REGULAR MEETING & WORK SESSION
OF THE CITY COUNCIL

August 27, 2019

ADDISON TOWN HALL

5300 BELT LINE RD., DALLAS, TX 75254
5:00 PM EXECUTIVE SESSION & WORK SESSION
7:30 PM REGULAR MEETING

1. Call Meeting to Order

WORK SESSION

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2. Present and Discuss **Non-Profit Organizations that Submitted an Application for Grant Funding from the Town of Addison for Fiscal Year 2020.**

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3. Present and Discuss **Legislation Passed During the 86th Session of the Texas Legislature**.

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4. Present and Discuss the **Stainless Steel Sculpture Proposed to be Located at the Addison Conference & Theatre Center.**

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5. Present and Discuss the **Powder-Coated Steel and Cable Sculpture Proposed to be Located within the Public Art Easement in the AMLI Development.**

REGULAR MEETING

Pledge of Allegiance

Announcements and Acknowledgements regarding Town and Council Events and Activities

Discussion of Events/Meetings

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.

6. Consider Action to Approve the **Minutes from the Following Meetings: 1) the July 8, 2019 City Council Special Meeting; 2) the July 9, 2019 City Council Work Session and Regular Meeting; 3) the August 15, 2019 City Council Special Meeting and Work Session; and, 4) the August 16, 2019 City Council Special Meeting and Work Session.**

7. Consider Action to Approve a **Resolution to Appoint Ivan Hughes, Town of Addison Council Member, as the Primary Representative and Paul Voelker, City of Richardson Council Member, as the Alternate to the Aggregated Position of Representative to the Regional Transportation Council (RTC) of the North Central Texas Council of Governments.**

8. Consider Action to Approve a **Resolution to Adopt the Town of Addison's Strategic Planning Pillars and Milestones for Fiscal Year 2020.**

9. Consider Action to Approve a **Resolution Approving a Contract Agreement Between the Town of Addison and Nu-Way Construction, LLC for Infrastructure and Development Services Related to Addison Airport Fuel Farm Exit Relocation, Perimeter Road Relocation, and Miscellaneous Concrete Repairs and Authorizing the City Manager to Execute the Agreement** in an Amount Not to Exceed $633,907.11.

10. Consider Action to Approve the **Location of a Stainless Steel Sculpture in Front of the Addison Conference & Theatre Center.**

11. Consider Action to Approve the **Location for the Powder-Coated Steel and Cable Sculpture Within the Public Art Easement in the AMLI Development and Authorize the City Manager to Execute the Agreement.**

12. Consider Action to Approve a **Resolution Authorizing the City Manager to Execute Easement and Property Acquisition Documents Necessary to Construct Public Improvements Associated with the Rerouting of the Basin I Sanitary Sewer Line Project.**

13. Consider Action to Approve a **Resolution Authorizing the Use of Eminent Domain to Reroute the Town of Addison's Sanitary Sewer Flow, Along Beltway Drive and to Midway Road, into Addison's Sanitary Sewer System, Through the Acquisition of Permanent Utility Easements and Temporary Construction Easements.**

14. Consider Action to Approve a **Resolution Selecting Frost Bank as the Primary Depository Bank for the Town of Addison; Directing the City Manager to Negotiate a Treasury Management Services Agreement and a Security Agreement with the Bank; and, Authorizing the City Manager to Execute the Agreements.**

15. Consider Action to Approve a **Resolution of the City Council of the Town of Addison, Texas Approving the North Dallas County Water Supply Corporation Operating Fund Budget for the Fiscal Year Beginning October 1, 2019 and Ending September 30, 2020 and Providing an Effective Date.**

Regular Items

16. Hold a Public Hearing, Present, and Discuss the **Town of Addison's Proposed Property Tax Rate for the Fiscal Year Commencing October 1, 2019 and Ending September 30, 2020.**

17. Present, Discuss, and Consider Action on a **Resolution Approving a Contract Agreement with JC Commercial Inc., for the Construction of a U.S. Customs and Border Protection Facility Combined with the Addison Airport Administration Offices to be Located on Addison Airport at 4545 Jimmy Doolittle Drive, and Authorizing the City Manager to Execute the Contract** in an Amount Not to Exceed $6,223,949.

18. Present, Discuss, and Consider Action on an **Ordinance Directing Staff to Process Plats in Accordance with the Procedures Established in House Bill 3167.**

19. Present and Discuss the **Operations and Financial Reconciliation for Taste Addison 2019.**

20. Present and Discuss the **Operations and Financial Reconciliation for Addison Kaboom Town! 2019.**

21. Present and Discuss an **Update on Addison Oktoberfest 2019.**

22. Present and Discuss the **Finance Department Quarterly Financial Report of the Town of Addison for the Fiscal Year 2019 Third Quarter Ended June 30, 2019.**

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: Thursday, August 22, 2019
Time: 9:40 pm

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: 08/27/2019

Department: Finance

Pillars: Gold Standard for Financial Health

AGENDA CAPTION:

Present and Discuss **Non-Profit Organizations that Submitted an Application for Grant Funding from the Town of Addison for Fiscal Year 2020.**

BACKGROUND:

At the request of the City Council, organizations that submitted an application for grant funding from the Town of Addison for Fiscal Year 2020 were invited to present to the entire City Council.

The purpose of the presentation is to allow the entire City Council the opportunity to personally hear more about each organization's mission and what they do to serve the Addison Community.

Below is the list of Non-Profit Organizations that submitted applications. Organizations marked with an "*" are new applicants. This list will also serve as the planned order for presentations.

- Addison Arbor Foundation
- Cavanaugh Flight Museum
- Communities in Schools of the Dallas Region
- Dallas Cat Lady*
- Metrocrest Chamber of Commerce
- Metrocrest Services
- Outcry Theatre*
- Steven A. Cohen Military Family Clinic*
- The Family Place
- WaterTower Theatre
- Woven Health Clinic

The City Council will make final funding decisions in September.

RECOMMENDATION:

Information only, no action required.

Work Session and Regular Meeting **3.**

Meeting Date: 08/27/2019

Department: City Manager

AGENDA CAPTION:

Present and Discuss **Legislation Passed During the 86th Session of the Texas Legislature**.

BACKGROUND:

Staff will present an update of legislation passed during the 86th Session of the Texas Legislature that will impact the Town.

RECOMMENDATION:

Information only, no action required.

Attachments

Presentation - Legislative Update

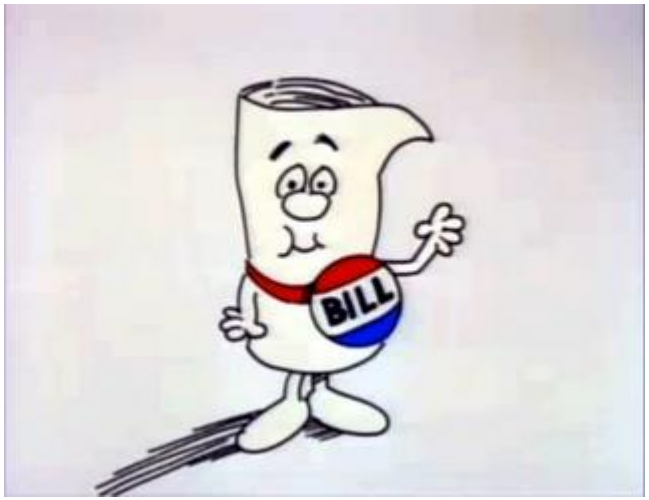


Legislative Update

86th Legislature

7,541 bills introduced
1,437 bills passed
330 bills impact cities

We will discuss various Senate Bills (SB) and House Bills (HB) that will become law.



ADDISON

Legislative Leaders



Property Taxes

SB 2 changes the property tax rate setting and appraisal processes.

- Lowers the property tax rollback rate from 8 percent to 3.5 percent (with some potential adjustments)
- The “rollback” tax rate will be called “voter approved” tax rate
- “Unused increment” carryover for up to three years
- November ratification election if voter approved rate is exceeded
- Alters calendar deadlines for appraisals, collection and rate setting processes to conform with possible election
- The “effective” tax rate becomes the “no new revenue” tax rate.
- The effective maintenance and operations rate” becomes the “no new revenue maintenance and operations rate”
- 45 other changes
- Effective January 1, 2020

Sales Tax

HB 1525 and HB 2153 establish the framework to collect sales and use taxes from remote and marketplace sellers.

