended Practices”.

H. Liner shall be applied to the inside of rectangular ducts and plenums with fire-resistant adhesive, Fosters 85-60, or 85-65, or Childers CP-127, Hardcast “Seal-Tack” or Ward “Premium Duct Liner Adhesive”, or equal, complying with ASTM C 916, completely coating the clean sheet metal. All joints in the insulation shall be “buttered” and firmly butted tightly to the adjoining liner using fire resistant adhesive. Where a cut is made for duct taps, etc., the “raw” edge shall be accurately and evenly cut and shall be throughly coated with this same fire resistant adhesive.

I. On ducts over twenty-four inches (24") in width or depth, the liner shall further be secured with mechanical fasteners. Fasteners shall be Graham or Gemco weld pins. "Stick Clips", "Sheet Metal Clips", or other fasteners secured to the ducts by adhesive are not allowed. Fasteners shall be placed on a maximum spacing of eighteen inches (18") and shall be pointed up with fire-resistant adhesive. Fasteners shall not compress the insulation more than 1/8".

J. Liner shall be accurately cut and ends thoroughly coated with adhesive so that when the duct section is installed, the liner shall make a firmly butted and tightly sealed joint. Provide metal nosings securely installed over transversely oriented liner edges facing the air stream at all fan discharges, at access doors, and at any interval of lined duct preceded by unlined duct.

K. Where rectangular ducts are lined and adjoins externally insulated rectangular ducts, the two insulations shall be overlapped not less than twenty-four inches (24").

L. Dimensions given on the Drawings are inside air stream, free area, dimensions only and sheet metal sizes shall be increased in size to maintain these free area dimensions when liner is installed.

M. All exposed ductwork shall be internally lined unless specifically indicated otherwise.

N. Refer to Section 23 07 00, Insulation, for further related requirements.

O. Acceptable liner manufacturer shall be:
   1. Certainteed, Tough Gard R with enhanced surface.

2. Knauf, Rotary Duct Liner E-M with Hydroshield.
3. Owens Corning, Quiet R Acoustic Duct Liner, Type 150 or equivalent Duct Liner Board.
4. Johns Manville, Linacoustic RC or R-300.

2.5 GRILLES, REGISTERS, AND DIFFUSERS

A. Grilles, registers, ceiling outlets, diffusers and other air devices shall be as scheduled on the Drawings and shall be suitable for the intended use.
B. Provide air devices with sponge rubber or soft felt gaskets at flanges where the devices mate up to a ceiling or wall surface.
C. If a manufacturer other than the one scheduled is used, the sizes shown on the Drawings shall be checked for performance, noise level or criteria, face velocity, throw, drop, pressure drop, air diffusion, etc., before the submittal is made. Selections shall meet the manufacturers' own published data for the above performance criteria. The throw shall be such that the terminal velocity will be not more than 50 FPM or less than 25 FPM at the point of penetrating the occupancy zone. The occupancy zone is defined as six feet (6') above the finished floor and six inches (6"), or farther, from the walls.
D. Noise levels shall not exceed those published in current ASHRAE Standards and Guidelines for the type of space being served (N.C. level) or that scheduled.
E. Locations of outlets on Drawings are approximate and shall be coordinated with other trades to make symmetrical patterns and shall be governed by the established pattern of the lighting fixtures, structure and Architectural Reflected Ceiling Plan (RCP). Air devices shall have margins, frames, and sizes to be compatible with the ceiling and wall systems installed. All color and finishes are subject to final approval by the Architect.
F. Where called for on the schedule, grilles, registers, ceiling outlets, diffusers and other air devices shall be provided with deflecting devices and manual dampers.
G. Where indicated on the Drawings, provide a fire rated blanket on the back side of steel ceiling mounted air devices (supply, return, exhaust, etc.).
H. Where indicated on the Drawings, provide an insulation blanket on the back side (all surface area) of ceiling mounted supply air devices to prevent condensation.
I. All air devices shall be the standard product of the manufacturer, subject to review by the Architect. Acceptable manufacturers are:
    1. Titus, or approved equals only by:
    2. Krueger.
    3. Nailor.
    4. Metal-Aire.
    5. Carnes.
    6. Price Industries.

2.6 AIR FILTERS

A. Provide appropriately sized and number of air filters for each piece of individual air handling equipment to include, but not be limited to, the following:
    1. Roof-Top Units.
    2. Split DX A/C Units
    3. Elsewhere as required to protect air type heat exchangers, such as warm air furnaces, or coil surfaces, such as duct mounted direct expansion coils.

B. Medium efficiency air filters shall generally be two inches (2") thick, unless indicated otherwise and shall be the pleated media, disposable type, listed by Underwriters Laboratories as Class 2, with the following features:
    1. Air filters shall be rated in accordance with the most recent version of ASHRAE Standards 52.1 and 52.2, test methods as indicated herein, and shall conform to Section 7.4 of ARI Standard 850.
    2. Filter media enclosing frame shall be constructed of rigid, heavy duty, high wet-strength resistant, “beverage” board with diagonal support members on the air entering and air exiting sides. Expanded diamond grid media support, integral with frame, shall be chemically bonded to filter media at each pleat, to insure pleat spacing and stability. Pleated media shall be bonded to the inside of the frame to eliminate air bypass.
    3. Filter media shall be high performance, non-woven, reinforced cotton-poly, synthetic blend fabric formed in a V-shape.
    4. Filters shall have the following performance data:

THICKNESS	SQUARE FEET MEDIA AREA TO ONE SQUARE FOOT FACE AREA	MINIMUM PLEATS PER LINEAL FOOT	INITIAL AIR RESISTANCE (INCHES W.G.)	RESISTANCE BASED ON AIR FLOW OF
One Inch (1")	2.4	16	0.25 (350 FPM)	1400 CFM
Two Inch (2")	4.3	15	0.28 (500 FPM)	1500 CFM

5. Filters shall be suitable for operation with varying velocities of up to 500 feet per minute (FPM) for 2" filters and 350 FPM for 1" filters.
6. Filters shall have a minimum efficiency of 30% with an average arrestance of 90 to 92% minimum dust holding capacity which shall be no less than 170 grams as tested in accordance with ASHRAE Standard 52.1. Filters shall also have a MERV rating of 11 as tested in accordance with ASHRAE Standard 52.2-2007.
7. Acceptable Manufacturers:
    a. Camfil Farr, Inc., Model AP-Eleven, or approved equals by:
    b. Environmental Filter Corporation.
    c. Eco-Air.

C. All filters shall be standard sizes that are readily and locally available, in stock, through multiple over the counter sources without requiring special order. Standard acceptable sizes shall be 16" x 20" and 16" x 25".

2.7 ADHESIVES AND SEALANTS

A. All adhesives and sealants used on this project must have a Volatile Organic Compound (VOC) content less than that listed in the current South Coast Air Quality Management District (SCAQMD) Rule 1168, and all sealants and fillers must meet or exceed the requirements of the Bay Area Air Quality Management District Regulation 8, Rule 51.
B. All adhesives and sealants shall meet the most current Leadership in Energy and Environmental Design (LEED™) requirements.

2.8 TURNING VANES

A. Turning vanes shall be Harper double wall turning vanes fabricated from the same material as the duct.
B. Turning vane front and back panels shall be securely locked together with adequate crimping to prevent twisting of vane. Vanes shall be capable of withstanding 250 pounds of tensile load when secured according to the manufacturer's instructions.
C. Rails for mounting vanes shall have self locking, friction fit tabs designed to facilitate proper alignment of vanes. Tab spacing shall be as specified in Figure 4-3 of the 2005 SMACNA Manual, "HVAC Duct Construction Standards, Metal & Flexible", Third Edition standard. Rail systems with non-compliant tab spacing shall not be accepted.
D. Acoustical Turning Vanes shall be used in applications that require quiet operating systems. Mounting rails shall have friction insert tabs that align the vanes automatically. These shall only be required where designated on the Drawings.
E. Approved Manufacturers:
    1. Ductmate Industries PRO-Rail Turning Vane or approved equals.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install all ductwork and equipment as indicated on the Drawings in full accordance with these specifications including foundations, hangers, supports, etc.
B. Seal all ductwork as specified, pressure test and repair leaks.
C. Install all air intake hoods on continuous neoprene strips set level on top of wood nailers of the specified roof curbs. Hoods shall be secured at 8" O.C. to the curbs with corrosion resistant screws if not secured

by other fasteners as specified. Flash and counterflash to prevent water leakage through the overall roofing system.

D. Install all duct mounted components such as heating coils, electric or water type, sound attenuators, air terminals, etc. in accordance with the manufacturers recommendations.

E. Should defects or installation deficiencies become apparent, or are observed, after the systems have been in operation, the deficient components shall be removed and replaced or reinforced as directed by the Owner's Representative.

3.2 CLEANING OF DUCT SYSTEMS

A. Before the grilles or diffusers are installed, all fans and air conditioning units shall be operated and all debris and foreign matter shall be removed from the ducts.

B. The air conditioning units shall be thoroughly cleaned, and the drain pans shall be thoroughly cleaned and flushed out with a hose; the filters shall be thoroughly cleaned and the grilles shall then be installed.

C. Insure all duct openings are capped and sealed during construction when additions are not being made.

3.3 AUTOMATIC CONTROL DAMPERS

A. Refer to Section 23 09 00, Controls and Instrumentation.

B. Install all temperature control modulating dampers under this section of the specifications, furnished in Section 23 09 00.

3.4 FILTERS

A. No air moving equipment may be operated at any time without filters being fully installed in equipment.

B. Provide a minimum of three (3) spare sets of two inch (2") thick, medium efficiency, pleated media filters for all air handling and fan coil units, as well as for filter return air grilles where scheduled, in addition to manufacturer furnished filters specified elsewhere herein. Where other sections of these specifications require one inch (1") thick filters, or other types of filters, provide spare sets of matching thickness and type.

C. Additionally replace filters during construction as directed by the Owner's Representative.

D. Install one (1) new complete set of filters, as directed by the Test and Balance (TAB) Firm, just prior to performance of TAB work.

E. Install one (1) new set of filters at "Substantial Completion" of the project.

F. Where the minimum number of filter sets are not used for the aforementioned purposes, provide the left over filters to the Owner for maintenance stock.

G. Document, in writing, when each filter change-out occurs.

END OF SECTION 233000

SECTION 233410 - HIGH VOLUME LOW SPEED (HVLS) CIRCULATION FANS

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS
- A. Comply with Division 1 - General Requirements and referenced documents.
- B. Comply with all other Division 23 Sections, as applicable. Refer to other Divisions for coordination of work with other portions of work.

1.2 SYSTEM DESCRIPTION
- A. Ceiling mounted HVLS fans of the diameter and air flow rates indicated on the equipment schedule.
- B. Provide high efficiency motors as specified in Section 230513 for motors one (1) horsepower and larger.

1.3 QUALITY ASSURANCE
- A. All equipment and materials shall be new and of the best quality.
- B. All equipment and materials shall be installed by factory trained installers or mechanics as recommended by the manufacturer.
- C. All fans shall bare an AMCA label. Capacity ratings shall be based on tests performed in accordance with the latest version of ANSI/AMCA Standard 230-07 – Laboratory Methods of Testing Air Circulating Fans for Rating.
- D. All fans shall be ETL certified and bare a UL label to indicate the fan is constructed to the guidelines set forth in UL Standards 507, 746C, 1004, and 1917.
- E. Electrical components, devices, and accessories shall be listed and labeled as defined in NFPA 70, by a certified testing agency and marked for the intended location and application.

1.4 SUBMITTALS
- A. Submit product data to include the manufacturer's descriptive literature, performance information, and installation instructions.
- B. Submit a color chart for the Architect and Owner to select or confirm the desired color scheme for the fan.
- C. Submit wiring diagrams for electrical power and control wiring.
- D. Submit Shop Drawings in accordance with Section 230500.
- E. When equipment, other than specified, is proposed, the Contractor shall be completely responsible for electrical revisions necessitated. Submit listing of electrical feeder and conduit sizes, breaker sizes, and motor starter sizes for each item of equipment where motor sizes are required to be larger than specified to meet scheduled capacities.

1.5 WARRANTY
- A. Manufacturer shall provide a twelve year limited warranty to repair or replace defective parts, components, and control panels.
- B. Manufacturer shall provide a lifetime warranty for the airfoils, hub, and support frame.
- C. Warranty information and terms shall be clearly indicated in the Operation and Maintenance manuals provided to the Owner.

1.6 PRODUCT HANDLING
- A. Deliver fan materials and components to the site in the manufacturer’s shipping container. Fans not properly protected and stored and which are damaged or defaced during construction shall be rejected.
- B. Storage and protection of materials shall be in accordance with Section 230000.

PART 2 - PRODUCTS

2.1 HIGH VOLUME LOW SPEED (HVLS) CIRCULATION FANS
- A. Airfoils
  1. The fan shall be equipped with a minimum of five (5) airfoils and shall have no more than eight (8) airfoils.
  2. The air foils shall be made from 6061 Extruded Aluminum with a powder coat finish. The finish colors shall be selected by the Architect/Owner from the fan manufacturer’s color chart.

B. Motor and Drive Assembly
   1. Provide a gearless direct drive motor assembly.
   2. The motor shall be a totally enclosed, fan cooled (TEFC) with an IP42 NEMA classification. The motor shall be rated for continuous operation and shall have Class F insulation rating.

C. Frame and Mounting System
   1. All mounting bolts shall be SAE Grade 8.
   2. The frame and mount shall be welded construction using ASTM A36 steel.
   3. The frame and mount have a powder coat finish and the finish color shall be selected by the Architect/Owner from the fan manufacturer's color chart.
   4. The standard universal I-Beam clamp will be utilized for connection to the building structure.

D. Safety Cables/Guy Wires
   1. The fan shall have four 1/8" diameter, galvanized steel, braided cable guy wires attached to the building structure. The guy wires shall be installed per the manufacturer's installation instructions to control lateral movement.
   2. A ¼" diameter, galvanized steel, braided cable shall be utilized as a secondary means to connect the HVLS fan to the building structure.

E. Remote Wall Mounted Control System
   1. Provide a wall mounted control panel to control each fan separately.
   2. The control panel shall control the following operations.
      a. On/Off.
      b. Increase/decrease fan speed.
      c. Forward/reverse fan direction.

F. Fire Alarm System Interface
   1. The fan shall be capable of receiving a stop command from the Fire Alarm System, and Aspirating Smoke Detection (ASD) device, smoke, flame or heat detectors.
   2. The fan shall be capable of ceasing operation when water flow is detected in the fire sprinkler system.
   3. The fan shall meet the air velocity requirements of FM Global for ESFR sprinklers.
   4. Upon detection of a fire by the means described above the HVLS fans shall coast to a stop as stated in the NFPA guidelines.

G. Acceptable Manufacturers:
   1. Hunter Fans
   2. Macro Air Fans
   3. SkyBlade Fans
   4. Big Ass Fans (BAF)

PART 3 - EXECUTION

3.1 DELIVERY AND PROTECTION
- A. Deliver all equipment to the site as indicated in Division 1.
- B. Contractor to perform installation and start-up to include installation of all accessories as required to make a complete and operating system.
- C. All equipment shall be handled carefully to avoid damage and be protected from exposure to the weather. All equipment shall be examined upon delivery to the site and evidence of abuse, damage, or exposure to weather and dirt shall be grounds for refusal to accept individual pieces of equipment. Rejected items shall be replaced promptly at no cost to the Owner.

3.2 INSTALLATION
- A. Securely anchor fans suspended from the structure in accordance with the manufacturer's installation instructions.
- B. Install all safety devices, safety cables, and guy wires prior to operating the fan.
- C. Confirm the operating parts move freely prior to operating the fan.
- D. Confirm there are no obstructions in the fan blade path prior to operating the fan. The vertical clearance from the fan blades to a fire sprinkler head deflector shall be a minimum of 3'-0".
- E. Adjust fan components as required for balanced operation in accordance with the manufacturer's installation instructions.

F. In buildings equipped with a sprinkler system confirm that a signal from the Fire Alarm system immediately ceases the operation of the HVLS fans when water flow is detected in the fire sprinkler system.

3.3 CLEAN-UP

A. Clean all fans and components after installation is complete.
B. Dispose of any construction debris.

END OF SECTION 233410

SECTION 236400 - PACKAGED WATER CHILLERS, OUTDOOR AIR COOLED (36-200 Tons Capacity)

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS
- A. Comply with General Requirements in Division 1, and all referenced documents.
- B. Comply with all other Sections as applicable. Refer to other Divisions for coordination of this work with other portions of work specified therein.

1.2 SYSTEM DESCRIPTION
- A. The work shall include installing microprocessor controlled packaged air cooled reciprocating water chilling units.
- B. Contractor shall connect piping, all required controls, factory furnished field installed accessories, appurtenances, insulation, hangers, supports, foundations, etc., for the water chilling units.

1.3 QUALITY ASSURANCE
- A. Unit performance shall be rated and certified in accordance with American Refrigeration Institute (ARI) Standard 590, latest edition.
- B. Unit construction shall comply with the latest editions of the National Electric Code (NEC), Underwriters Laboratory (U.L.), American Society of Mechanical Engineers (ASME) applicable codes, and American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) Standard 15.
- C. Cooler shall be tested and stamped in accordance with ASME Code for a minimum refrigerant working side pressure of 278 psig, and a minimum water side pressure of 150 psig.
- D. Air-cooled condenser coils shall be leak tested at 150 psig and pressure tested at 450 psig.
- E. Unit shall be fully tested at the factory prior to shipment.
- F. Factory authorized service personnel and routine repair parts shall be available within 24 hours of a trouble call.
- G. All equipment and materials shall be new and unused.

1.4 SUBMITTALS
- A. Product Data: Submit complete manufacturer's descriptive installation instructions for the configuration of equipment proposed to include:
  1. Chilled water piping arrangement.
  2. Equipment sizes, dimensions and weights.
  3. Accessory installation methods.
  4. Complete field and factory power and control wiring diagrams.
  5. Equipment capacities at design parameters scheduled and specified.
  6. Equipment installation methods.
  7. Sound Power Levels at full load for each of the eight octave bands with and without sound attenuation package installed.
- B. Shop Drawings: Submit in accordance with Section 23 05 00.

1.5 PRODUCT HANDLING
- A. Equipment to be installed shall be delivered to the site where it shall be covered and protected. Material not properly protected and stored, and which is damaged or defaced during construction, shall be replaced at no cost to the Owner.
- B. Storage and protection of materials shall be in accordance with Section 23 05 00.

PART 2 - PRODUCTS

2.1 AIR COOLED PACKAGED WATER CHILLER(S)
- A. Provide single piece factory assembled units to meet the capacities scheduled which shall be rated to handle the listed water quantities without excessive pressure drops and without exceeding the manufacturer's rating on water velocities through the tubes.
- B. Ratings shall be with a 0.0001 fouling factor on the water side of the cooler at 105°F ambient air temperature. Chillers shall meet scheduled efficiency ratings.
- C. Each unit shall include complete factory wiring, refrigerant piping, controls, operating refrigerant and oil charge (R-134a or R-410a), and special features as required prior to field startup.

D. Unit cabinet shall consist of a galvanized steel casing, zinc phosphatized, with an electrostatically applied baked enamel finish. Cabinet shall be capable of withstanding Federal Test Method Standard No. 141, Method 6061, 500 hour salt spray test.
E. Full load operation of each motor shall not exceed respective name plate ratings.
F. Compressors:
   1. Compressors shall be hermetic scroll or a single semi-hermetic rotary screw type.
   2. Each compressor shall be equipped with suction and discharge service valves, insert type factory sized oil crankcase heater, suction strainer, oil strainer, oil sight glass, and oil charging connection.
   3. Reciprocating compressors shall have a force feed lubrication system with automatically reversible oil pump and operating oil charge.
   4. Compressor motors shall be refrigerant suction gas cooled, high torque, semi-hermetic induction type, maximum 1750 RPM for reciprocating compressors and 3600 RPM for screw compressors, with inherent thermal protection in all three phases.
   5. Each individual compressor shall be mounted on spring or neoprene pad vibration isolators, without exception, to minimize noise and vibration transmissions to obtain an isolation efficiency of 95%, or greater. Submit data to verify compliance.
   6. Cycles per hour for each compressor shall not exceed six (6).
   7. Screw compressors shall be individually enclosed by an acoustic sound blanket suitable for outdoor conditions. Sound blankets shall be made of one layer of acoustical absorbent textile fiber, minimum 5/8 inch thickness; one layer of anti-vibrating heavy material with a minimum thickness of 1/8"; and both of these layers enclosed with two (2) outer sheets of welded PVC or vinyl coated polypropylene reinforced fabric suitable for exposure to high ambient temperatures, be oil and water resistant, and be treated for ultra-violet resistance. Enclosures shall be factory or field mounted.
   8. Scroll compressors shall have the ability to modulate and shall have a minimum of four steps of capacity. Provide scroll temperature protection, reverse phase protection, short cycle detection and low control voltage protection for each scroll compressor.

G. Evaporator (Cooler):
   1. Evaporator shall be direct expansion shell and tube type with carbon steel barrel, polypropylene water baffles, and high efficiency internally enhanced seamless finned through copper tubes rolled into heavy carbon steel tube sheets.
   2. Shell and tube heat exchanger heads shall be removable.
   3. The evaporator and all cold surfaces, and adjacent surfaces, as required to prevent any sweating, shall be insulated with 3/4 inch thick closed cell foam insulation sheet, maximum K factor of 0.28, fitted and cemented in place, then painted with a resilient vinyl base paint to resist cracking.
   4. The evaporator shall be designed, constructed, inspected, and stamped in accordance with ASME Code requirements.
   5. Provide factory, or field installed, weld neck flanged water piping connections. Victaulic couplings not acceptable.
   6. Equip with electric heat trace along the shell under the insulation to protect against cooler freeze-up down to -10°F ambient.
   7. Design shall include two independent refrigerant circuits such that failure of one circuit will not cause a total loss of capacity.

H. Air Cooled Condenser Coils:
   1. The condenser coils shall be constructed of 3/8" O.D. seamless copper tubes mechanically bonded into plate type aluminum fins. Alternative micro-channel aluminum technology coils will be allowed. A sample will need submitted for review and approval by the Engineer.
   2. A sub-cooling coil shall be an integral part of the main condenser coil.
   3. Tubes shall be cleaned, dehydrated, and sealed.
   4. Provide manufacturer furnished, field installed coil air inlet, hail and vandal type, guard made of galvanized steel, PVC coated steel or painted steel to resist corrosion. Guard shall have rigid border for reinforced support and securement to equipment frame. Flat expanded metal is not acceptable. Guards shall protect condenser coils, compressors, and other refrigerant piping and specialties.

I. Condenser Fans and Motors:
   1. Condenser fans shall be propeller type arranged for vertical air discharge and shall be direct drive fan motors, 3 phase type, with Class B insulation.
   2. Each fan shall be protected by a heavy gauge steel wire fan guard with ultra-violet inhibited PVC coating.
   3. Fans shall have permanently lubricated bearings.

4. Fan shafts shall be inherently corrosion resistant.
5. Fans shall be statically and dynamically balanced.
6. Condenser fans, motors, and accessories shall include a factory installed sound reduction option to result in a nominal 2-4 dba reduction in overall sound power levels, versus, a standard unit operating without this option.

J. Each refrigerant circuit shall be completely independent of each other and include a factory insulated suction line, a hot gas muffler, high side pressure relief device, liquid line shut-off valves, suction and discharge manual shut-off valves, replaceable core filter drier, moisture indicating sight glass, liquid line solenoid valve, stepper motor actuated electronic expansion valve or thermostatic expansion valve, and complete operating charge of refrigerant R-22, R-134a or R-410a and compressor oil.

K. Controls:
1. Unit controls shall include the following minimum components.
    a. Microprocessor
    b. Power and control circuit terminal blocks
    c. External on/off control switch (inside cabinet) with indicating lights.
    d. Replaceable solid-state relay panel
    e. Leaving chilled water setpoint and control panel
    f. Thermistors and potentiometers.
2. Capable of performing the following functions:
    a. Recycling pump down control. Pump-out to occur at beginning and end of every circuit cycle. Each time the unit is energized, the oil pump shall be energized if all safety protective devices are satisfied.
    b. Unit controls shall provide recycling pump down protection at all times, including time clock system shutdowns on nights and weekends.
    c. Capacity control based on leaving chilled water temperature and compensated by rate of change of return water temperature.
    d. Limit the chilled water temperature pull-down rate at start-up to 1°F per minute to prevent excessive demand spikes (charges) at start-up.
3. Unit shall be provided with automatic head pressure controls that permit satisfactory operation under low ambient conditions to 10°F, by cycling condenser fans or fan speed reduction in response to head pressure.
4. During part load operation, the unit's refrigerant circuits shall be alternately unloaded in steps by providing automatic lead-lag control from accessory or standard cylinder unloaders and compressor staging to automatically alternate the lead circuit to ensure even compressor wear. Units shall have as their last step of unloading a hot gas bypass for stability at low capacity if units do not have unloading capability down to 15% of total capacity. Provide a minimum of two (2) stages of capacity for machines 50 tons and smaller in size. For units over 50 tons in size, provide one (1) additional stage of capacity for each incremental increase in capacity of 25 tons. Provide at least three (3) stages of control for units up to 75 tons in capacity, four (4) stages for units up to 100 tons capacity, with up to eight (8) stages of capacity control for units up to 200 tons in size.

L. Safeties:
1. Unit shall be equipped with thermistors and/or potentiometer and all necessary components in conjunction with the control system to provide the unit with the following protections:
    a. Loss of refrigerant charge protection
    b. Low water flow protection.
    c. Low chilled water temperature protection
    d. Low and high superheat protection
    e. Low oil protection for each compressor circuit.
    f. Low control voltage (to unit) protection.
    g. Ground current protection for each compressor which shuts down compressor when no more than 2.5 supply amps are measured to prevent formation of acids.
    h. High pressure switch.
    i. Visual alarm signal (Light).

2. Compressors shall be equipped with the following manual reset-type protections:
    a. Thermal overload or individual compressor circuit breaker or solid state device overload protection.
    b. Pressure overload
    c. Electrical overload through the use of definite-purpose contactors and calibrated, ambient compensated, magnetic trip circuit breakers. Circuit breakers shall open all three phases in the event of an overload in any one phase, or single phasing condition. Motor overloads that provide single phasing protection as well as overload protection will be acceptable, in lieu of circuit breakers.
3. Fan motors shall have inherent overcurrent protection.
4. Provide a factory installed and wired non-fused disconnect.

M. Diagnostics:
1. Diagnostic display module shall be capable of indicating the safety lockout condition through displaying a two-number code for which a legend shall be provided in control panel. Protections included for display shall be:
    a. Compressor lockout
    b. Loss of charge
    c. Low water flow
    d. Low oil pressure
    e. Cooler freeze protection
    f. High or low suction superheat.
    g. Thermistor or potentiometer malfunction.
    h. Entering and leaving water temperature.
    i. Evaporator and condenser pressure.
2. Module must also be capable of performing a run test to verify operation of every switch, thermistor, potentiometer, fan, and compressor before chiller is started.

N. Operating Characteristics:
1. Unit shall be capable of starting and running fully loaded at outdoor ambient temperatures from 10°F up to 115°F per maximum load criteria of the most recent edition of ARI Standard 590, without special controls.
2. Unit shall be capable of starting up with 95° entering water temperature to the cooler.
3. Electrical Requirements:
    a. Unit primary electrical power supply shall be connected to a single point.
    b. Unit shall operate on three phase, 60 cycle power at the voltage shown in the equipment schedule.
    c. Field power connection, control interlock terminals, and unit control systems shall be centrally located.
    d. Power and starting components shall include separate fusing for the control circuit, fan circuits, starting contactors per compressor, solid-state compressor sequence start timers, adjustable 0 to 6 minute lockout timer anti-recycle protection on compressors, solid-state or suitable alternate compressor overload protection in all three phases, and unit power terminal blocks suitable for field connection from a single power supply.
    e. A field supplied 115 volt control power supply, with fusing and disconnect, shall be utilized to supply the control circuit and cooler heat trace system.
    f. Unit controls and power wiring shall be pre-wired and completely factory installed and labeled for ease of service and replacement.
4. Panel access doors shall key lock to prevent unauthorized access. Dead front panels shall protect service personnel against accidental contact with the line voltage components. Field install a key lock device on panels if not factory installed. Provide two (2) sets of keys for all locks.

O. Special Features:
   1. Unit shall be capable of starting and running at outdoor ambient temperatures down to 10°F with the addition of brine in the cooler circuit, wind baffles, and two-fan cycling solid state pressure switches with condenser coil temperature sensor.
   2. Unit shall be equipped with electrically actuated suction cutoff type cylinder unloaders on both lead compressors and automatic lead-lag control.
   3. Unit shall be field or factory equipped with refrigerant suction and discharge gauges with shut-off valves for each refrigerant circuit. An LCD Control Panel read-out will be acceptable in lieu of the specified gauges.
   4. Unit shall have externally mounted field installed, factory furnished, chilled water flow switch which shall prove sufficient flow before the unit can operate. Use only differential pressure type switches rated for outdoor installation equal to a Johnson Controls, Inc. Model F61MG-1C or approved equal by McDonnell & Miller. Flow switch shall be vapor-proof SPDT, NEMA 4X switch, rated for 150 PSIG differential water pressure, rated for ambient temperatures from -20°F to +250°F. Switch shall have 1" NPT connection for upright mounting in horizontal pipe. Alternately, a thermal dispersion flow switch standard with the chiller manufacturer may be used. Paddle type switches are not allowed.
   5. Unit shall be equipped with an oil pressure safety switch to protect each compressor from loss of lubrication.
   6. Provide corrosion resistant vandal /security grilles, with fasteners, for protection of all compressors, cooler, refrigerant piping and other components not otherwise protected.
   7. Control compartment shall be equipped with a 115 volt convenience duplex receptacle outlet.
   8. Sound attenuation shall be provided if necessary to be reduced to the following maximum sound power levels (A-weighted sound pressure):

      100% = 91 dbA 50% = 66 dbA
      75% = 68 dbA 25% = 63 dbA

P. Provide an additional four 4 year warranty on the compressors after the one (1) year guarantee has expired. The first year of Warranty shall include all parts and labor.
Q. Provide factory authorized equipment manufacturer representative to perform field start-up and check-out services to include adjustment of controls, recording of operating conditions, and direction to the installing contractor of any corrective actions necessary for proper operation due to installation deficiencies.
R. Acceptable Manufacturers:
   1. Trane
   2. Carrier
   3. York
   4. Daikin

PART 3 - EXECUTION

3.1 DELIVERY AND PROTECTION
A. All equipment shall be handled carefully to avoid damage and be protected from exposure to the weather and dirt.
B. All equipment shall be examined upon delivery to the site and evidence of abuse, damage, or exposure to weather and dirt shall be grounds for refusal to accept individual pieces of equipment. Rejected items shall be replaced promptly at no cost.

3.2 AIR COOLED PACKAGED WATER CHILLER INSTALLATION
A. Install chiller including accessory components, auxiliary devices, water piping connections, external wiring, and controls required for chiller operation in accordance with manufacturer's instructions.
B. Verify that machine has a full charge of refrigerant and lubrication oil. Add as necessary and seal any leaks when discovered.
C. Locate chiller to provide the minimum required service and operating clearance. This shall include clearance for proper condenser airflow, cooler tube pull space, and service access to compressors and control compartments.
D. Provide an externally mounted flow switch for the chilled water piping. Locate each chiller flow switch indoors and across the chilled water piping of the respective primary chilled water pump, suction to discharge, dedicated to the chiller. Use differential pressure type switches.

E. Verify height of machine, top of fan discharge, is equal to the height of any surrounding screening material to prevent air recirculation into the condenser coils.
F. Provide factory authorized agent start-up services as specified herein to include submission of the start-up service record, typed for legibility. Handwritten reports are not acceptable.

3.3 OPERATING PROCEDURES AND REQUIREMENTS

A. Operating and service instructions in illustrated and bound form shall be furnished by the manufacturer, three copies, within 30 days of "Substantial Completion".
B. At startup, the equipment manufacturer shall furnish skilled personnel to supervise, check out performance, make any required adjustment, place the unit in service, and instruct the Owner's personnel for a full period of four (4) hours. Start-up of chillers shall be performed by a service representative of the unit manufacturer.
C. The manufacturer of each item of equipment shall provide complete wiring diagrams to the Electrical and Temperature Controls Contractor and shall provide drawings indicating all required external wiring and arrangements of connections.

3.4 WARRANTY

A. Transfer the full Warranty to Owner to include all parts and labor for a full one year period after the cooling system is put into sustained operation to obtain building cooling effect and accepted as a completed installation by the Owner which shall begin at "Substantial Completion".
B. Transfer any and all other warranties as applicable over to the Owner at the completion of construction, "Substantial Completion", including the extended four (4) year compressor warranties.

END OF SECTION 236400

SECTION 237323 - AIR HANDLING EQUIPMENT

PART 1 - GENERAL

1.1 REFERENCED DOCUMENTS
- A. Conditions of the Contract and Division 1 - General Requirements are hereby made a part of this section.
- B. Comply with all other Division 23 Sections as applicable. Refer to other Divisions for coordination of work with other portions of work, as required.

1.2 SYSTEM DESCRIPTION
- A. Scope of Work includes the furnishing and installation of all air handling units, fan coil units, roof mounted air handling units, hangers, supports, and appurtenances as indicated herein.
- B. All items of equipment shall meet or exceed scheduled capacities and shall be provided in quantities indicated.
- C. Equipment shall be purchased and installed by the Contractor who shall install the equipment with field installed accessories and make connections to other components to make a complete and operating system.

1.3 QUALITY ASSURANCE
- A. All air handling unit electrical equipment shall be U.L. Listed.
- B. All water coils shall be rated for the application listed in accordance with the Air-Conditioning, Heating and Refrigeration Institute (AHRI) Standard 410.
- C. All fans shall be rated in accordance with the Air Moving Council Association (AMCA), and bear the label thereof.

1.4 SUBMITTALS
- A. Submit complete submittals and Shop Drawings in accordance with Section 23 05 00.
- B. Submittals shall include manufacturer's descriptive literature, material types, sizes, finishes, treatments, quantities, required accessory descriptions, capacities, fan curves, installation details, wiring diagrams, and any other descriptive literature necessary to fully evaluate the submittals for compliance with these Specifications.

1.5 INSTALLATION, OPERATION, AND MAINTENANCE BROCHURES
- A. Furnish all installation manuals required by a qualified mechanic for proper installation of equipment. Manuals shall be provided with equipment and be attached thereto.
- B. Complete bound Operating and Maintenance Brochures shall be retained by the successful equipment supplier for submittal, in triplicate, a minimum of 30 days prior to completion of construction.

1.6 PRODUCT HANDLING
- A. Cover and protect material in transit and at site. Material not properly protected and stored and which is damaged or defaced during construction shall and will be rejected.
- B. Storage and protection of materials shall be in accordance with Section 23 05 00.

PART 2 - PRODUCTS

2.1 CENTRAL STATION AIR HANDLING UNITS
- A. Each unit shall be of the horizontal or vertical type, have the performance capabilities as scheduled and be arranged as indicated on the Drawings.
- B. The sections which constitute the completed unit shall each be completely assembled at the factory in a double wall sheet metal housing appropriately furnished, and shipped as a complete unit or in sectionalized units suitable for field assembly. They shall be factory assembled, or be capable of job site assembly, into a complete unit having physical characteristics as indicated. All side and end panels shall be removable without reducing structural integrity of the unit.
- C. Each air unit shall be constructed of heavy gauge reinforced steel panels lined with one inch (1") thick mat faced glass fiber insulation not lighter than 3 lb. density. Alternately use two inch (2") thick 1.5 lb. density insulation. Such lining shall be cemented to the inside portion of the unit casing and additionally be secured with sheet metal binding strips. The lining material shall be waterproof and have a flame spread rating of less than 25 and shall comply with the requirements of NFPA Bulletin 90-A. This

insulation shall be covered with the metal inner wall as described herein. As a second alternate to the above, air handling units may have casing construction consisting of a high density foam type insulation sandwiched between inner and outer galvanized steel panels with a minimum overall R-value of 13.0. Minimum inner and outer steel panel thickness shall be as standard with the manufacturer for that style of construction. Structural members shall be minimum 16 gauge in thickness.

D. Provide factory-installed base rails on each air handling unit. Alternately provide an external support kit on the base of the unit to effect base rail support. External support kit or base rails shall be used for ceiling suspension, external isolation, or with housekeeping pads. Contractor shall be responsible for adjusting the height of housekeeping pads when unit is not of sufficient height to properly trap unit. The housekeeping pad height designated on the Drawings may be reduced when sufficient P-trap depth, with insulation, can be obtained with a lesser pad height. Approval must be obtained through the Engineer. Unit mounting devices not constructed of galvanized steel shall be chemically cleaned and coated with both a rust-inhibiting primer and finished coat of rust-inhibiting enamel.

E. All access doors, where specified herein, shall be of double wall construction with inner metal liners and have Ventlock 100 or 140 safety type latches. Alternately, quarter turn 5/16" Allen wrench operated integral latches will be acceptable. Provide tool for each air handling unit for operation of latches. Provide Ventlock 220 door pulls, or equal, on doors larger than 30" x 30". Screw attached doors are not acceptable. All access doors shall have continuous vinyl type bulb seals for a low leakage rate. Hinges shall be either continuous corrosion resistant metal piano hinges or consist of multiple heavy duty corrosion resistant metal or fiber reinforced nylon hinges.

F. Condensate drain pans shall have double wall construction with threaded drain connection on one end. Condensate drain pans shall be insulated with one inch (1") thick fiberglass cemented between a heavy gauge galvanized steel outer pan and minimum 16 gauge type 304 stainless steel inner pan (exposed to air stream). Inner pan shall be coated with corrosion resistant elastomeric based material. Insulation and adhesive shall comply with NFPA Bulletin 90-A flame spread and smoke generation requirements. Drain pan shall be sloped in two directions for positive drainage.