- Effective October 1, 2019

Franchise Fees

SB 1152 Franchise Fees: Authorizes a cable or phone company to stop paying the lesser of its state cable franchise or telephone access line fees, whichever are less for the company statewide.

Municipal Court Fees

SB 346 Municipal Court Costs, Fines, and Fees/Indigent Defendants: this bill updates municipal court costs, fines, and fees, and makes changes to a determination of a defendant's ability to pay them.

- Effective January 1, 2020

Local Debt

HB 477 Local Debt:

- requires the document ordering an election to authorize a political subdivision to issue debt obligations to distinctly state the aggregate amount of the outstanding interest on debt obligations of the political subdivision as of the date the election is ordered;
- requires the ballot to specifically state: (a) a general description of the purposes for which the debt obligations are to be authorized; (b) the total principal amount of the debt obligations to be authorized; and (c) that taxes sufficient to pay the principal of and interest on the debt obligations will be imposed;
- requires a political subdivision to prepare a voter information document for each proposition to be voted on at the election; requires the voter information document to be posted;

Local Debt (HB 477 Cont.)

- requires the voter information document to distinctly state:
  - the language that will appear on the ballot;
  - the principal of the debt obligations to be authorized;
  - the estimated interest for the debt obligations to be authorized;
  - the estimated combined principal and interest required to pay on time and in full the debt obligations to be authorized;
  - the estimated maximum annual increase in the amount of taxes that would be imposed on a residence homestead with an appraised value of $100,000 to repay the debt obligations (based upon assumptions made by the governing body of the political subdivision);
  - any other information that the political subdivision considers relevant or necessary to explain the information required to be included in the voter information document;

Local Debt (HB 477 Cont.)

- requires a political subdivision that maintains a website to provide the information in an easily accessible manner beginning not later than the 21st day before election day and ending on the day after the date of the debt obligation election;
- extends the timeframe to publish newspaper notice of intention to issue a certificate of obligation (CO) from 30 to 45 days before the passage of the ordinance;
- requires an issuer of COs that maintains a website to continuously post notice of intention to issue a CO on its website for at least 45 days before the passage of the CO issuance ordinance
- Effective September 1, 2019

Local Debt

SB 30 Bond Propositions:

- requires each single specific purpose for which bonds requiring voter approval are to be issued to be printed on the ballot as a separate proposition;
- provides that a proposition may include as a specific purpose one or more structures or improvements serving the substantially same purpose and may include related improvements and equipment necessary to accomplish the specific purpose; and
- requires a proposition seeking approval of the issuance of bonds to specifically include a plain language description of the single specific purpose for which the bonds are to be authorized.
- Effective September 1, 2019

Local Debt

HB 440 Local Debt:

- requires a political subdivision that maintains a website to include any sample ballot prepared for a general obligation bond election to be prominently posted on the political subdivision's website during the 21 days before the election, along with the election order, notice of the election, and contents of the proposition;
- provides that a political subdivision may not issue a general obligation bond to purchase, improve, or construct improvements or to purchase personal property if the weighted average maturity of the issue of bonds to finance the improvements or personal property exceeds 120 percent of the reasonably expected weighted average economic life of the improvements and personal property financed with the issue of bonds;

Local Debt (HB 440 cont.)

- provides that a political subdivision other than a school may use the unspent proceeds of issued general obligation bonds only: (a) for the specific purpose for which the bonds were authorized; (b) to retire the bonds; or (c) for a purpose other than the specific purpose for which the bonds were issued if: (i) the specific purpose is accomplished or abandoned; and (ii) a majority of the votes cast in an election held in the political subdivision approve the use of the proceeds for the proposed purpose.
- Effective September 1, 2019

Open Government

HB 81 Public Information and Parades, Concerts, and Other Entertainment Events: provides that: (1) information relating to the receipt or expenditure of public or other funds by a governmental body for a parade, concert, or other entertainment event paid for in whole or part with public funds is subject to the Public Information Act; (2) a person, including a governmental body, may not include a provision in a contract related to an event described by (1) that prohibits or would otherwise prevent the disclosure of information; and (3) a contract provision that violates the bill is void. (Effective immediately)

HB 305 Website Posting: provides that a political subdivision shall post on a publicly accessible Internet website the following information: (a) the political subdivision's contact information, including a mailing address, telephone number, and e-mail address; (b) each elected officer of the political subdivision; (c) the date and location of the next election for officers of the political subdivision; (d) the requirements and deadline for filing for candidacy of each elected office of the political subdivision, which shall be continuously posted for at least one year before the election day for the office; (e) each notice of a meeting of the political subdivision's governing body under the Open Meetings Act; and (f) the minutes of a meeting of the political subdivision's governing body. (Effective September 1, 2019)

Open Government

- **HB 2840 Right to Speak at Open Meetings**
- applies to local governmental bodies, including cities (but not state agencies)
- a governmental body shall allow each member of the public who desires to address the body regarding an item on an agenda for an open meeting to address the body regarding the item at the meeting before or during the body's consideration of the item
- a governmental body may adopt reasonable rules regarding the public's right to address the body, including rules that limit the total amount of time that a member of the public may address the body on a given item;
- a governmental body may not prohibit public criticism of the governmental body, including criticism of any act, omission, policy, procedure, program, or service, unless the public criticism is otherwise prohibited by law.
- Effective September 1, 2019

Development

HB 2439 Building Materials

In general, a city may not regulate building materials or construction methods (residential or commercial) beyond those in a nationally-recognized building code.

- 2018 International Residential Code for home exteriors includes, among others: concrete, stone or masonry; fiber cement siding, horizontal aluminum; vinyl siding or wood siding.

Development

HB 3167 Subdivision Platting

The bill makes numerous changes to the subdivision platting approval process, and it will require most cities to make changes to their subdivision ordinance, zoning ordinance, and/or unified development code approval processes.

- Effective September 1, 2019

Development

HB 852 Building Permit Fees:

- In determining the amount of a building permit or inspection fee required in connection with the construction or improvement of a residential dwelling, a city may not consider: (a) the value of the dwelling; or (b) the cost of constructing or improving the dwelling.
- A city may not require the disclosure of information related to the value of or cost of constructing or improving a residential dwelling as a condition of obtaining a building permit.
- Effective immediately

Public Safety

SB 1582 Peace Officer Disease Presumption:

- a peace officer is entitled to preventative immunization for any disease to which the officer may be exposed in performing official duties;
- a peace officer and any member of the officer's immediate family are entitled to vaccination for a contagious disease to which the officer is exposed during the course of employment;
- a peace officer who suffers tuberculosis, or any other disease or illness of the lungs or respiratory tract is presumed to have contracted the disease or illness during the course and scope of employment as a peace officer;
- a peace officer who suffers an acute myocardial infraction or stroke resulting in disability or death is presumed to have suffered the disability or death during the course and scope of employment as a peace officer if: (a) while on duty, the peace officer: (i) was engaged in a situation that involved nonroutine stressful or strenuous physical activity that involved fire suppression, rescue, hazardous material response, emergency medical services, or other emergency response activity; or (ii) participated in a training exercise that involved nonroutine stressful or strenuous physical activity; and (b)the acute myocardial infraction occurred while the officer was engaging in the activity described herein;
- Effective September 1, 2019

Public Safety

SB 2551 Firefighter and EMT Disease Presumption:

- modifies current law to provide that certain fire fighters and emergency medical technicians (EMT) who suffer from one or more of 11 defined cancers;
- Effective immediately

Public Safety

HB 2143 First Responder's PTSD: this bill: (1) expands the workers compensation presumption for post-traumatic stress disorder (PTSD) to include PTSD caused by multiple, as well as single, events; and (2) for purposes of a claim, the date of injury for post-traumatic stress disorder suffered by a first responder is the date on which the first responder first knew or should have known that the disorder may be related to the first responder's employment.

- Effective September 1, 2019

Public Health

SB 476 provides that food service establishments may choose to allow dogs in outdoor dining areas if: (1) the establishment posts a sign in a conspicuous location in the area stating that dogs are permitted; (2) the customer and dog access the area directly from the exterior of the establishment; (3) the dog does not enter the interior of the establishment; (4) the customer keeps the dog on a leash and controls the dog; (5) the customer does not allow the dog on a seat, table, countertop, or similar surface; and (6) the establishment does not prepare food or permit open food other than food that is being served to a customer in the outdoor area.

- A city may not adopt or enforce an ordinance, rule, or similar measure that imposes a requirement on a restaurant allowing a dog in an outdoor dining area that is more stringent than the requirements in the bill.



Work Session and Regular Meeting **4.**

Meeting Date: 08/27/2019
Department: Parks & Recreation
Pillars: Optimize the Addison Brand
Milestones: Define and promote Addison Identity

AGENDA CAPTION:

Present and Discuss the **Stainless Steel Sculpture Proposed to be Located at the Addison Conference & Theatre Center.**

BACKGROUND:

The Addison Arbor Foundation (AAF) is proposing to locate a stainless steel sculpture within the half circle drive located in front of the Addison Conference and Theatre Center. The sculpture is proposed to be placed at the terminus of the arbor walk in Addison Circle Park and will line up with the entrance to the park from the future DART Silver Line. The sculpture finish will include a wire brushed texture and mirror finish and will be illuminated with color LED lights at night. The sculpture including shipping, installation and all required infrastructure (geotechnical study, engineered foundation and lighting) is estimated to not exceed $65,000. The AAF plans to utilize Fiscal Year 2019 grant funds and requested Fiscal Year 2020 grants funds to pay for the project. The specifications of this sculpture are included in the attached presentation. The artist, Art Fairchild, will accompany the AAF and present a maquette of the proposed sculpture.

This agenda item is being discussed in Work Session to accommodate presentation of the sculpture maquette. A separate agenda item will seek Council approval of the proposed location.

RECOMMENDATION:

Information only, no action required.

Attachments

Presentation - Proposed Sculpture for the Addison Conference & Theatre Center

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ADDISON ARBOR FOUNDATION

Public Art Location Request ‘Tango Fantasia’

Artist: Art Fairchild

Materials: Stainless Steel

Size: 15’ x 10’ x 5’



ADDISON ARBOR FOUNDATION

Public Art Location Request ‘Tango Fantasia’

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Size: 15’ x 10’ x 5’



ADDISON ARBOR FOUNDATION

Public Art Location Request ‘Tango Fantasia’

Artist: Art Fairchild

Materials: Stainless Steel

Size: 15’ x 10’ x 5’



Work Session and Regular Meeting **5.**

Meeting Date: 08/27/2019

Department: Parks & Recreation

Pillars: Optimize the Addison Brand

Milestones: Define and promote Addison Identity

AGENDA CAPTION:

Present and Discuss the **Powder-Coated Steel and Cable Sculpture Proposed to be Located within the Public Art Easement in the AMLI Development.**

BACKGROUND:

The Addison Arbor Foundation will present information about a powder coated steel and cable sculpture planned within the public art easement located in the AMLI Development. The name of the sculpture is Spectra by artist Scott Shubin. The sculpture and installation are funded by a donation from AMLI Development. The specifications of this sculpture are listed in the attached presentation.

RECOMMENDATION:

Information only, no action required.

Attachments

Presentation - Public Art Spectra

ADDISON ARBOR FOUNDATION

Public Art Location Request ‘Spectra’

Artist: Scott Shubin

Materials: Steel

Size: 18’ x 7’ x 4.5”



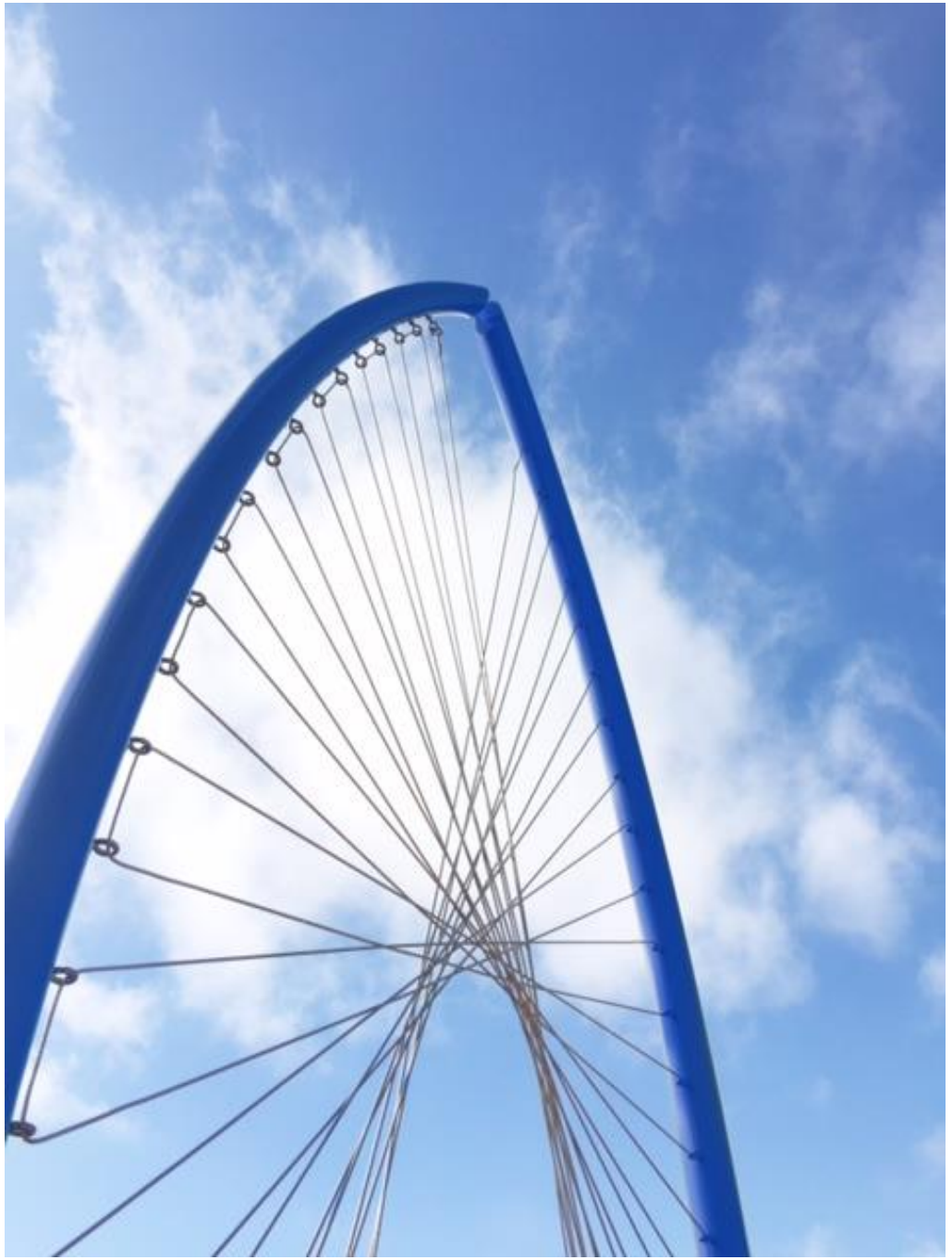
ADDISON ARBOR FOUNDATION

Public Art Location Request ‘Spectra’

Artist: Scott Shubin

Materials: Steel

Size: 18’ x 7’ x 4.5”



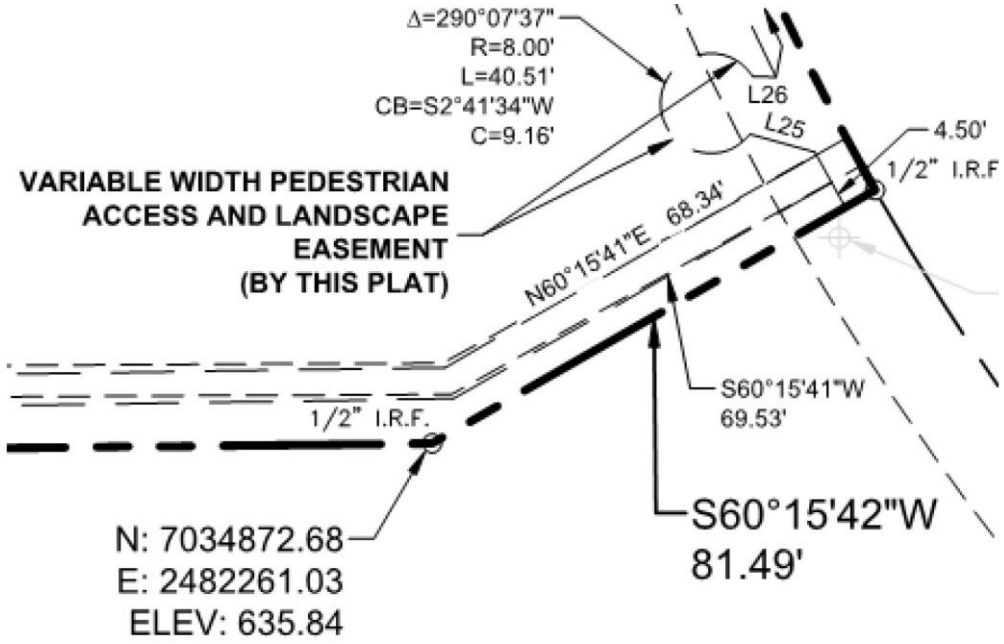
ADDISON ARBOR FOUNDATION

Public Art Location Request ‘Spectra’