G. Fan Section:
   1. Fan sections shall be double wall construction and be made of minimum 18 gauge G-90 galvanized steel or 18 gauge chemically cleaned phosphatized steel given a protective enamel finish. The inner liner shall be perforated, minimum, 20 gauge galvanized steel. Fan sections shall have a formed channel base for mounting of fan and casing panels. Each unit shall have either a Class II airfoil fan wheel and scroll or forward curved type as scheduled, and as required to meet scheduled capacities for stable operation. Fans shall be double width, double inlet type for forward curved fan wheels and backward curved airfoil blades with double inlet for air foil fans. Wheels shall be bonderized steel painted with baked enamel, galvanized steel, or welded aluminum. For sandwiched foam panel casing construction, the minimum outer casing steel panel thickness shall be as standard with the manufacturer. Sandwiched foam panel construction with a total capacity over 6,500 CFM will require one inch (1") thick fibrous insulation perforated metal liners in the fan section for enhanced acoustical attenuation.
   2. Fan shafts shall be solid steel C1040; turned, ground, and polished.
   3. Fan wheels shall be keyed to the shaft and shall be designed for continuous operation at the maximum rated fan speed and motor horse power. Fan wheels and shafts shall be selected to operate at least 25% below the first critical speed, and shall be statically and dynamically balanced as an assembly. The entire assembly shall be IRD 245 2 plane balanced to 1.0 mil or less total displacement as measured at each bearing pad.
   4. Fan bearings shall be self-aligning, pillow block regreasable ball type selected for an average life of 200,000 hours at design operating conditions, and a L-50 life, per ANSI Code B3.15. Provide extended lube lines to one single location on the unit exterior, at the coil connection side, for regreasing bearings without shutting down unit or disassembling components.
   5. Vibration isolation of the entire fan, motor, and drive assembly to be by use of 2 inch deflection springs internally mounted at the factory, together with fan discharge neoprene flexible connection and thrust restraint springs. All fans 6,500 CFM, or larger, shall be internally isolated.
   6. Fan motors shall be factory mounted inside the fan section casing, on slide rails having 2 adjusting screws. Motors shall be the open drip proof (ODP) type. Motor speed shall be 1750 RPM. Motors over one horsepower in size shall be NEMA (premium) efficiency type similar to Baldor Super-E, Century E Plus III, General Electric "X$D Ultra" or U.S. “NEMA Premium” as specified in Section 23 05 13.
   7. Fan drives shall be factory mounted and aligned with final alignment and belt adjustment to be made by the contractor after installation. Belt drives shall be variable pitch type for motors 10 HP and below and fixed pitch above 10 HP. Drive design shall provide a 1.5 service factor.

8. Provide a minimum of one (1) 60" X 18" access door to each fan casing, and any factory fabricated plenum sections. Doors shall have continuous vinyl jamb seals for an airtight seal. Fan sections or plenums too small to accommodate this size access door shall have an access door as large as the casing or plenum size will allow.

H. Coils:
1. Coils installed in air units shall be of the type that is standard with the unit manufacturer and shall be complete with continuous heavy-duty supporting structure. Coils shall be the slip-in and slip-out type for ease of replacement from the coil connection side. The type and capacity of each coil assembly shall be as scheduled on the Drawings and as specified elsewhere herein. Coils shall be erected and connected in the arrangements shown. Generally, unless indicated otherwise, heating coils shall be located in the pre-heat position.
2. Coil performance shall be rated and certified in accordance with AHRI Standard 410.
3. Chilled and Heating water coils shall have aluminum plate fins, minimum 0.006 inch thickness, maximum 144 fins per foot, with belled collars bonded to 1/2 inch minimum OD, minimum 0.016 inches thick wall, copper tubes by mechanical expansion. Coil sections shall have casings manufactured the same as the fan casings, except the inner liner shall consist of a 20 gauge galvanized steel solid panel section. Coil working pressure shall be 200 PSIG at 200 Deg.F. for chilled water and 175 PSIG at 400 Deg.F. for heating water. Coils shall be drainable and have non-trapping circuits. No turbulence promoting devices shall be permitted inside the tubes. Coils shall have seamless copper tube, headers with threaded, 2" and smaller, or flanged connections, 2-1/2" and larger. Alternately, install flanges on site. Headers shall have drain and vent connections. Provide minimum six (6) rows for cooling coils and two (2) rows for heating coils. Use maximum 12 fins per inch for cooling coils and 10 fins per inch for heating coils.
4. Direct expansion (DX) coils shall be proof tested to 250 PSIG and leak tested to a minimum of 3000 PSIG air pressure under water. Coils shall be dried after testing and filled with a 10 PSIG holding charge of nitrogen. Coils shall be provided with a minimum of two (2) vertical brass distributors to ensure that each coil circuit receives the same amount of refrigerant liqujid. Circuiting shall be as required for the application. Locate all DX coils downstream of water filled coils.
5. All coil connections shall have right hand connections looking downstream of unit, unless scheduled or indicated otherwise. Refer to Drawings.
6. Provide a minimum of one (1) 60" X 18" access door panel to each coil section casing or the maximum size possible to be installed thereon whenever the casing size cannot accommodate the specified size. All units shall have access doors, unless full access is provided to both sides of the coil section through the fan and filter section access doors.
7. Coil section inner wall, floor and ceiling panels shall all be minimum 20 gauge galvanized steel solid panels.
8. Heating coils shall be in the pre-heat position unless indicated otherwise.

I. Filter Sections:
1. Low Velocity (Angled) Filter Sections shall be provided by the air handling unit manufacturer for all air handling units, with the same casing construction as described for fan sections (solid or perforated metal inner wall). All units shall have angled filter sections, unless indicated otherwise on the Drawings. Filter racks, V-shaped, shall be capable of receiving 2" thick filters of standard sizes, and shall be constructed of heavy gauge galvanized steel slide rails. Filter sections shall have full size hinged access doors on each side of the casing. Doors shall include a minimum of two quarter turn fastening handles. Provide one (1) set of two inch (2") thick Farr 30/30 filters for each unit.
2. Furnish flat, or high velocity, filter sections, only where indicated on the Drawings, with two inch (2") heavy gauge galvanized steel slide rail filter racks and a complete set of two inch (2") thick Farr 30/30 filters with unit. Filters shall be accessible through both sides of unit by use of hinged filter access doors with suitable fasteners.
3. At the time of construction, before operating equipment, all filters shall be installed to fully protect coils and air distribution system from dirt and debris. Replace filters as specified in Section 23 30 00.
4. Provide a differential pressure gauge including magnahelic gauge across each bank of filters. Provide set of contacts to notify remote monitoring system of maximum resistance. Range shall be from 0.0 - 1.0 inches W.G. unless indicated otherwise.
5. Filter sections shall be double wall same as the fan and coil sections.

J. Plenum sections shall be field or factory fabricated and shipped, as applicable, with other sections of the air handling unit, at the option of the Contractor.

K. Provide factory fabricated face and bypass damper sections as scheduled and as indicated on the Drawings. Construction shall be the same as for fan casings. Damper shall be provided inside the casing and be the opposed blade type. Face dampers shall be in front of the cooling coil and bypass dampers shall divert airflow around the cooling coil. Dampers shall be the low leakage type with blades secured to minimum 1/2 inch corrosion resistant steel rods, rotating in nylon bushings and mounted in a galvanized steel frame. Leakage shall be less than 2% at 4.0 In.W.G. of static pressure difference. Dampers shall not exceed 48 inches in width, and shall be sectionalized as required to meet this requirement. Provide jamb seals and vinyl blade edge seals on dampers.

L. Acceptable Manufacturers:
   1. Carrier.
   2. Daikin.
   3. Trane.
   4. Temtrol.
   5. York.

2.2 FAN COIL UNITS

A. Fan coil units shall have the characteristics indicated and be furnished completely assembled to include casings, enclosure, or plenums as indicated, finned tube coils, fan and motor sections, belt drive assembly, filter racks, and other specified accessories to meet scheduled capacities.

B. Fan coil units shall be rated and certified by ARI and be U.L. approved.

C. Water coils shall be standard coils furnished by fan coil unit manufacturer and rated for scheduled capacities. Coils shall be ARI rated and certified. Coils shall be made of 3/8" or 1/2" O.D. copper tubes, minimum 0.016 inches tube wall thickness, mechanically expanded into aluminum plate fins, rated at 250 PSIG and leak tested at 350 PSIG minimum air pressure. Provide manual type air vent with each coil. Coils shall have a minimum six (6) rows for cooling and two (2) rows for heating applications, and have a maximum of ten (10) fins per inch. Both heating and cooling coils shall be installed within the same cabinet. Coil piping connections shall be made in the side of the unit casing, with grommets, with unit penetrations being provided by the manufacturer. Generally the heating coil, when provided, shall be in the pre-heat position unless indicated otherwise.

D. Fans shall be statically and dynamically balanced and be of indicated capacities. Fan wheels shall be constructed of a minimum of 22 gauge galvanized steel and be forward curved design. Furnish permanently lubricated long life heavy duty ball bearings. All motors shall be provided with thermal overload protection.

E. Cabinets shall be made of minimum of 18 gauge G-90 galvanized steel or 18 gauge cold rolled steel primed and coated with a baked enamel paint. Cabinets shall be insulated with a minimum 3/4 inch thick, 1.5 pound density, coated glass fiber insulation complying with NFPA No. 90A. Provide supply and return duct collars. Condensate pan shall be made of 18 gauge galvanized, or Type 304 stainless, steel and be insulated to prevent condensation. Cabinet shall have four (4) support points for insertion of 3/8" round threaded hanger rods. Provide two (2) removable panels for access to and removal of internal components from both sides. Coil piping shall not obstruct access to internal components requiring removal or periodic servicing.

F. Furnish side access flat filter racks, capable of accepting one or two inch (1" or 2") thick filters. Two inch (2") thick filters will be used in this application. Furnish filters and spare media same as for constant volume air handling units. All filters shall be standard filter sizes of all filter manufacturers.

G. Acceptable Manufacturers:
   1. Magic-Aire Series BHW, or approved equals by:
   2. Daikin.
   3. Carrier.
   4. Trane.
   5. York.

2.3 ROOF MOUNTED AIR HANDLING UNITS

A. Each unit shall have the performance capabilities as indicated on the Drawings and shall be provided with motors, starters, and control dampers.

B. Unit Performance:
   1. Unit cooling and heating coil capacities shall be rated in accordance with, and tested to, AHRI Standard 410.
   2. Coils shall carry the AHRI compliance sticker.
   3. Blower assemblies shall be A.M.C.A. rated and bear the label thereof.
   4. All electrical components used shall be U.L. listed.

5. Unit shall be shipped completely assembled by the manufacturer, including all standard and optional items.
6. Unit shall be 100% run tested by the manufacturer with a copy of the run test report shipped with the unit.

C. Unit Construction:
1. Unit shall be completely factory assembled, piped and wired, and shipped in one piece.
2. Unit shall be specifically designed for outdoor rooftop application with a fully weatherproof cabinet. Roof shall be sloped for complete drainage of rain water.
3. Unit design shall be dedicated bottom supply and bottom return air style system for mounting on a full perimeter roof curb. Unit openings shall be the same size as, or equivalent to, the clear air stream dimensions shown on the Drawings. Provide suitable connecting duct collars.
4. Cabinet shall be constructed entirely of G90 weight galvanized metal with the exterior panel construction being of 18 gauge, or heavier, material. All seams shall be welded or bolted and sealed with a rubber based mastic.
5. Access to controls, filters, blower, heating coil, cooling coil, and other items needing periodic checking or maintenance shall be through hinged full size access doors with a minimum of two (2) quarter turn safety type latches (ventlock handles). Door fastening screws are not acceptable.
6. Air side service access doors, exposed to ambient conditions, shall be fully gasketed with rain break overhangs.
7. Filter sections, access doors, and fan section casings shall have an internal, minimum 18 gauge galvanized steel, perforated liner to internally protect the insulation and for sound attenuation.
8. Unit exterior shall be painted with an epoxy-polyester paint over a wash primer and a paint lock type galvanized steel. Unit exterior shall be "Tan" in color, unless indicated otherwise.
9. The interior air side of the cabinet shall be entirely insulated on all exterior panels with two inch (2") thick, not lighter than 1-1/2 pound (1.5 lb.) density, neoprene coated, fiberglass insulation cemented to the unit casing and further secured with sheet metal binding strips. The lining material shall have a flame spread rating of less than 25 and shall comply with the requirements of NFPA Bulletin 90-A.
10. The entire fan cabinet, and other internal unit components, under a positive pressure and downstream from the supply air, and relief air where applicable, blower, shall be guaranteed to hold a static pressure of up to six inches (6") water column with less than 2% leakage.
11. All openings through the base pan of the unit shall have upturned flanges of at least 1/2" in height around the opening through the base pan.
12. Unit shall have decals and tags to indicate unit lifting - rigging, service areas, and caution areas. Wiring diagrams, installation and maintenance manuals shall be supplied with each unit.
13. The floors of each unit shall be insulated and have a minimum 20 gauge galvanized steel inner panel.
14. Condensate drain pans shall have double wall construction, sloped in all directions for positive drainage, with threaded drain connections. Condensate drain pan to be insulated with 5/8" thick isocyanurate foam, or equivalent, faced with an additional aluminum foil vapor barrier and cemented between the heavy gauge galvanized steel outer and inner pans. Inner pan shall be coated with corrosion-resistant elastomeric based material. Insulation adhesive and inner coating shall comply with NFPA Bulletin 90-A.
15. Furnish a 115 volt convenience outlet mounted in the fan compartment and wired to a junction box on the inside of the fan unit casing.

D. Blowers:
1. Shaft shall be solid steel, turned, ground, and polished. No hollow shafts allowed.
2. Blowers, drives, and motors shall be statically and dynamically balanced as an assembly.
3. Blower sections shall be constructed of galvanized steel, or chemically cleaned steel, phosphatized, and given a protective enamel finish; and shall have a formed channel base for mounting of fan and casing panels.
4. Each unit shall have one fan wheel and scroll only for each supply and return air fan, where applicable. Fans shall be double width, double inlet type, with forward curved blades, or single width, single inlet air foil fans suitable for the application. Fan wheels shall be bonderized steel painted with baked enamel, galvanized steel, or welded aluminum.
5. Provide full size, minimum 24" x 48" double wall fan access doors with ventlock quarter turn handles, located on the coil and motor drive side of the unit. Provide fasteners suitable for use of padlocks.
6. The entire fan assembly shall be completely isolated from the unit bulkhead with neoprene gasketing and shall be mounted on two inch (2") double deflection spring isolators.

7. Fan wheels shall be keyed to the shaft and shall be designed for continuous operation at the maximum rated fan speed and motor horsepower. Fan wheels and shafts shall be selected to operate at least 25% below the first critical speed.
8. Fan bearings shall be self-aligning, pillow block, regreasable ball type selected for an average life of 200,000 hours at design operating conditions, per ANSI Code B3.15.
9. Provide extended lube lines, with grease fittings, mounted in one single location on the exterior of the unit casing for regreasing bearings without shutting down unit, disassembling components, or accessing the interior of the unit.

E. Motors and Drives:
1. Motors shall be of NEMA standard frame design and mounted with adjustable steel hinge type mount or shop fabricated slide rail mount with two (2) adjusting screws located in the fan section casing. Motors shall be open drip-proof, single speed, squirrel cage, 1750 RPM, induction type of high efficiency design equal to Baldor Super-E, Century E-Plus-III, U.S. “NEMA (premium)”, or General Electric “X$D Ultra”. Refer to Specification Section 23 05 13.
2. Fan drives shall be factory mounted and are to be selected with a minimum belt horsepower capacity of 150% of the motor nameplate horsepower. Motor sheaves shall be variable pitch type for motors 10 horsepower, and below, and fixed type above 10 horsepower. Sheaves shall be as manufactured by Browning or Gates. Unit manufacturer shall furnish one sheave change-out as necessary to provide required fan performance for job site conditions.
3. Fan sheaves shall be cast iron QD-type, tapered bushing style as manufactured by Browning or Gates.
4. Provide open vibration springs and thrust restraints for internal isolation of motor and blower assembly.
5. For units over 8,000 CFM in capacity, furnish return air fans for positive control of relief air, as scheduled.

F. Outside air intakes shall be capable of bringing in from 0-100% outside air, economizer operation, with motor operated outside, return, and relief air dampers constructed of extruded aluminum hollow cores, air foil blades with rubber edge seals and aluminum end seals. Damper blades shall be pneumatically actuated and designed to have no more than 2% leakage when subjected to four inches (4.0") W.G. air pressure differential across the damper. Damper actuator shall be spring return type to insure closing of outdoor and relief air dampers during periods of unit shut down or power failure. Actuators shall be furnished and installed under Section 23 09 00, Controls and Instrumentation. Provide 1/2" x 1/2" galvanized steel birdscreen, and suitable rainproof hoods, with rain lip, over all openings to the outdoors.

G. Chilled water coils shall be copper tube with aluminum fins mechanically bonded to the tubes, same as Central Station Air Handling Units.

H. Hot water coils shall be copper tubes with aluminum fins mechanically bonded to the tubes, same as Central Station Air Handling Units.

I. Filters:
1. Units shall be furnished with low velocity (angle) filter sections with heavy gauge galvanized steel filter racks suitable for two inch (2") thick filters. Provide unit with one (1) set of two inch (2") thick, 30% efficient, pleated, Farr 30/30 throw away air filters.
2. Units shall be provided with a direct dial reading magnehelic gauge mounted in the control compartment, same as Central Station Air Handling Units.
3. Filters shall be accessible from both sides of the unit through hinged and sealed access doors.

J. Provide factory fabricated face and bypass damper sections as scheduled and as indicated on the Drawings. Construction shall be the same as for fan casings. Dampers shall be provided inside the casing and be the opposed blade type. Face dampers shall be in front of the cooling coil and bypass dampers shall divert airflow around the cooling coil. Dampers shall be the low leakage type with blades secured to minimum 1/2 inch corrosion resistant steel rods, rotating in nylon bushings and amounted in a galvanized steel frame. Leakage shall be less than 2% at 4.0 In.W.G. of static pressure difference. Dampers shall not exceed 48 inches in width, and shall be sectionalized as required to meet this requirement. Provide jamb seals and vinyl blade edge seals on dampers.

K. Unit shall be provided with a factory installed and wired internal disconnect switch with fusing, magnetic across-the-line starter with 120 volt control transformer, and H-O-A Switch.

L. Roof curbs shall be constructed of minimum 12 gauge galvanized steel with a treated wood nailer strip, minimum 1-1/2" thick internal curb insulation and be minimum 14" in height. Curb shall be shipped loose for field assembly. Curbs shall be provided with two inch (2") wide, 3/8 inch thick, neoprene gasketing for field mounting between the curb top and unit bottom with the curb providing full perimeter support, cross

structure support, and air seal for the unit. Curbs shall be provided by unit manufacturer and be approved by the National Roofing Contractors Association (NRCA).

M. All water piping, condensate piping, power and control wiring, and control tubing shall be routed within a pipe chase contained within the perimeter of the roof curb. Additionally, provide suitable space within each unit casing for field installed heating and chilled water piping to the coils. Provide full size access door to piping compartment. Piping compartment shall be outside the air stream.

N. Acceptable Manufacturers:
   1. Temtrol, or approved equals by:
   2. Carrier.
   3. Trane.
   4. York.
   5. Daikin.

PART 3 - EXECUTION

3.1 DELIVERY AND PROTECTION

A. Deliver all equipment to each site as indicated in Division 1.

B. Perform installation and start-up to include installation of all accessories as required to make a complete and operating system.

C. All equipment shall be handled carefully to avoid damage and be protected from exposure to the weather and dirt. All equipment shall be examined upon delivery to the site and evidence of abuse, damage, or exposure to weather and dirt shall be grounds for refusal to accept individual pieces of equipment. Rejected items shall be replaced promptly at no cost.

3.2 CENTRAL STATION AIR HANDLING UNITS

A. Install air handling units level on housekeeping pads, which shall extend four inches (4") larger than the unit in each dimension. Suspend fan coil units level from structure with all thread rod and vibration isolators.

B. Provide for positive gravity drainage of coil condensate. Pipe condensate full size of unit connection as detailed on the Drawings to include a P-trap. Verify proper drainage is attained from each unit.

C. Remove all shipping restraints and unfasten any hold down fasteners.

D. Verify correct rotation of fan and proper wiring of motor to include verification of proper line voltage and insuring actual motor amps does not exceed name plate amps.

E. Lubricate all greaseable ball bearings with manufacturers suggested lubricant.

F. Adjust belt tension and align belts to eliminate wear and excessive vibration per manufacturers recommendations.

G. Verify starter (motor controller) motor overload heaters are sized within the nameplate motor amp range, i.e., a heater range of 8.0 - 9.0 amps would only be suitable for a motor within that range. A motor nameplate of 9.1 amps would need a different heater.

H. Adjust fan drives as required to obtain scheduled capacities as directed by the Test and Balance firm to include one sheave and belt replacement, as required thereby.

I. Lubricate all greaseable ball bearings with manufacturers suggested lubricant.

J. Replace filters as specified in Section 23 30 00. Keep the filter section loaded with filters at all times. Provide the new specified type just prior to the commencement of the Test and Balance work. Do not operate any unit without proper filters in place.

K. Install emergency overflow condensate pans and drain piping as detailed on the Drawings for units suspended from structure.

L. Make piping connections so as not to interfere with future coil removal work, access door operation, filter removal and maintenance, or motor and drive maintenance.

M. Provide power to units for operation for system balancing in sufficient time to perform TAB work prior to Substantial Completion.

3.3 ROOF MOUNTED AIR HANDLING UNITS

A. Install roof mounted air handling units level on roof on full perimeter roof curbs, in accordance with manufacturer's installation instructions. Install units plumb and level, firmly anchored in locations indicated, and maintain manufacturer's recommended clearances.

B. Install and connect electrical devices furnished by manufacturer, but not specified to be factory mounted. Furnish copy of manufacturer's electrical connection diagram submittal to electrical systems installer.

C. Install and connect devices furnished b0079 manufacturer but not specified to be factory mounted.

D. Start-up units in accordance with manufacturer's start-up instructions. Test controls and demonstrate compliance with requirements.
E. Contractor shall adjust and align fan drives to obtain scheduled capacities as required by the Test and Balance Firm to include labor for one sheave and belt change-out to provide fan performance to meet job site conditions.
F. Refer to Paragraph 3.2 above.

3.4 CLEAN-UP
A. Clean coils and condensate pans after installation of air handling units and fan coil units is complete.
B. Vacuum clean all debris from inside air handling units, fan coil units, other fan casings, and plenums with internal duct lining.

END OF SECTION 237323

SECTION 260000 - ELECTRICAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. This Division and all Electrical sections contained hereinafter are subject to the Contract Documents of Division 1 whether attached or not, the various Divisions of the General Construction specifications and Division 23 of the Construction specifications and respective plans.

B. All drawings, material in other Divisions of these specifications, addenda, and other pertinent documents are considered to be a part of the technical requirements of this Division of the specifications insofar as they are applicable.

C. The material contained in this section shall be applicable to other sections of the specifications under this Division.

1.2 DEFINITIONS

A. The following definitions shall apply to all sections of this Division:

1. "Owner" shall mean the Owner or his designated representative.

1.3 SCOPE OF WORK

A. This Division and all electrical sections of the specifications include all labor and material to complete all electrical systems as specified or shown on the Drawings.

B. All work shown and specified shall be completely installed and connected in a workmanlike manner by mechanics properly qualified to perform the work required. All work shall be left in a satisfactory operating condition as determined by the Owner.

C. Provide all services and perform all operations required in connection with or properly incidental to the construction of complete and fully operating systems with all accessories as herein specified or shown on the Drawings.

1.4 GENERAL

A. The accompanying plans show diagrammatically the location of the various light fixtures, devices, conduits and equipment items, and methods of connecting and controlling them. It is not intended to show every connection in detail or all fittings required for a complete system. The Contractor shall carefully lay out his work at the site to conform to the conditions, to avoid obstructions and provide proper routing of raceways. Exact locations of light fixtures, devices, equipment, and connections thereto shall be determined by reference to the accompanying Plans, etc., by field measurement at the project, and in cooperation with other Contractors and Sub-Contractors, and in all cases shall be subject to the approval of the Owner. Minor relocations necessitated by the conditions at the site or directed by the Owner shall be made without any additional cost to the Owner.

B. These specifications and the accompanying drawings are intended to describe and illustrate systems which will not interfere with the structures, which will fit into available spaces, and which will insure complete and satisfactorily operating installations. The Contractor shall be responsible for the proper fittings of his material and apparatus into the building and shall prepare installation drawings for all critical areas illustrating the installation of his work as related to the work of all other trades. Interferences with other trades or with the building structures shall be corrected by the Contractor before the work proceeds. Should any changes become necessary due to failure to comply with these stipulations, the Contractor shall make such necessary changes at his own expense.

C. All work shall be run parallel or perpendicular to the lines of the building unless otherwise noted on the Drawings.

D. It is the intent of the Contract Documents to provide an installation complete in every respect. In the event that additional details or special construction may be required for work indicated or specified in this section or work specified in other sections, it shall be the responsibility of the Contractor to provide those details or special construction as well as to provide material and equipment usually furnished with such systems or required to complete the installation.

E. The Contractor, by submitting a bid on this work, sets forth that he has the necessary technical training and ability and that he will install his work in a satisfactory manner which is up to the best standards of the trade, complete and in good working order. If any of the requirements of the Drawings and Specifications are impossible to perform, or if the installation when made in accordance with such requirements will not perform satisfactorily, he shall report such occurrences to the Owner promptly after discovery of the discrepancy.

F. No extra compensation will be allowed for extra work or changes caused by failure to comply with the above requirements.

1.5 INSPECTION OF THE SITE

A. The Contractor shall visit the site, verifying all existing items indicated on the Drawings or specified, and familiarize himself with the existing work conditions, hazards, grades, actual formations, soil, conditions, and local requirements. The submission of bids shall be deemed evidence of such visit.
B. All proposals shall take these existing conditions into consideration, and the lack of specific information on the Drawings shall not relieve the Contractor of any responsibility.
C. All site visits shall be coordinated and scheduled with the Owner.

1.6 CUTTING AND PATCHING

A. When cutting or patching becomes necessary to permit the installation of any work under this contract, or should it become necessary to repair any defects that may appear in patching up to the expiration of the guarantee, such cutting shall be done under the supervision of the Architect by the trade or Contractor whose work is to be disturbed. After the necessary work has been completed, damage shall be repaired by the Contractor or trade whose work has been disturbed. The cost of all such cutting and patching shall be paid by the Contractor requiring it to be done.
   1. Refer to Division 1 requirements.
B. The Contractor shall do all necessary cutting and drilling of present walls, floors, ceilings, etc. for the installation of new work or for modifications to the existing work, but no structural work shall be cut unless specifically approved by the Architect. Patching and painting of services as required shall be by the General Contractor unless specified otherwise hereinafter.
C. Locations of the various existing services, walls, and equipment to be altered, removed or connected to have been taken from plans of the existing building and other substantially reliable sources and are offered as a general guide only, without guarantee as to their accuracy. This Contractor shall examine the site and shall verify to his own satisfaction the location of all existing work and shall adequately inform himself as to their relation to and effect on the work before entering into a contract. Submission of a bid shall constitute evidence that the submitting Contractor has inspected the site of the proposed work.
D. The Contractor shall examine the existing building and plans for the new work and note the sizes of the openings available and shall be responsible for any cutting, patching, and alterations required to place new equipment in the building.
E. Where walls, acoustical tile, suspended ceilings, etc., not scheduled to be re-worked or re-finished under the general contract are damaged during installation of new raceways, or other work, etc., such walls, tiles, etc., shall be replaced by the General Contractor at the expense of the Contractor.
F. All damage done to the existing equipment, services, etc., incurred in the execution of this contract shall be repaired and restored to its original conditions by the Contractor.
G. Holes through concrete shall be drilled with "Mole", or "Core-It", or equal diamond point hole saw.

1.7 DEMOLITION OF EXISTING EQUIPMENT

A. Certain types of equipment will be retained by the Owner. The Owner will provide a list of all such salvage items. Before removal of any equipment, contact the Architect, who will determine the disposition. Equipment designated to be salvaged and remain the property of the Owner shall be carefully removed to prevent damage and delivered to a location on the site as directed by the Architect. Any equipment not retained by the Owner shall become the property of the Contractor and shall be removed from the premises.
B. The Contractor shall visit the site and verify all outlets, devices, wall switches, light fixtures, etc., that are to be removed due to remodeling work and building additions.
C. The attendant raceways, hangers, wiring, foundations, etc., of those items of existing equipment to be removed and not intended for reuse, shall also be removed in their entirety. No raceways, hangers, etc., shall be abandoned in place except those raceways concealed in existing walls or buried below grade.

1.8 CODE REQUIREMENTS

A. All work shall comply with the provisions of these specifications, as illustrated on the accompanying drawings, or as directed by the Architect, and shall satisfy all applicable local codes, ordinances, or regulations of the governing bodies, and all authorities having jurisdiction over the work, or services thereto. In all cases where alterations to, or deviations from, the drawings and specifications are required by the authority having jurisdiction, report the same in writing to the Architect and secure his approval before proceeding. Upon completion of the work, furnish a statement from the inspecting authority stating that the installation has been accepted and approved. Provide complete utility service connections as

directed, and submit, as required, all necessary drawings; secure all permits and inspections necessary in connection with the work, and pay all legal fees on account thereof. In the absence of other applicable local codes acceptable to the Architect, the National Electrical Code shall apply to this work.

1.9 RECORD DRAWINGS

A. The Contractor shall, during the execution of the work, maintain a complete set of drawings upon which all locations of equipment, panels, and all deviations and/or changes in the work shall be recorded. All underground and overhead utilities provided under, or affected by, work of this Division shall be accurately located by dimensions. These "Record" drawings shall be delivered to the Architect in good condition upon the completion and acceptance of the work and before final payment is made.
   1. Refer to Division 1 requirements.

1.10 RECORDS AND INSTRUCTIONS FOR OWNER

A. The Contractor shall accumulate, during the project's progress, the following sets, prepared in neat brochures or packet folders and turned over to the Architect for checking and subsequent delivery to the Owner:
   1. All warranties and guarantees and manufacturer's directions on equipment and material covered by the Contractor.
   2. Approved equipment brochures, wiring diagrams and control diagrams.
   3. Copies of reviewed Shop Drawings.
   4. Operating instructions for all systems. Operating instructions shall include recommended maintenance procedures.
   5. Any and all other data and drawings required during construction.
   6. Repair parts lists of all major items and equipment including name, address, and telephone number of local supplier or agent.

B. All of the above data shall be submitted to the Architect for review at such time as the Contractor makes application for final payment, but in no case less than two weeks before final observation.

C. The Contractor shall also give not less than two (2) days of operating instructions, during the adjustment and testing period, to the Owner's operating personnel in order to familiarize them with the proper care and operation of the equipment. The written operating instructions referred to in above paragraphs shall be used as a basis for this on-the-job instruction.
   1. Refer to Division 1 requirements.

1.11 SHOP DRAWINGS AND SUBMITTALS

A. The Contractor shall submit, to the Architect, shop drawings and catalog data on all equipment and materials designated on the Drawings and specified herein.

B. The submittal will be reviewed for compliance with general requirements of design and arrangement only; it is not a contract document and acknowledgement of compliance does not relieve the Contractor from responsibility for performance of the work in compliance with all provisions and requirements of the Contract Documents. Job measurements and the coordination of all the dimensions for proper fit of all parts of the work and performance of all equipment supplies to meet specification requirements are and remain specific responsibilities of the Contractor.

C. Shop Drawings shall be furnished by the Contractor for the work involved after receiving approval on the make and type of material and in sufficient time so that no delay or changes will be caused. This is done in order to facilitate progress on the job, and failure on the part of the Contractor to comply shall render him liable to stand the expense of any and all delays, changes in construction, etc., occasioned by his failure to provide the necessary detailed drawings. Also, if the Contractor fails to comply with this provision, the Architect reserves the right to go directly to the manufacturer he selects and secure any details he might deem necessary, and should there be any charges in connection with this, they shall be borne by the Contractor.

D. The Shop Drawings submitted shall not consist of manufacturers' catalogues or tear sheet therefrom that contain no indication of the exact item offered. Rather, the submission on individual items shall designate the exact item offered.

E. Shop Drawings submitted without indicating markings or Contractor's stamp shall not be reviewed and will be returned to the Contractor for correction of such discrepancies.

F. The Shop Drawings are not intended to cover detailed quantitative lists of electrical specialties, and similar items, as the plans and specifications illustrate and describe those items, and it is the Contractor's responsibility to procure the proper sizes and quantities required to comply with the established requirements.

G. Any Shop Drawings prepared to illustrate how equipment can be fitted into available spaces will be examined under the assumption that the Contractor has verified all the conditions, and obtained any approval thereon shall not relieve the Contractor of responsibility in the event the material cannot be installed as shown on those Drawings.
H. Various material submissions of such as raceways, switches, panelboards, and related items shall be assembled in brochures or in other suitable package form and shall not be submitted in a multiplicity of loose sheets.
I. Each Contractor shall process his submitted data to insure that it conforms to the requirements of the plans and specifications and that there are no omissions, errors or duplications.
J. Shop Drawings shall be accompanied by certification from this Contractor that Shop Drawings have been checked by him for compliance with Contract Drawings.
K. Samples of various products or mock-ups of particular details or systems may be required by various sections of this Specification.
L. Refer to Division 1 requirements.

1.12 PENETRATIONS THROUGH FIRE-RATED ASSEMBLIES
A. Seal voids around ducts and pipes penetrating fire-rated assemblies and partitions using fire-stopping materials and methods in accordance with provisions in Division 1.

1.13 CONNECTION OF EQUIPMENT FURNISHED BY OTHERS
A. All equipment furnished under other Divisions of the specification requiring service connections shall be connected by this Contractor. Materials and labor required for the connection of this equipment shall be furnished under Division 26. The respective supplier shall furnish proper roughing-in diagrams for the installation of these items. All items shall be roughed-in and connected in strict accordance therewith. All equipment requiring connection may not be specified herein, but may be included in other Division documents. This Contractor shall ascertain for himself all equipment so specified is included as part of his work.
B. Refer to Section 26 05 23.

1.14 DRAWINGS
A. The drawings show diagrammatically the locations of the various conduits, fixtures, and equipment, and the method of connecting and controlling them. It is not intended to show every connection in detail and all fittings required for a complete system. The systems shall include, but are not limited to, the items shown on the drawings. Exact locations of these items shall be determined by reference to the general plans and measurements at the building and in cooperation with other trades and, in all cases, shall be subject to the approval of the Architect. The Architect reserves the right to make any reasonable change in the location of any of this work without additional cost to the Owner.
B. Should any changes be deemed necessary in items shown on the contract drawings, the shop drawings, descriptions, and the reason for the proposed changes shall be submitted to the Architect for approval.
C. Exceptions and inconsistencies in plans and specifications shall be brought to the Architect's attention before bids are submitted; otherwise, the Contractor shall be responsible for the cost of any and all changes and additions that may be necessary to accommodate his particular apparatus.
D. Lay out all work maintaining all lines, grades, and dimensions according to these drawings with due consideration for other trades and verify all dimensions at the site prior to any fabrication or installation; should any conflict develop or installation be impractical, the Architect shall be notified before any installation or fabrication and the existing conditions shall be investigated and proper changes effected without any additional cost.
E. Titles of Sections and Paragraphs in these specifications are introduced merely for convenience and are not to be construed as a correct or complete segregation or tabulation of the various units of material and/or work. The Architect does not assume any responsibility, either direct or implied, for omissions or duplications by the Contractor due to real or alleged error in the arrangement of matter in the Contract Documents.

1.15 COOPERATION
A. All work under these specifications shall be accomplished in conjunction with other trades on this project in a manner which will allow each trade adequate time at the proper stage of construction to fulfill his work.
B. Maintaining contact and being familiar with the progress of the general construction and the timely installation of sleeves and inserts, etc., before concrete is placed shall be the responsibility of this trade

as will the installation of the required systems in their several stages, at the proper time to expedite this contract and avoid unnecessary delays in the progress of other contracts.

C. Should any question arise between trades as to the placing of lines, ducts, conduits, or equipment, or should it appear desirable to remove any general construction which would affect the appearance or strength of the structure, reference shall be made to the Architect for instructions.

1.16 MATERIALS AND EQUIPMENT

A. All materials purchased for this Project shall be new.

B. Where specified product is not manufactured, manufacturer's current product meeting specification shall be substituted, subject to written approval of Engineer.

C. Space allocations in electrical spaces are based on equipment scheduled in each case. Should the Contractor offer equipment of another make, he shall verify that such equipment will fit in the spaces allowed.

D. Manufacturers' names are listed herein to establish a standard. The products of other manufacturers will be acceptable; if, in the opinion of the Architect, the substitute material is of a quality as good or better than the material specified, and will serve with equal efficiency and dependability, the purpose for which the items specified were intended.

E. It is fully the Contractor's responsibility to assemble and submit sufficient technical information to fully illustrate that the material or equipment proposed for substitution is equal or superior as the Architect or his Engineer is under no obligation to perform the service for the Contractor. The proposal shall be accompanied by manufacturers' engineering data, specification sheet, and a sample, if practical or if requested. In no event shall a proposal for substitution be cause for delay of work.

F. Should a substitution be accepted under the above provisions, and should the substitution prove defective or otherwise unsatisfactory for the intended service, within the warranty period, the Contractor shall replace the substitution with the equipment or material specified, and on which the specifications required him to base his proposal.

1.17 STORAGE AND PROTECTION OF MATERIALS

A. The Contractor shall provide his own storage space for protection and storage of his materials and assume complete responsibility for all losses due to any cause whatsoever. All storage shall be within the property lines of the building site, or as directed by the Owner's representative. In no case shall storage interfere with traffic conditions in any public or project thoroughfare.

B. All work and material shall be protected at all times. This Contractor shall make good any damage caused, either directly or indirectly, by his workmen. He shall be responsible for safe handling of all electrical equipment and shall replace, without charge, all items damaged prior to acceptance by the Owner.