Artist: Scott Shubin

Materials: Steel

Size: 18’ x 7’ x 4.5”



LINE TABLE		
NO.	BEARING	LENGTH
L21	N89°12'18"E	9.61'
L22	N89°07'29"E	10.27'
L23	N00°52'31"W	10.00'
L24	S89°07'29"W	13.32'
L25	N74°26'12"W	10.69'
L26	S89°11'45"E	3.68'

Kimley»Horn

6160 Warren Parkway, Suite 210

Frisco, Texas 75034

Tel. No. (972) 335-3580

Work Session and Regular Meeting **6.**

Meeting Date: 08/27/2019

Department: City Secretary

AGENDA CAPTION:

Consider Action to Approve the **Minutes from the Following Meetings: 1) the July 8, 2019 City Council Special Meeting; 2) the July 9, 2019 City Council Work Session and Regular Meeting; 3) the August 15, 2019 City Council Special Meeting and Work Session; and, 4) the August 16, 2019 City Council Special Meeting and Work Session.**

BACKGROUND:

The City Secretary has prepared the Minutes for four recent City Council Meetings for consideration.

RECOMMENDATION:

Administration recommends approval.

Attachments

Minutes - July 8 2019 City Council Special Work Session

Minutes - July 9 2019 City Council Regular Meeting and Work Session

Minutes - August 15 2019 Special Meeting Work Session

Minutes - August 16 2019 Special Meeting and Work Session

DRAFT

OFFICIAL ACTIONS OF THE ADDISON CITY COUNCIL SPECIAL WORK SESSION

Monday, July 8, 2019 @ 4pm
Addison TreeHouse
14681 Midway Road, Suite 200, Addison Texas

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

1. **CALL MEETING TO ORDER:** Mayor Chow called the meeting to order.

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2. **Present, Discuss and Consider Action Regarding the Town's Strategic Plan and Goal Setting.**

Presentation: Mike Mowery, Facilitator – Strategic Government Resources. The Town held special work sessions 2017 and 2018 to plan for Addison's future growth. During those planning sessions the City Council has reaffirmed their 7 strategic pillars and identified various milestones as annual priorities. This year the City Council reviewed the 7 strategic pillars and 9 priority milestones for fiscal year 2019. The focus of the discussion centered around the continued relevance of the pillars and milestones and to make necessary tweaks, deletions, and/or additions in order to give Staff clear direction from Council for fiscal year 2020.

The additions to this year's plan include the following which will be presented to the City Council at a future council meeting for adoption.

- **Pillar One: Entrepreneurship and Business Hub**
  - Milestone: Economic Development focus on attracting and retaining entrepreneurship and high- tech conferences.
  - Milestone: Review Town Ordinances and regulations to modernize them and facilitate redevelopment.
  - Milestone: Create a specific channel for two-way communication with the business community.
- **Pillar Two: Excellence in Asset Management**
  - Milestone: Implement the Asset Management Plan.
- **Pillar Three: Excellence in Transportation Systems**

- Milestone Promote Silver Line Development.
- Milestone Improve all modes of transportation with infrastructure in acceptable condition and well-maintained.

❖ **Pillar Four: Gold Standard in Customer Service**
- Milestone: Promote and protect the Addison Way.

❖ **Pillar Five: Gold Standard in Financial Health**
- Milestone: Continue development and implementation of the Long-Term Financial Plan.

❖ **Pillar Six: Gold Standard in Public Safety**
- Milestone: Maximize use of cutting-edge technology to enhance public safety.

❖ **Pillar Seven: Optimize Addison Brand**
- Milestone: Define and promote Addison's identity.

Adjourn Meeting

There being no further business to come before the Council, Mayor Chow adjourned the meeting.

TOWN OF ADDISON, TEXAS

_____
Joe Chow, Mayor

ATTEST:

_____
Irma G. Parker, City Secretary

OFFICIAL ACTIONS OF THE ADDISON CITY COUNCIL WORK SESSION

July 9, 2019

Addison Town Hall, 5300 Belt Line Rd., Dallas, TX 75254 5:00 p.m. Executive Session & Work Session 7:30 Regular Meeting

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

1. **CALL MEETING TO ORDER:** Mayor Chow called the meeting to order.

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2. **CLOSED (EXECUTIVE) SESSION OF THE ADDISON CITY COUNCIL PURSUANT TO:**

Section 551.087, Tex. Gov. Code, to discuss or deliberate regarding commercial or financial information that the City Councilhas received from a business prospect or business prospects that the City Council seeks to have locate, stay, or expand in or near the territory of the Town of Addison and with which the City Council is conducting economic development negotiations, and/or to deliberate the offer of a financial or other incentive to such business prospect or business prospects:

- **Project Madison**

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

- **Spruill Dog Park Naming and Recognition Policy**

Mayor Chow closed the open session at 5:15 pm to convene the City Council into Closed Executive Session.

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

Mayor Chow reconvened the City Council into Regular Open Session at 6:11 pm. No action taken.

WORK SESSION

4. **Present and Discuss the Leadership Metrocrest Program**.

Presentation: Erin Carney, Metrocrest Chamber of Commerce President. Ms. Carney provided Council with an update on the Leadership Metrocrest Program including the participant selection process.

COUNCIL COMMENTS: Council's role is to nominate community members, encourage participation and tuition assistance. City Manager Pierson suggested that the Council wait until the Metrocrest Chamber of Commerce selects Leadership Metrocrest participants before any funding decisions for applicants are made. Once the participants are selected the Town can apply its funding matrix to those applicants that are successful in being selected as a Leadership Metrocrest participant. Council responded positively to this suggestion. Priority will be given to citizens and then Town employees.

5. **Present and Discuss the Addison Community Bond Advisory Committee's Final Report on a Recommendation for a Bond Program and Review the Program's Propositions, Projects, Financing, and Process.**

Presentation: Lisa Pyles, Director of Infrastructure and Public Works. The purpose of this agenda item was for Council and Staff to discuss the recommended bond program's propositions, projects, financing, and process. A brief review of timeline was provided. The Committee chose 15 projects that they believe should be included in a bond program. These projects were also divided into five proposed propositions. The total cost of the recommended projects is $85,620,002 and shown as follows:

- Proposition 1 - Roads (East West) $22,900,000
- Proposition 2 - Roads (North South) $33,602,000
- Proposition 3 - Buildings $7,395,000
- Proposition 4 - Recreation and Lifestyle $6,723,002
- Proposition 5 - Investment in the Future $15,000,000

Council asked questions relating to the impact of the bond program on future Town tax rates. Ms. Julie Partain, Bond Attorney for the Town of Addison answered questions and provided information related the proposed Proposition 5 - $15,000,000 for strategic land acquisition for economic development purposes. Ms. Partain also shared pertinent information related to the bond sale process, tax laws associated with the sale of bonds, and the ability for the Town to reimburse itself for bond eligible project expenses.

This and future presentations are intended to facilitate discussion, provide information, and

answer questions in order for the City Council to decide whether or not to call for a bond election. Information about the Bond Advisory Committee's meetings can be found on the Town's website by visiting: https://addisontexas.neVbc/community-bond-advisory-committee

REGULAR MEETING

Pledge of Allegiance

Announcements and Acknowledgements regarding Town and Council Events and Activities

Discussion of Events/Meetings

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 requests from any audience members to address the City Council.

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.*

6. **Consider Action to Approve the June 24, 2019 City Council Work Session and Regular Meeting Minutes.**

7. **Consider Action to Reject All Bids for the Addison Town Hall Drive and Lake Forest Drive Pavement Replacement Projects.**

8. **Consider Action to Approve a Resolution Approving the Agreement for Professional Engineering Services Between the Town of Addison and Icon Consulting Engineers, Inc., for Design, Bid, and Construction Phase Services Associated with the Public Streetscape Services to Serve Vitruvian West 2 and Vitruvian West 3 Improvements Project, and Authorize the City Manager to Execute the Agreement in an Amount Not to Exceed $64,375.**

9. **Consider Action to Approve Change Order #1 to the Contract with Jim Bowman Construction Company LP, for Concrete and Asphalt Repairs and Authorize the City Manager to Execute the Change Order in an Amount Not to Exceed $610,645.**

10. **Consider Action to Approve an Ordinance Amending the Code of Ordnances Chapter 62 Section 62-247. - Political Signs by Adopting New Regulations for Political Signs in the Public Right-of-Way and on Town-Owned Property.**

11. **Consider Action to Approve Change Order #1 to Flow-Line Construction, Inc., for the Construction of the Vitruvian Phase 8 Public Infrastructure Project Increasing the Construction Fee and Authorize the City Manager to Execute the Change Order in an Amount Not to Exceed $87,646.37.**

12. **Consider Action to Approve Change Order #3 to Flow-Line Construction, Inc., for the Construction of the Vitruvian Phase 5 Public Infrastructure Project Increasing the Construction Fee and Authorize the City Manager to Execute the Change Order in an Amount Not to Exceed $58,498.**

Mayor Chow called for any requests to remove an item from the Consent Agenda for separate discussion. The following requests were made to discuss various Items from the Consent Agenda separately: City Manager Pierson - Items 6 and 12; Council Member Hughes – Item 10; and Council Member Quintanilla – Items 7 and 9. Mayor Chow called for a motion to approve Consent Agenda Items 8 and 11.

MOTION: Deputy Mayor Pro-Tempore Ward moved to approve Consent Agenda Items 8 and 11. Council Member Walden seconded the motion. Motion carried unanimously.

Resolution No. R19-046: Icon Consulting Engineers, Inc. Streetscape Services Vitruvian West 2 and 3.

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Consent Agenda Item 6 – June 24, 2019 Meeting Minutes: City Manager Pierson reported that at the June 24th Meeting Minutes the Meritorious Exception request for signage at 3802 Belt Line Road in the Addison Town Center for a proposed 'Ross Dress for Less' was tabled to the July 9th Council Meeting. This request for a Meritorious Exception is not included in the agenda for July 9. A Meritorious Exception has no requirement to be brought back at a certain date. The Applicant did not prepare the additional information for Staff and Council review and consideration for presentation at tonight's meeting. That action will be considered at a future date. This was presented for information only, no changes and/or additions to the Minutes of June 24. Mayor Chow called for a motion on Consent Item #6.

MOTION: Mayor Pro-Tempore Braun moved to approve Consent Agenda Item #6 – June 24, 2019 Meeting Minutes. Deputy Mayor Pro-Tempore Ward seconded the motion. Motion carried unanimously.

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Consent Agenda Item 7 – Reject Bids for Pavement Replacement Projects: Public Works Director Lisa Pyles reported that a bid for construction of the pavement replacement of Town Hall Drive and Lake Forest Drive was posted on April 25th and closed on May 9th. One bid was found to be non-responsive and disqualified. Since only one bid was received, Staff recommends the Bid be rejected.

COUNCIL COMMENTS: Council Member Quintanilla stated that he requested this Item to provide information to the public regarding the questions asked by Council on this Item with the response from Staff. Director Lisa Pyles responded as follows:

Question: Where was this request for bids posted?
Response: The request for bids was posted on BidSync (for 26 days) which is our normal process.

Question: Were any representatives of EJ Smith, HQS or Jim Bowman Construction in attendance at this pre-bid meeting?
Response: HQS sent one representative. No representatives from the other bidder, EJ Smith, were in attendance. Jim Bowman Construction was not a bidder on the Town Hall Drive and Lake Forest Drive Pavement Replacement Projects. As such, no one from Jim Bowman Construction attended the pre-bid meeting. The pre-bid meeting is not mandatory.

Question: Please provide historical background, if available, about the projects EJ Smith and HQS have undertaken or bid on for the town.
Response: Current Town Staff does not know of any work done for the Town by either EJ Smith or HQS.

Question: Please provide a copy of the scope of work posted.
Response: The scope of work for this project is outlined in the bid documents provided to bidders. The bid documents include the 108-page Specification and Contract Documents as well as the engineering plans prepared for the projects. Copies of both documents were uploaded to the Council One Drive.

Council Member Quintanilla asked for clarification as it appears there is a parallel bidding process taking place. City Manager Pierson stated there was no parallel bidding going on. This project was let for bid in April and closed in May. Since one bid was found to be non-responsive that bid was disqualified. With only one bid received our IDIQ contract was reviewed and found to provide a cost savings to the Town for these projects.

MOTION: Council Member Quintanilla moved to approve as submitted. Council Member Willesen seconded the motion. Motion carried unanimously.

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Consent Agenda Item 9 – Change Order #1, Jim Bowman Construction Co., LP: This Change Order #1 will add three projects to the IDIQ contract for (1) fire station #1 and #2 driveways, (2) Town Hall Drive Pavement Replacement and (3) Lake Forest Drive Pavement Replacement.

COUNCIL COMMENTS: Council Member Willesen stated his focus was on the Lake Forest Drive pavement replacement project as it was his understanding that maybe a lot of this is being driven by some work that needs to be done over the bridge that separates the private part of the street from the public. Director of Public Works Lisa Pyles reported that the portion of Lake Forest Drive from Belt Line Road to the southern limit of the bridge was to be reconstructed.

The bridge will receive an overlay only. Council Member Willesen asked if the Finance Building's parking lot would be repaired. Director Pyles stated that the parking lot was not included in this project.

Mayor Pro-Tempore Braun inquired as to how quantities were determined. Director Pyles reported that the design engineer determines quantities and provides them in the bid specifications for each project. The design engineer works with Staff and the contractor throughout the project and on occasion additions or deletions are made due to conditions in the field.

Council Member Quintanilla inquired as to the timing of these projects. Director Pyles advised that the projects are scheduled to commence in September. Dates are determined by the contractor's availability. This provides a cost savings when the contractor is provided leeway in determining start and end dates. Council Member Quintanilla and Mayor Chow thanked the Public Works Department for their efforts to save money by the use of the IDIQ program.

MOTION: Council Member Quintanilla moved to approve Change Order #1 as submitted. Mayor Pro-Tempore Braun seconded the motion. Motion carried unanimously.

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Consent Agenda Item 10 – Chapter 62, §62-247 Political Signs: Director of Development Services Charles Goff summarized the changes which includes: prohibition of political signs within the public right-of-way (ROW); prohibition of political signs on Town-owned property i.e. parks, facilities; and the establishment of limits on the number and size of signs placed at a polling location. Amendments to the Code were prepared in response to City Council request after receiving complaints received.

COUNCIL COMMENTS: Council Member Hughes stated he requested this Ordinance be removed from the Consent Agenda to provide information to the public. During this discussion Council expressed concern with the language contained in §62-247(d)(1) related to placement of signage in single-family neighborhoods. Wording suggested by City Attorney McDonald for amendment to sign placement was accepted and a motion made to provide direction to Staff.

MOTION: Council Member Hughes moved to amend §62-247(d)(1) to read as follows: *'(1) In single family neighborhoods, political signs may be placed in any portion of the front or side yard that may include the public right-of-way, if the political sign is placed at least three (3') feet away from the edge of the street, or, in locations with sidewalks, located so as not to obstruct the sidewalk.'* Mayor Pro-Tempore Braun seconded the motion. Motion carried unanimously.

Additionally, Council Member Willesen suggested that §62-247(d)(2) be reconsidered due to the limitation placed on the signage size. Council opined that most signs were approximately three (3 sf) square feet; however, Council Member Willesen stated his signs were larger. Council Member Willesen was asked to provide the exact dimensions of his signs to Staff and Council for possible consideration and inclusion in this ordinance.

MOTION: Mayor Pro-Tempore Braun moved to TABLE. Council Member Hughes seconded the motion. Motion carried unanimously.