1.18 FOUNDATIONS

A. Provide bases and foundations for all equipment specified or shown, unless specifically noted to the contrary. Foundations are generally to be built in compliance with the equipment manufacturer's shop drawings which have been approved by the Architect, or as directed by the Architect. Vibration or noise created in any part of the building by the operation of any equipment furnished or installed under this portion of the work will be objectionable. Take all precautions against same by isolating the various items of equipment from the building's structure, and by such other means as may be necessary to eliminate all excessive vibration and objectionable noise produced by any equipment installed; install all foundations, supports, etc., for raceway system and equipment with this end in view.

1.19 EXCAVATION AND BACKFILLING

A. The Contractor shall do all necessary excavating and backfilling for the installation of his work. Trenches for underground conduits shall be excavated to required depths with bell holes provided as necessary to insure uniform bearing. Care shall be taken not to excavate below depth, and any excavation below depth shall be refilled with sand or gravel firmly compacted. Where rock or hard objects are encountered, they shall be excavated to a grade six inches (6") below the lowermost part of the conduit and refilled to grade as specified. After the conduit has been installed and approved, the trenches shall be backfilled to grade with approved materials, well tamped or puddled compactly in place. Where streets, sidewalks, etc., are disturbed, cut, or damaged by this work, the expense of repairing same in a manner approved by the Architect shall be a part of this contract.

B. The Contractor shall bear sole responsibility for design and execution of acceptable trenching and shoring procedures, in accordance with State of Texas Regulations. On trench excavations in excess of five feet in depth, contractor shall pay a qualified engineer to prepare detailed plans and specifications directing

Contractor in the safe execution of trenching and shoring. It is understood that trench safety systems constitute a means and method of construction for which the Architect, Engineer, and Owner are not responsible. Accordingly, such documents when prepared, shall be separately issued by Contractor's Consultant, independent or project Contract Documents.

1.20 SCHEDULE OF WORK

A. The work under the various sections must be expedited and close coordination will be required in execution of the work. The various Contractors shall perform their work at such times as directed so as to insure meeting scheduled completion dates, and to avoid delaying any other Contractor. The Architect will set up completion dates, schedule the times of work in the various areas involved, etc. This Contractor shall cooperate in establishing these times and locations and shall process his work so as to insure the proper execution of it.

1.21 CONTINUATION OF SERVICES

A. The Contractor shall realize that the existing building must continue in operation during the construction period, except as the Architect and the Owner may direct otherwise.

B. Under no conditions shall any work be done in the present building that would interfere with its natural use during the normal hours of occupancy, unless special permission is granted by the Owner. This is particularly applicable where new connections are to be made to present services or items of equipment in the building or where present equipment items in the building are to be relocated or modified in any way.

C. Existing utility systems shall continue to function with a minimum of interruptions in service. This Contractor shall install any temporary lines, connections, etc., required to place and maintain the electrical systems in operation unless otherwise directed by the Architect.

D. Arrange for and provide temporary electric and telephone services to the building where new construction conflicts with existing utility locations.

1.22 COMMISSIONING OF EQUIPMENT AND SYSTEMS

A. The Contractor shall provide qualified personnel, as requested by the Owner and Architect, to assist in all on-site testing and commissioning of all equipment.

1.23 CLEANING UP

A. The Contractor shall be responsible for cleaning up his work as specified in the General Requirements of these Specifications.

1.24 FINAL OBSERVATION

A. Schedule: Upon completion of the Contract, there shall be a final observation of the completed installation. Prior to this observation, all work under this Division shall have been completed, tested, and balanced and adjusted in final operating condition and the test report shall have been submitted to and approved by the Owner.

B. Qualified personnel representing the Contractor must be present during final observation to demonstrate the systems and prove the performance of the equipment.

1.25 CERTIFICATIONS

A. Before receiving final payment, the Contractor shall certify that all equipment furnished and all work done is in compliance with all applicable codes mentioned in these Specifications.

B. Furnish, at the completion of the job, a final Inspection Certificate from the local inspecting authority.

1.26 GUARANTEE

A. The guarantee provision of this specification requires prompt replacement of all defective workmanship and materials occurring within one year of final job acceptance. This includes all work required to remove and replace the defective item and to make all necessary adjustments to restore the entire installation to its original specified operating condition and finish at the time of acceptance. The Contractor shall also guarantee that the performance of all equipment furnished and/or installed under this Division of the specifications shall be at least equal to the performance as called for in the specifications and as stated in the equipment submittals. Should there be indication that the equipment and installation is not producing the intended conditions, the Contractor shall make further tests as the Engineer may direct to demonstrate that the equipment installed meets the specifications. If there is indication that the equipment does not meet the specifications, the Contractor shall, at his expense, institute a program to demonstrate the adequacy of the installation. This program shall include all necessary testing and testing

equipment. Should the Contractor not have the equipment or technical skill to perform the tests, it shall be his responsibility to provide recognized experts to perform the tests and shall provide certified laboratory tests, certified factory reports and work sheets, or other certified data to support results of any tests required.

B. Refer to Division 1 requirements.

PART 2 - PRODUCTS

NOT USED

PART 3 - INSTALLATION

3.1 DEVICE MOUNTING REQUIREMENTS

A. Mounting heights listed in Drawings shall be defined as measured from the centerline of the device or outlet box to finished floor elevation. Unless specifically noted otherwise on the Drawings. Device heights shall be in accordance with the Texas Accessibility Standards or the Americans with Disabilities Act.

B. Where devices are grouped together, they shall be mounted at the same height.

C. Coordinate all mounting dimensions with Owner's requirements and coordinate with architectural elevations and details.

3.2 HOUSEKEEPING PADS

A. Provide 4 inch thick concrete housekeeping pad with 6 x 6 wire mesh and same cure strength as adjacent floor for all floor-mounted electrical equipment unless otherwise indicated on the Drawings. Provide dowel connections to floor if pad is not part of continuous floor pour.

1. Provide inserts for anchor bolts as required for each floor-mounted piece of electrical equipment.
2. Provide 3/4 inch chamfered edge at all exposed edges.

B. Minimum pad dimensions shall be 6 inches greater than dimensions, including all protrusions, of equipment to be installed.

1. Free-standing equipment: Center equipment on housekeeping pad.
2. Equipment anchored to wall: Center equipment side-to-side on housekeeping pad and reduce pad front-to-back dimension by 3 inches.

END OF SECTION 260000

SECTION 260501 - ELECTRICAL DEMOLITION

PART 1 - GENERAL

1.1 REFERENCED DOCUMENTS
- A. Comply with Division 1- General Requirements and related documents.
- B. All sections of this Specification.

1.2 DESCRIPTION
- A. Contractor shall remove several items of materials and equipment under this section of the specifications. Equipment and materials to be removed shall be as indicated and noted on the Drawings and as required to facilitate the new installations.
- B. Provide labor, materials, equipment, tools and services as required to complete the demolition work indicated.
- C. Refer to Division 1 for "Schedule of Work".

1.3 DISRUPTION OF EXISTING FUNCTIONS
- A. Under no conditions shall any work be done in the present building that would interfere with its natural or intended use unless special permission is granted by the Owner.
- B. Disruptions: Maintain existing lighting, power, telephone, and other systems, and maintain existing functions in service, except for scheduled disruptions as allowed in Division 01, "General Conditions".
- C. Provide all temporary connections as necessary to facilitate the phasing of construction.

1.4 SALVAGE, DEMOLITION, AND RELOCATION
- A. It shall be the responsibility of the Contractor to remove and store those items of existing equipment as indicated on the Drawings to be removed. All items of equipment or fixtures removed shall be protected from damage insofar as is practical.
- B. These items shall be stored on site for a minimum of two (2) weeks unless indicated otherwise by the Owner's representative to allow for inspection by the Owner. Deliver, all items tagged to be retained by the Owner to a designated storage location on site or to the Owner's designated Service Center or Warehouse. All items not retained by the Owner shall be removed from the site by the Contractor at no additional cost to the Owner.
- C. The attendant conduit, hangers, foundations, etc., of those items of existing equipment to be removed, shall also be removed in their entirety. No hangers, etc., shall be abandoned in place.
- D. Relocations:
  1. Repair and restore to good functional condition materials and items scheduled for relocation and/or reuse and which are damaged during dismantling or reassembly operations.
  2. New materials and items of like design and quality may be substituted for materials and items indicated to be relocated, in lieu of relocation, upon approval of shop drawings, product data and samples.
  3. Remove carefully, in reverse to original assembly or placement, items which are to be relocated.
  4. Protect items until relocation is complete.
  5. Clean and repair and provide new materials, fittings, and appurtenances required to complete the relocation and to restore to good operative order.
  6. Perform the relocation work in accordance with pertinent sections of the specifications, utilizing skilled workers.
  7. Refer to Drawings for specific requirements of temporary services and relocated equipment and fixtures.
  8. Coordinate with the General Contractor repairs required to bring finishes back to their original conditions after demolition and or installation of new equipment.

1.5 CLEAN UP
- A. Remove all debris, rubbish, and materials resulting from cutting, demolition, or patching operations from the work area on a daily basis.
- B. Transport materials and legally dispose of off site.

PART 2 - PRODUCTS

2.1 GENERAL

A. Provide materials and equipment for patching and extending work as specified in individual sections or as indicated on the Drawings.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Field Conditions: Demolition Drawings are based on non-invasive field observations and existing record documents. Report discrepancies in location, dimensions or quantity to Owner and Architect prior to disturbing existing installation.
B. Abandoned Wiring: Verify that abandoned wiring and equipment serve only facilities scheduled for demolition.
C. Existing Conditions: Commencing demolition means Contractor accepts existing conditions.

3.2 PREPARATION

A. Demolition: Disconnect electrical systems in walls, floors, ceilings and equipment scheduled for removal.
B. Project Coordination: Coordinate utility service outages with utility companies and schedule work with Facility management and Owner.
C. Temporary Wiring: Provide temporary wiring and connections as necessary to maintain existing systems in service during construction.
D. Schedule installation of temporary wiring and connections to eliminate hazard to installing personnel.
    1. When work must be performed on energized circuits or equipment, use qualified personnel experienced in such operations.
    2. Submit "hot work" policy information to Architect for review prior to performing work on any energized circuits.
E. Electrical Service: Maintain existing system in operation until new system is complete and ready for service. Disable system only to make switchovers and connections. Obtain permission, in writing, from Owner prior to partially or completely disabling system. Minimize outage duration. Make temporary connections as necessary to maintain service to areas unaffected by the scope of Work.
F. Telephone Service: Maintain existing system in operation until new system is complete and has been accepted. Disable system only to make switchovers and connections. Obtain permission, in writing, from Owner, and notify the utility company, prior to partially or completely disabling system. Minimize outage duration. Make temporary connections as necessary to maintain service to areas unaffected by the scope of Work.
G. Special Systems: Maintain existing systems in operation until new systems are complete and have been accepted. Disable systems only to make switchovers and connections. Obtain permission, in writing, from Owner prior to partially or completely disabling systems. Minimize outage duration. Make temporary connections as necessary to maintain service to areas unaffected by the scope of Work.
    1. The following systems will be affected by the scope of Work:
        a. Fire Alarm System
        b. Public Address System
        c. Security System
        d. Data System

3.3 DEMOLITION AND EXTENSION OF EXISTING WORK

A. General: Demolish and extend existing work as indicated or described in the Drawings and Specifications.
    1. Lighting fixtures and electrical distribution equipment shall be salvaged for possible re-installation as directed by the Owner and Architect.
B. Wiring: Remove abandoned wiring and cables to source of supply or termination.
C. Raceways:
    1. Remove exposed abandoned conduits and raceways, including abandoned conduits and raceways above accessible ceilings.
    2. Conduits and raceways concealed in existing construction to remain shall be abandoned in place. Cut conduits and raceways such that finished surfaces can be patched smooth.

D. Wiring Devices: Remove abandoned wiring devices. Provide blank device plate for outlet box not being removed.
E. Electrical Distribution Equipment: Disconnect and remove abandoned panelboards and electrical distribution equipment.
F. Lighting Fixtures: Disconnect and remove abandoned lighting fixtures, including brackets stems, hangers and other accessories not indicated to be re-used.
G. Existing Installations to Remain: Maintain access to existing electrical installations which remain active.
H. Modify installation or provide access panel as required.
I. Extension of existing circuits: Extend existing installations as required to maintain service to items to remain using materials and methods, as specified that are compatible with original installation.
J. Adjacent Construction: Repair adjacent construction and finishes damaged during demolition and extension work.
K. Dispose of hazardous materials, such as fluorescent and H.I.D. lamps and PCB's in lamp ballasts, in accordance with all Local, State and Federal ordinances and regulations.

3.4 SALVAGED MATERIALS

A. Salvage existing materials for re-installation as directed by Owner. Coordinate locations for storage of salvaged materials with Owner.

3.5 CLEANING AND REPAIR

A. Existing Materials: Clean and repair existing materials and equipment which remain or are to be re-used.
B. Existing Panel boards: Clean exposed surfaces and check tightness of all electrical connections. Replace damaged circuit breakers with units of compatible construction and provide closure plates for vacant positions.
C. Existing Lighting Fixtures: Where existing lighting fixtures are indicated to remain, clean reflector and lens and replace lamps.
    1. Use mild detergent to clean all interior and exterior surfaces; rinse with clean water and wipe dry; allow to dry thoroughly prior to re-installation.
    2. Replace lamps and broken electrical components. Replace cracked or broken lenses and louvers with new identical materials.
    3. Ballasts: Replace ballasts in all fluorescent lighting fixtures to remain or to be re-used with new ballasts as specified.

END OF SECTION 260501

SECTION 260519 - LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 REFERENCED DOCUMENTS
- A. Comply with Division 1 - General Requirements and related documents.
- B. Comply with all other Division 26 sections as applicable.
- C. Refer to other Divisions for coordination of work with other portions of work.

1.2 DESCRIPTION
- A. Provide systems of wires and cables for electric power, signaling and control.
- B. Related work specified in other sections
  1. 26 00 00 - Electrical
  2. 26 05 20 - Cable Connections
  3. 26 05 23 - Control Voltage Electrical Power Cables
  4. 26 05 32 - Raceways
  5. 26 05 33 - Boxes for Electrical Systems

1.3 QUALITY ASSURANCE
- A. The equipment supplied and installed shall meet the requirements of the National Electrical Code and all applicable local codes and ordinances.
- B. All equipment supplied shall be Underwriter's Laboratories Inc. listed and so labeled.

1.4 REFERENCED STANDARDS

A.	ICEA 5-61-402	Thermoplastic Insulated Wire and Cable
B.	ICEA 5-66-524	Cross Linked Thermosetting Polyethylene Insulated Wires and Cables
C.	ICEA 5-68-516	Ethylene Propylene Rubber Insulated Wire and Cable
D.	ICEA 5-19-81	Rubber Insulated Wire and Cable
E.	ANSI 1581	Standard of Electrical Wires, Cables, and Flexible Cords.
F.	UL 83	Thermoplastic Insulated Wires and Cables
G.	UL 1569	Metal Clad Cables
H.	ASTM B3	Standard Specification for Soft or annealed Copper Wire
I.	ASTM B8	Standard Specification for Concentric Lay Standard Copper Conductors

1.5 SUBMITTALS
- A. Where products are of a manufacturer other than listed as acceptable manufacturers, submit manufacturer's product literature completely describing conductors and cable assembles and evidence of U.L. Listing.

1.6 DELIVERY, STORAGE AND HANDLING
- A. Deliver conductors and cable assemblies to the project in the manufacturer's standard reels or boxes marked with conductor material, insulation type, conductor size and U.L. Label.
- B. Store conductors and cable assemblies in a clean, dry location to prevent damage from moisture, dust, personnel and equipment.
- C. Handle conductors and cables in a manner to prevent damage to conductor, insulation, jackets, and identifying markings.

1.7 MANUFACTURERS
- A. The material shall be the product of a manufacturer with a minimum of ten years' experience in the manufacture of similar material.
- B. Acceptable Manufacturers:
  1. AFC Cable Systems.
  2. Cerro Wire, Inc.
  3. General Cable
  4. Southwire Company
  5. Okonite Company

1.8 WARRANTY
A. The material shall be warranted to be free from defect and in proper working order for one year following the date of final acceptance.

PART 2 - PRODUCTS

2.1 CONDUCTORS
A. Copper Conductors
1. Conductors shall be copper unless specifically noted otherwise on the Drawings.
2. Copper conductors shall be soft drawn annealed copper, minimum conductivity 98% of pure copper per ASTM ASTM-B3.
3. Sizes No. 10 AWG and smaller shall be solid conductor, single strand.
4. Sizes No. 8 AWG and larger shall be concentric lay Class B stranding.
5. Shall conform to the Conductor Properties proscribed in the NEC.

B. Insulation
1. Type THW: 600 volt moisture and heat resistant thermoplastic rated 75 Deg.C. in wet or dry loactions.
2. Type THW-2: 600 volt moisture and heat resistant thermoplastic rated 90 Deg.C. in wet or dry location.
3. Type THWN: 600 volt moisture and heat resistant thermoplastic rated 75 Deg.C. in wet or dry.
4. Type THWN-2: 600 volt moisture and heat resistant thermoplastic rated 90 Deg.C. in wet or dry locations.
5. Type XHHW: 600 volt moisture resistant cross linked polyethylene rated 75 Deg.C. in wet or dry locations.
6. Type XHHW-2: 600 volt moisture resistant cross linked polyethylene rated 90 Deg.C. in wet or dry locations.

PART 3 - EXECUTION

3.1 USES PERMITTED
A. Unless specifically noted on the drawings, permitted by the NEC and local codes and ordinances, wiring shall be Types THW-2, THWN-2 or XHHW-2 installed in metal raceways as specified in 26 05 32, Raceways.

3.2 COLOR CODING
A. Where available, insulation shall be color coded by factory pigmentation for each phase and each voltage system employed on the project.
B. 120/208 and 120/240 volt systems:
1. Phase A - Black
2. Phase B - Red
3. Phase C - Blue
4. Neutral - White
5. Ground - Green

C. 277/480 volt systems:
1. Phase A - Brown
2. Phase B - Orange
3. Phase C - Yellow
4. Neutral - Gray
5. Ground - Green

D. Switch legs, travelers and special systems shall be continuous color scheme throughout the project as selected by the Contractor.
E. Where factory pigmentation is not available, code conductors with 1-1/2" colored tape band at each terminal and at each pull or junction box.

3.3 GROUNDING CONDUCTORS
A. All branch circuits and feeders shall include an insulated equipment grounding conductor. Raceway systems shall not be used as the sole equipment grounding path without specific approval.

3.4 MULTIWIRE BRANCH CIRCUITS

A. Multiwire branch circuits shall not be permitted.

3.5 MINIMUM SIZE

A. Conductors shall be of the minimum size shown on the drawings, lighting and power branch circuit wiring shall be minimum No.12 AWG.
B. Feeder circuit wiring shall be sized to limit the effect of voltage drop, based on the actual installed conductor length to limit voltage drop to 2% of nominal system voltage.
C. Branch circuit wiring shall be size to limit the effect of voltage drop, based on the actual installed conductor length, to limit voltage drop to 3% or less of nominal system voltage.
D. Circuits shall be grouped in raceways and grouped together when passing through enclosures to have phases and neutral grouped together to minimize circuit reactance.

3.6 INSTALLATION

A. Examine the system in which the conductors are to be installed for defects in equipment and installation which may cause damage to the conductors, insulation, or jackets.
B. Pull a swab or mandrel through conduit systems immediately before pulling conductors to insure a full bore, clean raceway system.
C. Do not exceed the conductor manufacturer’s maximum pulling force or minimum bending radius.
D. Use pulling lubricant compound where necessary and recommended by the manufacturer.
E. Conductors or cables which have insulation or jackets damaged in the pulling process shall be removed and replace with new material.

3.7 FIELD QUALITY CONTROL

A. Test all wiring insulation with a megohm meter prior to energization:
   1. Phase to ground
   2. Phase to phase
   3. Phase to neutral
   4. Neutral to ground
B. Perform test in accordance with manufacturer’s recommendation and to meet manufacturer’s published minimum insulation values.
C. Correct all defects revealed by such tests including replacing material with new as required.

END OF SECTION 260519

SECTION 260520 - CABLE CONNECTIONS

PART 1 - GENERAL

1.1 REFERENCED DOCUMENTS
- A. Comply with Division 1- General Requirements and related documents.
- B. All sections of this Specification.

1.2 DESCRIPTION
- A. Work Included: Provide wire connections and devices to be readily identifiable, mechanically and electrically secure wiring system.
- B. Related work specified in other sections:
  1. 26 05 19 Low Voltage Electrical Power Conductors and Cables

1.3 QUALITY ASSURANCE
- A. The equipment supplied and installed shall meet the requirements of the National Electrical Code and all applicable local codes and ordinances.
- B. All equipment supplied shall be Underwriter's Laboratories Inc. listed and so labeled.

1.4 SUBMITTALS
- A. Samples: Provide samples upon specific request.
- B. Product Data: If materials are by manufacturers other than those specified, submit product data giving complete description for sizes employed, material types, and electrical ratings.

1.5 DELIVERY, STORAGE AND HANDLING
- A. Connections shall be made in atmospheres that are free from dirt, moisture, and elements which may be damaging.

1.6 MANUFACTURERS
- A. The materials shall be the product of a manufacturer with a minimum ten years' experience in the manufacture of similar materials.
- B. Acceptable manufacturers are listed with the products.

PART 2 - PRODUCTS

2.1 MATERIALS
- A. Spring Connectors: Ideal "Wingnut" 3M-Scotch, Buchanan, and Thomas and Betts.
- B. Terminal Connectors: O-Z/Gedney, Burndy, and Thomas and Betts.\
- C. Splice Connectors: O-Z/Gedney or Burndy with insulating cover.
- D. "T" and Parallel Connectors: O-Z/Gedney or Burndy with insulating cover.
- E. Vinyl Plastic Tape: 3M-Scotch #33 or #88, Plymouth and Okonite.
- F. Rubber Tape: Okonite, 3M-Scotch and Plymouth.
- G. Colored Tape: 3M-Scotch, Plymouth.
- H. Wire Ties: Thomas and Betts "Ty-Rap", Ideal and Panduit.
- I. Tie Mounts, Plates, Anchors: Thomas and Betts, Ideal, and Panduit.
- J. Wire Tags: Self-laminating, cloth, wrap-on type by Thomas and Betts, Ideal, and Brady.
- K. Terminal Strips: Nylon; 600 volt; modular plug-on construction; tubular compression slip-in terminals properly sized; complete with mounting track, end clips, and anchors by Allen-Bradley, Square D, and Buchanan.
- L. Cable and Cord Fittings: Crouse-Hinds with wire mesh grip or Appleton.

PART 3 - EXECUTION

3.1 INSPECTION
- A. Examine wires to be joined, tapped, spliced, terminated, and their connecting devices for defects which may affect the mechanical and electrical integrity of the connection.
- B. Do not proceed until defects are corrected.

3.2 PREPARATION
A. Remove proper amount of insulation necessary for connection, clean conductors.

3.3 INSTALLATION
A. No. 10 Wire and Smaller: Connect with spring connectors, terminate at terminal strips.
B. No. 8 Wire and Larger: Connect and terminate with above specified tape half-lapped to produce a dielectric value equal to wire insulation.
C. Train, hold, clamp, and tag wiring in cabinets, pull boxes, panels, and junction boxes with above specified devices.
D. Splices in feeders and mains may only be made where designated on the drawings and where prior approval is obtained from the Architect.
E. Install terminal strips in enclosures without means for termination of wiring.
F. Install cable and cord grips on all cables and cords, entering enclosures. Use wire mesh grips where necessary for strain relief.

3.4 FIELD QUALITY CONTROL
A. Test: Connections shall be resistance tested with megohm meter as specified for wire.

3.5 ADJUSTMENTS
A. Assure that wire connections made by others in equipment furnished by others are mechanically and electrically sound prior to energization.

END OF SECTION 260520

SECTION 260523 - CONTROL -VOLTAGE ELECTRICAL POWER CABLES

PART 1 - GENERAL

1.1 REFERENCED DOCUMENTS
- A. Comply with Division 1 - General Requirements and related documents.
- B. Comply with all other Division 26 sections as applicable.
- C. Refer to other Divisions for coordination of work with other portions of work.

1.2 DESCRIPTION
- A. Work Included: Provide power wiring, raceways, and connections for items of equipment and control systems.
- B. All wiring for every system shall be installed in metal conduit. Refer to Section 26 05 32 Raceways for conduit types and materials for specific locations and applications.
- C. Related work specified in other sections:
  1. 23 09 00 Instrumentation and Controls for HVAC
  2. 26 00 00 Electrical
  3. 26 05 19 Low Voltage Electrical Power Conductors and Cables
  4. 26 05 32 Raceways
  5. 28 31 00 Fire Alarm System

1.3 QUALITY ASSURANCE
- A. The equipment supplied and installed shall meet the requirements of the National Electrical Code and all applicable local codes and ordinances.
- B. All equipment supplied shall be Underwriter’s Laboratories Inc. listed and so labeled.

1.4 WARRANTY
- A. The material shall be warranted to be free from defect and in proper working order for one year following the date of final acceptance.

1.5 COORDINATION
- A. For equipment furnished under other Divisions, obtain equipment supply and wiring requirements from the Contractor supplying the equipment.
- B. For equipment furnished under Division 23, obtain complete temperature control system drawings, and power supply and interlock wiring requirements from the Contractor furnishing the systems.

PART 2 - PRODUCTS

2.1 MATERIALS
- A. Refer to related work specified in other sections for material requirements.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS
- A. Work Included: The Electrical Contractor shall provide:
  1. Branch circuit and motor feeder circuit conductors, raceway, connections, and overcurrent protection for each motor or item of equipment furnished by the Owner or other Contractors.
  2. Motor Control Centers, where indicated on the drawings.
  3. Installation of motor controllers furnished by the Owner or other Contractors, along with branch circuit and motor feeder circuit conductors, raceway, and connections in accordance with the manufacturer's approved wiring diagrams.
  4. Disconnect switches and combination disconnect switches and motor controllers, where indicated on the drawings or required by codes, except as provided as an integral part of manufactured equipment.
  5. Power supply conductors, raceway, connections, and overcurrent protection for input power to HVAC Temperature Controls, HVAC Automation, and HVAC Energy Management Systems in accordance with approved rough-in and connection diagrams furnished by the system suppliers.

6. The above represents an outline of the work for the purpose of describing one division of the work which is acceptable to insure that all work is contained within the General Contract. Nothing herein shall be construed to confine the General Contractor from assigning the work to any member or group of contractors deemed best suited to executing the work to effect the contract. Refer to specific bidding instructions of the General Contractor for the actual division of the work. The General Contractor is fully responsible for the installation of complete, operating systems in accordance with the functional intent of the specifications.

B. Work Not Included: The Mechanical Contractor shall provide:
1. Motors and equipment, erected in place and ready for final connection of power supply wiring, along with manufacturer's approved wiring diagrams.
2. Motor controllers, in suitable enclosures and of the type and size in accordance with the manufacturer's recommendations and NEMA requirements, along with properly sized overload elements and approved wiring diagrams.
3. Disconnecting switches or devices which are normally provided as a part of manufactured equipment.
4. Rough-in and connection diagrams for input power supply and connections for the HVAC Temperature Control, HVAC Automation, and HVAC Energy Management Systems.
5. Conductors, raceways, devices, and connections for low voltage control, line voltage control, and signaling systems for the HVAC Temperature Control, HVAC Automation, and HVAC Energy Management Systems in accordance with the provisions of Division 26, and approved systems shop drawings to provide complete operating systems in accordance with the functional requirements of the specifications.
6. The above represents an outline of the work for the purpose of describing one division of the work which is acceptable to insure that all work is contained within the General Contract. Nothing herein shall be construed to confine the General Contractor from assigning the work to any member or group of contractors deemed best suited to executing the work to effect the contract. Refer the specific bidding instructions of the General Contractor for the actual division of work. The General Contractor is fully responsible for the installation of complete, operating systems in accordance with the functional intent of the specifications.

C. Completely connect all electrical consuming items of mechanical equipment, kitchen equipment, shop equipment, etc., provided by the Owner or other trades. Outlets of various types have been indicated at equipment locations, but no indications or exact location or scope of work is indicated on the accompanying drawings.

D. Refer to details and information furnished by the Owner and various equipment suppliers for equipment wiring requirements and to the Plumbing and Heating, Ventilating and Air Conditioning Specifications for the scope of the connections to equipment provided under those sections, and determine from the various trades by actual measurements at the site, and by direction from the Owner and the Architect the exact locations of all items. Roughing-in drawings, wiring diagrams, etc., required for the proper installation of the electrical work will be furnished by applicable trades furnishing equipment. Request the drawings and information required in writing to the equipment supplier in ample time to permit preparation of the drawings and to permit proper installation of all wiring. Obtain from those furnishing equipment the size and type of service required for each motor or piece of electrical equipment and verify that the service to be installed is compatible.

3.2 INSTALLATION

A. All conduits shall terminate in conduit boxes on motors where possible. When motors are direct-connected, the conduit may continue rigid into the box, but when motors drive through belts and have sliding bases, a piece of flexible liquid tight conduit not less than 12 inches long shall be connected between the rigid conduit and the motor terminal. Where motors are not provided with conduit boxes, terminate the conduit in a condulet at the motor.

B. Where disconnecting switches are not provided integral with the control equipment for motors, provide and install a disconnect switch in the circuit to each motor where indicated and required by code. Switches shall be installed as close as possible to the motor or controls they serve and they shall be within sight of the motor or control circuit.

C. Be responsible for installing all conductors and protective devices serving equipment motors furnished by others in strict conformance with all applicable codes, regardless of any discrepancy in plans and/or mechanical equipment sizes variations, unless covered by directives issued by the Architect.

END OF SECTION 260523

SECTION 260526 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 REFERENCED DOCUMENTS
- A. Comply with Division 1 - General Requirements and related documents.
- B. Comply with all other Division 26 sections as applicable.
- C. Refer to other Divisions for coordination of work with other portions of work.

1.2 DESCRIPTION
- A. Provide a grounding electrode for the facility and a ground electrode conductor system to connect to the electric service main equipment.
- B. Provide supplementary grounding electrodes as specified herein.
  1. Provide connections from the grounding electrode system to:
  2. The electric power system grounded circuit conductor (neutral).
  3. The electric power system non-current carrying enclosures and equipment ground conductors (equipment ground).
- C. Provide connections from the grounding electrode system to auxiliary ground conductors for data and voice communication systems (isolated ground).

1.3 QUALITY ASSURANCE
- A. The equipment supplied and installed shall meet the requirements of the National Electrical Code and all applicable local codes and ordinances.
- B. All equipment supplied shall be Underwriter’s Laboratories Inc. listed and so labeled.

1.4 REFERENCED STANDARDS
- A. National Electrical Code, NFPA 70.
- B. EIA/TIA Standard 607
- C. IEEE - Standard 142 - Recommended Practice for Grounding of Industrial and Commercial Power Systems.
- D. IEEE Standard 81 - Guide for Measuring Earth Resistivity.

1.5 SUBMITTALS
- A. Where products are of a manufacturer other than listed as acceptable manufacturers, submit manufacturer’s product literature completely describing conductors and cable assembles and evidence of U.L. Listing.

1.6 DELIVERY, STORAGE AND HANDLING
- A. Deliver conductors and cable assemblies to the project in the manufacturer’s standard reels or boxes marked with conductor material, insulation type, conductor size and U.L. Label.
- B. Store conductors and cable assemblies in a clean, dry location to prevent damage from moisture, dust, personnel and equipment.
- C. Handle conductors and cables in a manner to prevent damage to conductor, insulation, jackets, and identifying markings.

1.7 MANUFACTURERS
- A. The materials shall be the products of a manufacturer with a minimum of ten years experience in the manufacture of similar material.
- B. Acceptable manufacturers shall be as listed with the material descriptions.

1.8 WARRANTY
- A. The material shall be warranted to be free from defect and in proper working order for a period of one year following the date of final acceptance.

PART 2 - PRODUCTS

2.1 GROUND RODS

A. Standard ground rods shall be 3/4 inch diameter, 10 foot length, copper clad steel, equal to Thompson Company.

2.2 CONDUCTORS

A. Conductors buried in contact with the earth shall be bare copper, solid for sizes up to No. 6 AWG, concentric lay strand for sizes No. 8 AWG and larger.
B. Conductors for installation below raised access floor systems shall be bare copper, solid for sizes up to No. 6 AWG, concentric lay strand for sizes No. 8 AWG and larger.
C. All other grounding conductors shall be copper conductor, Type THWN 600 volt 90 Deg.C. thermoplastic insulation, green color where available.

2.3 CONNECTIONS

A. All connections made below grade, in inaccessible locations, and all connections and splices in the grounding electrode conductor system shall be made by exothermic weld process equal to Cadweld. Provide polyethylene inspection well covers and lids equal to Erico #T416B.
B. All other connections shall be hydraulically crimped irreversible connectors equal to Thomas and Betts 54000 Series.
C. Connections to raised access floor system pedestals shall be Thomas and Betts 38268 malleable iron mechanical clamp.
D. Connections to cable trays shall be Thomas and Betts 10105 malleable iron mechanical clamp.
E. Connections to domestic cold water piping shall be Thomas and Betts GUV Series copper alloy U-bolt and mechanical clamp.
F. Connections to building structural steel shall be exothermic weld equal to Cadweld.
G. Connections which require flexibility for movement, expansion, or vibration shall be made with flexible flat conductor, multiple strands of 30 gauge copper conductors or equivalent circular mil area to the primary ground conductor. Protect ends with copper bolt hole end pieces.

2.4 CONDUITS

A. Provide malleable iron conduit grounding bushings where:
    1. Metallic raceways terminate at metal housings without mechanical and electrical connection to housing.
    2. At each end of metallic conductors for grounding conductors where conduits are electrically non-continuous.
    3. At the ends of service entrance conduit.

PART 3 - EXECUTION

3.1 GROUNDING ELECTRODE

A. Provide one, or more, driven solid ground rods to serve as the grounding electrode for the facility. Additional rods shall be driven at not less than ten foot separation and connected together until the specified resistance testing criteria can be met.
B. Grounding electrode shall be tested and certified to provide five ohms or less Earth resistivity.

3.2 SUPPLEMENTARY GROUND ELECTRODES

A. The following items, where they exist on the project, shall be bonded together with the main grounding electrode described above:
    1. Domestic cold water service entrance.
    2. Building structural steel frame.
    3. Minimum twenty feet of bare copper conductor, minimum No. 4 AWG, encased in a concrete footing along the exterior perimeter edge of the building.
    4. Lightning Protection System.

B. Ground Electrode Bus:
    1. Provide a single copper bus bar located adjacent to the service main disconnecting means as the common connection point for the main ground electrode and each supplementary ground electrode.
    2. Mount ground bus on suitable wall insulator stand-offs.

3. All grounding electrode conductors shall be permanently connected to this bus with exothermic weld connections.
4. All grounding electrode conductors shall be the same size and shall be not less than the size required by NEC or the size shown on the Drawings.
5. Connect the grounding electrode system to the main ground connection in the U.L. Listed Service Disconnecting means in the main switch or switchboard.

3.3 GROUNDED CIRCUIT CONDUCTOR

A. Bond the grounding electrode system to the grounded circuit conductor (neutral conductor) at one location only, on the supply side of the service disconnecting means, with a neutral disconnecting link as required by the NEC.

3.4 EQUIPMENT GROUNDING CONDUCTORS

A. Bond the non-current carrying parts of the electric power system to the grounding electrode conductor at the service disconnecting means. From this point forward, all non-current carrying parts of the electric power system shall be electrically connected and continuous by means of:
   1. Electrically continuous equipment enclosures, metallic boxes and metallic raceways connected with U.L. Listed connectors and couplings.
   2. Equipment grounding conductors supplementary to metallic raceway systems where shown on the Drawings.
   3. Equipment grounding conductors in non-metallic raceway systems and in flexible metal conduit systems.
   4. Where permitted under other sections of the Specification, the insulated grounding conductor provided in Type MC cable will be considered an acceptable equipment grounding conductor.
   5. Uninsulated grounding strips and spiral wrap provided in Type AC cable is not an acceptable grounding conductor.

3.5 SEPARATELY DERIVED SYSTEMS

A. Separately derived systems include:
   1. Secondaries of dry type power transformer.
   2. Outputs of uninterruptible power systems.
   3. Outputs of motor generator sets or frequency convertors.

B. These systems shall be grounded in accordance with the NEC, similar to the service disconnecting means discussed above, and as shown on the Drawings.

C. The grounding electrode conductor from a separately derived system shall be connected to the main ground electrode bus described above, or to one of the secondary ground electrode busses, if present.

D. A second grounding electrode conductor shall connect to building structural steel frame at the nearest available location, if available.

3.6 TESTING

A. Grounding Electrode:
   1. The earth resistance of the main ground electrode shall be not more than 5 ohms.
   2. Perform a measurement of ground resistance by one of the means described in IEEE Standard 81, Guide for Measuring Earth Resistivity.
   3. Provide written certification of the ground resistance measurements upon request.

B. Grounding Continuity:
   1. Provide continuity tests and checks of equipment grounding and isolated grounding conductor systems to insure electrical continuity.
   2. Provide written certification of continuity checks upon requests.

END OF SECTION 260526

SECTION 260529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 REFERENCED DOCUMENTS
- A. Comply with Division 1- General Requirements and related documents.
- B. All sections of this Specification.

1.2 DESCRIPTION
- A. Work Included: Provide miscellaneous materials for the supporting of electrical material and equipment.
- B. Related work specified in other sections:
  1. 26 00 00 Electrical
  2. 26 05 32 Raceways
  3. 26 27 16 Electrical Cabinets and Enclosures
  4. 26 05 33 Boxes for Electrical Systems

1.3 QUALITY ASSURANCE
- A. The equipment supplied and installed shall meet the requirements of the National Electrical Code and all applicable local codes and ordinances.
- B. All equipment supplied shall be Underwriter's Laboratories Inc. listed and so labeled.

1.4 SUBMITTALS
- A. Product Data: If materials are by manufacturers other than specified, submit product data giving complete description.