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Consent Agenda Item 12 – Change Order #1 Flow-Line Construction, Inc.: City Manager Pierson requested this Item be Tabled to a future date to allow Staff time to address concerns associated with this Change Order. Mayor Chow called for any questions, there being none, he requested a motion.

MOTION: Council Member Walden moved to Table Consent Item 12. Council Member Hughes seconded the motion. Motion carried unanimously.

Regular Items

13. **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 2019 and Providing an Effective Date.**

City Manager Pierson advised that an updated Resolution was provided to the Council at the dais. The only change to the resolution includes, as part of the allowable project costs, an expenditure for the improvements to a groundwater well to supply water to the Town's Vitruvian Park. This is an additional well at the pond at Vitruvian to be built into the Trinity Aquifer.

Chief Financial Officer Olivia Riley reported that the proposed $18 million in Certificates of Obligation are to fund Midway Road reconstruction, streets projects related to Vitruvian Park West 2 and 3, and well-site improvements. The Town's Financial Advisor Nick Bulaich (Hilltop Securities) and Julie Partain, the Town's Bond Counsel (Bracewell LLP) were also in attendance. Mr. Bulaich advised this 20-year Certificate would cost the Town an estimated annual payment of $1.2 million. These Certificate of Obligations would be sold via competitive sale on September 10, 2019. A review of the timeline was presented and discussed.

COUNCIL COMMENTS: Council Member Hughes wished to get on the record, how the recently adopted House Bill 2, the Property Tax Reform Bill which caps property tax revenue growth, would affect the Town's ability to sell these Certificates of Obligation. He added that bond rating agencies consider this legislation a net credit negative. Mr. Bulaich stated that it should not affect the Town's Bond Rating. It will affect all cities' ability to pay cash for a projects in the future, which could result in more debt being issued in lieu of cash funded projects.

City Manager Pierson reported that the all State Laws have been followed for this issuance, just as had been done for the last issuance. The difference between the Series 2019 Issuance and

Series 2018 Issuance sold in December of 2018 is that the debt service was supported by airport and utility funds and had no net impact to our debt service tax rate. The Series 2019 Issuance will be supported by our debt service tax rate and as a result the debt service tax will require a small increase for Fiscal Year 2020. Specific to the debt service portion of the tax rate. PUBLIC HEARING: There were no requests to address the Council at this Public Hearing.

MOTION: Council Member Walden moved to approve as presented. Deputy Mayor Pro-Tempore Ward seconded the motion. Motion carried unanimously.

Resolution No. R19-045: Notice of Intention to Issue Certificates of Obligation, Series 2019

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14. **Hold a Public Hearing, Present, Discuss, and Consider Action on an Ordinance Changing the Zoning on Property Located at 4355 Beltway Drive, Which Property is Currently Zoned Planned Development (PD) Through Ordinance O95-007, by Amending the Permitted Uses to Allow for the Sale of Alcoholic Beverages for On-Premises Consumption Only Upon Approval of a Special Use Permit, and by Approving Such Special Use Permit. Case 1801-Z/Holiday Inn.**

Charles Goff, Director of Development Services, presented this item to Council. The Planning & Zoning Commission, meeting on June 18, 2019, voted to recommend approval the requested Special Use Permit to change the zoning to allow for the sale of alcoholic beverages for on-premises consumption only on property located at 4355 Beltway Drive. Staff recommended approval subject to a condition which requires the applicant to not use any terms or graphic depictions that relate to alcoholic beverages in any exterior signage.

COUNCIL COMMENTS: Deputy Mayor Pro-Tempore Ward inquired as to the status of the monument sign. Mr. Goff reported there was no damage to the monument sign, it was covered since the branding or logo was not applicable to the current facility and is scheduled to be updated. Council Member Hughes inquired as to the restrictions and general provision of serving alcohol, i.e. hours of sale, late-night sale. Mr. Goff advised that the Texas Alcohol and Beverage Commission regulates the sale of alcohol.

PUBLIC HEARING: There were no requests to address the Council at this Public Hearing.

MOTION: Council Member Hughes moved to approve as submitted. Council Member Willesen seconded. Motion carried unanimously.

Ordinance No. O19-28: Case 1801-Z/Holiday Inn, 4355 Beltway Drive

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15. **Present, Discuss and Consider Action on the Status of Construction Along the Cotton Belt Regional Rail Corridor and the Development of Properties Adjacent to the Rail Corridor.**

Charles Goff, Director of Development Services, presented the status of the three projects – DART'S Cotton Belt Regional Commuter Rail Project, North Central Texas Council of Governments (NCTCOG) and the Town's implementation of the Special Area Study findings.

Director Goff updated the Council on Dallas Area Rapid Transit's (DART) progress the Cotton Belt Rail Project and indicated that DART is still scheduled to complete the project in time to start revenue service by the end of 2022. Director Goff explained that in December 2018, DART awarded a contract to Archer Western Herzog Joint Venture (AWH) for the design and construction of the Cotton Belt Regional Rail Project. AWH's work is progressing with design development and some preliminary construction activities within the corridor.

Director Goff explained that the North Central Texas Council of Government (NCTCOG) has been coordinating with DART, Dallas County, and the cities along the rail line to construct a hike and bike trail within the corridor. Mr. Goff explained that NCTCOG's goal is to coordinate funding for the trail among the various stakeholders so that as much of the trail as possible can be built by DART and AWH while the rail line is being constructed. Mr. Goff discussed the the funding for the trail project, explaining that the project is federally funded, which require a 20% local match. Mr. Goff explained that Dallas County has agreed to cover half of the cost of the local match and they have agreed to completely fund certain portions of the trail not included in the Regional Transportation Council's funding approvals. For Addison, this means that the entire trail, as it runs through the Town, will be constructed as the rail line is built. The Town's required contribution to this project is expected to total $307,469.

Director Goff also discussed the Town's work to create a new transit-oriented development surrounding the planned rail station in Addison. This process began with the creation of a vision established through the Addison Circle Special Area Study, which was adopted by Council earlier in 2019. Since then, staff has been working on a plan to solicit developer interest before releasing a call for developers in the first quarter of 2020.

COUNCIL COMMENTS: Council Member Hughes asked if developers had been in contact with Town employees to inquire about possible participation. Mr. Goff said there had been interest. Council Member Willesen wanted more information regarding the Town's match. Mr. Goff stated that the $307,469 match was determined during the design phase. The local match may go down but will not exceed that amount. Council Member Quintanilla inquired as to the plans for integration of the two-mile hike and bike trail and the Town's sidewalk and trail system. Mr. Goff stated that entry points are included for the safe transition from the DART system and the Town's trail system. Provided for information only. No action taken.

16. **Present, Discuss, and Consider Action on a Resolution Indicating Addison's Commitment to Provide the Required Local Match for the Cotton Belt Hike and Bike Trail in Fiscal Year 2021 in an Amount Not to Exceed $307,469.**

Charles Goff, Director of Development Services, presented this Resolution for consideration and adoption. North Central Texas Council of Governments (NCTCOG) coordinated with stakeholders along the rail line to construct a hike and bike trail within the corridor with the

Regional Transportation Council funding design of the hike and bike trail and covering 80% of the construction costs for the segments of trail that were deemed critical. The remaining 20% of the construction costs to be covered by a local match. Dallas County has agreed to cover half of the required 20 percent local match. This resolution formally adopts and records the Town of Addison's commitment to fund a local match equal up to 10% of the cost to construct the two critical trail sections located in Addison in an amount not to exceed $307,469..

MOTION: Council Member Hughes moved to approve as submitted. Deputy Mayor Pro-Tempore Ward seconded the motion. Motion carried unanimously.

Resolution No. R19-047: Commitment to provide local match for Cotton Belt (now known as Silver Line) Hike and Bike Trail in FY 2021.

17. **Present, Discuss and Consider Action on a Resolution Amending the Spruill Dog Park Naming and Recognition Policy to Remove the Requirement Allowing a Minimum Donation to Rename Spruill Dog Park to be Included on Elements for a Minimum Donation and Limiting the Naming Nomenclature to Only Include Dog Name, Family or Individual Name, or Business Name.**

Janna Tidwell, Director of Parks & Recreation, presented the Resolution amending the Naming and Recognition Policy. In June, Staff brought this Policy before Council for discussion at the request of Council. As a result of those comments and suggestions, Staff brought forward policy amendments for consideration.

COUNCIL COMMENTS: Council Member Willesen asked questions related to when and how much of the donations from the Legacy Foundation for Spruill Dog Park were received by the Town. Ms. Tidwell explained that in the short-term, the Town is reimbursed for the costs associated with engraving and installing brick pavers at Spruill Dog Park. She also reported ultimately, the intent is that 100% of the donations received by the Legacy Foundation for Spruill Dog Park would be given to the Town for projects at the dog park. Additional questions regarding the relationship between the Town and the Legacy Foundation were discussed. Regarding the brick program, Council Member Willesen inquired as to the procedure and cost. City Manager Pierson explained the cost to the Town and how much was paid to the Town by the Legacy Foundation.

Amendments were discussed with Deputy Mayor Pro-Tempore Ward asking about the inclusion of 'dog-centric' language in the policy. City Manager Pierson advising that in last approved Policy, Section 2 (a) and (b) did not have 'dog-centric'. Council may add that back or keep it the same. No change was recommended by Council. Council Member Hughes recommended adding Section 3(a) (iv) to read: 'no names shall include profanity or offensive language.' There being no other comments, Mayor Chow called for a motion.

MOTION: Council Member Hughes moved to approve this Resolution with the following amendment in Section 3 (a) "Naming Nomenclature" to read '*The naming of elements in Spruill Dog Park may only include the following:'* and the addition of Section (a)(iv) *'No names shall*

include profanity or offensive language.' Mayor Pro-Tempore Braun seconded. Motion carried 6 to 1 with Council Member Willesen voting against.

Resolution No. R19-048: Amending Spruill Dog Park Naming and Recognition Policy.

Adjourn Meeting

There being no further business to come before the Council, Mayor Chow adjourned the meeting.

TOWN OF ADDISON, TEXAS

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Joe Chow, Mayor

ATTEST:

_____
Irma Parker, City Secretary

D R A F T

OFFICIAL ACTIONS OF THE ADDISON CITY COUNCIL SPECIAL MEETING & WORK SESSION

Thursday, August 15, 2019 @ 4:00 pm
Addison Conference & Theatre Centre
15650 Addison Road, Addison, TX 75001

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

1. **Call to Order.** Mayor Chow called the Special Budget Workshop Meeting to order.

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2. **Present, Discuss, and Consider Action on the Proposed Annual Budget for the Town of Addison for Fiscal Year 2019-2020 (Beginning October 1, 2019 and Ending September 30, 2020), including but limited to the General Fund, Utility Fund, Stormwater Fund, Airport Fund, Hotel Fund, Economic Development Fund, Information Technology Fund, Capital Replacement Fund, Infrastructure Investment Fund, and Long-Term Planning.**

City Manager Wesley Pierson, Budget Director Terri Doby and Chief Operating Officer Olivia Riley presented highlights of the Proposed Fiscal Year 2019-2020 Budget. Those highlights include:

Property Tax Rates: Proposed:

	FY2018	FY2019	FY2020
Effective	$0.542963/100	$0.527064/100	$0.552371/100
Rollback	$0.551854/100	$0.553323/100	$0.591133/100
Proposed	$0.550000/100	$0.550000/100	$0.591133/100

Property Tax Rates: Breakdown:

	FY2018	FY2019	FY2020
Operations & Maintenance	$0.396958/100	$0.407352/100	$0.441750/100
Interest & Sinking	$0.153042/100	$0.142648/100	$0.149383/100
Total Tax Rate	$0.550000/100	$0.550000/100	$0.591133/100

Staffing Summary:

Department	2016	2017	2018	2019	2020
General Fund	241.6	223.2	224.2	226.9	235.1
Hotel Fund	14.8	16.7	16.7	17.0	17.0
Economic Development Fund	4.0	4.0	4.0	4.0	4.0
Airport Fund	3.0	3.4	3.4	4.4	4.4
Utility Fund	17.6	19.2	19.2	22.2	25.2
Stormwater Fund	1.7	2.0	2.0	4.0	4.0
TOTAL	282.7	268.5	269.5	278.5	278.5

General Fund Balance:

	FY2018 Actual	FY2019 Budget	FY2019 Estimated	FY2020 Proposed
BEGINNING FUND BALANCE	$16.8M	$17.8M	$21.0M	$18.1M
Total Operating Revenue	40.3M	37.4M	39.0M	39.4M
Total Operating Expense	34.5M	37.4M	37.4M	39.0M
TRANSFER				
Transfer to Self-Funded Projects Fund	$1.2M	$3.1M	$3.5M	$4.0M
Transfer to IIF	-	1.0M	1.0M	0.4M
ENDING FUND BALANCE	$21.0M	$13.7M	$18.1M	$14.1M
FUND BALANCE PERCENTAGE	60.8%	36.7%	48.3%	36.0%

Hotel Fund Overview (excluding transfers):

	FY2019 Budget	FY2020 Proposed	Difference
Total Revenue	$8.9M	$7.6M	$(1.3)M
Total Expense	$8.2M	$7.1M	$(1.1)M
Revenue to Expense	$0.7M	$0.5M	($0.2) M

Economic Development Fund:

	FY2019 Budget	FY2020 Proposed	Difference
Total Revenue	$1.9M	$2.0M	$0.1M
Total Expense	$1.9M	$1.9M	-
Revenue to Expense	-	$0.1M	$0.1M

Airport Fund:

	FY2019 Budget	FY2020 Proposed	Difference
Total Revenue	$5.4M	$5.7M	$0.3M
Total Expense	$5.6M	$5.6M	-
Revenue to Expense	($0.2)M	$0.1M	$0.3M

Utility Fund Balance:

	FY2018 Actual	FY2019 Estimated	FY2020 Proposed
BEGINNING FUND BALANCE	$12.0M	$12.2M	$11.3M
Total Operating Revenue	12.4M	12.3M	13.1M
Total Operating Expense	11.7M	12.3M	13.1M
TRANSFER			
Interfund Transfers	$0.5M	-	-
CAPITAL PROJECTS (Cash Funded)			
Basin I Sanitary Sewer Re-route	-	0.7M	$1.7M
Water System Improvement Design	-		$0.1M
Chlorine Booster Station	-	0.2M	-
ENDING FUND BALANCE	$12.2M	$11.3M	$9.5M
FUND BALANCE PERCENTAGE	104.3%	92.8%	73.1%

Stormwater Fund Overview:

	FY2019 Budget	FY2020 Proposed	Difference
Total Revenue	$2.2M	$2.4M	$0.2M
Total Expense	$1.5M	$1.5M	-
Revenue to Expense	$0.7M	$0.9M	$0.2M

	FY2019 Budget	FY2020 Requested	FY2020 Proposed	RY2020 Recommended
GENERAL FUND				
Addison Arbor Foundation	$50,000	$50,000	$50,000	$50,000
Metrocrest Chamber of Commerce	$35,000	$35,000	$35,000	$35,000
Metrocrest Services	$66,000	$66,120	$66,000	$66,120
The Family Place	$2,500	$25,000	$2,500	$2,500
Woven Health Clinic	$5,000	$6,500	$5,000	$5,000
Sub-Total General Fund	$158,500	$182,620	$158,500	$158,620
FUNDRAISING – MATCHING FUNDS – FY19 up to $15,000.00				
Addison Arbor Foundation	$15,000	$15,000	$15,000	$15,000
NEW - TOTAL GENERAL FUND	$173,500	$197,620	$173,500	$173,620
HOTEL FUND				
WaterTower Theatre	$295,000	$300,000	$295,000	$300,000
WaterTower Theatre (matching funds)	$150,000	$200,000	$150,000	$200,000
Cavanaugh Flight Museum	$50,000	$75,000	$50,000	$60,000
TOTAL HOTEL FUND	$495,000	$575,000	$495,000	$560,000

Additional Applications				
Military Family Clinic-Metrocrest Services	-	$40,000	-	-
Dallas Cat Lady	-	$5,000	-	$5,000
Outcry Theatre	-	$10,000	-	$5,000
Communities in Schools Dallas Region	-	$30,000	-	-
GRAND TOTAL	**-**	**$857,620**	**$668,500**	**$743,620**

Adjourn Meeting

There being no further business to come before the Council, Mayor Chow adjourned the 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 SPECIAL MEETING & WORK SESSION

Friday, August 16, 2019 @ 4:00 pm
Addison Conference & Theatre Centre
15650 Addison Road, Addison, TX 75001

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

1. **Call to Order.** Mayor Chow called the Special Budget Workshop Meeting to order.