1.5 MANUFACTURERS
- A. Listed with Materials.
- B. Acceptable Manufaturers
  1. Kindorf
  2. Unistrut
  3. Caddy

PART 2 - PRODUCTS

2.1 MATERIALS
- A. Continuous Slotted Channel: #12 gauge steel, electrogalvanized, with zinc chromate, bases and dimensions as required for application.
- B. Hanger Rods: Continuous thread, electrogalvanized, with zinc chromate, sizes as required for loads imposed.
- C. Hex Head Cap Screws and Nuts: No. H-113 and No. H-114, respectively.
- D. One-Hole Pipe Straps: Series HS-100, galvanized steel
- E. Single Bolt Channel Pipe Straps: Steel, with machine screws and nut, Series C-105 and Series C-106.
- F. Lay-In Pipe Hanger: Series C-149.
- G. Conduit and Pipe Hanger: Series 6H.
- H. Beam Clamps: Series 500, RC, EC, and PC for applications.
- I. Concrete Inserts, Spot: Series D-256 or No. D-255.
- J. Concrete Inserts, Channel: Series D-980 or Series D-986.
- K. Riser Clamps: Series C-210.
- L. Cable Supports: O-Z/Gedney Type S.

PART 3 - EXECUTION

3.1 INSTALLATION
- A. Carefully lay out and provide concrete inserts.
- B. Securely fasten and support conduits and raceways to the building structure.

C. Suspend horizontal runs of conduit and raceways from the floor and roof construction by rod hangers spaced 10 feet on less on centers for sizes 2-1/2 inches and greater and 9 feet or less on centers for sizes 2 inch and smaller.
D. Fasten single runs of conduit to the structure with one-hole pipe straps and beam clamps or hang on rod hangers.
E. Support multiple runs of conduit and raceways from continuous channel inserts or from trapeze hangers constructed of rod hangers and channels.
F. Fasten single conduits to rod hangers with adjustable lay-in pipe hangers or for 2 inches and smaller conduits with Series 6H pipe hangers.
G. Fasten conduits to channels with pipe channel straps.
H. Support conduits and raceways within 3 feet of each end of each bend, of each termination, and at other intervals to maintain horizontal and vertical alignment without sag and deformation.
I. Do not use cable, strap, and wire hangers as fasteners.
J. Provide riser clamps for conduits at floor lines. Provide wire and cable supports in pull boxes for risers in accordance with NEC Section 300-19 and Table 300-19 (a).
K. Install supports to permit equally distributed expansion and contraction of conduits and raceways with expansion joints. Use guides or saddles and U-bolts and anchors designed for equal effectiveness for both longitudinal and transverse thrusts.
L. Do not support conduits and raceways for equipment connections.
M. Provide special supports with vibration dampers to minimize transmission of vibrations and noises.
N. Provide trapeze hangers for conduits and raceways where routing interferes with ducts
O. Provide hangers, racks, cable cleats and supports for wires and cables in cable chambers and other locations to make a neat and substantial installation.
P. Provide angle iron and channel supports to the floor and structure for panelboards, cabinets, pull and junction boxes. Support independently from entering conduits and raceways. Provide supports as specified for conduits and raceways for outlet boxes and pull boxes 100 cubic inches and smaller.
Q. Provide supports sized for the ultimate loads to be imposed.

3.2 CLEANING
A. Clean surfaces to be painted.

END OF SECTION 260529

SECTION 260532 - RACEWAYS

PART 1 - GENERAL

1.1 REFERENCED DOCUMENTS
- A. Comply with Division 1 - General Requirements and related documents.
- B. Comply with all other Division 26 sections as applicable.
- C. Refer to other Divisions for coordination of work with other portions of work.

1.2 DESCRIPTION
- A. Work Included: Provide a mechanically and electrically complete conduit system.
- B. Related work specified in other sections:
  1. 26 00 00 Electrical
  2. 26 05 19 Low Voltage Electrical Power Conductors and Cables
  3. 26 05 29 Hangers and Supports for Electrical Systems
  4. 26 05 23 Control Voltage Electrical Power Cables

1.3 QUALITY ASSURANCE
- A. The equipment supplied and installed shall meet the requirements of the National Electrical Code and all applicable local codes and ordinances.
- B. All equipment supplied shall be Underwriter's Laboratories Inc. listed and so labeled.

1.4 SUBMITTALS
- A. Samples: Provide samples upon specific request.
- B. Product Data: If materials are by manufacturers other than those specified, submit product data giving complete description for sizes employed, material types, and installation methods.
- C. Certificates:
  1. Labels of Underwriters' Laboratories, Inc. affixed to each item of material.
  2. If materials are by manufacturers other than those specified submit certification that material meets applicable Underwriters' Laboratories, Inc. Standards.
  3. Labels of ETL Verified PVC-001 affixed to each PVC Coated Galvanized Rigid Conduit.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING
- A. Protect conduits and finishes from damage.

1.6 MANUFACTURER
- A. The materials shall be the products of a manufacturer with a minimum of ten years experience in the manufacture of similar equipment.
- B. Acceptable Manufacturers
  1. Metallic Conduits: Allied, and Wheatland.
  2. Nonmetallic Conduits: Cantex, and SEDCO.
  3. PVC Coated Metallic Conduits: Plastibond, Permacote, and Korkap.
  4. Others: As listed with products.

1.7 WARRANTY
- A. The materials shall be warranted to be in proper working condition for a period of one year following the date of final acceptance.

PART 2 - PRODUCTS

2.1 MATERIALS
- A. Rigid Metal Electrical Conduit: Hot-dipped galvanized steel with zinc coated threads and an outer coating of zinc bichromate, complete with one coupling and one end thread protector. Intermediate metal conduit (IMC) is not allowed.
- B. Electrical Metallic Tubing: Welded, electro-galvanized thin wall steel tubing.
  1. Conduit for power wiring shall be natural electro galvanized.
  2. Conduit for other systems shall be color coded in accordance with Section 26 05 23 - Control Voltage Electrical Power Cables.

C. Flexible Metal Electrical Conduit: Hot-dipped galvanized steel strip core with integral copper ground wire on sizes 1-1/4" and smaller.
D. Liquidtight Flexible Metal Electrical Conduit: Hot-dipped galvanized steel strip core with extruded polyvinyl jacket.
E. Rigid Nonmetallic Electrical Conduit: Schedule 40 heavy wall polyvinylchloride, high impact resistant.
F. Elbows and Bends:
   1. All Types: Size 1-1/4 inch and larger shall be factory manufactured.
G. Bushings:
   1. 1-1/4" and Smaller: Same material as the conduit with which they are installed.
   2. 1-1/2" and Larger: Hot-dipped galvanized with thermosetting phenolic insulation, 150 Deg.C.
H. Locknuts:
   1. 1-1/2" and Smaller: Zinc plated heavy stuck st eel, O-Z/Gedney.
   2. 2" and Larger: Cadmium plated malleable iron, O-Z/Gedney.
I. Hubs: Cadmium plated malleable iron, tapered threads, neoprene "O" ring, insulated throat, O-Z/Gedney.
J. E.M.T. Compression Connectors: Gland compression type, zinc plated steel body, cadmium plated, malleable iron nut, insulated throat, O-Z/Gedney.
K. E.M.T. Compression Couplings: Gland compression type, zinc plated steel body, cadmium plated malleable iron nut, O-Z/Gedney.
L. Liquidtight Conduit Connectors: Cadmium plated malleable iron body and nut, cadmium plated steel ferrule, insulated throat, integrally cast external ground lug, O-Z/Gedney.
M. Seals for Watertight Wall and Floor Penetrations: Malleable iron body, oversize sleeve, sealing ring, pressure clamp and rings and sealing grommet, hex head cap screws, O-Z/Gedney.
N. Seals for Penetrations through Existing Walls: Thunderline Corporation Link-Seal watertight sleeves, complete with wall and casing seals.
O. Fire Seals: Galvanized iron pipe sleeves sealed with approved foam type fireproofing.
P. Expansion Fittings: Hot-dipped galvanized malleable iron with bonding jumpers selected for linear or linear with deflection, as required.
Q. Escutcheons: Chrome plated sectional floor and ceiling plates, Crane No. 10.
R. Accessories: Reducers, bushings, washers, etc., shall be cadmium plated malleable iron on the forms and dimensions best suited for the application.
S. Identifying Tape for Underground Conduits: Polyethylene tape, 6 inches wide, with continuous printing along length, Brady Identoline:
   1. For Electric Power Conduits: Yellow with black letters.
   2. For Other Services: Green with black letters.
T. Sleeves: 22 gauge galvanized steel sleeves where conduits pass through walls and floors. Standard galvanized steel pipe where conduits pass through beams, outside walls, or structural members.

PART 3 - EXECUTION

3.1 INSPECTION
A. Examine surfaces to which conduits are to be secured for:
   1. Defects which will adversely affect the execution and quality of work.
   2. Deviations from allowable tolerances for the building material.
B. Do not start work until defects and deviations are corrected.

3.2 INSTALLATION
A. Size conduits as indicated on the drawings and as required by the NEC for the number and sizes of wires to be drawn into conduit. Do not use conduit sized less than 3/4" unless specified otherwise.
B. Conceal conduits from view in all areas except mechanical and electrical equipment rooms and crawl spaces. Should it appear necessary to expose any conduit:
   1. Bring to the attention of the Architect, immediately, and
   2. Rearrange the work to facilitate an approved installation.
C. Install all conduits at elevations and locations to avoid interference with grading of other work, the structure, finished ceilings, walls. Avoid causing cutting of masonry units.
D. To prevent displacement, securely support and hold in place all conduits installed in advance of other work and to be concealed in the building structure.

E. Carefully lay out conduits run within the structure, such as floors, beams, walls, to avoid densities excessive for the construction. Relocate those conduits when excessive densities occur.
F. Ream, remove burrs, and swab inside conduits before conductors are pulled in.
G. Cap or plug conduits with standard manufactured accessories as soon as the conduits have been permanently installed in place.
H. Bends and offsets in 1" and smaller conduits may be done with approved bending devices. Do not install conduits which have had their walls crushed and deformed and their surface finish damaged due to bending.
I. Where space conditions prohibit the use of standard ells, elbows, and conduits, use cast ferrous alloy fittings of such forms and dimensions as best required for the application.
J. Make all conduit joints mechanically tight, electrically continuous, and watertight. Pitch conduits in a manner to avoid creating moisture traps.
K. Install insulated throat threaded hubs on conduits entering enclosures without threaded hubs where exposed to damp or wet locations.
L. Connect and couple E.M.T. with compression type fittings. Do not use indentor and set screw fittings.
M. Install and neatly rack exposed conduits parallel with and perpendicular to the building walls. Do not install exposed diagonal conduit runs.
N. Route and suspend conduits crossing expansion joints to permit expansion, contraction, and deflection utilizing approved fittings to prevent damage to the building, conduits, and supporting devices in accordance with the National Electrical Code.
O. Do not run conduits exposed on the roof unless approval is obtained prior to installation.
P. Do not place conduits in close proximity to equipment, systems, and service lines, such as hot water supply and return lines, which could be detrimental to the conduit and its contents. Maintain a minimum 3" separation, except in crossing, which shall be a minimum 1".
Q. Connect motors, equipment containing motors, equipment mounted on an isolated foundation, and other equipment and devices which are subject to vibration and which require adjustment with flexible metallic conduit from the device to the conduit serving it. Size the flexible conduit length more than 12 diameters, but less than 18 diameters. Rigidly support the points of attachment on each side of the connection.
R. Install escutcheons on all exposed conduits passing through interior floors, walls, or ceilings. Install fire sealing materials on all conduits passing through fire rated partitions. Install wall and floor fire seals on all conduits passing through exterior walls and floors.
S. Conduit sleeves shall be sized to permit insertion of conduit with adequate clearance for movement due to expansion and contraction. Where conduits pass through outside walls, watertight fittings, as specified herein, shall be used.
T. Provide pullstring in each empty conduit. Label pullstring when conduit termination is not obvious.

3.3 USES PERMITTED

A. Rigid Metal Conduit:
   1. Exterior conditions above grade.
   2. Interior wet or damp locations.

B. Schedule 40 PVC:
   1. Below grade exterior to the building.

C. Electrical Metallic Tubing:
   1. All uses above grade interior to the building, except as limited elsewhere in this section.

D. Flexible Metal Conduit:
   1. Final connection to vibrating or adjustable equipment.
   2. Connection to vibrating equipment shall contain one 90 degree bend.

E. Liquid tight Flexible Metal Conduit:
   1. All uses permitted for flexible metal conduit.
      a. In damp or wet locations.
      b. Exterior to the building.

END OF SECTION 260532

SECTION 260533 - BOXES FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 REFERENCE DOCUMENTS
- A. Comply with Division 1 - General Requirements and related documents.
- B. Comply with all of the Division 26 sections as applicable.
- C. Refer to other Divisions for coordination of work with other portions of work.

1.2 DESCRIPTION
- A. Work Included: Provide outlet boxes for the installation of wiring devices, lighting fixtures, and power and control connections.
- B. Related work specified in other section:
  1. Electrical: Section 26 00 00
  2. Wiring Devices: Section 26 27 26
  3. Lighting: Section 26 51 00
  4. Control Voltage Electrical Power Cables: Section 26 05 23

1.3 QUALITY ASSURANCE
- A. The equipment supplied and installed shall meet the requirements of the National Electrical Code and all applicable local codes and ordinances.
- B. All equipment supplied shall be Underwriter's Laboratories Inc. listed and so labeled.

1.4 SUBMITTALS
- A. Samples: Provide samples upon specific request.
- B. Product Data: If materials are by manufacturers other than those specified, submit product data giving complete description for sizes employed, material types, and electrical ratings.

1.5 MANUFACTURERS
- A. Listed with Materials.
  1. Appleton Electric Company
  2. Raco
  3. Steel City
  4. Crouse Hinds
  5. Hubbell
  6. Raceway Components
  7. Walker

PART 2 - PRODUCTS

2.1 MATERIALS
- A. Flush Mounted Outlet Boxes: Standard, stamped galvanized steel with factory conduit knockouts, one piece and welded construction:
  1. Series 4S and 4S0 square boxes with covers.
  2. Series M1, M2, M3 - 250 and Series M1, M2, M3 - 350 masonry boxes with covers.
  3. Series 2G and GC-5075 switch boxes with covers.
  4. Series OCR concrete rings with Series OCP and OCP-3/8 back plates.
  5. Series 40 and 40D octagonal boxes with raised covers.
  6. Series SX expandable bar hangers.
- B. Surface Mounted Outlet Boxes: Cast metal with threaded hubs. Type FS and FD of form suited to the application.
- C. Fire Rated, Flush, Poke-Thru Outlets: Raceway Components, Inc. #RC-700A.
- D. Fire Rated, Flush, Poke-Thru Outlets with Conduit Adapter: Raceway Components, Inc. #RC-700-6-A.
- E. Floor Outlet Boxes: Hubbell cast flush floor boxes, fully adjustable with flush service fitting, and carpet flange (if required).

PART 3 - EXECUTION

3.1 INSPECTION
- A. Examine building structure to which outlet boxes are to be secured for defects which affect the execution and quality of work.
- B. Do not start work until defects are corrected.

3.2 PREPARATION
- A. Carefully measure and lay out exact locations in conference with the Construction Manager.
- B. Owner may change outlet box locations a distance of 5 feet before rough-in without additional cost.

3.3 INSTALLATION
- A. In dry walls for single and two gang outlet provide 4S and 4D boxes; for 3 or more outlets use masonry boxes.
- B. In poured concrete floors, provide cast flush floor boxes complete with service fittings and carpet flanges (if required).
- C. In existing concrete floors, provide fire-rated poke-thru outlets complete with wiring devices and other accessories (if required).
- D. In block and masonry walls provide masonry boxes of depths required for wall thickness.
- E. In poured concrete and plastered walls provide 4S and 4D boxes for single gauge outlets and 2G and 3G-5075 boxes for multiple ganged outlets.
- F. In concrete ceiling provide OCR rings.
- G. In other ceilings provide 40 and 40D boxes. Omit covers if standard canopy and device plates entirely cover the ceiling opening.
- H. In exposed work, exterior of the building, in wet locations, and flush in non-waterproofed walls below grade provide FS and FD boxes.
- I. Submit for approval special boxes for special devices and applications. Size according to device and application in accordance with NEC.
- J. Install outlet boxes finished to within 1/8 inch of finished surfaces.
- K. Install center of box at heights above finished floor:
  1. Wall Switches: 45 Inches
  2. Convenience Outlets: 18 Inches
  3. Telephone/Data Outlets: 18 Inches
  4. Wall Telephone Outlets: 45 Inches
  5. Boxes Indicated Above Counters: 4 Inches above backsplash and trim, unless otherwise indicated.
- L. Install wall switch outlet boxes on the strike side of doors as finally hung.
- M. Group outlet on circuits with homeruns as indicated on the Drawings.
- N. Do not provide through-the-wall and back-to-back boxes unless specifically noted on the drawings.
- O. Provide standard manufactured plugs in unused openings of boxes.
- P. Provide boxes at the terminal of conduit runs to outlets and devices.
- Q. Provide plaster rings and covers where required by the building structure.
- R. In brick finished walls, locate to work brick in a brick course where possible, and to permit conduits and raceways to enter from the rear without cutting brick, where possible.
- S. Provide 3/8 inch studs and lighting fixture outlet boxes where shop drawings of fixtures require and elsewhere as may be required for fixtures.
- T. Rigidly attach to structure and ceiling supporting members in suspended ceilings to avoid cutting mechanical ceiling members.
- U. Center outlet in paneling and in other Architectural features.
- V. Locate light fixture outlets in uniform relation with ceiling tiles.
- W. Label all junction boxes with circuit information as to its use for special system equipment. Use an indelible marker to mark information on cover.

3.4 CLEANING
- A. Clean surfaces to be painted.

END OF SECTION 260533

SECTION 260553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 REFERENCE DOCUMENTS
- A. Comply with Division 1 - General Requirements and related documents.
- B. Comply with all of the Division 26 sections as applicable.
- C. Refer to other Divisions for coordination of work with other portions of work.

1.2 DESCRIPTION
- A. Provide identification of electrical equipment.
- B. Provide identification of over current devices.
- C. Provide identification of branch circuits, outlets, and wiring devices.
- D. Provide identification of required clear working spaces for electrical equipment.
- E. Provide identification of rooms and spaces for access by qualified personnel.
- F. Related work specified in other section:
  1. Section 26 05 33: Boxes for Electrical Systems.
  2. Section 26 22 13: Low Voltage Distribution Transformers.
  3. Section 26 24 13: Circuit Breaker Distribution Switchboards.
  4. Section 26 24 16: Panelboards.

1.3 QUALITY ASSURANCE
- A. Signs and plackards shall meet the requirements by OSHA.

1.4 SUBMITTALS
- A. Submit literature describing all signage and marking materials to the Architect for approval prior to installation.

PART 2 - PRODUCTS

2.1 PLACKARDS
- A. Plackards shall be engraved phenolic name plates with engraved lettering engraved. Lettering shall be minimum 24 point type in basic block font.
- B. Plackards shall be securely and permanently adhered to the equipment enclosures without fasteners or penetrations into the enclosures.
- C. Plackards shall be color coded for various systems as follows:
  1. Utility Power Systems: White plackard, black lettering.
  2. Generator Power Systems: Red plackard, white lettering.
  3. UPS or UPS-A Systems: Gray plackard, white lettering.
  4. UPS-B Systems: Brown plackard, white lettering.
  5. Other Systems: As directed by Owner.

2.2 LABELS
- A. Labels shall be typewritten, adhesive backed printed labels. Lettering shall be minimum 18 point type in basic black font.

2.3 MARKING MATERIALS
- A. Materials for marking of required working clearance shall be adhesive backed yellow tape, equal to 3M Company 471 Series. Clean and prepare floor surface in accordance with manufacturer’s instructions.

2.4 SIGNAGE
- A. Signage for electrical equipment rooms shall be preprinted manufactured sign units providing warning of the Danger of Electrical Equipment Hazards and limiting access to Qualified Personnel only.
- B. Signage shall be securely and permanently adhered to the door surface without fasteners or penetrations into the door surface.
- C. All signage shall be approved by the Architect prior to installation.

PART 3 - EXECUTION

3.1 SERVICE ENTRANCE EQUIPMENT

A. Provide a plackard for each service entrance equipment identifying
   1. The name of the equipment.
   2. The data of installation.
   3. The utility company available fault current.
   4. The supply system voltage.
   5. The name of the engineering company of record for the project.
   6. The number of service disconnecting means associated with this service.
   7. The name and locations of any other service entrance equipment on the property.

B. Provide each service disconnecting means, switch or circuit breaker with a plackard identifying the device as “Service Disconnecting Means X of X Devices.”
   1. Utility source disconnecting means.
   2. PV Source disconnecting means.
   3. Wind power source disconnecting means.

C. Provide Feeder Protective Devices with a plackard identifying the name of the device or circuit number and the name of the equipment or load served.

3.2 DISTRIBUTION SWITCHBOARDS AND PANELBOARDS

A. Provide each switchboard and panelboard with a plackard identifying.
   1. The name of the equipment.
   2. The supply system voltage.
   3. The name of the equipment supplying the switchboard or panelboard.
   4. The circuit number of the overcurrent device supplying the switchboard or panelboard.

B. Provide each feeder protective device with a plackard identifying the name of the device or circuit number and the name of the equipment or load served.

3.3 LIGHTING AND APPLIANCE PANELBOARDS

A. Provide each panelboard with a plackard identifying:
   1. The name of the equipment.
   2. The supply system voltage.
   3. The name of the equipment supplying the switchboard or panelboard.
   4. The circuit number of the overcurrent device supplying the panelboard.

B. Provide each panelboard with a typewritten circuit directing card describing the name of the load served and the room number (3) where the devices are located. Reference the room number(s) actually installed at the project, not the room numbers for Architectural construction documents.

3.4 LOW VOLTAGE DISTRIBUTION TRANSFORMERS

A. Provide each transformer with a plackard identifying:
   1. The name of the equipment.
   2. The name of the supply source equipment and protective device circuit number.
   3. The supply system voltage.
   4. The load systems voltage.
   5. The name of the equipment supplied from the load side of the transformer.

3.5 OTHER EQUIPMENT

A. Provide other electrical and mechanical equipment with plackards identifying.
   1. The name of the equipment.
   2. The name of the supply source equipment.
   3. The circuit number of the overcurrent device supplying the equipment.

3.6 OUTLET BOXES, JUNCTION BOXES AND WIRING DEVICES

A. Provide labels affixed to the inside cover for each outlet box, junction box, and wiring device identifying the panel name and branch circuit numbers for the overcurrent devices supply the circuits.

3.7 REQUIRED WORKING CLEARANCES

A. Provide marking on the floor around each item of equipment defining the required working clearances in accordance with the National Electrical Code.

3.8 ELECTRICAL EQUIPMENT ROOMS

A. Provide each entry door into a room or space containing electrical power distribution equipment providing Warning of the Electrical Hazard and restricting entrance to Qualified Personnel only.

END OF SECTION 260553

SECTION 262416 - PANELBOARDS

PART 1 - GENERAL

1.1 REFERENCED DOCUMENTS
- A. Comply with Division 1 - General Requirements and related documents.
- B. Comply with all other Division 26 sections as applicable.
- C. Refer to other Divisions for coordination of work with other portions of work.

1.2 DESCRIPTION
- A. Provide lighting and appliance branch circuit panelboards, circuit breakers and accessories.
- B. Related work specified in other sections:
  1. 26 00 00 - Electrical

1.3 QUALITY ASSURANCE
- A. The equipment supplied and installed shall meet the requirements of the National Electrical Code and all applicable local codes and ordinances.
- B. All equipment supplied shall be Underwriter's Laboratories Inc. listed and so labeled.

1.4 REFERENCED STANDARDS
- A. NEMA PB 1 - Panelboards
- B. NEMA PB1.1 - Instructions for Sate Installation, Operation and maintenance of Panelboards Rated 600 Volts or Less.
- C. NEMA AB 1 - Molded Case Circuit Breakers
- D. NEMA KS 1 - Enclosed and Miscellaneous Distribution Equipment Switches (600 Volts Maximum)
- E. UL 50 - Enclosures for Electrical Equipment
- F. UL 67 - Panelboards
- G. UL 98 - Enclosed and Dead-front Switches
- H. UL 489 - Molded-Case Circuit Breakers and Circuit Breaker Enclosures
- I. Federal Specification W-P-115C - Type Class 1
- J. Federal Specification W-C-375B/Gen - Circuit Breakers, Molded Case, Branch Circuit and Service.

1.5 SUBMITTALS
- A. Submit Shop Drawings including:
  1. Voltage Ratings.
  2. Main lug or breaker rating and location voltage ratings.
  3. Main Bus Rating.
  4. Neutral Bus Rating and location.
  5. Ground Bus Rating and location.
  6. Thru-feed or sub-feed lug ratings and location.
  7. Overall Panelboard Dimensions.
  8. Interior Mounting Dimensions.
  9. 1/4" scale layout of proposed equipment location including required working clearances, interference with other equipment and available recessing depth where applicable.
  10. Location and arrangement of branch breakers.
  11. Number of poles, trip ratings, and interrupting ratings of branch breakers.
  12. Top and bottom conduit entries and knockouts.
  13. Enclosure NEMA Type.
  14. Panel deadfront, trim, door, hinge and locking provisions.
  15. Manufacturer's literature describing circuit breakers and trip units for each type and frame employed.

1.6 DELIVERY, STORAGE, AND HANDLING
- A. Equipment shall be included and off loaded in accordance with the manufacturer's published instructions.
- B. Upon arrival, inspect equipment for damage incurred in shipping.
- C. Store in a clean, dry environment. Maintain factory packaging and, if required, provide an additional heavy canvas or heavy plastic cover to protect enclosure(s) from dirt, water, construction debris, and traffic.

D. Conform to NEMA PB2 service conditions during and after installation of panelboards.

1.7 MANUFACTURER
A. The equipment shall be the product of a manufacturer with a minimum of ten years' experience with the manufacturer of similar equipment.
B. Acceptable Manufacturers:
1. Square D Company.
2. General Electric.
3. Eaton, Cutler-Hammer.

1.8 WARRANTY
A. The equipment shall be warranted to be in proper working order for a period of one year following the date of final acceptance.

PART 2 - PRODUCTS

2.1 GENERAL
A. Interior:
1. Shall be equal to Square D type NF panelboard for 480 volt and Square D NQOB for 208 volt. Continuous main current ratings, as indicated on drawings.
2. Minimum Short Circuit Rating:
a. 65,000 rms symmetrical amperes at 480Y/277 or as indicated on the Drawings.
b. 25,000 rms symmetrical amperes at 208Y/120 or as indicated on the Drawings.
c. All panelboard components shall be fully rated for the required short circuit interrupting rating. Series rating of devices is not permitted.
3. Provide one (1) continuous bus bar per phase. Each bus bar shall have sequentially phased branch circuit connectors limited to bolt-on branch circuit breakers. The bussing shall be fully rated. Panelboard bus current rating shall be determined by heat-rise tests conducted in accordance with UL 67. Bussing shall be plated aluminum. Bus bar plating shall run the entire length of the bus bar. Panelboards shall be suitable for use as Service Equipment when application requirements comply with UL 67 and NEC Articles 230-F and -G.
4. All current-carrying parts shall be insulated from ground and phase-to-phase by high dielectric strength thermoplastic.
5. A solidly bonded aluminum equipment ground bar shall be provided. An additional aluminum isolated/insulated ground bar shall also be provided as indicated on the Drawings.
6. UL Listed panelboards with 200% rated solid neutral shall be plated aluminum for non-linear load applications. Panelboards shall be marked for non-linear load applications.
7. Interior trim shall be dead-front construction to shield user from energized parts. Dead-front trim shall have filler plated covering unused mounting space.
8. Nameplate shall contain system information and catalog number or factory order number. Interior wiring diagram, neutral wiring diagram, CSA/UL Listed label and short circuit current rating shall be displayed on the interior or in a booklet format.
9. Interiors shall be field convertible for top or bottom incoming feed. Main lug interiors up to 400 amperes shall be field convertible to main breaker. Interior leveling provisions shall be provided for flush mounted applications.
10. Interior phase bus shall be pre-drilled to accommodate field installable options (i.e., Sub-Feed Lugs, Sub-Feed Breakers, and Thru-Feed Lugs).
11. Interiors shall accept 125 ampere breakers in group mounted branch construction.

B. Main Circuit Breaker
1. Circuit protective devices shall be UL Listed for 100% continuous current when applied in distribution panelboards. Ampere ratings shall be as shown on the drawings.
2. Main circuit breakers shall have an overcenter, trip-free, toggle mechanism which will provide quick-make, quick-break contact action. Circuit breakers shall have a permanent trip unit with thermal and magnetic trip elements in each pole. Each thermal element shall be true rms sensing and be factory calibrated to operate in a 40 Deg.C. ambient environment. Thermal elements shall be ambient compensating above 40 Deg.C.

3. Two- and three-pole circuit breakers shall have common tripping of all poles. Circuit breakers frame sizes above 100 amperes shall have a single magnetic trip adjustment located in the front of the breaker that allows the user to simultaneously select the desired trip level all poles.
4. Circuit breaker handle and faceplate shall indicate rated ampacity. Standard construction circuit breaker shall be CSA and UL Listed for reverse connection without restrictive line or load markings.
5. Circuit breaker escutcheon shall have international I/O markings, in addition to standard ON/OFF markings. Circuit breaker handle accessories shall provide provisions for locking handle in the ON or OFF position.
6. Lugs shall be UL Listed to accept solid or standard copper and aluminum conductors. Lugs shall be suitable for 75 Deg.C. rated wire.
7. The circuit breakers shall be UL Listed for use with the following accessories: Shunt Trip, Under Voltage Trip, Ground Fault Shunt Trip, Auxiliary Switch, Alarm Switch, Mechanical Lug Kits, and Compression Lug Kits.

C. Branch Circuit Breakers
1. Circuit breakers shall be UL Listed with amperage ratings, interrupting ratings, and number of poles as indicated on the drawings.
2. Molded case branch circuit breakers shall have bolt-on type bus connectors.
3. Circuit breakers shall have an overcurrent toggle mechanism which will provide quick-make, quick-break contact action. Circuit breakers shall have thermal and magnetic trip elements in each pole. Two- and three-pole circuit breakers shall have common tripping of all poles
4. The exposed faceplates of all branch circuit breakers shall be flush with one another.
5. Lugs shall be UL Listed to accept solid or stranded copper and aluminum conductors. Lugs shall be suitable for 75 Deg.C. rated wire.
6. Breakers shall UL Listed for use with the following factory installed accessories: Shunt Trip, Auxiliary Switch, and Alarm Switch.
7. Breaker shall be UL Listed with the follow ratings: (15-125A) Heating, Air Conditioning, and Refrigeration (HACR), (15-30A) High Intensity Discharge (HID), (15-20A) Switch Duty (SWD), (15-50A) Equipment Protection Device (EPD) (480Y/277Vac maximum).

D. Enclosures
1. Type 1 Boxes
    a. Boxes shall be hot zinc dipped galvanized steel constructed in accordance with UL 50 requirements. Unpainted galvanized steel not acceptable.
    b. Boxes shall have removable endwall with knockouts located on one end. Boxes shall have welded interior mounting studs. Interior mounting brackets are not required.
    c. Box width shall not exceed 20" wide.
2. Type 1 Fronts
    a. Front shall meet strength and rigidity requirements per UL 50 Standards. Shall have ANSI 49 gray enamel electrodeposited over cleaned phosphatized steel.
    b. Mounting shall be flush or surface as indicated on the Drawings.
    c. Front shall have flat latch type lock with catch and spring loaded stainless steel door pull. All lock assemblies shall be keyed alike. One (1) key shall be provided with each lock. A clear plastic directory card holder shall be mounted on the inside of door.
    d. Fronts shall be hinged door-in-door construction with front trim connected to enclosure with continues piano hinge and latch to access all wiring and termination without removing the door from the enclosure. A separate door, hinge and latch shall be provided to access the deadfront compartment to provide access to main and branch breaker operating handles with no exposure to energized parts.
3. Type 3R, 5 and 12
    a. Enclosures shall be constructed in accordance with UL 50 requirements. Enclosures shall be painted with ANSI 49 gray enamel electrodeposited over cleaned phosphatized steel.
    b. All doors shall be gasketed and equipped with a tumbler type vault lock and two (2) additional quarter turn fasteners on enclosures 59 inches or more in height. All lock assemblies shall be keyed alike. One 91) key shall be provided with each lock. A clear plastic directory card holder shall be mounted on the inside of door.

c. Maximum enclosure dimensions shall not exceed 21" wide and 9.5" deep.

PART 3 - EXECUTION

3.1 INSTALLATION
- A. Install panelboards in accordance with manufacturer's written instructions, NEMA PB 1.1 and NEC standards.
- B. Provide panelboard supports to the building structure independent of raceways.

3.2 FIELD QUALITY CONTROL
- A. Inspect complete installation for physical damage, proper alignment, anchorage, and grounding.
- B. Measure steady state load currents at each panelboard feeder; rearrange circuits in the panelboard to balance the phase loads within 20% of each other. Maintain proper phasing for multi-wire branch circuits.
- C. Check tightness of bolted connections and circuit breaker connections using calibrated torque wrench or torque screwdriver per manufacturer's written specifications.

3.3 IDENTIFICATION
- A. Provide engraved panelboard nameplate permanently affixed to the panel boor, giving panelboard name designation, system voltage, and name of the panelboard supply source.
- B. Provide a neatly typewritten circuit directory card in card holder inside panel door describing the name and location of devices served by each branch breaker using numbers finally established at the project.

3.4 FUTURE PROVISIONS
- A. From each flush mounted panelboard section, provide a minimum of two 1" conduits stubbed into the accessible ceiling and/or crawl space, as may be available, for future branch circuit wiring.
- B. Provide a pull cord in all future conduits with identifying tags on both ends.

3.5 COORDINATION OF LOADS SERVED
- A. Confirm that all branch circuit breakers are of the proper type and configuration for the loads finally connected:
  1. HCAR Rated.
  2. HID Rated.
  3. GFCI Rated.
  4. AFCI Rated.
  5. Three pole common trip breakers for multi-wire branch circuits.
- B. Reconnect loads, rearrange branch circuit breakers of provide new breakers as required to insure branch circuit breakers are proper type and properly rated for the loads finally connected.

3.6 CLEANING
- A. Throughout the construction period, maintain panelboards and interiors free of dust, debris, wire trimmings, etc. Provide heavy duty plastic barriers as required.
- B. Before final acceptance, thoroughly clean panelboards and interiors and vacuum clean to a dust free condition.

3.7 TRAINING
- A. Provide eight hours of training for the Owner's personnel in the operation and maintenance of the equipment.

END OF SECTION 262416

SECTION 262716 - ELECTRICAL CABINETS AND ENCLOSURES

PART 1 - GENERAL

1.1 REFERENCE DOCUMENTS
- A. Conditions of the Contract and Division 01 - General Requirements are hereby made a part of this section.
- B. All sections of this specification.

1.2 DESCRIPTION
- A. Work Included: Provide cabinets for the installation of wiring and equipment.
- B. Related work specified in other section:
  1. 26 00 00 - Electrical
  2. 26 24 16 - Panelboards
  3. 26 28 16 - Enclosed Switches and Circuit Breakers
  4. 26 05 23 - Control Voltage Electrical Power Cables

1.3 QUALITY ASSURANCE
- A. Source Quality Control: Tests to meet applicable Underwriters' Laboratories, Inc. Standards.
- B. Reference Standards:
  1. Underwriters' Laboratories, Inc. applicable Standards.
  2. National Electrical Code.
- C. Design Criteria: National Electrical Manufacturer's Association construction types based on environment.
  1. Indoor: NEMA Type 1
  2. Outdoor: NEMA Type 3R

1.4 SUBMITTALS
- A. Shop Drawings shall include dimensions, knockout sizes and locations, material types and gauges, finishes, and installation methods.
- B. Certificates shall include labels of Underwriters' Laboratories, Inc., and National Electrical Manufacturer's Association affixed to each item.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS
- A. Square D
- B. General Electric
- C. Eaton, Cutler-Hammer

2.2 MATERIALS
- A. For Panelboards:
  1. Same manufacturer as panelboard, boxes of code gauge steel, welded with edges turned to receive trim, and galvanized.
  2. Trim and doors No. 12 gauge steel minimum, hinged door, flush tumbler lock and catch keyed alike throughout the work, factory enamel finish, suitable for field color coat.
     a. Flush: Overlap minimum 3/4 inches top, bottom, and sides.
     b. Surface: Same size as cabinet.

PART 3 - EXECUTION

3.1 INSPECTION
- A. Examine structure to which cabinets are to be secured for defects which affect the execution and quality of work.
- B. Do not start work until defects are corrected.

3.2 PREPARATION
- A. Carefully measure and lay out exact locations.
- B. Provide supports.

3.3 INSTALLATION
- A. Provide cabinets where indicated and where necessary.
- B. Provide flush type in finished areas centered in paneling and other Architectural features.
- C. Provide surface type in equipment rooms, above accessible finished ceilings, and in crawl spaces.
- D. Install lighting and power cabinets with tops 6 feet 6 inches above finished floor.
- E. Install cabinet trim and doors straight and plumb.

3.4 CABINET IDENTIFICATION
- A. Cabinets for all panelboards, switchboards, disconnect switches, transformers, motor starters, and electrical equipment furnished shall be provided with engraved phenolic lamacoid plastic name plates with 1/2 inch block engraving.
- B. Name plates shall give equipment designation as scheduled on the drawings, circuit number designation, and voltage and phase of service.

3.5 ADJUSTMENT AND CLEANING
- A. Adjust trims and doors for vertical and horizontal alignment.
- B. Clean surfaces to be painted.

END OF SECTION 262716

SECTION 262816 - ENCLOSED SWITCHES AND CIRCUIT BREAKERS

PART 1 - GENERAL

1.1 REFERENCED DOCUMENTS
- A. Comply with Division 1 - General Requirements and related documents.
- B. Comply with all other Division 26 sections as applicable.
- C. Refer to other Divisions for coordination of work with other portions of work.

1.2 DESCRIPTION
- A. Work Included: Provide disconnect switches and enclosed circuit breakers for branch circuit, motor circuits, and items of equipment.
- B. Related work specified in other sections:
  1. Division 23
  2. 26 00 00 Electrical
  3. 26 28 13 Fuses

1.3 QUALITY ASSURANCE
- A. The equipment supplied and installed shall meet the requirements of the National Electrical Code and all applicable local codes and ordinances.
- B. All equipment supplied shall be Underwriter's Laboratories Inc. listed and so labeled.

1.4 REFERENCED STANDARDS
- A. UL 50 Cabinets and Boxes
- B. UL 98 Enclosed and Deadfront Switches
- C. UL 489 Molded Case Circuit Breakers
- D. UL 977 Fused Power Circuit Devices
- E. NEMA AB1 Molded Case Circuit Breakers and Molded Case Switches
- F. NEMA KS1 Enclosed Switches

1.5 SUBMITTALS
- A. Submit shop drawings including:
  1. Enclosure outline drawings and dimensions.
  2. Nameplate schedule.
  3. Assembly ratings including:
     a. Main lug ratings and location.
     b. Voltage ratings.
     c. Short circuit ratings.
  4. Conduit entry and exit locations, dimensions, and knock-outs.
  5. Cable terminal sizes.
  6. Fuse types and ratings.
  7. Manufacturer's literature describing circuit breakers and trip units.

1.6 DELIVERY, STORAGE AND HANDLING
- A. Equipment shall be handled and off loaded in accordance with the manufacturer's published instructions.
- B. Upon arrival, inspect equipment for damage insured in shipping.
- C. Store and protect equipment from moisture and dust by storing in a clean, dry, heated space. Provide additional heavy plastic cover to protect the equipment and components. Provide auxiliary heating in the sections in accordance with the manufacturer's recommendations.

1.7 MANUFACTURER
- A. The equipment shall be the product of a manufacturer with a minimum of ten years' experience with the manufacture of similar equipment.
- B. Acceptable Manufacturers:
  1. Square D Company.
  2. General Electric.

3. Eaton, Cutler-Hammer.

1.8 WARRANTY

A. The equipment shall be warranted to be in proper working order for a period of one year following the date of final acceptance.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Enclosed Switches
   1. Provide enclosed switches where indicated on the drawings or required by NEC.
   2. Switches shall be NEMA Type HD, heavy duty, rated 600 volts, with quick-make, quick break switch units and external operator, rated 100,000 A.I.C.
   3. Switches shall be fused or unfused as shown on the drawings and as required by NEC, capacity and number of poles as indicate don the drawings.
   4. Enclosures shall be provided with interlocks to prevent opening the enclosure without first opening the switch and to prevent operating the switch with the enclosure open.
   5. Enclosures shall be provided with a means for pad locking in the open position.
   6. Enclosures shall be provided with an equipment grounding lug.
   7. Enclosures for use on four wire shall be provided with an insulated neutral bus.
   8. Line side and load side terminals shall be provided with insulating cover to prevent accidental contact.
   9. Indoor locations shall be provided with NEMA Type 1 Enclosures.
   10. Outdoor locations shall be provided with NEMA Type 3R Enclosures and water tight threaded hubs for conduit entry.

B. Enclosed Circuit Breakers
   1. Provide enclosed circuit breakers or molded case switches where indicated on the drawings or required by the NEC.
   2. Circuit breaker for rating 250 amperes or less shall be thermal magnetic molded case circuit breakers.
   3. Circuit breakers 300 amperes through 1200 amperes shall be electronic trip, microprocessor based, true RMS sensing, with adjustable, defeatable instantaneous pickup.
   4. Molded case switches shall be non-automatic with no over current trip function.
   5. Units shall be 600 volt or 250 volt as required and unless noted otherwise shall be 42,000 A.I.C.
   6. Enclosures shall be provided with a means for pad locking in the open position.
   7. Enclosures shall be provided with and equipment ground bus.
   8. Enclosures for use on four wire systems shall be provided with an insulated neutral bus.
   9. Line side and load side terminals shall be provided with insulating covers to prevent accidental contact.
   10. Indoor locations shall be NEMA Type 1 Enclosures.
   11. Outdoor locations shall be NEMA Type 3R enclosures and watertight hubs for threaded conduit entry.

PART 3 - EXECUTION

3.1 INSPECTION

A. Inspect building structure to which disconnects are to be secured for defects which affect the execution and quality of work.
B. Do not start work until defects are corrected.

3.2 PREPARATION

A. Carefully measure and lay out exact locations maintaining working clearances required by the National Electrical Code.

3.3 INSTALLATION

A. Provide disconnects where indicated and where required by the National Electrical Code and all equipment where integral disconnects are not provided by the manufacturers.
B. Provide disconnects mounted to building structure ahead of flexible conduit final connection to each fan powered terminal box.

C. Install within sight of equipment served.
D. Provide final connection to equipment served.
E. Provide engraved lamicoid name plate secured to cabinet with designation of equipment served, operating voltage, and circuit designation.

END OF SECTION 262816

TOWN OF ADDISON
ADDISON ATHLETIC CLUB

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ADDISON ATHLETIC CLUB - HVAC IMPROVEMENTS

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ADDISON

MEP SHEET LIST

SHEET NO.	SHEET NAME	SHEET ISSUE DATE
ME-00	GENERAL NOTES & LEGEND	09/10/18
ME-01	GROUND FLOOR DEMOLITION - AREA 'A'	09/10/18
ME-02	GROUND FLOOR DEMOLITION - AREA 'B'	09/10/18
ME-03	SECOND FLOOR DEMOLITION - AREA 'A'	09/10/18
ME-04	SECOND FLOOR DEMOLITION - AREA 'B'	09/10/18
ME-11	GROUND FLOOR PLAN - AREA 'A'	09/10/18
ME-12	GROUND FLOOR PLAN - AREA 'B'	09/10/18
ME-13	SECOND FLOOR PLAN - AREA 'A'	09/10/18
ME-14	SECOND FLOOR PLAN - AREA 'B'	09/10/18
ME-21	SCHEDULES	09/10/18
ME-31	DETAILS	09/10/18
ME-41	ELECTRICAL SCHEDULES & DETAILS	09/10/18

POWER LEGEND

	RACEWAY IN WALL OR ABOVE CEILING
	RACEWAY IN OR BELOW FLOOR
B-4	HOMERUN : LETTER(S) DENOTES PANEL NAME NUMBER DENOTES CIRCUIT NUMBER
A	DENOTES DEVICE MOUNTED ABOVE COUNTER
WP	DENOTES WEATHERPROOF DEVICE
GFI/GFCI	DENOTES GROUND FAULT INTERRUPTING DEVICE
	DUPLEX RECEPTACLE
	QUADRAPLEX RECEPTACLE
	ISOLATED GROUND DUPLEX RECEPTACLE
	ISOLATED GROUND QUADRAPLEX RECEPTACLE
	FLOOR DUPLEX RECEPTACLE
	FLOOR ISOLATED GROUND DUPLEX RECEPTACLE
	FLOOR QUADRAPLEX RECEPTACLE
	FLOOR ISOLATED GROUND QUADRAPLEX RECEPTACLE
C	CEILING MOUNTED DUPLEX RECEPTACLE
	CEILING MOUNTED QUADRAPLEX RECEPTACLE
	USB RECEPTACLE
	USB DUPLEX COMBO RECEPTACLE
	USB QUADRAPLEX COMBO RECEPTACLE
	ISOLATED GROUND USB DUPLEX COMBO RECEPTACLE
	ISOLATED GROUND USB QUAD COMBO RECEPTACLE
	125V. SIMPLEX RECEPTACLE
	250V., SINGLE PHASE, 3 WIRE GROUNDED RECEPTACLE (NUMBER INDICATES AMPERAGE RATING)
	THREE PHASE RECEPTACLE (NUMBER DENOTES AMPERAGE RATING)
	CEILING JUNCTION BOX
	WALL JUNCTION BOX
	POWER/DATA SURFACE RACEWAY
	POWER/DATA POWER POLE
	CONTROL DEVICE
	SCOREBOARD FLUSH FLOOR BOX
	MOTOR CONNECTION
	MOTOR STARTER
	DISCONNECT SWITCH
	DISCONNECT SWITCH - FUSED
	480V PANELBOARD
	208V PANELBOARD
	DISTRIBUTION PANELBOARD
T	DRY-TYPE TRANSFORMER
RISER DIAGRAM LEGEND	
	TRANSFORMER
M	METER
	GROUND CONNECTION
	CIRCUIT BREAKER
	DRAW-OUT CIRCUIT BREAKER
	FUSED SWITCH
	NON-FUSED DISCONNECT
	AUTOMATIC TRANSFER SWITCH
	GENERATOR
	HEATER CONNECTION

GENERAL POWER NOTES:

1. ALL WORK SHALL COMPLY WITH APPLICABLE NATIONAL, STATE AND LOCAL CODES, RULES, REGULATIONS AND REQUIREMENTS OF THE SERVICE UTILITY COMPANY.
2. ALL WORK SHALL COMPLY WITH THE BUILDING OWNER'S CONSTRUCTION GUIDELINES.
3. ALL CIRCUITS SHOWN SHALL BE 120V, 20A CIRCUITS UNLESS NOTED OTHERWISE.
4. ALL CONDUCTORS SHALL BE #12 AWG UNLESS NOTED OTHERWISE.
5. ALL 120V RUNS LONGER THAN 60' SHALL BE #10 AWG UNLESS NOTED OTHERWISE ON THE PLANS.
6. ALL CONDUCTORS SHALL BE COPPER (#10 AND SMALLER SHALL BE SOLID).
7. WHERE CONDUCTOR SIZES ARE NOTED ON DRAWINGS, THAT CONDUCTOR SIZE SHALL BE THROUGH THE ENTIRE RUN UNLESS NOTED OTHERWISE.
8. PANELBOARD DIRECTORIES SHALL BE COMPLETELY FILLED OUT TO ACCURATELY IDENTIFY EACH CIRCUIT (EXISTING AND NEW CIRCUITS) IN ALL PANELS WITHIN SCOPE OF WORK. DIRECTORIES SHALL BE TYPEWRITTEN.
9. ALL RECEPTACLES MOUNTED OUTSIDE THE BUILDING SHALL HAVE GROUND FAULT CIRCUIT INTERRUPTER(GFCI) PROTECTION.
10. ELECTRIC CONNECTIONS TO PANELBOARDS SHALL BE MADE ONLY WHEN PANELBOARD HAS BEEN DE-ENERGIZED.
11. ALL ELECTRICAL PANELS AND TRANSFORMERS SHALL HAVE PERMANENT ENGRAVED LABELS ON COVER INDICATING PANEL OR TRANSFORMER DESIGNATION.
12. CIRCUIT NUMBERS SHOWN ARE FOR LOCATION AND QUANTITY ONLY. VERIFY EXACT NUMBERS IN THE FIELD.
13. EACH CIRCUIT SHALL HAVE A DEDICATED NEUTRAL CONNECTED BACK TO THE PANEL.
14. PAINT ALL EXPOSED CONDUIT TO MATCH EXISTING PAINT COLOR IN THAT AREA. COORDINATE WITH ARCHITECTURAL FINISHES PRIOR TO FINAL ROUGH-IN.

GENERAL ELECTRICAL DEMOLITION NOTES:

1. THE INFORMATION ON THE DEMOLITION DRAWINGS ARE NOT FROM "AS BUILT" DRAWINGS BUT FROM ORIGINAL DRAWINGS. THIS INFORMATION IS INCLUDED FOR REFERENCE ONLY. CONTRACTOR WILL BE RESPONSIBLE FOR VISITING THE SITE PRIOR TO SUBMITTING A BID TO DETERMINE THE AMOUNT OF WORK THAT WILL BE REQUIRED. CONTRACTOR SHALL EXAMINE THE EXISTING BUILDING AND GENERALLY VERIFY THE LOCATION OF ALL EXISTING WORK AND BECOME INFORMED AS TO THE RELATION TO AND EFFECT ON. THE WORK REQUIRED BEFORE SUBMITTING A BID. SUBMISSION OF A BID WILL CONSTITUTE EVIDENCE THAT THE CONTRACTOR HAS INSPECTED THE SITE OF THE PROPOSED WORK.
2. REMOVE ALL EXISTING FIXTURES, WIRING DEVICES, ELECTRICAL EQUIPMENT AND CIRCUITING, WHETHER SPECIFICALLY INDICATED OR NOT, AS REQUIRED DUE TO THE ARCHITECTURAL AND MEP DEMOLITION WORK IN THE AREA TO BE RENOVATED. ALL EQUIPMENT THAT HAS BEEN REMOVED AND IS NOT REUSED SHALL BE RETURNED TO THE OWNER, OR DISPOSED OF AS DIRECTED BY THE OWNER'S REPRESENTATIVE. VERIFY DISPOSAL OF ANY MAJOR ELECTRICAL EQUIPMENT ITEMS SUCH AS PANELS, TRANSFORMERS AND FIXTURES WITH OWNER'S REPRESENTATIVE AND ELECTRICAL ENGINEER.
3. COORDINATE DEMOLITION WORK WITH THE BUILDING MAINTENANCE PERSONNEL AND OTHER TRADES PERFORMING WORK IN THE BUILDING PRIOR TO THE REMOVAL OF ANY ITEMS OF EQUIPMENT OR SYSTEMS THAT WILL EFFECT OTHER SYSTEMS WITHIN THE LIMIT OF NEW CONSTRUCTION OR OTHER AREAS OF THE BUILDING. CONTRACTOR SHALL VERIFY WITH THE OWNER IF THE BUILDING WILL BE OCCUPIED DURING CONSTRUCTION, AND THEREFORE, UTILITIES MUST REMAIN IN OPERATION AT ALL TIMES. ANY REQUIRED OUTAGES MUST BE COORDINATED WITH THE OWNER.
4. PRIOR TO THE REMOVAL OF ANY MEP ITEMS OF EQUIPMENT, CONTRACTOR MUST VERIFY THE ORIGIN AND TERMINATION OF THOSE SYSTEMS AND CONFIRM THAT THE ITEMS BEING REMOVED DO NOT SERVE ANY ITEMS THAT ARE TO REMAIN (INCLUDING THOSE IN AREAS OUTSIDE THE CONTRACT LIMITS).
5. MODIFY AND RECONNECT THE EXISTING ELECTRICAL EQUIPMENT AS REQUIRED TO REMAIN, AND NOT AFFECTED BY THE NEW CONSTRUCTION, TO ENSURE THE FINAL SYSTEM WILL FUNCTION IN A SAFE MANNER ACCEPTABLE TO AUTHORITIES.
6. DO NOT ABANDON ANY ITEMS IN PLACE. REMOVE ALL COMPONENTS ASSOCIATED WITH EACH ITEM CALLED OUT TO BE REMOVED.
7. RECONNECT CIRCUITING AS REQUIRED TO MAINTAIN CONTINUITY TO REMAINING OUTLETS WHEN EXISTING FIXTURES AND DEVICES ARE REMOVED. CONSOLIDATE PARTIALLY LOADED CONVENIENCE RECEPTACLE CIRCUITS TO MAXIMIZE SPACE MADE AVAILABLE AT THE PANELBOARD. TRACE CONSOLIDATED CIRCUITS TO VERIFY THAT THE TOTAL LOAD DOES NOT EXCEED 1920 VOLT AMPERES.
8. PROVIDE EXTENSION RINGS, COVER PLATES OR ACCESS DOORS AS NECESSARY TO MAINTAIN ACCESS TO EXISTING WIRING, WHERE REQUIRED BY NEW CONSTRUCTION. ALL ACCESS DOOR LOCATIONS SHALL BE REVIEWED BY ARCHITECT PRIOR TO INSTALLATION.
9. PROVIDE BLANK COVER PLATES ON JUNCTION BOXES WHICH ARE NOT REUSED.
10. PROVIDE TYPE AND SIZE OF CONDUCTORS TO MATCH EXISTING FOR EXISTING CIRCUITS WHICH ARE EXTENDED TO SERVE NEW OR RELOCATED DEVICES OR FIXTURES.
11. REMOVE ALL UNUSED CONDUITS AND WIRING, SWITCHES, RECEPTACLES, LIGHT FIXTURES, ETC., WHERE CEILINGS, CEILING TILES OR WALLS ARE BEING DEMOLISHED EXCEPT AS FOLLOWS: WHERE WALLS AND CEILINGS ARE TO REMAIN. MAINTAIN EXISTING CONDUIT, WIRING AND BOXES SERVING ALL ELECTRICAL EQUIPMENT, OUTLETS AND SWITCHES IN THOSE AREAS. REMOVE ALL POWER WIRING BACK TO ITS OVERCURRENT DEVICE AND MARK CIRCUIT BREAKERS AS "SPARE." INSTALL BLANK COVERS ON ALL BOXES. REFER TO DRAWINGS FOR ADDITIONAL REQUIREMENTS AND OTHER SPECIFIC EXCEPTIONS.
12. COORDINATE ALL DEMOLITION WORK WITH NEW REQUIREMENTS TO ASSURE THAT EXISTING EQUIPMENT, WIRING, ETC., THAT IS REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM IS NOT REMOVED.
13. THE CONTRACTOR SHALL INCLUDE IN HIS BID ALL MATERIALS AND LABOR REQUIRED FOR THE EXTENSIONS, RE-ROUTING AND RELOCATION OF EXISTING SYSTEM COMPONENTS, EQUIPMENT, WIRING, CONDUITS, AND CABLING,SO AS, TO MAINTAIN OPERATION OF ALL SYSTEMS THROUGHOUT THE OCCUPIED AREAS OF THE BUILDING DURING THE DEMOLITION.
14. EXISTING RACEWAYS MAY BE REUSED, IF IN PLACE, WHERE POSSIBLE, AND WHERE IN COMPLIANCE WITH THE SPECIFICATIONS AND THE INTENT OF THE CONTRACT DOCUMENTS. UPGRADE AND/OR PROVIDE NEW CONDUIT SUPPORTS WHERE NECESSARY FOR ALL RACEWAYS BEING REUSED. INSURE INTEGRITY OF EXISTING RACEWAYS BEFORE REUSE.

MECHANICAL LEGEND

CHS	CHILLED WATER SUPPLY
CHR	CHILLED WATER RETURN
HWS	PRIMARY HEATING WATER RETURN
HWR	PRIMARY HEATING WATER RETURN
RS	REFRIGERANT SUCTION
RL	REFRIGERANT LIQUID
RG	REFRIGERANT GAS
CD	CONDENSATE DRAIN
	FLOW IN DIRECTION OF ARROW
1/8" / FT.	SLOPE DOWN IN DIRECTION OF ARROW WITH SLOPE SHOWN
	STRAINER WITH BLOW DOWN VALVE
	GATE VALVE
	BUTTERFLY VALVE
	UNION
	BALL VALVE
	GLOBE VALVE
	PLUG VALVE
	CHECK VALVE
	FLOW SWITCH
	FLOW METER
	AUTO FLOW CONTROL VALVE
	AUTOMATIC 2-WAY CONTROL VALVE
	AUTOMATIC 3-WAY CONTROL VALVE
	AUTOMATIC STEAM CONTROL VALVE
	PRESSURE REDUCING VALVE
	PRESSURE RELIEF VALVE
	GAUGE COCK
	PRESSURE GAUGE WITH GAUGE COCK
	THERMOMETER
	INSTRUMENT PORT
	CAP
	LOW PRESSURE DRIP TRAP ASSEMBLY
	MEDIUM PRESSURE DRIP TRAP ASSEMBLY
	AUTOMATIC AIR VENT
	RISE IN PIPING
	DROP IN PIPING
	THERMOWELL
	ANCHOR POINT
	GUIDE OR RACK POINT
C.R.	CONCENTRIC REDUCER
E.R.	ECCENTRIC REDUCER
T	THERMOSTAT/TEMERATURE SENSOR
H	HUMIDITY SENSOR
C	CARBON DIOXIDE SENSOR
S	DUCT SMOKE DETECTOR
	WALL SWITCH
P	WALL SWITCH WITH PUSH BUTTON
T	WALL TIMER SWITCH
	SUPPLY AIR ARROW
	RETURN AIR ARROW
R	RISE IN DUCT
D	DROP IN DUCT
	SUPPLY DUCT
	RETURN OR EXHAUST DUCT
	MANUAL DAMPER
M	MOTORIZED DAMPER
F.D.	FIRE DAMPER
S.D.	SMOKE DAMPER
F.S.D.	FIRE-SMOKE DAMPER
	CONNECT TO EXISTING
	EXISTING WORK TO REMAIN
	EXISTING WORK TO BE REMOVED
	NEW WORK

NOTE: ALL SYMBOLS MAY NOTE BE USED ON THIS PROJECT.

GENERAL DEMOLITION MECHANICAL NOTES:

1. THE INFORMATION ON THE DEMOLITION DRAWINGS ARE NOT FROM "AS-BUILT" DRAWINGS BUT FROM ORIGINAL DRAWINGS. THIS INFORMATION IS INCLUDED FOR REFERENCE ONLY. CONTRACTOR WILL BE RESPONSIBLE FOR VISITING THE SITE PRIOR TO SUBMITTING A BID TO DETERMINE THE AMOUNT OF WORK THAT WILL BE REQUIRED. CONTRACTOR SHALL EXAMINE THE EXISTING BUILDING AND GENERALLY VERIFY THE LOCATION OF ALL EXISTING WORK AND BECOME INFORMED AS TO THE RELATION TO, AND EFFECT ON, THE WORK REQUIRED BEFORE SUBMITTING A BID. SUBMISSION OF A BID WILL CONSTITUTE EVIDENCE THAT THE CONTRACTOR HAS INSPECTED THE SITE OF THE PROPOSED WORK.
2. EXISTING MPE ITEMS TO BE REMOVED SHALL BE RETURNED TO THE OWNER OR DISPOSED OF AS DIRECTED BY THE DESIGNATED OWNER'S REPRESENTATIVE.
3. COORDINATE DEMOLITION WORK WITH THE BUILDING MAINTENANCE PERSONNEL AND OTHER TRADES PERFORMING WORK IN THE BUILDING PRIOR TO THE REMOVAL OF ANY ITEMS OF EQUIPMENT OR SYSTEMS THAT WILL EFFECT OTHER SYSTEMS WITHIN THE LIMIT OF NEW CONSTRUCTION OR OTHER AREAS OF THE BUILDING. THE BUILDING WILL BE OCCUPIED DURING CONSTRUCTION; AND, THEREFORE, UTILITIES MUST REMAIN IN OPERATION AT ALL TIMES. ANY REQUIRED OUTAGES MUST BE COORDINATED WITH THE OWNER.
4. PRIOR TO THE REMOVAL OF ANY MPE ITEMS OR EQUIPMENT, CONTRACTOR MUST VERIFY THE ORIGIN AND TERMINATION OF THOSE SYSTEMS AND CONFIRM THAT THE ITEMS BEING REMOVED DO NOT SERVE ANY ITEMS THAT ARE TO REMAIN (INCLUDING THOSE IN AREAS OUTSIDE THE CONTRACT LIMITS).

GENERAL MECHANICAL NOTES:

1. ALL DUCTWORK SHALL BE RUN CONCEALED ABOVE CEILINGS AS HIGH AS POSSIBLE & CONCEALED IN WALLS, CHASES, OR FURROUTS IN GENERAL LOCATIONS SHOWN, UNLESS NOTED OTHERWISE.
2. LOCATE AIR DEVICES APPROXIMATELY WHERE SHOWN. FOR EXACT LOCATION AND FRAME MOUNTING TYPES, REFER TO ARCHITECTURAL REFLECTED CEILING PLANS. ALL CEILING DIFFUSERS TO BE FOUR-WAY TYPE, UNLESS NOTED OTHERWISE BY AIR FLOW ARROWS ON FLOOR PLAN
3. DUCTWORK INSULATION TO MEET CURRENT 2015 IECC REQUIRMENTS. RECTANGULAR SUPPLY AIR DUCTWORK IS TO BE EXTERNALLY INSULATED WITH ONE AND ONE-HALF (1-1/2") THICK INSULATION. RECTANGULAR RETURN AND TRANSFER AIR DUCTS SHALL BE LINED WITH 1" LINER ONLY. DUCTWORK SIZES SHOWN ARE NET INTERNAL CLEAR DIMENSIONS. SHEET METAL SIZES ARE TO BE INCREASED IN SIZE TO MAINTAIN THESE INTERNAL CLEAR DIMENSIONS. CONCEALED ROUND DUCTWORK IS TO BE EXTERNALLY WRAPPED. FLEXIBLE ROUND DUCTWORK SHALL HAVE A MINIMUM R-VALUE OF 50.

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STATE OF TEXAS
09/17/18

REGISTRATION

DRAWING HISTORY

№	DATE	DESCRIPTION
	9/17/2018	ISSUE FOR BID

KEY PLAN

PROJECT NAME
ADDISON ATHLETIC CLUB - HVAC IMPROVEMENTS

PROJECT LOCATION
3900 BELTWAY DR.
ADDISON, TX 75001

PROJECT NUMBER
17116.00

SHEET TITLE
GENERAL NOTES & LEGEND

SHEET NUMBER
ME-00

FILE PATH: C:\Revit Local Files\20181116-Addison Athletic Club-RWB-v22r9_jsnorkett.rvt
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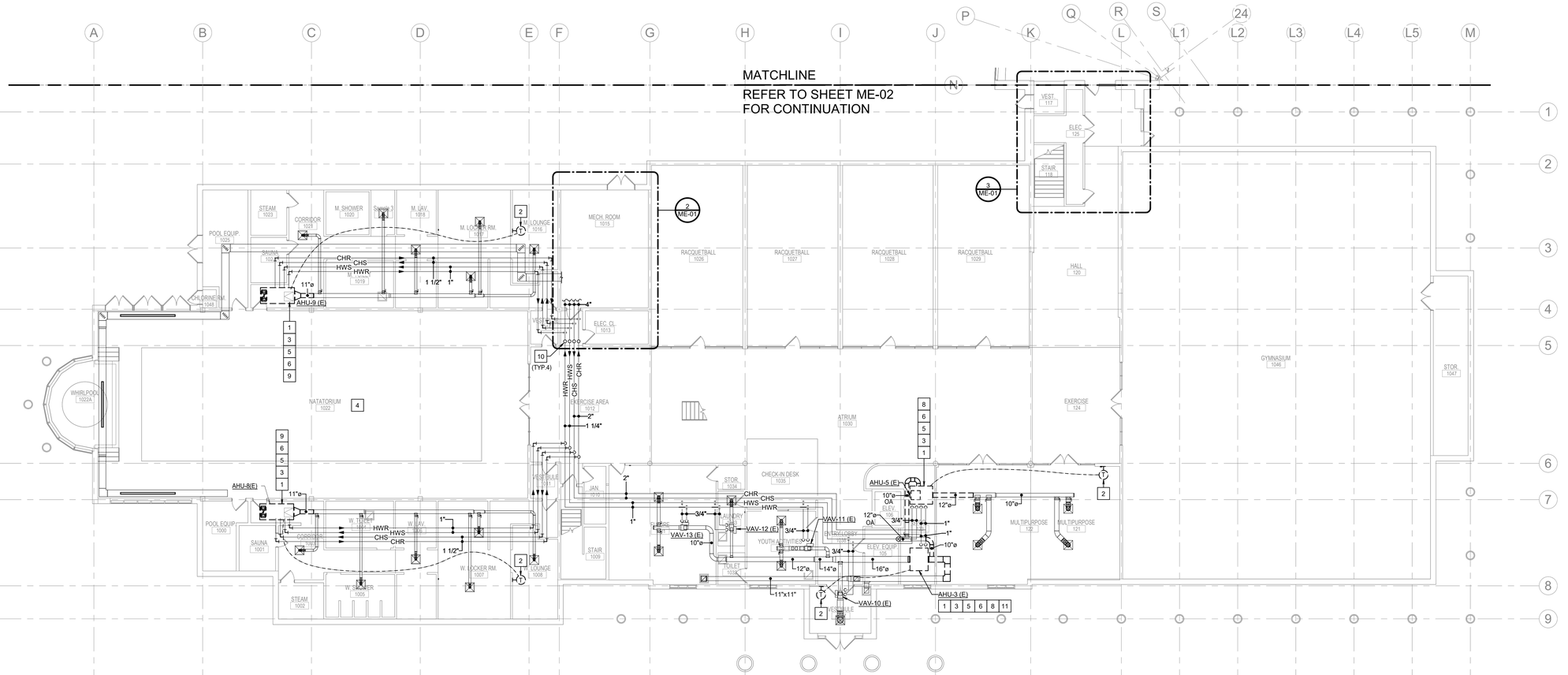
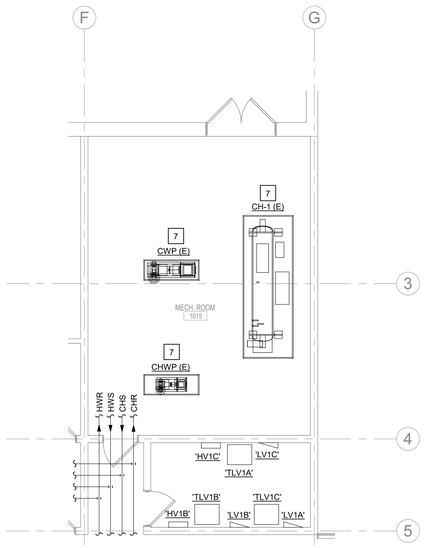


PLAN NORTH / TRUE NORTH

1 GROUND FLOOR - DEMOLITION FLOOR PLAN - MECHANICAL/ELECTRICAL - AREA 'A'

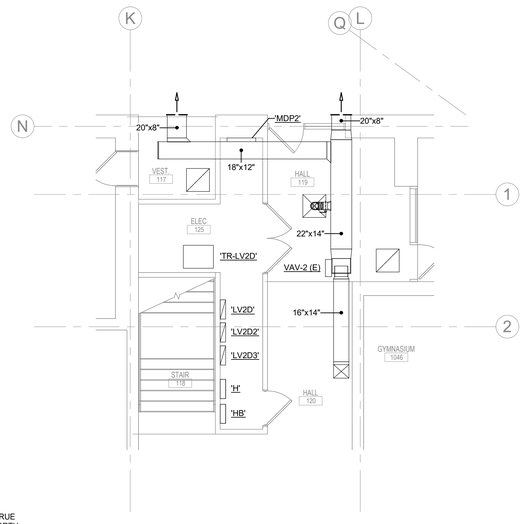
SCALE: 3/32" = 1'-0"



PLAN NORTH / TRUE NORTH

2 PARTIAL DEMOLITION FLOOR PLAN - GROUND FLOOR - ORIGINAL BUILDING - MECH 1015

SCALE: 3/16" = 1'-0"



PLAN NORTH / TRUE NORTH

3 PARTIAL DEMOLITION FLOOR PLAN - GROUND FLOOR - ORIGINAL BUILDING - ELECT 125

SCALE: 3/16" = 1'-0"

DEMOLITION NOTES BY SYMBOL '□':

1. EXISTING AIR HANDLING UNIT TO BE REMOVED.
2. EXISTING PNEUMATIC THERMOSTAT TO BE REMOVED.
3. REMOVE EXISTING DISCONNECT SWITCH AND ELECTRICAL WHIP TO PACKAGED A/C UNIT. EXISTING ELECTRICAL FEEDER TO DISCONNECT SWITCH SHALL REMAIN FOR REUSE. FIELD VERIFY EXISTING CONDITIONS PRIOR TO FINAL DEMOLITION.
4. POOL AREA AND POOL EQUIPMENT NOT IN SCOPE.
5. REMOVE EXISTING CHS/CHR AND HWS/HWR BACK TO ISOLATION VALVES.
6. DISCONNECT EXISTING CONDENSATE DRAIN PIPING TO ALLOW FOR EQUIPMENT REMOVAL.
7. EXISTING CHILLER AND ASSOCIATED EQUIPMENT TO REMAIN OPERATIONAL THROUGHOUT THE CONSTRUCTION PROCESS.
8. REMOVE LAY-IN CEILING AND GRID TO ALLOW FOR THE AHU REPLACEMENT. SAVE AND PROTECT THE TILE AND GRID FOR RE-INSTALLATION.
9. REMOVE GYPSUM CEILING AND ACCESS PANELS TO ALLOW FOR THE AHU REPLACEMENT.
10. 4" CHS/R & HWS/R UP TO SECOND FLOOR.
11. REPLACEMENT OF THIS AHU SHALL BE PRICED AS AN ALTERNATE BID.

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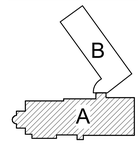
DRAWING HISTORY

№	DATE	DESCRIPTION
	9/17/2018	ISSUE FOR BID

KEY PLAN



PROJECT NAME
ADDISON ATHLETIC CLUB - HVAC IMPROVEMENTS

PROJECT LOCATION
3900 BELTWAY DR.
ADDISON, TX 75001

PROJECT NUMBER
17116.00

SHEET TITLE
GROUND FLOOR DEMOLITION - AREA 'A'

SHEET NUMBER
ME-01

FILE PATH: C:\Revit Local Files\2018\17116-Addison Athletic Club-RWB-v2018_jmorton.rvt
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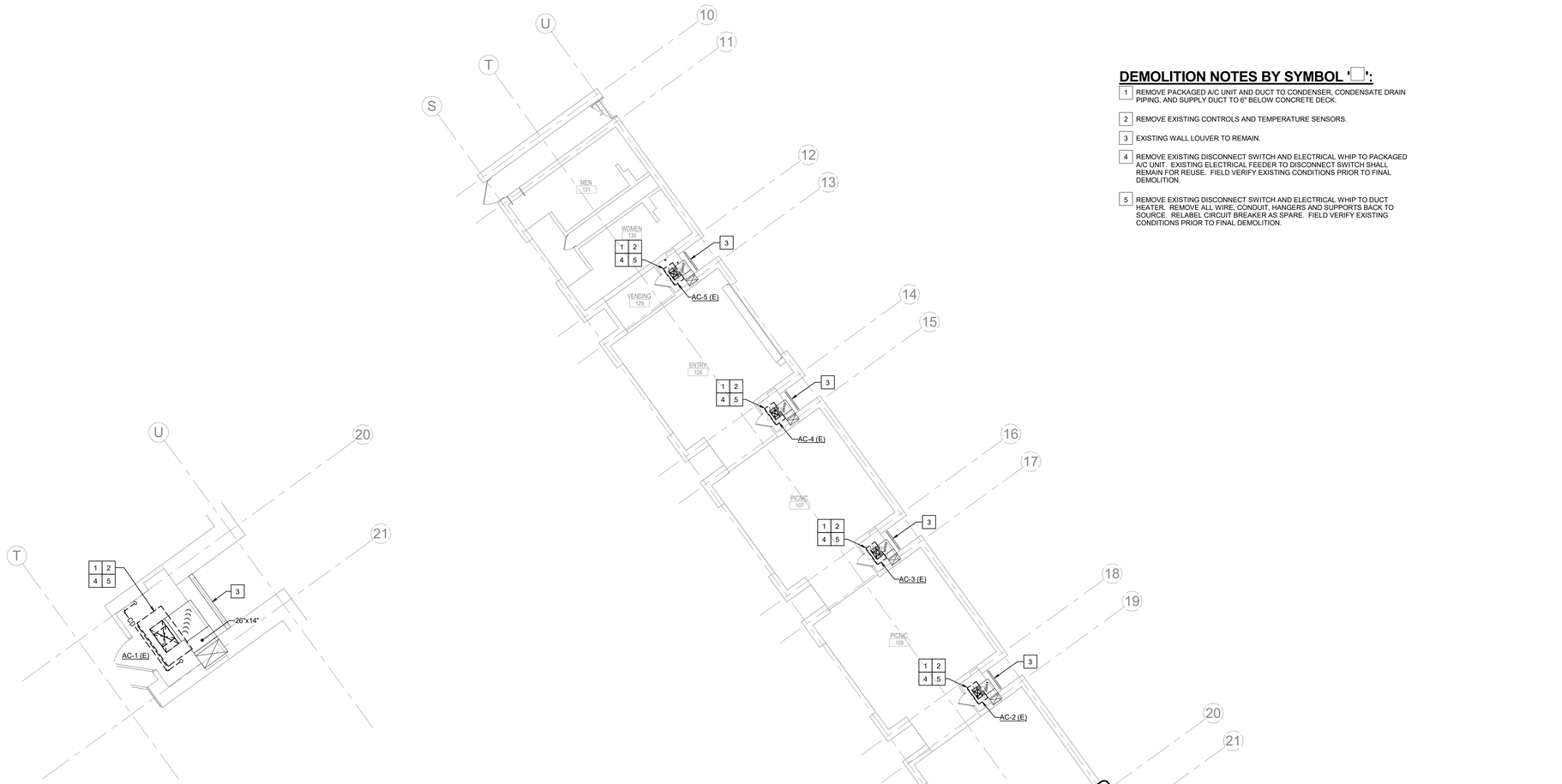

PLAN NORTH TRUE NORTH 2

PARTIAL DEMOLITION FLOOR PLAN - GROUND FLOOR - CARDIO WING - MECHANICAL 112 (TYPICAL FOR AC-2, AC-3, AC-4 & AC-5)

SCALE: 1/4" = 1'-0"

DEMOLITION NOTES BY SYMBOL '□':

1. REMOVE PACKAGED A/C UNIT AND DUCT TO CONDENSER, CONDENSATE DRAIN PIPING, AND SUPPLY DUCT TO 6" BELOW CONCRETE DECK.
2. REMOVE EXISTING CONTROLS AND TEMPERATURE SENSORS.
3. EXISTING WALL LOUVER TO REMAIN.
4. REMOVE EXISTING DISCONNECT SWITCH AND ELECTRICAL WHIP TO PACKAGED A/C UNIT. EXISTING ELECTRICAL FEEDER TO DISCONNECT SWITCH SHALL REMAIN FOR REUSE. FIELD VERIFY EXISTING CONDITIONS PRIOR TO FINAL DEMOLITION.
5. REMOVE EXISTING DISCONNECT SWITCH AND ELECTRICAL WHIP TO DUCT HEATER. REMOVE ALL WIRE, CONDUIT, HANGERS AND SUPPORTS BACK TO SOURCE. RELABEL CIRCUIT BREAKER AS SPARE. FIELD VERIFY EXISTING CONDITIONS PRIOR TO FINAL DEMOLITION.

PLAN NORTH TRUE NORTH 1

GROUND FLOOR - DEMOLITION FLOOR PLAN - AREA 'B'

SCALE: 3/32" = 1'-0"

ARCHITECT

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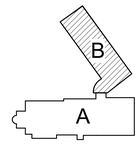
REGISTRATION

DRAWING HISTORY

No	DATE	DESCRIPTION
	9/17/2018	ISSUE FOR BID

KEY PLAN



PROJECT NAME
ADDISON ATHLETIC CLUB - HVAC IMPROVEMENTS

PROJECT LOCATION
3900 BELTWAY DR.
ADDISON, TX 75001

PROJECT NUMBER
17116.00

SHEET TITLE
GROUND FLOOR DEMOLITION - AREA 'B'

SHEET NUMBER
ME-02

FILE PATH: C:\Revit Local Files\2018\17116-Addison Athletic Club-RWB-2018_amcken.rvt
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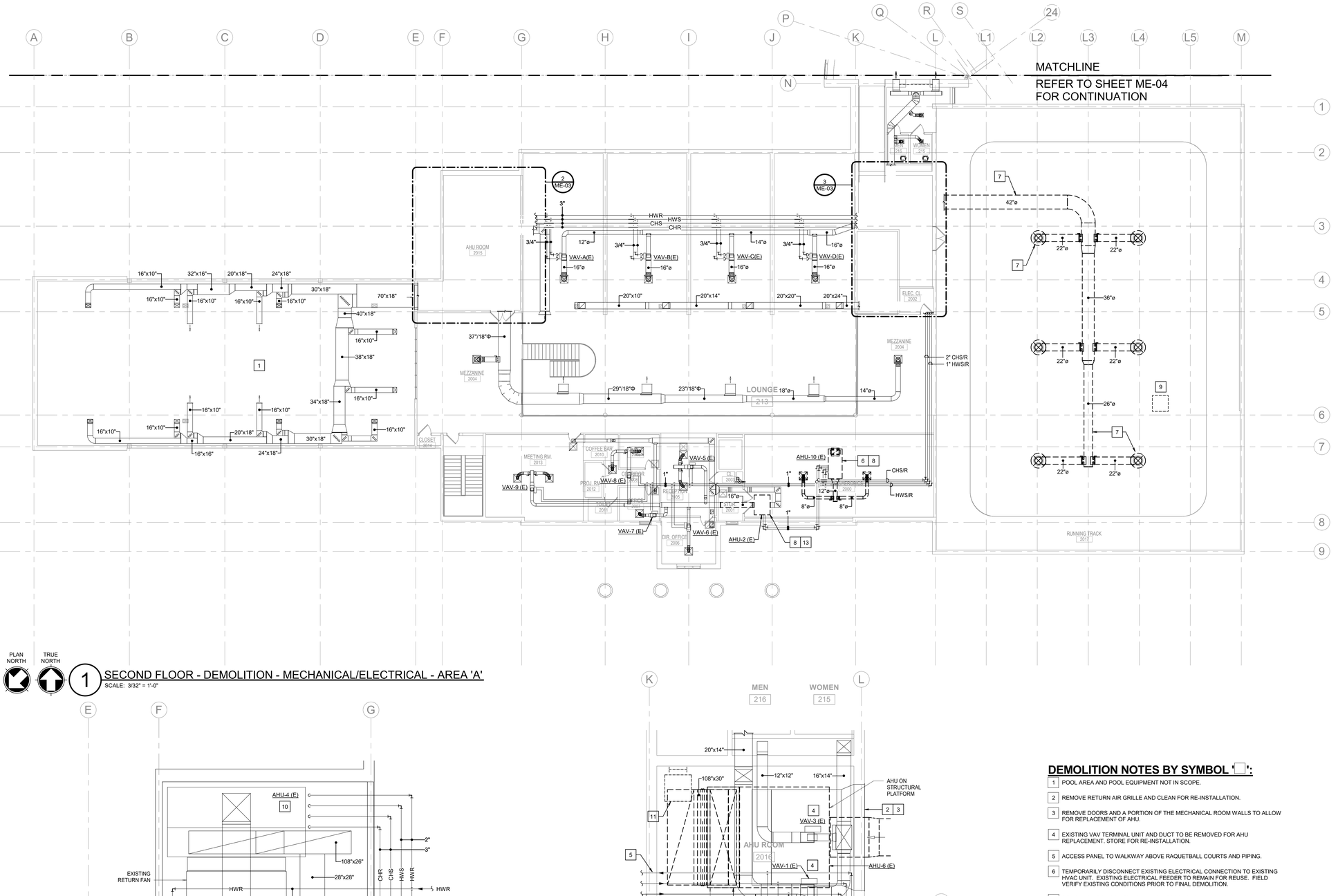
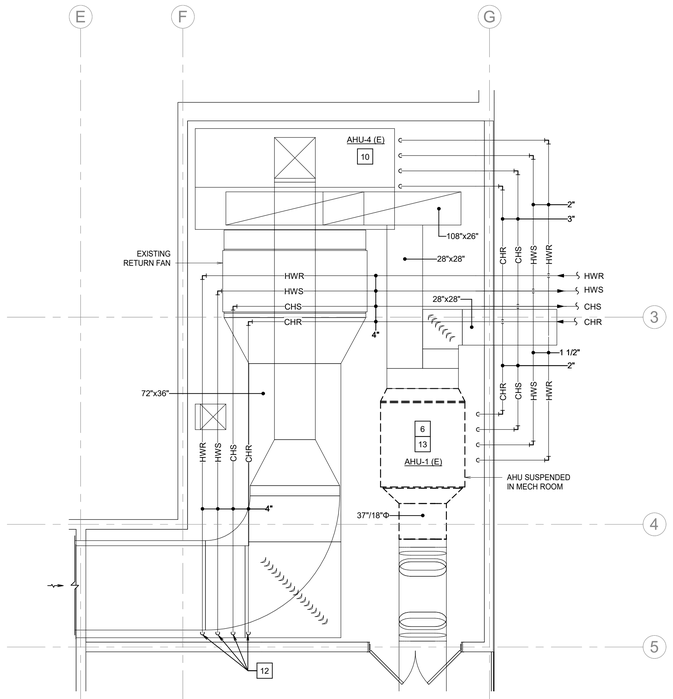


PLAN NORTH / TRUE NORTH

1 SECOND FLOOR - DEMOLITION - MECHANICAL/ELECTRICAL - AREA 'A'

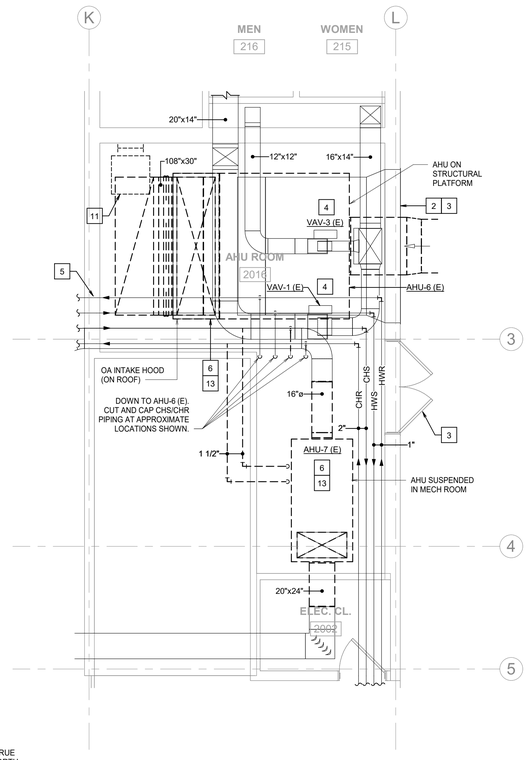
SCALE: 3/32" = 1'-0"



PLAN NORTH / TRUE NORTH

2 PARTIAL FLOOR PLAN - SECOND FLOOR - ORIGINAL BUILDING - MECHANICAL 1015

SCALE: 1/4" = 1'-0"



PLAN NORTH / TRUE NORTH

3 PARTIAL FLOOR PLAN - SECOND FLOOR - ORIGINAL BUILDING - MECHANICAL 125

SCALE: 1/4" = 1'-0"

DEMOLITION NOTES BY SYMBOL '□':

1. POOL AREA AND POOL EQUIPMENT NOT IN SCOPE.
2. REMOVE RETURN AIR GRILLE AND CLEAN FOR RE-INSTALLATION.
3. REMOVE DOORS AND A PORTION OF THE MECHANICAL ROOM WALLS TO ALLOW FOR REPLACEMENT OF AHU.
4. EXISTING VAV TERMINAL UNIT AND DUCT TO BE REMOVED FOR AHU REPLACEMENT. STORE FOR RE-INSTALLATION.
5. ACCESS PANEL TO WALKWAY ABOVE RAQUETBALL COURTS AND PIPING.
6. TEMPORARILY DISCONNECT EXISTING ELECTRICAL CONNECTION TO EXISTING HVAC UNIT. EXISTING ELECTRICAL FEEDER TO REMAIN FOR REUSE. FIELD VERIFY EXISTING CONDITIONS PRIOR TO FINAL DEMOLITION.
7. REMOVE EXISTING DUCTWORK AND ASSOCIATED AIR DEVICES IN GYMNASIUM. (ALTERNATE BID)
8. REMOVE EXISTING DISCONNECT SWITCH AND ELECTRICAL WHIP TO PACKAGED A/C UNIT. EXISTING ELECTRICAL FEEDER TO DISCONNECT SWITCH SHALL REMAIN FOR REUSE. FIELD VERIFY EXISTING CONDITIONS PRIOR TO FINAL DEMOLITION.
9. EXISTING RELIEF AIR HOOD TO REMAIN.
10. EXISTING AHU-4 (POOL UNIT) IS NOT IN THE SCOPE.
11. EXISTING ROOF HATCH TO REMAIN.
12. PIPING DOWN TO GROUND FLOOR.
13. REPLACEMENT OF THIS AHU SHALL BE PRICED AS AN ALTERNATE BID.

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STATE OF TEXAS J. MIKE ADCOCK 86850 LICENSED PROFESSIONAL ENGINEER 4/7/18

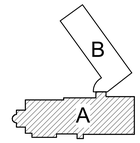
REGISTERED DAVID W. BOOM 95600 PROFESSIONAL ENGINEER 2018-04-17

REGISTRATION

DRAWING HISTORY

No.	DATE	DESCRIPTION
	3/17/2018	ISSUE FOR BID

KEY PLAN



PROJECT NAME

ADDISON ATHLETIC CLUB - HVAC IMPROVEMENTS

PROJECT LOCATION

3900 BELTWAY DR. ADDISON, TX 75001

PROJECT NUMBER

17116.00

SHEET TITLE

SECOND FLOOR DEMOLITION - AREA 'A'

SHEET NUMBER

ME-03

FILE PATH: C:\Revit Local Files\2018\17116 Addison Athletic Club\RWB-2018_smorken.rvt
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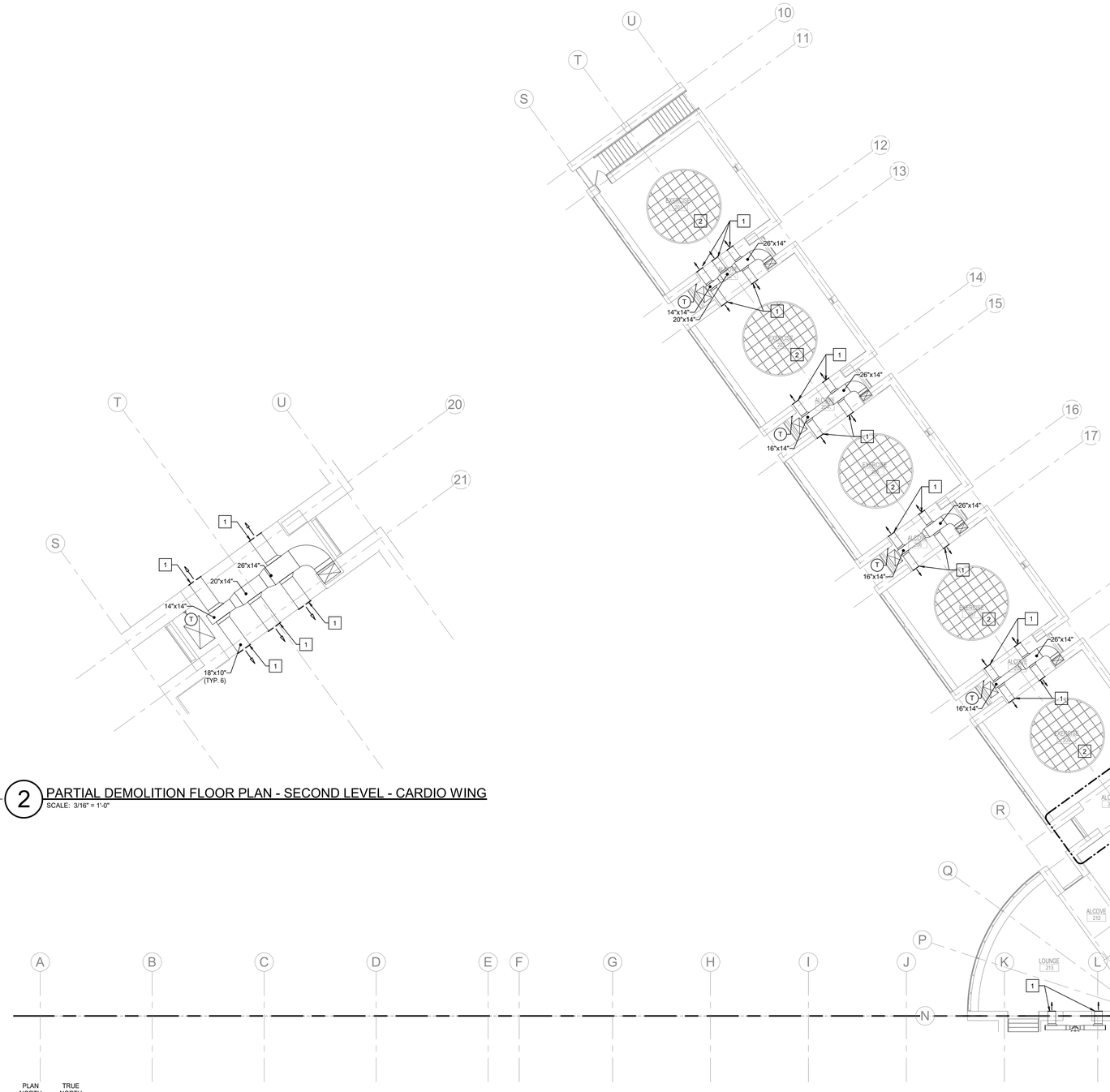
PLOT SCALE:As indicated



PLAN NORTH TRUE NORTH

1 SECOND FLOOR - DEMOLITION - MECHANICAL/ELECTRICAL - AREA 'B'

SCALE: 3/32" = 1'-0"

PLAN NORTH TRUE NORTH

2 PARTIAL DEMOLITION FLOOR PLAN - SECOND LEVEL - CARDIO WING

SCALE: 3/16" = 1'-0"

DEMOLITION NOTES BY SYMBOL '□':

1 REMOVE EXISTING SUPPLY GRILLE.

2 REMOVE CIRCLE HANGING GRID LOCATED BELOW THE LIGHTS IN THIS AREA.

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RWB PROJECT #17116-00

STATE OF TEXAS — J. MIKE ADCOCK — 86850 — LICENSED PROFESSIONAL ENGINEER — 9/7/18

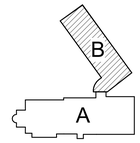
STATE OF TEXAS — DAVID M. BOON — 95600 — LICENSED PROFESSIONAL ENGINEER — 2018.09.17

REGISTRATION

DRAWING HISTORY

No	DATE	DESCRIPTION
	9/17/2018	ISSUE FOR BID

KEY PLAN



PROJECT NAME
ADDISON ATHLETIC CLUB - HVAC IMPROVEMENTS

PROJECT LOCATION
3900 BELTWAY DR.
ADDISON, TX 75001

PROJECT NUMBER
17116.00

SHEET TITLE
SECOND FLOOR DEMOLITION - AREA 'B'

SHEET NUMBER
ME-04

FILE PATH: C:\Revit Local Files\2018\17116-Addison Athletic Club-RWB-2018_jamoreen.rvt
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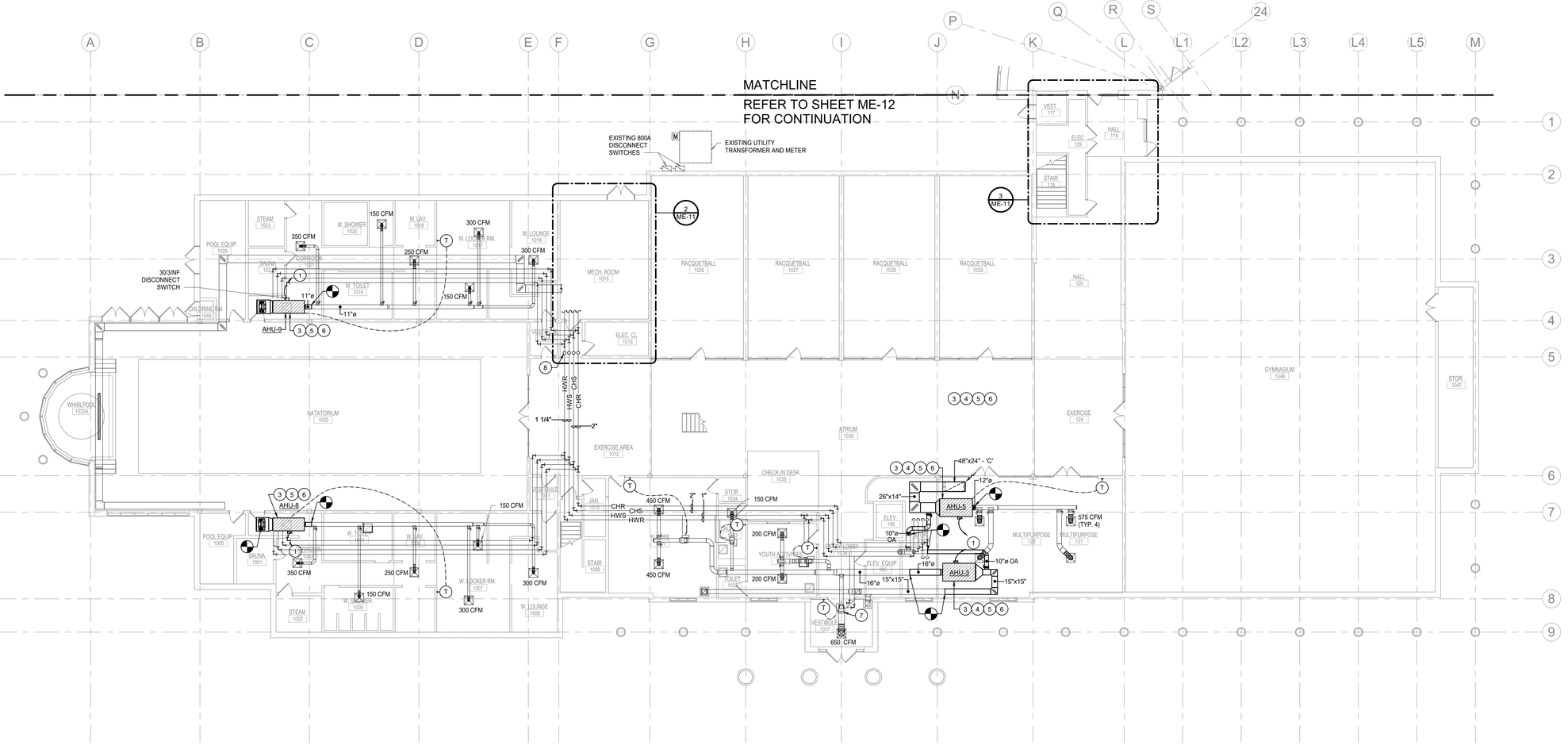
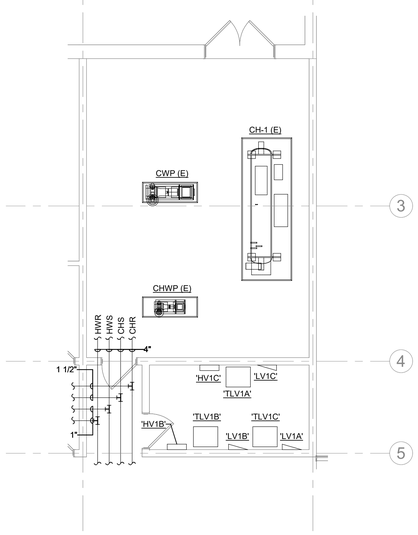
PLOT SCALE:As indicated

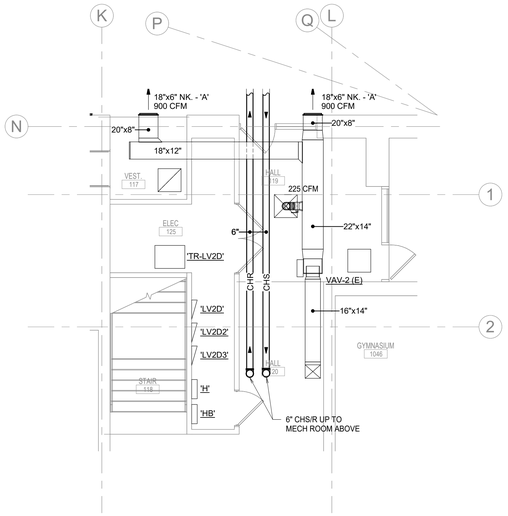


PLAN NORTH / TRUE NORTH

1 GROUND FLOOR - MECHANICAL/ELECTRICAL - AREA 'A'

SCALE: 3/32" = 1'-0"





PLAN NORTH / TRUE NORTH

2 PARTIAL FLOOR PLAN - GROUND FLOOR - ORIGINAL BUILDING - MECH 1015

SCALE: 3/16" = 1'-0"

PLAN NORTH / TRUE NORTH

3 PARTIAL FLOOR PLAN - GROUND FLOOR - ORIGINAL BUILDING - MECH 125

SCALE: 3/16" = 1'-0"

NOTES BY SYMBOL '◯':

1. PROVIDE A NEW 30/3/15AF FUSED DISCONNECT SWITCH FOR NEW A/C UNIT. TERMINATE TO EXISTING FEEDER MADE AVAILABLE FROM DEMOLITION. PROVIDE NEW ELECTRICAL WHIP FROM NEW DISCONNECT SWITCH TO NEW A/C UNIT WITH (3)#12, #12 GROUND IN 3/4" CONDUIT. FIELD VERIFY EXISTING CONDITIONS PRIOR TO FINAL ROUGH-IN.
3. SUSPEND NEW UNIT FROM STRUCTURE UTILIZING NEW VIBRATION ISOLATION.
4. REPLACE THE EXISTING CEILING GRID AND LAY-IN TILE TO MATCH THE ORGINAL CONDITIONS.
5. REPAIR GYP CEILINGS AND PAINT TO MATCH THE ADJACENT LOCKER ROOM CEILING. INSTALL (2) 24"X24" STAINLESS STEEL ACCESS PANELS, ONE TO ACCESS FILTERS AND ONE TO ACCESS THE COIL SECTION AND CONTROL VALVES.
6. PROVIDE NEW 2-WAY CONTROL VALVES AND TEMP SENSOR FOR NEW AHU.
7. EXISTING TERMINAL UNIT TO REMAIN. VERIFY OPERATION PRIOR TO PERFORMING TAB ON NEW AHU.
8. 4" CHS/R & HWS/R UP TO SECOND FLOOR.

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RWB PROJECT #17116-00

STATE OF TEXAS — J. MIKE ADCOCK — 86850 — LICENSED PROFESSIONAL ENGINEER — 9/17/18

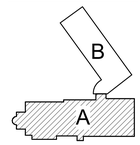
STATE OF TEXAS — DAVID M. BOON — 95600 — LICENSED PROFESSIONAL ENGINEER — 9/17/18

REGISTRATION

DRAWING HISTORY

№	DATE	DESCRIPTION
	9/17/2018	ISSUE FOR BID

KEY PLAN



PROJECT NAME
ADDISON ATHLETIC CLUB - HVAC IMPROVEMENTS

PROJECT LOCATION
3900 BELTWAY DR.
ADDISON, TX 75001

PROJECT NUMBER
17116.00

SHEET TITLE
GROUND FLOOR PLAN - AREA 'A'

SHEET NUMBER
ME-11

FILE PATH: C:\Revit Local Files\2018\17116-Addison Athletic Club-RWB-v2018_jmorton.rvt
DATE/TIME:9/17/2018 11:54:19 AM
PLOT SCALE:As indicated

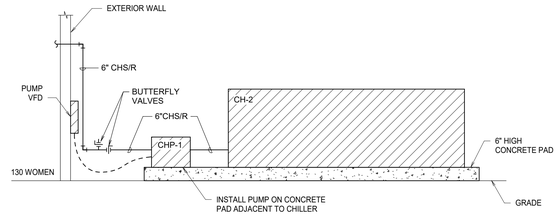
PLAN NORTH TRUE NORTH

2 PARTIAL FLOOR PLAN - GROUND FLOOR - CARDIO WING

SCALE: 1/4" = 1'-0"

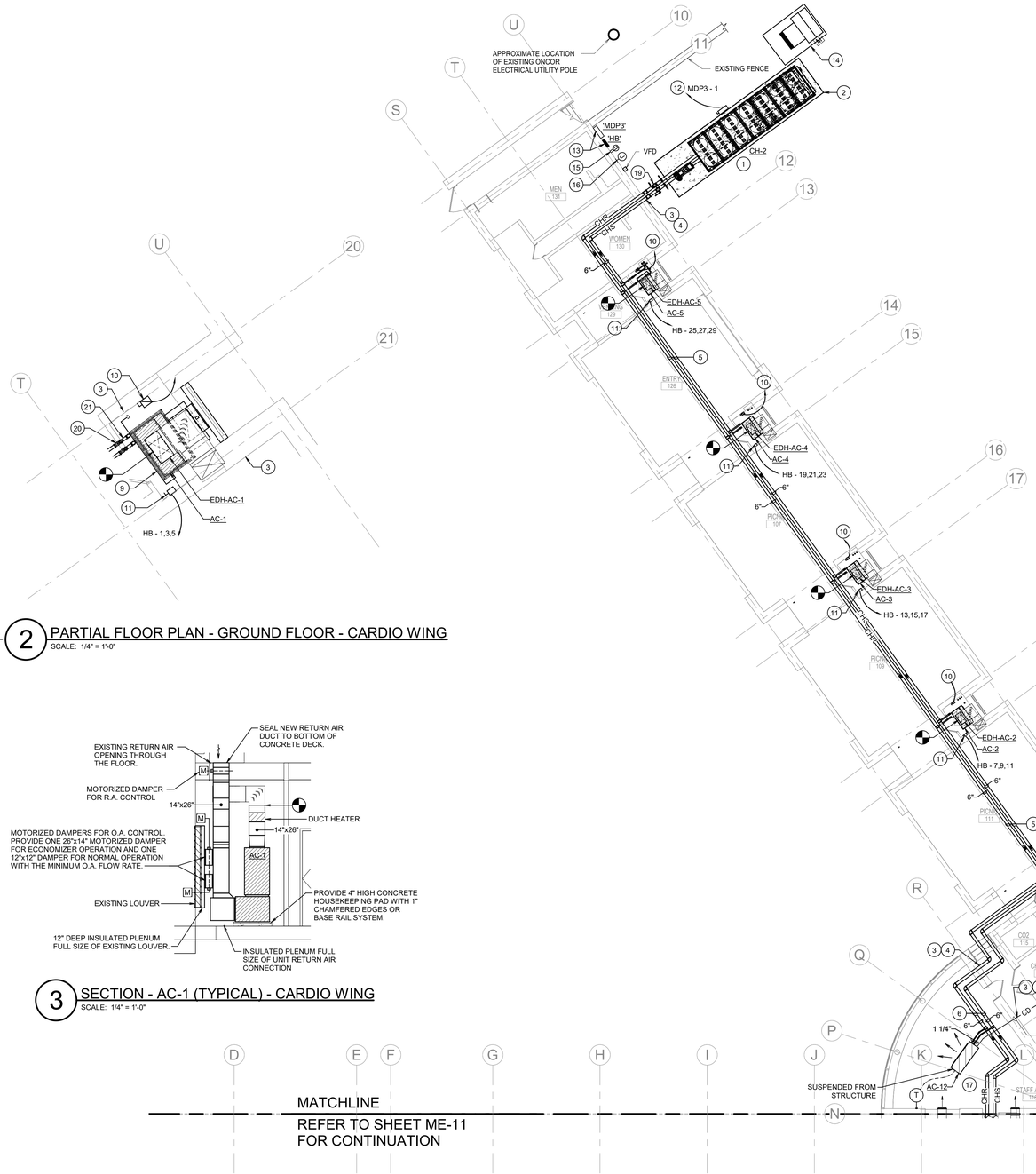
3 SECTION - AC-1 (TYPICAL) - CARDIO WING

SCALE: 1/4" = 1'-0"



4 CHILLER CH-2 SECTION

NO SCALE



PLAN NORTH TRUE NORTH

1 GROUND FLOOR PLAN - AREA 'B'

SCALE: 3/32" = 1'-0"

NOTES BY SYMBOL '⬡':

1. PROVIDE MANUFACTURERS RECOMMENDED CLEARANCES FOR SERVICE AND AIR FLOW. CONTRACTOR TO LOCATE CHILLER TO MINIMIZE IMPACT TO EXISTING LANDSCAPING. CONFIRM MODIFICATIONS TO SITE PRIOR TO MAKING ANY CHANGES TO THE EXISTING CONDITIONS.
2. PROVIDE 6" THICK CONCRETE PAD WITH 1" CHAMFERED EDGES. PAD SHALL BE 4" LARGER THAN THE CHILLER SKID IN EACH DIRECTION.
3. SLEEVE PIPE PENETRATIONS THROUGH WALL AND SEAL TO BE WATERPROOF.
4. INSULATE PIPING OUTSIDE BUILDING AND COVER WITH AN ALUMINUM JACKET.
5. PIPING SHALL BE INSTALLED TIGHT TO BOTTOM OF THE STRUCTURE ADJACENT TO THE FIRE PROTECTION PIPING. THE PIPING INSTALLED IN THE RESTROOMS AND PICNIC AREAS SHALL BE INSULATED AND WRAPPED WITH A WHITE PVC JACKET.
6. PIPING INSIDE THE BUILDING SHALL BE INSULATED AND WRAPPED WITH A PVC JACKET.
7. 1-1/4" CHS/R PIPING UP TO CEILING MOUNTED CASSETTE UNITS. PROVIDE BALL VALVES IN MECH. ROOM TO ISOLATE THE CASSETTE UNITS FROM THE AIR HANDLING UNITS.
8. 3/4" CONDENSATE DRAIN FROM CEILIING MOUNTED CASSETTE UNITS TO HUB DRAIN IN MECH. ROOM.
9. 3/4" CONDENSATE DRAIN FROM AHU TO HUB DRAIN IN MECH. ROOM.
10. PROVIDE NEW 30/3/15AF FUSED DISCONNECT SWITCH FOR NEW AIR HANDLING UNIT. RE-CONNECT TO EXISTING FEEDER. PROVIDE (3) #12 & #12 GROUND IN 3/4" FLEXIBLE METAL CONDUIT FROM NEW DISCONNECT SWITCH TO NEW AIR HANDLING UNIT. FIELD VERIFY EXISTING CONDITIONS PRIOR TO FINAL INSTALLATION.
11. PROVIDE NEW 60/3/NF NON-FUSED DISCONNECT SWITCH FOR NEW ELECTRIC DUCT HEATER. PROVIDE NEW ELECTRICAL BRANCH CIRCUIT AS SHOWN. PROVIDE ALL ELECTRICAL TERMINATIONS TO DUCT HEATER.
12. PROVIDE SINGLE FEEDER FROM DISTRIBUTION PANELBOARD TO AIR COOLED CHILLER PACKAGE FACTORY MOUNTED DISCONNECT SWITCH AS SHOWN.
13. PROVIDE NEW WALL MOUNTED PANELBOARDS. REFERENCE SHEET ME-41 FOR DETAILS.
14. NEW PAD MOUNTED TRANSFORMER AND ASSOCIATED METER BY ONCOR. TRANSFORMER PAD BY CONTRACTOR PER ONCOR DESIGN AND CONSTRUCTION STANDARDS. CONTRACTOR SHALL PROVIDE TWO (2) 4" CONDUITS UNDERGROUND TO AND CONDUIT POLE RISER UP ONCOR ELECTRICAL UTILITY POLE NORTH OF TRANSFORMER LOCATION. COORDINATE EXACT POLE LOCATION WITH ONCOR. PROVIDE SECONDARY ELECTRICAL FEEDER TO NEW DISTRIBUTION PANELBOARD MDP3. REFERENCE SHEET ME-41 FOR DETAILS.
15. PROVIDE GFCI RECEPTACLE WITH WEATHERPROOF COVER. PROVIDE 120V CIRCUIT FROM EXISTING PANELBOARD 'LV2D3'.
16. PROVIDE 120V CIRCUIT FROM EXISTING PANELBOARD 'LV2D3' FOR CHILLER CONTROLS AND CONTROL PANEL. COORDINATE EXACT REQUIREMENTS WITH CHILLER MANUFACTURER'S SPECIFICATIONS PRIOR TO ROUGH-IN.
17. PROVIDE 208V CIRCUIT FROM EXISTING PANELBOARD 'LV2D3' FOR POWER TO NEW HVAC UNIT. PROVIDE NEW 2-POLE, 45A CIRCUIT BREAKER IN PANELBOARD. PROVIDE 2#6 & #10 GROUND IN 3/4" CONDUIT.
18. ROUTE 3/4" PVC CONDENSATE DRAIN TO NEAREST FLOOR DRAIN. MAINTAIN 1/8" PER FOOT SLOPE.
19. PROVIDE A 6" DIA. TEE IN CHS/R PIPING. INSTALL A VALVE AND A BLIND FLANGE TO BE USED FOR CONNECTION TO A RENTAL CHILLER IN THE EVENT THAT CH-2 IS NOT OPERATIONAL. INSULATE AND SEAL THE ENTIRE ASSEMBLY.
20. BALL VALVES FOR ISOLATION OF BRANCH PIPING IN MECHANICAL ROOM. TYPICAL FOR ALL AHU'S.
21. 2" CHS/R PIPING TO AHU IN MECHANICAL ROOM WITH 1-1/4" VALVE AND CAP FOR FUTURE CONNECTION.

ARCHITECT

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RWB PROJECT #17116-00

STATE OF TEXAS — J. MIKE ADCOCK — 86850 — LICENSED PROFESSIONAL ENGINEER — 4/1/16

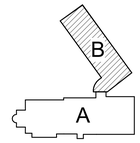
STATE OF TEXAS — DAVID M. BOON — 95600 — LICENSED PROFESSIONAL ENGINEER — 2016.09.13

REGISTRATION

DRAWING HISTORY

No	DATE	DESCRIPTION
	9/17/2016	ISSUE FOR BID

KEY PLAN



PROJECT NAME
ADDISON ATHLETIC CLUB - HVAC IMPROVEMENTS

PROJECT LOCATION
3900 BELTWAY DR.
ADDISON, TX 75001

PROJECT NUMBER
17116.00

SHEET TITLE
GROUND FLOOR PLAN - AREA 'B'

SHEET NUMBER
ME-12

FILE PATH: C:\Revit Local Files\2016\17116-Addison Athletic Club-RWB-2016_jonorian.rvt
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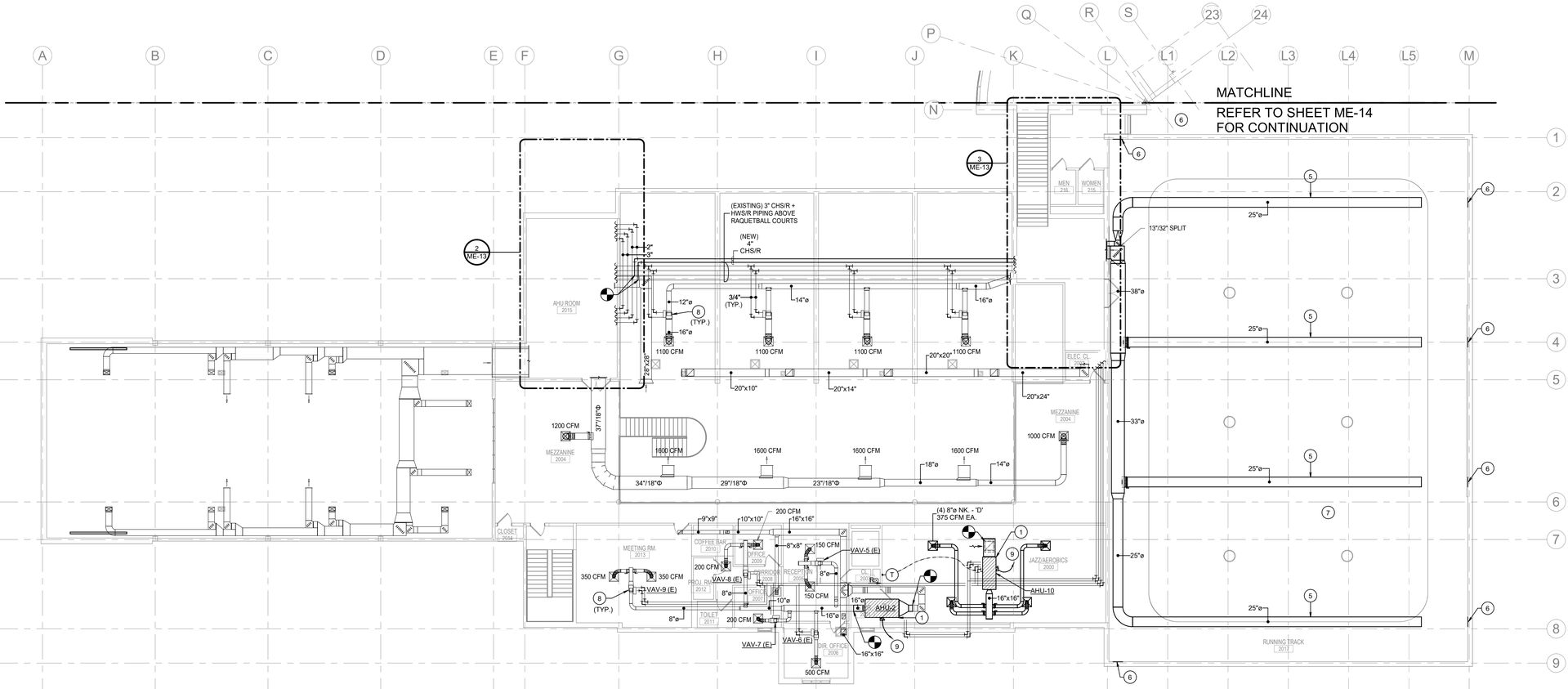
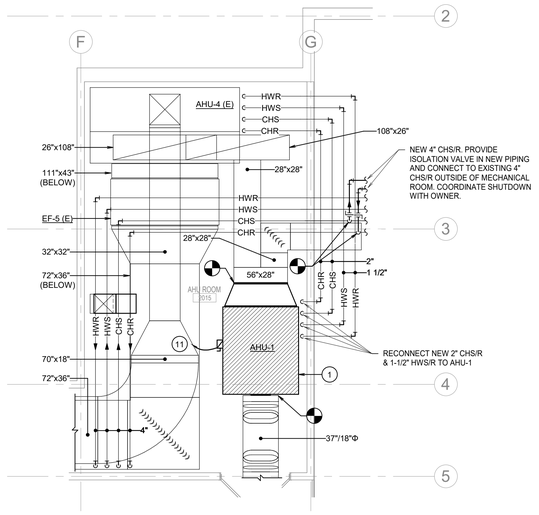


PLAN NORTH / TRUE NORTH

1 SECOND FLOOR PLAN - AREA 'A'

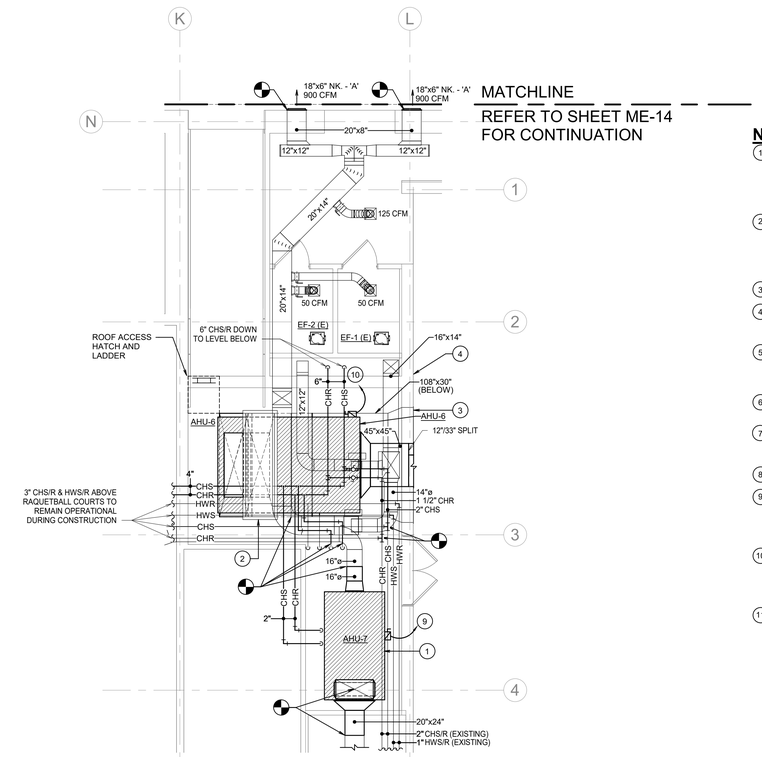
SCALE: 3/32" = 1'-0"



PLAN NORTH / TRUE NORTH

2 SECOND FLOOR PLAN - AREA 'A' - MECH 2015

SCALE: 3/16" = 1'-0"



PLAN NORTH / TRUE NORTH

3 SECOND FLOOR PLAN - AREA 'A' - MECH 125

SCALE: 3/16" = 1'-0"

NOTES BY SYMBOL '◯':

1. SUSPEND AHU FROM STRUCTURE AND CONNECT TO EXISTING SUPPLY DUCT. PROVIDE NEW RETURN AIR GRILLE AND RETURN AIR DUCT. CONNECT EXISTING OUTSIDE AIR DUCT TO NEW AHU. INSTALL NEW ELECTRONIC ACTUATORS ON EXISTING DAMPERS. PROVIDE NEW 2-WAY LOW VOLTAGE CONTROL VALVES FOR THE CHILLED AND HEATING WATER COILS. CONNECT NEW AHU TO THE EXISTING CONDENSATE PIPING.
2. UTILIZE THE EXISTING STRUCTURAL PLATFORM FOR THE NEW AHU. RETURN AIR DUCT WILL CONNECT TO THE BOTTOM OF THE MIXING SECTION AND THE OUTSIDE AIR DUCT WILL CONNECT TO THE TOP OF THE MIXING SECTION. PROVIDE MOTORIZED DAMPERS IN THE R.A. AND O.A. DUCTS. INSTALL NEW 2-WAY CONTROL VALVES FOR THE CHILLED AND HEATING WATER COILS. INSTALL NEW 3/4" CONDENSATE DRAIN PIPING TO THE FLOOR DRAIN.
3. CLEAN AND RE-USE THE SIDEWALL RETURN AIR.
4. REPAIR THE WALL OPENING UTILIZED FOR REMOVAL AND RE-INSTALLATION OF THE AIR HANDLING UNIT. PATCH AND MATCH THE FINISH OF THE ADJACENT WALL THAT WAS NOT DAMAGED.
5. PROVIDE AN ALTERNATE BID TO INSTALL FABRIC DUCT AND THE CABLE SUPPORT SYSTEM FOR THE CONFIGURATION SHOWN. THE BASIS OF DESIGN IS DUCTSOX, MATERIAL: DURATEX WITH NOZZLES AT 45° FROM BOTTOM CENTERLINE ON EACH SIDE OF DUCT, SKELECORE SUSPENSION.
6. FABRIC DUCT CABLE SUSPENSION POINTS. PROVIDE STRUCTURAL SUPPORTS TO DISTRIBUTE THE CABLE TENSION INTO THE WALL STRUCTURE.
7. REPLACE THE EXISTING ROOF MOUNTED RELIEF AIR HOOD AND INSTALL A MOTORIZED DAMPER AT THE ROOF OPENING TO MODULATE TO MAINTAIN THE BUILDING PRESSURIZATION.
8. EXISTING VAV TERMINAL TO REMAIN.
9. PROVIDE A NEW 30/3/15 AF FUSED DISCONNECT SWITCH FOR NEW A/C UNIT. TERMINATE TO EXISTING FEEDER MADE AVAILABLE FROM DEMOLITION. PROVIDE NEW ELECTRICAL WHIP FROM NEW DISCONNECT SWITCH TO NEW A/C UNIT WITH (3)#12, #12 GROUND IN 3/4" CONDUIT. FIELD VERIFY EXISTING CONDITIONS PRIOR TO FINAL ROUGH-IN.
10. PROVIDE A NEW 60/3/45 AF FUSED DISCONNECT SWITCH FOR NEW A/C UNIT. TERMINATE TO EXISTING FEEDER MADE AVAILABLE FROM DEMOLITION. PROVIDE NEW ELECTRICAL WHIP FROM NEW DISCONNECT SWITCH TO NEW A/C UNIT WITH (3)#6, #10 GROUND IN 1" CONDUIT. FIELD VERIFY EXISITING CONDITIONS PRIOR TO FINAL ROUGH-IN.
11. RECONNECT EXISTING DISCONNECT AND ELECTRICAL FEEDER TO NEW AHU-1 VFD. EXTEND WIRE AND CONDUIT TO EXISTING DISCONNECTS NEW LOCATION. FIELD VERIFY EXISTING CONDTIONS PRIOR TO FINAL ROUGH-IN.

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RWB PROJECT #17116-00

REGISTRATION

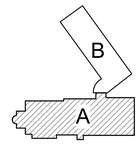
STATE OF TEXAS — J. MIKE ADCOCK — 86850 — LICENSED PROFESSIONAL ENGINEER — 9/7/18

STATE OF TEXAS — DAVID M. BOON — 95600 — LICENSED PROFESSIONAL ENGINEER — 09/07/2018

DRAWING HISTORY

No.	DATE	DESCRIPTION
	9/17/2018	ISSUE FOR BID

KEY PLAN



PROJECT NAME
ADDISON ATHLETIC CLUB - HVAC IMPROVEMENTS

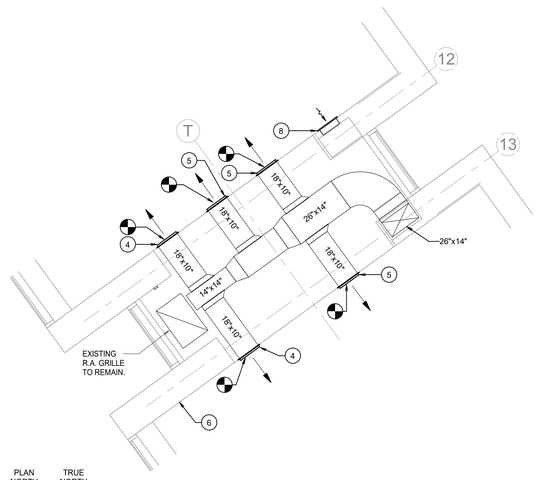
PROJECT LOCATION
3900 BELTWAY DR.
ADDISON, TX 75001

PROJECT NUMBER
17116.00

SHEET TITLE
SECOND FLOOR PLAN - AREA 'A'

SHEET NUMBER
ME-13

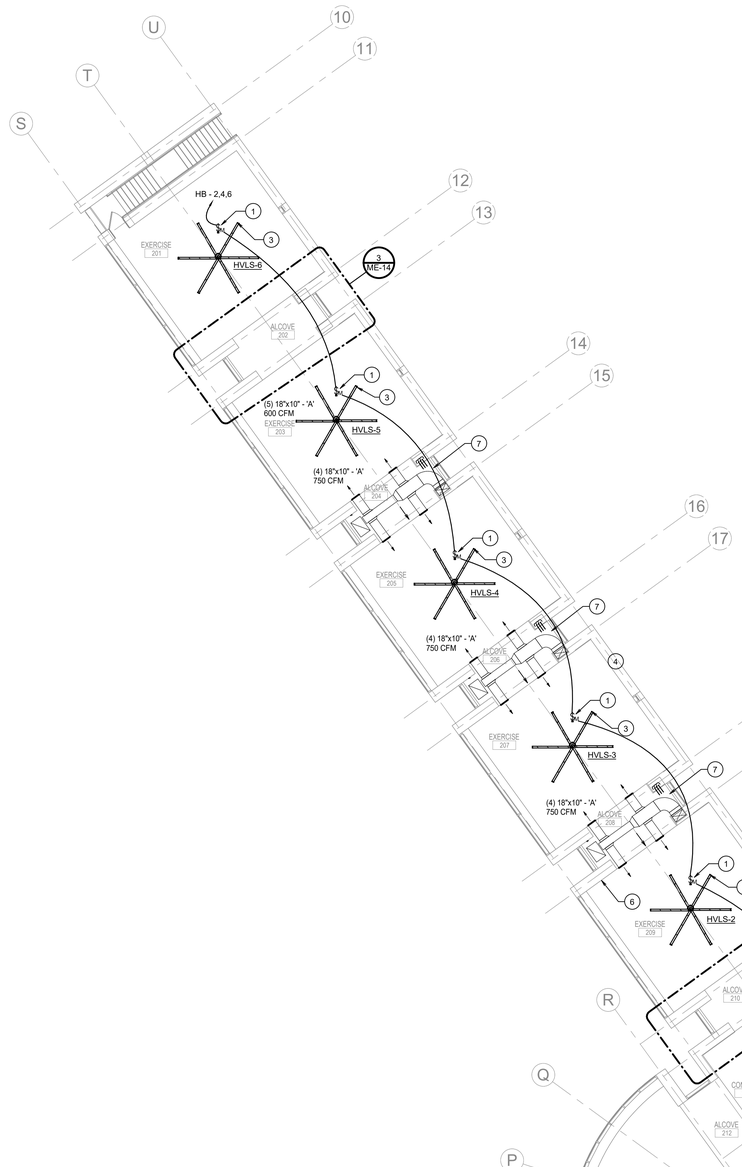
FILE PATH: C:\Revit Local Files\2018\17116 Addison Athletic Club\RWB-2018_amorhan.rvt
DATE/TIME:9/17/2018 11:04:13 AM
PLOT SCALE:As indicated

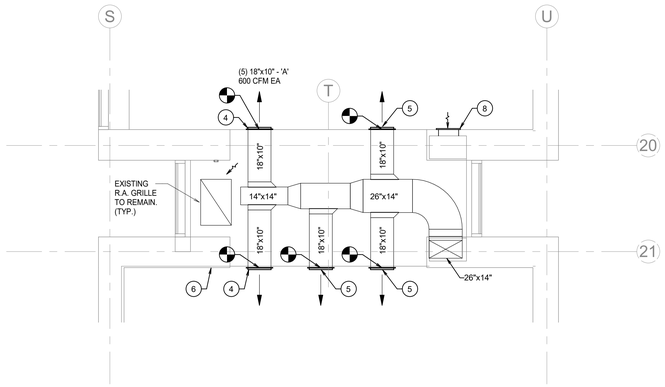


PLAN NORTH TRUE NORTH

3 PARTIAL FLOOR PLAN - SECOND FLOOR PLAN - AREA 'B'

SCALE: 1/4" = 1'-0"





PLAN NORTH TRUE NORTH

2 PARTIAL FLOOR PLAN - SECOND FLOOR

SCALE: 1/4" = 1'-0"

A B C D E F G H I J K L L1 L2 L3 L4 L5 M

PLAN NORTH TRUE NORTH

1 SECOND FLOOR PLAN - AREA 'B'

SCALE: 3/32" = 1'-0"

NOTES BY SYMBOL '◯':

1. PROVIDE A MOTOR THERMAL OVERLOAD SWITCH AND MOUNT TO THE STRUCTURE NEAR THE FAN, BUT NOT UNDER THE BLADES.
3. PROVIDE (1) MOCKUP OF THE HIGH VELOCITY FANS FOR APPROVAL FROM FACILITY AND CITY PRIOR TO INSTALLATION OF THE OTHER FANS. COORDINATE HVLS ROD LENGTH AND EXISTING LIGHTS. FAN SHALL BE INSTALLED BELOW LIGHTS.
4. INSTALL NEW DRUM LOUVER TO MATCH THE EXISTING DUCT SIZE. REFER TO THE AIR DEVICE SCHEDULE. ADJUST THE DISCHARGE AIR DIRECTION TO EVENLY COVER THE WINDOWS.
5. INSTALL NEW DRUM LOUVER TO MATCH THE EXISTING DUCT SIZE. REFER TO THE AIR DEVICE SCHEDULE. ADJUST THE DISCHARGE AIR DIRECTION TO EVENLY COVER THE ROOM.
6. INSTALL A LOCKABLE COVER OVER THE CONTROL PANEL FOR THE HVLS FANS. TWO CONTROL PANELS TO INDIVIDUALLY OPERATE ALL FANS. PROVIDE A NEW 1P20A CIRCUIT BREAKER IN EXISTING PANEL 'LV2D3' TO FEED HVLS FANS WITH 2#12, #12 GROUND IN 3/4" CONDUIT.
7. REPAIR GYP CEILING AND WALLS DAMAGED BY THE CEILING CASSETTE INSTALLATION. MATCH THE ADJACENT FINISH AND COLOR. PAINT THE WALLS CORNER TO CORNER AND THE ENTIRE CEILING TO AVOID COLOR MATCHING ISSUES.
8. INSTALL NEW 36"x24"—'B' RETURN AIR GRILLE 1'-0" A.F.F.

ARCHITECT

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RWB PROJECT #17116-00

STATE OF TEXAS
J. MIKE ADCOCK
86850
LICENSED
PROFESSIONAL ENGINEER
9/17/18

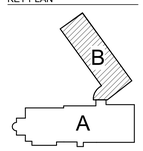
STATE OF TEXAS
DAVID M. BOON
95600
LICENSED
PROFESSIONAL ENGINEER
09-17-18

REGISTRATION

DRAWING HISTORY

No	DATE	DESCRIPTION
	9/17/2018	ISSUE FOR BID

KEY PLAN



PROJECT NAME
ADDISON ATHLETIC CLUB - HVAC IMPROVEMENTS

PROJECT LOCATION
3900 BELTWAY DR.
ADDISON, TX 75001

PROJECT NUMBER
17116.00

SHEET TITLE
SECOND FLOOR PLAN - AREA 'B'

SHEET NUMBER
ME-14

FILE PATH: C:\Revit Local Files\2018\17116-Addison Athletic Club-RWB-2018_smcrken.rvt
DATE/TIME:9/17/2018 11:54:13 AM
PLOT SCALE:As indicated

PACKAGED AIR COOLED CHILLER SCHEDULE

GENERAL DATA	DESIGNATION	CH-2
	LOCATION	EQUIPMENT YARD
	SERVICE	ENTIRE FACILITY
	TYPE	SCREW
	REFRIGERANT	R-513A
	NOMINAL CAPACITY, TONS	200
	AMBIENT AIR TEMP., °F	105
	MINIMUM FULL LOAD (FL) EER AT AHRI CONDITIONS	11.55
	MINIMUM PART LOAD (IPLV) EFFICIENCY AT AHRI CONDITIONS	18.79
	MANUFACTURER	TRANE
	MODEL	RTAF 200
	OPERATING WEIGHT, LBS	14,500
EVAPORATOR	GPM	440.0
	ENTERING WATER TEMP. - DEG. F.	54.0
	LEAVING WATER TEMP. - DEG. F.	44.0
	MAX. WATER PRESS. DIFF. FT.	15
	FOULING FACTOR, HR-SF-DEG. F./BTU	0.0001
ELECTRICAL DATA	VOLTS / PH	460 / 3
	FREQUENCY	60
	MCA	383
	MOCP	500
	POWER, KW	232.0
REMARKS		MAXIMUM SOUND LEVELS (A-WEIGHTED SOUND PRESSURE) 100% = 91 dBA 75% = 68 dBA 50% = 66 dBA 25% = 63 dBA

PUMP SCHEDULE

DESIGNATION	CHP-1
SERVICE	CHILLED WATER
TYPE	IN-LINE
MANUFACTURER	B&G
MODEL	e-80
WATER FLOW, GPM	440
TOTAL HEAD	75.0
MIN. PUMP EFF	78.5
HP	15
RPM	1750
VOLTAGE	460
PHASE	3
FREQ.	60
REMARKS	VFD
NOTE: PROVIDE WEATHERPROOF PACKAGE FOR OUTDOOR INSTALLATION	

HIGH VOLUME LOW SPEED (HVLS) FAN SCHEDULE

DESIGNATION		HVLS-1,2,3,4,5,6
AIR SYSTEM		CIRCULATION
SERVICE		LEVEL 2 CARDIO
MOUNTING		CEILING
FAN DIAMETER, FT.		14
DRIVE TYPE		DIRECT
WEIGHT, LBS.		168
FAN ROTATION, RPM		103
ELEC. DATA	MIN. MOTOR H.P.	3/4
	VOLTS/PH	208/1
INTERLOCK WITH		WALL-MOUNTED CONTROLLER
MANUFACTURER / MODEL NO.		HUNTER / TITAN 14
REMARKS		

ELECTRIC DUCT HEATER SCHEDULE

DESIGNATION	EDH-AC-1,2,3,4,5
SERVICE	AC-1,2,3,4,5
ELEC HEAT, KW	30.0
SIZE, IN.	26 x 14
EAT, °F	60.9
LAT, °F	92.5
VOLTS/PH	460/3
MANUFACTURER	GREENHECK
MODEL	IDHB
REMARKS	

AIR HANDLING UNIT SCHEDULE

		AHU-1	AHU-2	AHU-3	AHU-5	AHU-6	AHU-7	AHU-8	AHU-9	AHU-10	AC-1,2,3,4,5	AC-6
GENERAL	DESIGNATION											
	LOCATION	MECH. ROOM	ABOVE CEILING	ABOVE CEILING	ABOVE CEILING	2ND FLOOR MECH. ROOM	2ND FLOOR MECH. ROOM	ABOVE CEILING	ABOVE CEILING	ABOVE CEILING	MECH ROOM	EXPOSED
	SERVING	ATRIUM	2ND FLOOR OFFICES	1ST FLOOR OFFICES	CONFERENCE/ MULTI-PURPOSE RMS	GYM	RACQUETBALL COURTS	GIRLS' LOCKER RM.	BOYS' LOCKER RM.	AEROBICS	CARDIO	STAFF AREA
	MANUFACTURER	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE
	MODEL NO.	CLIMATE CHANGER	CLIMATE CHANGER	CLIMATE CHANGER	CLIMATE CHANGER	CLIMATE CHANGER	CLIMATE CHANGER	CLIMATE CHANGER	CLIMATE CHANGER	CLIMATE CHANGER	BCXD	FCDB-12
	MAXIMUM WEIGHT, LBS.	1,500	800	800	700	4,300	1,400	600	600	600	425	250
	MCA	17.8	4.5	4.5	4.5	26.9	6.3	2.9	2.9	2.9	6.9	40.1
	MOCP	30	15	15	15	45	15	15	15	15	15	45
	VOLTS/PH	460 / 3	460 / 3	460 / 3	460 / 3	460 / 3	460 / 3	460 / 3	460 / 3	460 / 3	460 / 3	208 / 1
	STARTER TYPE	HOA STARTER	HOA STARTER	HOA STARTER	HOA STARTER	HOA STARTER	HOA STARTER	HOA STARTER	HOA STARTER	HOA STARTER	HOA STARTER	HOA STARTER
SUPPLY FAN SECTION	TOTAL AIR FLOW - CFM	8,600	2,100	2,100	2,300	18,000	4,400	1,500	1,500	1,500	3,000	975
	OUTSIDE AIR, CFM MIN./MAX.	500 / -	250 / -	200 / -	300 / -	500 / -	500 / -	150 / -	160 / -	300 / -	600 / -	-
	EXTERNAL S.P. - IN. W.G.	1.0	1.0	1.0	0.3	0.75	1.0	0.3	0.3	0.3	0.3	0.1
	ARRANGEMENT / SIZE / TYPE	HORIZONTAL / 17 / FC	HORIZONTAL / 6 / FC	HORIZONTAL / 6 / FC	HORIZONTAL / 6 / FC	HORIZONTAL / 35 / FC	HORIZONTAL / 10 / FC	HORIZONTAL / 3 / FC	HORIZONTAL / 3 / FC	HORIZONTAL / 3 / FC	VERTICAL / 72 / -	HORIZONTAL CABINET
	MAX. FAN RPM	2,500	2,100	2,100	2,100	1,900	1,900	2,900	2,900	2,900	-	1,100
	FAN QUANTITY	1	1	1	1	2	1	1	1	1	1	2
	MIN. MOTOR HP	10	2	2	2	7.5 EA	3	1	1	1	3	1/3 + 1/4
COIL SECTION COOLING	DESIGN CFM	8,600	2,100	2,100	2,300	18,000	4,400	1,500	1,500	1,500	3,000	975
	ENTERING AIR D.B./W.B.-DEG. F.	76.6 / 63.2	78.2 / 64.0	77.6 / 64.0	78.5 / 64.1	75.8 / 62.8	78.1 / 63.9	77.7 / 63.8	77.9 / 63.8	80.4 / 65.0	80.4 / 65.0	77.0 / 65.0
	LEAVING AIR D.B./W.B.-DEG. F.	53.8 / 53.3	54.2 / 53.9	54.4 / 54.1	54.4 / 54.0	54.0 / 53.0	54.3 / 54.0	53.0 / 52.6	53.0 / 52.6	53.4 / 52.9	52.2 / 51.9	55.8 / 54.8
	ENTER'G CH. WATER TEMP. DEG. F.	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0
	LEAVING CH. WATER TEMP. DEG. F.	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0
	GPM	50.0	12.5	12.3	13.8	102.0	25.8	10.0	10.0	10.8	23.0	5.4
	MAX. WATER P.D., FT.	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	10.0
	MAX. AIR P.D., IN. W.G.	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
	MIN ROWS/MAX. F.P.I.	6 / 10	6 / 10	6 / 10	6 / 10	6 / 10	6 / 10	6 / 10	6 / 10	6 / 10	6 / 10	3 / 10
	MAX. FACE VELOCITY, FPM	500	500	500	500	500	500	500	500	500	500	500
COIL SECTION HEATING	DESIGN CFM	8,600	N/A	N/A	2,300	18,000	N/A	1,500	1,500	1,500	(1)	(2)
	ENTERING AIR D.B.-DEG. F.	67.3	N/A	N/A	64.1	68.7	N/A	65.4	65.1	60.9	(1)	(2)
	LEAVING AIR D.B.-DEG. F.	95.0	N/A	N/A	95.0	95.0	N/A	95.0	95.0	95.0	(1)	(2)
	TOTAL HEATING OUTPUT, MBH	257.0	N/A	N/A	77.0	511.3	N/A	48.0	48.4	55.2	(1)	(2)
	ENTERING HOT WATER TEMP., DEG. F.	180.0	N/A	N/A	180.0	180.0	N/A	180.0	180.0	180.0	(1)	(2)
	GPM	25.7	N/A	N/A	7.7	51.1	N/A	4.8	4.8	5.5	(1)	(2)
	MAX. WATER P.D., FT.	5.0	N/A	N/A	5.0	5.0	N/A	5.0	5.0	5.0	(1)	(2)
	MAX. AIR P.D., IN. WG.	1.0	N/A	N/A	1.0	1.0	N/A	1.0	1.0	1.0	(1)	(2)
	MIN. ROWS/MAX. F.P.I.	2 / 10	N/A	N/A	2 / 10	2 / 10	N/A	2 / 10	2 / 10	2 / 10	(1)	(2)
	MAX. FACE VELOCITY, FPM	500	N/A	N/A	500	500	N/A	500	500	500	(1)	(2)
FILTER SECTION	THICKNESS/DEPTH - TYPE	2" / PLEATED	2" / PLEATED	2" / PLEATED	2" / PLEATED	2" / PLEATED	2" / PLEATED	2" / PLEATED	2" / PLEATED	2" / PLEATED	2" / PLEATED	1" / PLEATED
	MIN. EFFICIENCY, %	MERV 11	MERV 11	MERV 11	MERV 11	MERV 11	MERV 11	MERV 11	MERV 11	MERV 11	MERV 11	MERV 8
	MAX. AIR P.D., CLEAN - IN. W.G.	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
	MANUFACTURER / MODEL NO.	FARR 30/30	FARR 30/30	FARR 30/30	FARR 30/30	FARR 30/30	FARR 30/30	FARR 30/30	FARR 30/30	FARR 30/30	FARR 30/30	FARR 30/30
REMARKS		ALTERNATE BID	ALTERNATE BID	ALTERNATE BID	BASE BID	ALTERNATE BID	ALTERNATE BID	BASE BID	BASE BID	BASE BID	BASE BID	BASE BID

NOTES:
(1) ELECTRIC DUCT HEATER IN SUPPLY AIR DUCT.
(2) ELECTRIC HEATING COIL INTEGRAL TO UNIT.

GRILLES, REGISTERS, AND DIFFUSERS

DESIGNATION	TYPE	MOUNTING TYPE	MATERIAL	FINISH	MAX. N.C. LEVEL	OPPOSED DAMPER BLADE	EQUALIZING GRID	MANUFACTURER	MODEL	DESCRIPTION
A	DRUM LOUVER	SURFACE	ALUMINUM	WHITE	30	NO	NO	TITUS	DL	—
B	RETURN GRILLE	SIDE WALL	ALUMINUM	WHITE	30	NO	NO	TITUS	355FL	35 DEG. FIXED DEFLECTION
C	RETURN GRILLE	LAY-IN	ALUMINUM	WHITE	30	NO	NO	TITUS	50F	1/2"x1/2"x1/2" EGGCRATE W/FRAME BORDER
D	SUPPLY DIFFUSER - LOUVERED	LAY-IN	ALUMINUM	WHITE	30	NO	NO	TITUS	TMS	24"x24" FACE

ARCHITECT

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RWB PROJECT #17116-00

STATE OF TEXAS
J. MIKE ADCOCK
86850
LICENSED
PROFESSIONAL ENGINEER
9/7/18

STATE OF TEXAS
DAVID M. BOOH
95600
REGISTERED
PROFESSIONAL ENGINEER
9/18/2018

REGISTRATION

ENGINEER
J. MIKE ADCOCK
P.E. # 86850

NOTE:
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DRAWING HISTORY

No.	DATE	DESCRIPTION
	9/17/2018	ISSUE FOR BID

KEY PLAN

PROJECT NAME
ADDISON ATHLETIC CLUB - HVAC IMPROVEMENTS

PROJECT LOCATION
3900 BELTWAY DR.
ADDISON, TX 75001

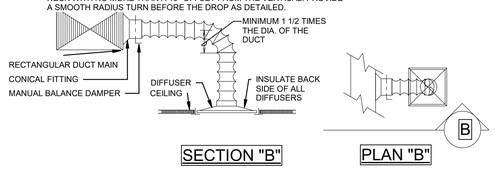
PROJECT NUMBER
17116.00

SHEET TITLE
SCHEDULES

SHEET NUMBER
ME-21

FILE PATH: C:\Revit Local Files\2018\17116-Addison Athletic Club-RWB-j2018_amorken.rvt
DATE/TIME: 9/17/2018 11:04:15 AM
PLOT SCALE: 12" = 1'-0"

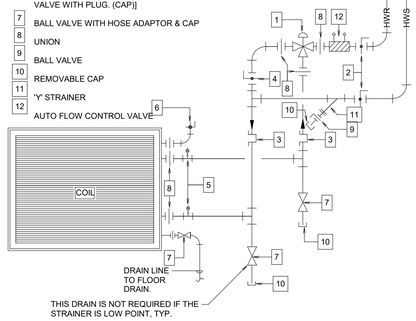
GENERAL NOTES:
1. FOR ROUND DUCT USE STRAIGHT SPIN-IN TYPE FITTINGS WITH SEPARATE LOCKING HANDLE BALANCING DAMPERS IN ALL AREAS WITH LAY-IN CEILINGS.
2. IN AREAS WITH HARD CEILINGS, USE SPIN-IN FITTINGS AND DAMPERS WITH REMOTE YOUNG REGULATORS LOCATED ON THE CEILING. ALTERNATELY PROVIDE CEILING ACCESS DOORS LARGE ENOUGH TO FACILITATE AIR BALANCING. THE NUMBER OF ACCESS PANELS SHALL BE MINIMIZED AND CONSOLIDATED. ALL ACCESS PANEL LOCATIONS SHALL BE APPROVED BY THE ARCHITECT PRIOR TO INSTALLATION.
3. MAXIMUM LENGTH OF FLEXIBLE DUCT USED SHALL NOTE EXCEED 6'-0".
4. RIGID AND FLEX DUCT DIAMETER TO BE EQUAL TO NECK SIZE SHOWN UNLESS SPECIFICALLY NOTED OTHERWISE.
5. FLEXIBLE DUCT DROPS SHOULD BE STRAIGHT DOWN TO THE DIFFUSER NECK WITH NO MORE THAN A 10" OFFSET FROM THE VERTICAL. PROVIDE A SMOOTH RADIUS TURN BEFORE THE DROP AS DETAILED.



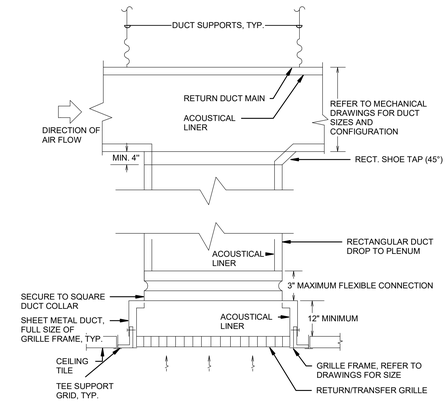
1 SUPPLY DIFFUSER DETAILS
NO SCALE

NOTE:
1. ALL COILS SHALL HAVE 2-WAY VALVE PIPING, UNLESS OTHERWISE NOTED ON FLOOR PLANS TO HAVE 3-WAY VALVES. DELETE BYPASS ON TWO-WAY VALVES.
2. COIL SHALL BE PIPED WITH WATER FLOW COUNTER TO AIR FLOW.
3. PIPE COILS WITH PROVISIONS FOR COIL AND FILTER REMOVAL & ACCESS.
4. PIPE DRAINS TO FLOOR DRAINS WHEN IN MECH. ROOMS.
5. PROVIDE FOR AIR VENTS IN ALL HIGH POINTS OF PIPING AND DRAINS IN ALL LOW POINTS.
6. COIL DRAIN TO BE AT LOW POINT OF PIPING SYSTEM.
7. PIPE CONTROL VALVES AND VALVES WITH VALVE STEM IN THE VERTICAL AND POINTED UP.

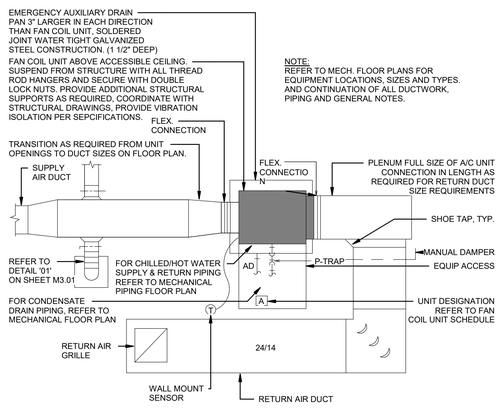
1 AUTOMATIC 3-WAY WATER CONTROL VALVE
2 ISOLATION VALVE
3 THERMOMETER WELL
4 ISOLATION VALVE W/ MEMORY STOP (BALANCE)
5 PETE'S PLUG
6 MANUAL AIR VENT NEEDLE VALVE WITH PLUG. (CAP)]
7 BALL VALVE WITH HOSE ADAPTOR & CAP
8 UNION
9 BALL VALVE
10 REMOVABLE CAP
11 'Y' STRAINER
12 AUTO FLOW CONTROL VALVE



2 SINGLE HEATING WATER COIL WITH 3-WAY VALVE - AHU
NO SCALE



3 RETURN/TRANSFER AIR GRILLE (RECTANGULAR DUCT) DETAIL
NO SCALE

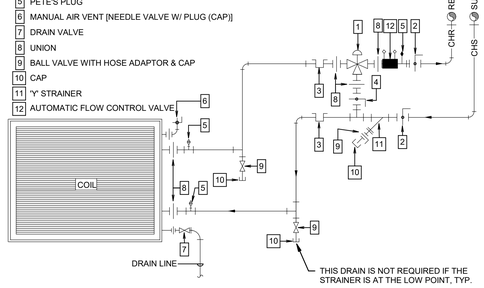


NOTE:
REFER TO MECH. FLOOR PLANS FOR EQUIPMENT LOCATIONS, SIZES AND TYPES. AND CONTINUATION OF ALL DUCTWORK, PIPING AND GENERAL NOTES.

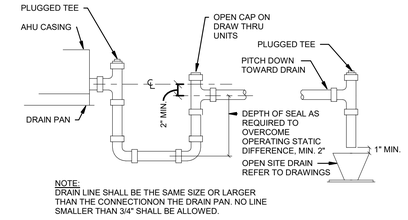
4 TYPICAL FAN COIL A/C UNIT DETAIL
NO SCALE

NOTE:
1. ALL COILS HAVE 2-WAY VALVE PIPING UNLESS OTHERWISE NOTED ON PIPING DRAWINGS. DELETE BYPASS FOR 2-WAY VALVES.
2. ALL COILS SHALL BE PIPED WITH WATER FLOW COUNTER TO AIR FLOW.
3. PIPE COILS WITH PROVISIONS FOR COILD AND FILTER REMOVAL & ACCESS.
4. PIPE DRAINS TO FLOOR DRAINS WHEN IN MECH. ROOMS.
5. PROVIDE FOR AIR VENTS IN ALL HIGH POINTS OF PIPING AND DRAINS IN ALL LOW POINTS.
6. COIL DRAIN TO BE AT LOW POINT OF PIPING SYSTEM.
7. PIPE CONTROL VALVES AND OTHER VALVES WITH STEMS IN THE VERTICAL AND POINT UP.

1 AUTOMATIC 3-WAY WATER CONTROL VALVE
2 ISOLATION VALVE
3 THERMOMETER WELL
4 ISOLATION VALVE W/ MEMORY STOP (BALANCE)
5 PETE'S PLUG
6 MANUAL AIR VENT [NEEDLE VALVE W/ PLUG (CAP)]
7 DRAIN VALVE
8 UNION
9 BALL VALVE WITH HOSE ADAPTOR & CAP
10 CAP
11 'Y' STRAINER
12 AUTOMATIC FLOW CONTROL VALVE

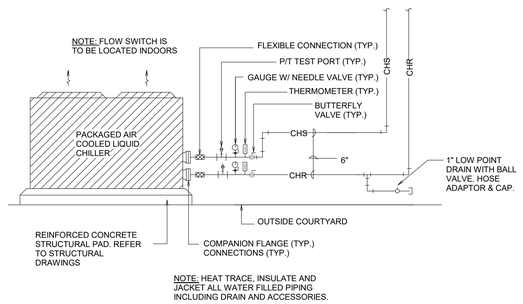


5 SINGLE CHILLED WATER COIL WITH 3-WAY VALVE - AHU
NO SCALE

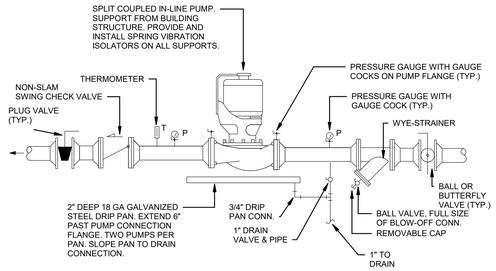


NOTE:
DRAIN LINE SHALL BE THE SAME SIZE OR LARGER THAN THE CONNECTIONON THE DRAIN PAN. NO LINE SMALLER THAN 3/4" SHALL BE ALLOWED.

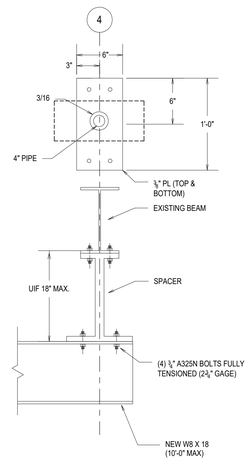
6 TYPICAL AHU/FCU CONDENSATE DRAIN TRAP DETAIL
NO SCALE



7 AIR COOLED CHILLER DETAIL
NO SCALE



8 IN-LINE CIRCULATING PUMP DETAIL
NO SCALE



9 HVLS FAN SUPPORT & SPACER DETAIL
NO SCALE

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RWB PROJECT #17116-00

STATE OF TEXAS J. MIKE ADCOCK LICENSED PROFESSIONAL ENGINEER 86850 4/7/18

DAVID W. BOSH LICENSED PROFESSIONAL ENGINEER 95600 2018-04-17

REGISTRATION

ENGINEER
J. MIKE ADCOCK
P.E. # 86850

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DRAWING HISTORY

No.	DATE	DESCRIPTION
	9/17/2018	ISSUE FOR BID

KEY PLAN

PROJECT NAME
ADDISON ATHLETIC CLUB - HVAC IMPROVEMENTS

PROJECT LOCATION
3900 BELTWAY DR.
ADDISON, TX 75001

PROJECT NUMBER
17116.00

SHEET TITLE
DETAILS

SHEET NUMBER
ME-31

FILE PATH: C:\Revit Local Files\2018\17116-Addison Athletic Club-RWB-v2018_amorkan.rvt
DATE/TIME:9/17/2018 11:54:16 AM
PLOT SCALE:As indicated

Switchboard: MDP3

Location: | **Volts:** 480/277 Wye | **A.I.C. Rating:** 30 KAIC
Supply From: | **Phases:** 3 | **Mains Type:** MCB
Mounting: SURFACE | **Wires:** 4 | **Mains Rating:** 800.0 A
Enclosure: NEMA 3R | **MCB Rating:** 800.0 A

CKT	Circuit Description	Poles	Frame Size	Trip Rating	Load	Wire Size	Remarks
1	NEW AIR COOLED CHILLER	3	600.0 A	500.0 A	249,500 VA	REF: ONE-LINE DIAGRAM	
2	NEW PANELBOARD HB	3	225.0 A	225.0 A	157,500 VA	REF: ONE-LINE DIAGRAM	
3	Space	--	--	--	0 VA	--	--
4	Space	--	--	--	0 VA	--	--
5							
6							
7							
8							
9							
10							
11							
12							

Total Conn. Load: 407,000 VA
Total Amps: 489.5 A

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Heating Space	150,000 VA	100.00%	150,000 VA		
Motor	7,500 VA	104.17%	7,813 VA	**Total Conn. Load:**	407,000 VA
HVAC	249,500 VA	100.00%	249,500 VA	**Total Est. Demand:**	407,313 VA
				Total Conn. Current:	489.5 A
				Total Est. Demand Current:	489.9 A
				Non-Coincident Heating/Cooling:	0.0 A
				Total Est. Deman - NC:	489.9 A

Notes:
1. PROVIDE NEMA 3R ENCLOSURE WITH LOCKABLE COVER.

PANEL: HB

Location: | **Volts:** 480/277 Wye | **A.I.C. Rating:** 22 KAIC
Supply From: MDP3 | **Phases:** 3 | **Mains Type:** MLO
Mounting: SURFACE | **Wires:** 4 | **Mains Rating:** 225.0 A
Enclosure: NEMA 3R | **Sections:** 1

CKT	Load Name	BKR	Poles	Wire Size	A		B		C		Wire Size	Poles	BKR	Load Name	CKT
1					10000	2500									2
3	EDH-AC-1	50	3	3#6, 1#10G, 3/4"C.			10000	2500			3#12, #12G, 3/4"C	3	15	HVLS FANS	4
5									10000	2500					6
7					10000	0					--	1	20	Spare	8
9	EDH-AC-2	50	3	3#6, 1#10G, 3/4"C.			10000	0			--	1	20	Spare	10
11									10000	0	--	1	20	Spare	12
13					10000	0					--	1	20	Spare	14
15	EDH-AC-3	50	3	3#6, 1#10G, 3/4"C.			10000	0			--	1	20	Spare	16
17									10000	0	--	1	20	Spare	18
19					10000	0					--	--	--	Space	20
21	EDH-AC-4	50	3	3#6, 1#10G, 3/4"C.			10000	0			--	--	--	Space	22
23									10000	0	--	--	--	Space	24
25					10000	0					--	--	--	Space	26
27	EDH-AC-5	50	3	3#6, 1#10G, 3/4"C.			10000	0			--	--	--	Space	28
29									10000	0	--	--	--	Space	30
31	Space	--	--	--	0	0					--	--	--	Space	32
33	Space	--	--	--			0	0			--	--	--	Space	34
35	Space	--	--	--					0	0	--	--	--	Space	36
37	Space	--	--	--	0	0					--	--	--	Space	38
39	Space	--	--	--			0	0			--	--	--	Space	40
41	Space	--	--	--					0	0	--	--	--	Space	42
				Total Load:	52,500 VA		52,500 VA		52,500 VA						
				Total Amps:	189.5 A		189.5 A		189.5 A						

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Heating Space	150,000 VA	100.00%	150,000 VA		
Motor	7,500 VA	104.17%	7,813 VA	**Total Conn. Load:**	157,500 VA
				Total Est. Demand:	157,813 VA
				Total Conn. Current:	189.4 A
				Total Est. Demand Current:	189.8 A
				Non-Coincident Heating/Cooling:	0.0 A
				Total Est. Deman - NC:	189.8 A

General Notes:
1. ALL ONE POLE CIRCUITS SHALL HAVE DEDICATED NEUTRAL WIRES
2. * DENOTES TO PROVIDE GFI BREAKER
3. ALL WIRE AND CONDUIT SHALL BE 2#12, 1#12G, 3/4"C. UNLESS OTHERWISE NOTED

Other:
1. PROVIDE NEMA 3R ENCLOSURE WITH LOCKABLE COVER.

FAULT CURRENT ANALYSIS:

MAXIMUM ONCOR ELECTRICAL UTILITY TRANFORMER SIZE = 750 KVA

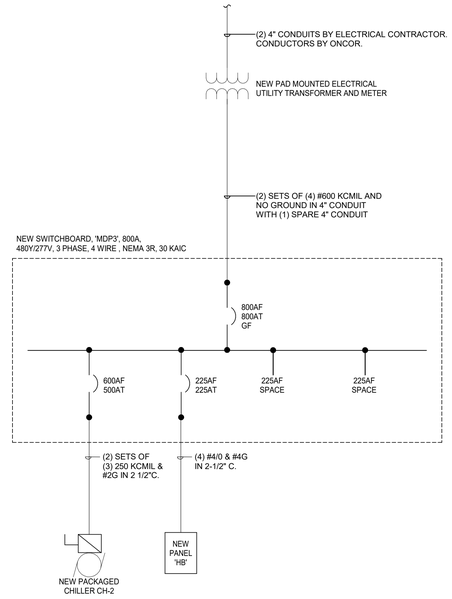
PAD MOUNTED TRANSFORMER IMPEDANCE = 5.75 %

MAXIMUM UTILITY CONTRIBUTION AT DISTRIBUTION PANELBOARD 'MDP3' = 15,696 AIC

WITH MOTOR CONTRIBUTION = 20,405 AIC

MAXIMUM AVILABLE FAULT CURRENT AT DISTRIBUTION PANELBOARD 'MDP3' = 20,405 AIC

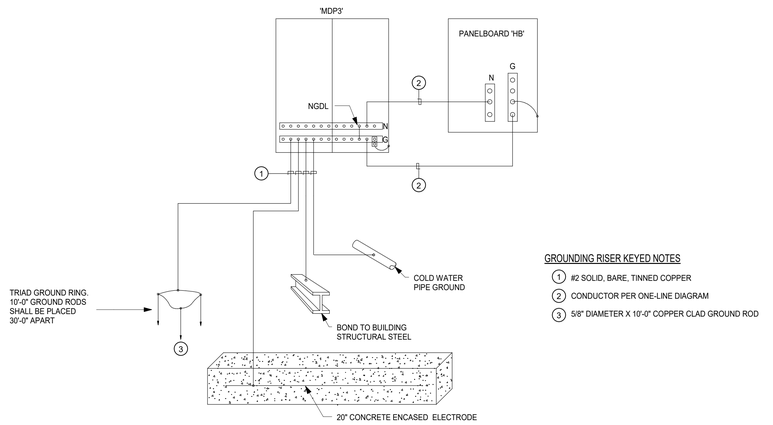
MAXIMUM AVAILABLE FAULT CURRENT AT PANELBOARD 'MB' = 15,696 AIC



ONCOR CONTACT:

LARRY REDICK (972) 323-8917
LARRY.REDICK@ONCOR.COM

1 ELECTRICAL ONE LINE DIAGRAM
NO SCALE



GROUNDING RISER KEYED NOTES

1. #2 SOLID, BARE, TINNED COPPER
2. CONDUCTOR PER ONE-LINE DIAGRAM
3. 5/8" DIAMETER X 10'-0" COPPER CLAD GROUND ROD

2 GROUNDING RISER DIAGRAM
NO SCALE

ARCHITECT

PGAL

3030 LBJ FREEWAY
SUITE 1220
DALLAS, TX 75234
T 972 871 2225
F 972 871 2228
www.pgal.com

CONSULTANT

RWB
Reed, Wells, Benson & Company
Consulting Engineers
Texas Firm #F-2174
COIT CENTRAL TOWER SUITE 1100 PHONE: (972) 788-4222
12001 NORTH CENTRAL EXPWY FAX: (972) 788-0002
DALLAS, TEXAS 75243 WWW.RWB.NET

RWB PROJECT #171116-00

REGISTRATION

DRAWING HISTORY

№	DATE	DESCRIPTION
	9/17/2018	ISSUE FOR BID

KEY PLAN

PROJECT NAME
ADDISON ATHLETIC CLUB - HVAC IMPROVEMENTS

PROJECT LOCATION
3900 BELTWAY DR. ADDISON, TX 75001

PROJECT NUMBER
17116.00

SHEET TITLE
ELECTRICAL SCHEDULES & DETAILS

SHEET NUMBER
ME-41

FILE PATH: C:\Revit Local Files\2016\17116-Addison Athletic Club-RWB-2016_anchen.rvt
DATE/TIME:9/17/2018 11:54:19 AM
PLOT SCALE:As Indicated

Work Session and Regular Meeting **17.**

Meeting Date: 11/13/2018

Department: Finance

Pillars: Gold Standard for Financial Health

AGENDA CAPTION:

Present, Discuss, and Consider Action to Approve a **Resolution for a Grant Funding Agreement with Metrocrest Chamber of Commerce and Authorize the City Manager to Execute the Agreement** in an Amount not to Exceed $35,000.

BACKGROUND:

This item was tabled a the 10/23/2018 Meeting. It is being placed back on the agenda for additional discussion and action by Council.

Town Staff has developed a grant funding process that allows non-profit organizations within the Town of Addison to submit a request of funds for their organization that directly enhances the Town. Town Staff and appointed Council Liaisons evaluate all applications individually. Town Staff review all applicable financials of the non-profit organizations, which includes, but is not limited to: equipment assessment, cash flow assessment, operations assessment, and percentage of annual revenue in comparison to grant request.

To clearly reflect the impact of the grant to Addison and non-Addison residents, Quarterly Grant Reports are required by all non-profit organizations through the end of the Town's Fiscal Year. The Quarterly Grant Reports contain the non-profit organization's goals, objectives and performance measures as identified in the Grant Uses section of the agreement. Financial statements may or may not be required, but Town Staff can request them at any time.

The Metrocrest Chamber of Commerce submitted an application to the Town requesting $35,000 for Fiscal Year (FY) 2019. During the Council budget retreat on August 16, 2018, Council discussed grant funding allocations for multiple non-profits included in the FY 2019 budget. During the discussion concerning the Metrocrest Chamber of Commerce, Council directed staff to grant $35,000 to the organization. The Town has reviewed and evaluated the application and determined that the non-profit organization's request set forth in the application is for a public purpose that directly enhances the town of Addison.

The Metrocrest Chamber of Commerce grant funding agreement is included as Exhibit A in the attached resolution.

RECOMMENDATION:

Administration recommends approval.

Attachments

Resolution - Grant Funding Agreement Metrocrest Chamber

TOWN OF ADDISON, TEXAS

RESOLUTION NO. _____

A RESOLUTION OF THE CITY COUNCIL OF THE TOWN OF ADDISON, TEXAS APPROVING THE GRANT FUNDING AGREEMENT BETWEEN THE TOWN OF ADDISON AND METROCREST CHAMBER OF COMMERCE; AUTHORIZING THE CITY MANAGER TO EXECUTE THE GRANT FUNDING AGREEMENT; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City Council of the Town of Addison, Texas ("City Council") has investigated and determined that it is in the best interest of the Town of Addison, Texas ("Town") to provide a grant of public funds to various organizations that promote public purposes and benefit the public within the Town; and

WHEREAS, the City Council has adopted an application process ("Application") whereby these organizations may apply for public funds that will be used for public purposes within the Town, as determined by the Town; and

WHEREAS, Metrocrest Chamber of Commerce submitted an Application to the Town for consideration; and

WHEREAS, the Town has reviewed the Application and investigated and determined that the requests set forth in the Application are for a public purpose and will benefit its citizens; and

WHEREAS, the Town and Metrocrest Chamber of Commerce desire to enter into this Agreement to set forth the terms and conditions regarding Metrocrest Chamber of Commerce's use of the public funds.

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

Section 1. The Grant Funding Agreement between the Town and Metrocrest Chamber of Commerce, a copy of which is attached to this Resolution as **Exhibit A,** is hereby approved. The City Manager is hereby authorized to execute said 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 13th day of November, 2018.

_____

Joe Chow, Mayor

ATTEST:

By: _____
Irma Parker, City Secretary

APPROVED AS TO FORM:

By: _____
Brenda N. McDonald, City Attorney

EXHIBIT A

STATE OF TEXAS	§	
	§	**AGREEMENT FOR GRANT FUNDING**
COUNTY OF DALLAS	§	

This Agreement for Grant Funding ("Agreement") is made and entered into as of the 1st day of October, 2018 by and between the Town of Addison, Texas (the "City") and Metrocrest Chamber of Commerce (the "Organization").

WITNESSETH:

WHEREAS, the City Council has investigated and determined that it is in the best interest of the City to provide a grant of public funds to various organizations that promote public purposes and benefit the public within the City; and

WHEREAS, the City Council has adopted an application process ("Application") whereby these organizations may apply for public funds that will be used for public purposes within the City, as determined by the City; and

WHEREAS, the Organization submitted an Application to the City for consideration; and

WHEREAS, the City has reviewed the Application and investigated and determined that the requests set forth in the Application are for a public purpose and will benefit its citizens; and

WHEREAS, the City and Organization desire to enter into this Agreement to set forth the terms and conditions regarding the Organization's use of the public funds.

NOW, THEREFORE, for and in consideration of the mutual covenants and agreements hereinafter set forth, the benefits flowing to each of the parties hereto, and other good and valuable consideration, the Town of Addison, Texas and the Organization do hereby agree as follows:

I. TERM

The term of this Agreement shall be for a period of one year from the 1st day of October, 2018, through the 30th day of September, 2019, except as otherwise provided for herein, and subject to the earlier termination of this Agreement ("Term"). The Program, hereinafter defined, must be completed during the Term of the Agreement to the satisfaction of the City.

II. GRANT USE

The Organization shall complete the following program(s) with the assistance of grant funding received by the City (collectively, the "Program"):

1. *Economic Development Marketing* – The Chamber will provide to the City the following economic development marketing services ("Economic Development Marketing Services"):

   (a) provide good faith marketing support of the Addison Conference Centre that will generate at least five (5) events annually;

(b) provide marketing support to Addison Economic Development Department, including support and participation in the Annual Economic Development Luncheon;

(c) conduct a Business Expo with marketing targeted at Addison businesses and provide education sessions;

(d) Target Addison-based Chamber members to renew Business Registration;

(e) conduct Economic Development Committee meetings and monthly roundtables with Town leadership and City Council representation on economic development strategies;

(f) develop a strategy to reach out to minority/ethnic chambers of commerce in the region to create awareness of Addison business opportunities and special events; and

(g) Provide marketing and logistical support for special events.

2. *Entrepreneur Development Support* - The Chamber will provide to the City the following entrepreneur development support services ("Entrepreneur Development Support Services"):

(a) highlight local resources available to entrepreneurs (i.e. SBA, SBDCs, SCORE, etc.);

(b) host at least one Chamber event at the Addison Treehouse;

(c) provide complimentary one-year memberships to business start-ups from university-based programs that are being incubated by the Town of Addison; and

(d) encourage Treehouse memberships amongst chamber members; hold monthly drop-in's at Treehouse and regular office hours there to help bridge business community and entrepreneurs/start-ups in Addison.

3. *Addison Business Profile Support* - The Chamber will provide to the City the following services which will raise Addison's business profile ("Addison Business Profile Support"):

(a) Organize and conduct annual Mayor's Forum;

(b) Provide a local leadership development opportunity via Leadership Metrocrest;

(c) Provide ribbon-cutting support for new Chamber members in the Addison area;

(d) Conduct annual Educator Appreciation Luncheon for Bush Elementary; and

(e) Support Economic Development Department efforts in attracting and retaining businesses, conduct "mini" Business Retention and Expansion Program (BREP) with Economic Development Director and Manager connecting the relationship between the Town and the Chamber.

4. *Develop Strategies to Connect the Addison Airport Community and the Addison Business Community* - The Chamber will provide to the City the following services connecting the Addison Airport Community and the Addison Business Community ("Airport-Business Connection Services"):

(a) provide airport management, tenants, and users opportunities to attend and benefit from Chamber events such as the Business Expo, Chairman's Circle, etc;

(b) increase awareness of airport to Chamber members and work with airport management to provide support regarding the airport strategic development plan; and

(c) work with airport staff to host at least one event at airport.

5. *Tourism Support* - The Chamber will provide to the City the following Tourism Support services ("Tourism Support Services"):

(a) work with Tourism Coordinator to identify targeting hotel conferences to disseminate information of local attractions, local events, and business support services;

(b) work to develop consistent brand awareness for the Town of Addison, special events, and business amenities; and

(c) work with Tourism Coordinator and Special Events Department to promote hotel packages for Addison's special events amongst chamber members and business community.

The Organization shall submit detailed quarterly program results to the City listing the expenditures made by the Organization with the Funding received pursuant to this Agreement by the following dates:

January 30, 2019
April 30, 2019
July 30, 2019
October 30, 2019

III. FUNDING

For the completion of the Program as described herein, the City shall pay to the Organization the sum of no more than Thirty-Five Thousand and No/100 Dollars ($35,000.00) ("Funding") as follows: fifty percent (50%) of the Funding shall be paid to the Organization within thirty (30) days of the City's execution of this Agreement, and the remaining fifty percent (50%) of the Funding shall be paid to the Organization on May 30, 2019. However, the Organization may send a written request to the Chief Financial Officer of the City for an advance of the second fifty percent (50%) distribution prior to May 30, 2019 for a compelling reason, and the Chief Financial Officer may or may not grant

this request in his sole and absolute discretion. Payment is made contingent upon the Organization not then being in default of this Agreement. Funding shall not carry over into the following fiscal year. If the Organization fails to complete the Program identified herein to the satisfaction of the City within the Term, then the Organization shall return any and all unexpended Funding to the City immediately upon request, and the Organization may be ineligible for the receipt of Funding the following year.

IV. RESPONSIBILITY; INDEMNIFICATION

(a) THE ORGANIZATION AGREES TO ASSUME AND DOES HEREBY ASSUME ALL RESPONSIBILITY AND LIABILITY FOR DAMAGES OR INJURIES SUSTAINED BY PERSONS OR PROPERTY, WHETHER REAL OR ASSERTED, BY OR FROM THE PERFORMANCE OF THE PROGRAM PERFORMED AND TO BE PERFORMED HEREUNDER BY THE ORGANIZATION OR BY ITS OFFICIALS, OFFICERS, EMPLOYEES, OWNERS, MEMBERS, AGENTS, SERVANTS, INVITEES, GUESTS, VOLUNTEERS, CONTRACTORS, SUBCONTRACTORS, OR ANYONE DIRECTLY OR INDIRECTLY EMPLOYED BY ANY OF THEM OR ANYONE FOR WHOSE ACTS ANY OF THEM MAY BE LIABLE.

(b) **INDEMNITY OWED BY THE ORGANIZATION.** THE ORGANIZATION COVENANTS AND AGREES TO FULLY DEFEND, INDEMNIFY AND HOLD HARMLESS THE TOWN OF ADDISON, TEXAS AND THE ELECTED AND APPOINTED OFFICIALS, THE OFFICERS, EMPLOYEES, REPRESENTATIVES, AND VOLUNTEERS OF THE TOWN OF ADDISON, TEXAS, INDIVIDUALLY OR COLLECTIVELY, IN BOTH THEIR OFFICIAL AND PRIVATE CAPACITIES (THE TOWN OF ADDISON, TEXAS AND THE ELECTED AND APPOINTED OFFICIALS, THE OFFICERS, EMPLOYEES, REPRESENTATIVES, AND VOLUNTEERS OF THE TOWN OF ADDISON, TEXAS EACH BEING AN "ADDISON PERSON" AND COLLECTIVELY THE "ADDISON PERSONS"), FROM AND AGAINST ANY AND ALL COSTS, CLAIMS, LIENS, HARM, DAMAGES, LOSSES, EXPENSES, FEES, FINES, PENALTIES, PROCEEDINGS, JUDGMENTS, ACTIONS, DEMANDS, CAUSES OF ACTION, LIABILITY, AND SUITS, OF ANY KIND AND NATURE WHATSOEVER MADE UPON OR INCURRED BY ANY ADDISON PERSON, WHETHER DIRECTLY OR INDIRECTLY, (THE "CLAIMS"), THAT ARISE OUT OF, RESULT FROM, OR RELATE TO: (1) THE PROGRAM AS DESCRIBED IN SECTION II OF THIS AGREEMENT; (2) REPRESENTATIONS OR WARRANTIES BY THE ORGANIZATION UNDER THIS AGREEMENT; AND/OR (3) ANY OTHER ACT OR OMISSION UNDER OR IN PERFORMANCE OF THIS AGREEMENT BY THE ORGANIZATION, OR ANY OWNER, OFFICER, DIRECTOR, MANAGER, EMPLOYEE, AGENT, REPRESENTATIVE, CONSULTANT, CONTRACTOR, SUBCONTRACTOR, LICENSEE, INVITEE, PATRON, GUEST, CUSTOMER, OR CONCESSIONAIRE OF OR FOR THE ORGANIZATION, OR ANY OTHER PERSON OR ENTITY FOR WHOM THE ORGANIZATION IS LEGALLY RESPONSIBLE, AND THEIR RESPECTIVE OWNERS, OFFICERS, DIRECTORS, MANAGERS, EMPLOYEES, AGENTS, REPRESENTATIVES, CONSULTANTS, CONTRACTORS, SUBCONTRACTOR, LICENSEES, INVITEES, PATRONS, GUESTS, CUSTOMERS, AND CONCESSIONAIRES. **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 ANY ADDISON PERSON, OR CONDUCT BY ANY ADDISON PERSON THAT WOULD GIVE RISE TO STRICT LIABILITY OF ANY KIND.**

THE ORGANIZATION SHALL PROMPTLY ADVISE THE CITY IN WRITING OF ANY CLAIM OR DEMAND AGAINST ANY ADDISON PERSON OR THE ORGANIZATION RELATED TO OR ARISING OUT OF THE ORGANIZATION'S ACTIVITIES UNDER THIS AGREEMENT AND SHALL SEE TO THE

INVESTIGATION AND DEFENSE OF SUCH CLAIM OR DEMAND AT THE ORGANIZATION'S SOLE COST AND EXPENSE. THE ADDISON PERSONS SHALL HAVE THE RIGHT, AT THE ADDISON PERSONS' OPTION AND AT OWN EXPENSE, TO PARTICIPATE IN SUCH DEFENSE WITHOUT RELIEVING THE ORGANIZATION OF ANY OF ITS OBLIGATIONS HEREUNDER.

THE PROVISIONS OF THIS DEFENSE, INDEMNITY, AND HOLD HARMLESS OBLIGATION, AND ANY OTHER DEFENSE, INDEMNITY, AND HOLD HARMLESS OBLIGATION SET FORTH IN THIS AGREEMENT, SHALL SURVIVE THE TERMINATION OR EXPIRATION OF THIS AGREEMENT.

V. TERMINATION

This Agreement may be canceled and terminated by either party at any time and for any reason or no reason upon giving at least thirty (30) days written notice of such cancellation and termination to the other party hereto. Such notice shall be sent certified mail, return receipt requested, and to the most recent address shown on the records of the party terminating the Agreement. The thirty (30) day period shall commence upon deposit of the said notice in the United States mail and shall conclude at midnight of the 30th day thereafter. In the event of such cancellation and termination and if the Organization has failed at the time of such cancellation and termination to provide the Program set forth herein, the Organization shall immediately refund to the City that portion of Funding paid to the Organization under the terms of this Agreement (and identified in Section II, above) allocable to the Program that has not been completed at the time of cancellation and termination, as determined by the City.

Upon payment or tender of any refund amount, all of the obligations of the Organization and the City under this Agreement shall be discharged and terminated (except as otherwise provided herein, e.g., except for obligations and responsibilities as may survive termination or cancellation of this Agreement as provided for in this Agreement) and no action shall lie or accrue for additional benefit, consideration or value for or based upon the Program performed under or pursuant to this Agreement.

VI. CONFLICT OF INTEREST

(a) No officer or employee of the City shall have any interest or receive any benefit, direct or indirect, in this Agreement or the proceeds thereof. This prohibition is not intended and should not be construed to preclude payment of expenses legitimately incurred by City officials in the conduct of the City's business. No officer, employee, representative, or volunteer of the Organization shall have any financial interest, direct or indirect, in this Agreement or the proceeds hereof.

(b) For purposes of this section, "benefit" means anything reasonably regarded as an economic advantage, including benefit to any other person in whose welfare the beneficiary is interested, but does not include contributions or expenditures made and reported in accordance with any law.

VII. ACCOUNTING

Prior to adopting its annual budget, the Organization shall submit for the City's review a budget showing the use of the Funding provided pursuant to this Agreement, and the Organization shall make such quarterly financial reports to the City, as provided for herein, listing the expenditures made by the Organization from the Funding. The approval of the Organization's annual budget creates a fiduciary duty in the Organization with respect to the Funding provided by this Agreement.

Funding received hereunder from the City may be spent for day to day operations, supplies, salaries and other administrative costs, provided that such costs are necessary for the promotion and encouragement of the purposes for which the Funding may be used as described herein.

The Organization shall maintain complete and accurate financial records of all of its revenues, including, without limitation, each expenditure of Funding received pursuant to this Agreement. On request of the City at any time, the Organization shall make all its records available for inspection and review by the City or its designated representative(s). Within ninety (90) days of the end of the Organization's fiscal year, the Organization shall provide the City with a financial statement signed by the Chairman of the Organization's Board of Directors (or other person acceptable to the City) and audited by an independent Certified Public Accountant, at the Organization's expense, setting forth the Organization's income, expenses, assets and liabilities, and such obligation shall survive the termination or expiration of this Agreement. Beginning FY 2018 and every other year thereafter, so long as the Organization is a recipient of grant funding, the City may request a compilation report prepared by an independent accounting firm prior to the end of the applicable fiscal year. The Organization shall deliver the compilation report to the City within one hundred twenty (120) days of the end of the applicable fiscal year.

If this Agreement is terminated prior to its expiration, the Organization shall provide such reports as required by the City for the period prior to the expiration for which reports have not been provided, and such obligation shall survive the termination hereof; and the obligation to provide the reports for the last quarter of this Agreement shall survive the expiration of this Agreement.

All application materials, financial information, quarterly (or other) reports, any other information described herein or required hereunder, and general correspondence with the City must be submitted to the City in electronic format to the City email address specified in the application packet. Additionally, the City may require that such materials, information, reports, and correspondence also be provided to the City in writing a hard-copy, non-electronic format.

VIII. ADDITIONAL REQUIREMENTS OF THE ORGANIZATION

The Organization agrees to the following:

(a) The City may conduct an on-site visit to the Organization during the Term;

(b) Within thirty (30) days of the City's execution of this Agreement, the Organization shall provide to the City a current list of all Organization board members and a schedule of all board meetings. A representative from the City may choose to attend any scheduled board meetings. The City shall be immediately notified of any changes to the schedule; and

(c) In any and all marketing material produced by the Organization, the City shall be prominently recognized as a supporter of the Organization through the use of the City designated logo provided.

IX. INDEPENDENT CONTRACTOR

In completing the Program under this Agreement, the relationship between the City and the Organization is that of independent contractor, and the City and the Organization by the execution of this Agreement do not change the independent status of the Organization. The Organization is an

independent contractor, and no term or provision of this Agreement or action by the Organization in the performance of this Agreement is intended nor shall be construed as making the Organization the agent, servant or employee of the City, or to create an employer-employee relationship, a joint venture relationship, or a joint enterprise relationship, or to allow the City to exercise discretion or control over the manner in which the Organization performs the Program which is described in this Agreement.

X. NON-ASSIGNABILITY; NO THIRD-PARTY BENEFIT

The Organization may not and shall have no authority to assign, transfer, or otherwise convey by any means whatsoever this Agreement or any of the rights, duties or responsibilities hereunder without obtaining the prior written approval of the City, and any attempted assignment, transfer, or other conveyance of this Agreement without such approval shall be null and void and be cause for immediate termination of this Agreement by the City.

This Agreement is solely for the benefit of the parties hereto and is not intended to and shall not be deemed to create or grant any rights, contractual or otherwise, to any third person or entity.

XI. NO PARTNERSHIP, JOINT VENTURE, OR JOINT ENTERPRISE

Nothing contained in this Agreement shall be deemed to constitute that the City and the Organization are partners or joint venturers with each other, or shall be construed or be deemed to establish that their relationship constitutes, or that this Agreement creates, a joint enterprise.

XII. NON-DISCRIMINATION

During the term of this Agreement, the Organization agrees that it shall not discriminate against any employee or applicant for employment because of race, age, color, sex or religion, ancestry, national origin, place of birth, or handicap.

XIII. LEGAL COMPLIANCE; AGREEMENT SUBJECT TO LAWS; RECITALS

The Organization shall observe and abide by, and this Agreement is subject to, all applicable federal, state, and local (including the City) laws, rules, regulations, and policies (including, without limitation, the Charter and Ordinances of the City), as the same currently exist or as they may be hereafter amended. The Organization agrees that any and all records of the Organization which, including but not limited to describe, relate to, convey and/or illustrate the obligations, terms and conditions set forth in this Agreement shall be subject to the Texas Public Information Act, Texas Government Code Chapter 552, as amended. The above and foregoing recitals to this Agreement are true and correct and incorporated herein and made a part hereof.

XIV. VENUE; GOVERNING LAW

In the event of any action under this Agreement, exclusive 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 Agreement; 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.

XV. COUNTERPARTS

This Agreement may be executed in any number of counterparts, each of which shall be deemed an original and constitute one and the same instrument.

XVI. NO WAIVER; RIGHTS CUMULATIVE

The failure by either party to exercise any right or 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. The rights or remedies under this Agreement are cumulative to any other rights or remedies, which may be granted by law.

XVII. NOTICES

All notices, communications and reports, required or permitted under this Agreement shall be personally delivered or mailed to the respective parties using certified mail, return receipt requested, postage prepaid, at the addresses shown below. The City and the Organization agree to provide the other with written notification within five (5) days, if the address for notices, provided below, is changed. Notices by personal delivery shall be deemed delivered upon the date delivered; mailed notices shall be deemed communicated on the date shown on the return receipt. If no date is shown, the mailed notice shall be deemed communicated on the third (3rd) day after depositing the same in the United States mail.

The City's address:	The Organization's address:
Attn: City Manager Town of Addison 5300 Belt Line Road Dallas, Texas 75254	Ms. Erin Carney Metrocrest Chamber of Commerce 2550 Midway Road, Suite 240 Carrollton, TX 75006

XVIII. SEVERABILITY

The terms of this Agreement are severable, and if any section, paragraph, clause, or other portion of this Agreement shall be found to be illegal, unlawful, unconstitutional or void for any reason, the balance of the Agreement shall remain in full force and effect and the parties shall be deemed to have contracted as if said section, paragraph, clause or portion had not been in the Agreement initially.

XIX. AUTHORITY TO EXECUTE AGREEMENT

The undersigned officers and/or agents of the parties hereto are the properly authorized officials and have the necessary authority to execute this 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.

XX. ENTIRE AGREEMENT

This Agreement represents the entire and integrated Agreement and agreement between the City and the Organization and supersedes all prior negotiations, representations and/or agreements, either written or oral. This Agreement may be amended only by written instrument signed by both the City and the Organization.

XXI. SOVEREIGN IMMUNITY

The parties agree that the City has not waived its sovereign immunity by entering into and performing its obligations under this Agreement.

XXII. NO BOYCOTT ISRAEL

Pursuant to Texas Government Code Chapter 2270, Organization's execution of this Agreement shall serve as verification that the Organization does not presently boycott Israel and will not boycott Israel during the term of this Agreement.

IN WITNESS THEREOF, the parties hereto have caused this Agreement to be signed by their proper corporate officers as first above specified, and have caused their proper corporate seal to be hereto affixed the day and year first above written.

TOWN OF ADDISON, TEXAS	**METROCREST CHAMBER OF COMMERCE**
By:_____	By:_____
Wesley S. Pierson, City Manager	Ms. Erin Carney, President
Date:_____	Date: 10/8/2018

Work Session and Regular Meeting **18.**

Meeting Date: 11/13/2018

Department: Finance

Pillars: Excellence in Asset Management
Gold Standard for Financial Health

Milestones: Maintain all roads in an acceptable condition
Implement and continue development of Long Term Financial Plan

---

AGENDA CAPTION:

Present, Discuss, and Consider Action Related to **Potential Municipal Debt Issuances for the Midway Road Rehabilitation Project and Funding of the Addison Grove Development Incentive.**

BACKGROUND:

This presentation is intended to be a follow-up to "Debt 201" presented on September 27, 2018. Cities use debt to finance public infrastructure projects such as city facilities, parks, streets, water, sewer and drainage improvements. Debt financing allows cities to finance projects, capital assets, or improvements to existing assets over their useful life.

"Debt 201" was designed to assist the citizens, businesses owners, and the general public in understanding the process of how municipal debt is issued to finance public infrastructure projects. The presentation covered the following topics:

- Review of concepts covered in "Debt 101"
- Debt issuance process
- Current short-term debt needs
- Bond election history
- Bond sale progress
- Lessons learned from previous bond elections
- Current bond capacity
- Methodology to identify and prioritize future needs for Capital improvements, asset management and ADA projects
- Bond election process and schedule

This presentation is a follow up from Debt 201 relating to the potential funding for the improvements needed on Midway Road as well as funding for the incentive promised for the development of Addison Groves.

RECOMMENDATION:

Staff requests direction from Council.

Attachments

Presentation - Potential Debt Issuances for Midway Road and Addison Grove

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Potential Debt Issuances for Midway Road Reconstruction and Addison Grove Public Infrastructure Incentive

November 13, 2018

Purpose of Discussion

Facilitate City Council discussion regarding:

- Options for funding the Midway Road Reconstruction Project; and
- Options for funding the economic development incentive for the public infrastructure for the Addison Grove development.

Midway Road Reconstruction

- Issue: In 2012 voters approved $16 million in funding for the reconstruction of Midway Road. $3 million is being spent on the design of the reconstruction project. $13 million is available for construction of the project. The total project **estimate** is $41 million in ($38 million 2016 dollars + $3 million to add Master Transportation Plan elements). The funding gap is approximately $25 million.

- Policy Question:

  Should the funding gap for the Midway Road Reconstruction Project be funded through additional voter approved bonds or should the City Council authorize the sale of Certificates of Obligation to complete a project that is already authorized by voters?

Midway Road Reconstruction (Cont.)

Estimated Total Cost of Project	$41,000,000
Partial Funding To Date:	
2012 Bond Issuance	$3,000,000
2012 Authorized Bond Issuance	$13,000,000
Total Funding from 2012 Bond Election	$16,000,000
Unfunded Cost of Project	$25,000,000

Addison Grove Public Infrastructure Incentive

- Issue: In 2016 the City Council approved an economic development incentive agreement to reimburse the developer for the cost of the public infrastructure related to the redevelopment of the former Sam's Club site (Addison Grove). The incentive was to be cash funded from multiple Town funding sources. The cash funding will impact the financial resources from those funding sources, particularly the General Fund, to deliver Town services.

- Policy Question:

  Should the Addison Grove Public Infrastructure Incentive continue to be funded on a cash basis or should the City Council authorize the sale of Certificates of Obligation to pay for the project?

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Addison Grove (Cont.)

- Current Funding Plan – Addison Grove Incentive

  - General Fund
    - Scheduled to make 3 transfers of $750,000: $2,250,000
    - Waiver of $250,000 in Town Fees: $250,000
    - Total from General Fund: $2,500,000
  - Utility Fund
    - Scheduled to make 2 transfers of $500,000 made for a total of: $1,000,000
  - Storm Water Fund
    - Scheduled to make 2 transfers of $500,000 for a total of: $1,000,000
  - Infrastructure Investment Fund
    - Scheduled to make 4 transfers of $500,000 for a total of: $2,000,000

- Total Incentive Commitment: $6,500,000
- Total cash available for project incentive at the end of Fiscal 2019: $3,000,000
- Remaining cash required for total commitment: $3,250,000

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Questions & Discussion