---

2. **Present, Discuss, and Consider Action on the Proposed Annual Budget for the Town of Addison for Fiscal Year 2019-2020 (Beginning October 1, 2019 and Ending September 30, 2020), including but limited to the General Fund, Utility Fund, Stormwater Fund, Airport Fund, Hotel Fund, Economic Development Fund, Information Technology Fund, Capital Replacement Fund, Infrastructure Investment Fund, and Long-Term Planning.**

City Manager Wesley Pierson reviewed the budget items discussed at the August 15th Budget Meeting. Mr. Pierson answered several Council questions related to the budget including, but not limited to, questions about the addition of new positions for the Town which had previously been out-sourced and the purpose and thinking associated with the proposed tax rate. The City Council spent time talking about the following three policy questions: 1) Any concerns with adding additional FTEs in the General Fund (does the Council want to add new positions); 2) Is the Council comfortable with the proposed tax rate of $0.591133; and 3) How might the adoption of the proposed tax rate of $0.591133 impact the voter sentiment related to the propositions on the November 2019 Bond Election? The Council also discussed reaching a consensus related to a tax rate that they could support to fund their priorities in fiscal year 2020.

Adjourn Meeting

There being no further business to come before the Council, Mayor Chow adjourned the meeting.

TOWN OF ADDISON, TEXAS

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Joe Chow, Mayor

ATTEST:

_____

Irma G. Parker, City Secretary

Work Session and Regular Meeting **7.**

Meeting Date: 08/27/2019

Department: City Secretary

AGENDA CAPTION:

Consider Action to Approve a **Resolution to Appoint Ivan Hughes, Town of Addison Council Member, as the Primary Representative and Paul Voelker, City of Richardson Council Member, as the Alternate to the Aggregated Position of Representative to the Regional Transportation Council (RTC) of the North Central Texas Council of Governments.**

BACKGROUND:

The Regional Transportation Council is a forty-four (44) member independent transportation policymaking body which determines how regional transportation funds should be spent. The municipalities of Richardson and Addison share one (1) representative. With this resolution, the City Council appoints Council Member Ivan Hughes as the primary representative with Richardson City Council Member Paul Voelker as the alternate representative. Both of these individuals are currently serving in their respective roles.

The City of Richardson and the Town of Addison rotate the appointments and collaborate together to ensure the interests of both cities are represented. In May 2018 with the adoption of Resolution No. R18-035, City of Richardson Council Member Steve Mitchell was appointed primary representative and Council Member Ivan Hughes was appointed Alternate. Mr. Voelker is replacing Council Member Mitchell from Richardson.

RECOMMENDATION:

Administration recommends approval.

Attachments

Resolution - Regional Transportation Council

RESOLUTION NO. R19-__

A RESOLUTION OF THE CITY COUNCIL OF THE TOWN OF ADDISON, TEXAS, APPOINTING IVAN HUGHES AS REPRESENTATIVE AND PAUL VOELKER AS ALTERNATE TO THE AGGREGATED POSITION OF REPRESENTATIVE TO THE REGIONAL TRANSPORTATION COUNCIL (RTC) OF THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS, WHICH FRACTIONAL ALLOCATION MEMBERSHIP IS SHARED WITH THE CITY OF RICHARDSON; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, regional transportation planning improved mobility are goals of the Town of Addison; and

WHEREAS, the Town of Addison desires to have a representative on the Regional Transportation Council (RTC).

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

SECTION 1. That Ivan Hughes, Council Member of the Town of Addison, is hereby appointed representative to the Regional Transportation Council (RTC) of the North Central Texas Council of Governments.

SECTION 2. That Paul Voelker, Mayor of the City of Richardson, is hereby appointed as Alternate to the Regional Transportation Council (RTC) of the North Central Texas Council of Governments.

SECTION 3. That this Resolution shall become effective immediately from and after its passage.

DULY RESOLVED AND ADOPTED by the City Council of the Town of Addison, Texas, on this the ***27th*** day of ***AUGUST 2019.***

TOWN OF ADDISON, TEXAS

_____
Joe Chow, Mayor

ATTEST:

_____
Irma G. Parker, City Secretary

APPROVED AS TO FORM:

_____
Brenda N. McDonald, City Attorney

RESOLUTION NO. 19-21

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF RICHARDSON, TEXAS, APPOINTING IVAN HUGHES TO THE AGGREGATED POSITION OF REPRESENTATIVE, AND PAUL VOELKER AS ALTERNATE TO THE AGGREGATED POSITION OF REPRESENTATIVE, TO THE REGIONAL TRANSPORTATION COUNCIL OF THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS, WHICH FRACTIONAL ALLOCATION MEMBERSHIP IS SHARED WITH THE TOWN OF ADDISON; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, regional transportation planning and improved mobility are goals of the City of Richardson; and

WHEREAS, the City of Richardson desires to have a representative on the Regional Transportation Council;

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

SECTION 1. That Ivan Hughes, Council Member of the Town of Addison, is hereby appointed to the Regional Transportation Council of the North Central Texas Council of Governments.

SECTION 2. That Paul Voelker, Mayor of the City of Richardson, is hereby appointed as Alternate to the Regional Transportation Council of the North Central Texas Council of Governments.

SECTION 3. That this Resolution shall become effective immediately from and after its passage.

DULY RESOLVED AND ADOPTED by the City Council of the City of Richardson, Texas, on this the 19th day of August 2019.

CITY OF RICHARDSON, TEXAS

MAYOR

CITY OF RICHARDSON RICHARDSON, TEXAS

ATTEST:

CITY SECRETARY

Work Session and Regular Meeting **8.**

Meeting Date: 08/27/2019

Department: City Manager

AGENDA CAPTION:

Consider Action to Approve a **Resolution to Adopt the Town of Addison's Strategic Planning Pillars and Milestones for Fiscal Year 2020.**

BACKGROUND:

Since 2016, the City Council has participated in an annual strategic planning session facilitated by Strategic Government Resources (SGR). At their strategic planning session held on July 8, 2019, Council reviewed the Strategic Planning Pillars for Fiscal Year 2020. These are:

- Entrepreneurship and Business Hub
- Excellence is Asset Management
- Excellence in Transportation Systems
- Gold Standard in Customer Service
- Gold Standard in Financial Health
- Gold Standard in Public Safety
- Optimize Addison Brand

Council also identified Milestones that indicate progress toward achieving these pillars and selected 10 priority Milestones to focus on for Fiscal Year 2020. A complete list of the Milestones is attached as Exhibit A in the Resolution. SGR's full report is also attached.

RECOMMENDATION:

Administration recommends approval.

Attachments

Resolution - Strategic Planning Pillars and Milestones for Fiscal Year 2020

Report - Strategic Planning Pillars and Milestones for Fiscal Year 2020

RESOLUTION NO. _____

A RESOLUTION OF THE CITY COUNCIL OF THE TOWN OF ADDISON, TEXAS APPROVING SEVEN STRATEGIC PILLARS AND TEN MILESTONES OF THE ADDISON STRATEGIC PLAN AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City Council met in a special work session on July 8, 2019 to review and revise the components of the Town's Strategic Plan; and

WHEREAS, the Seven Pillars and Milestones have been identified to develop a cohesive vision of the future that creates excitement and commitment for the Town of Addison; and

WHEREAS, as a result of the Council's discussion, the City Council desires to adopt amendments to the Pillars of Success and Milestones components of the Strategic Plan.

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

Section 1. The Strategic Planning Session Results, including the Seven Pillars and the Milestones, attached hereto as **EXHIBIT A** and incorporated herein, are hereby approved.

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 ***27th*** day of ***August*** 2019.

_____
Joe Chow, Mayor

ATTEST:

By: _____
Irma Parker, City Secretary

APPROVED AS TO FORM:

By: _____
Brenda N. McDonald, City Attorney

EXHIBIT A

Strategic Plan for Fiscal Year 2020

Pillar One: Entrepreneurship and Business Hub

Milestone: Economic Development focus on attracting and retaining entrepreneurship and high-tech conferences.
Milestone: Review Town Ordinances and regulations to modernize them and facilitate redevelopment.
Milestone: Create a specific channel for two way communication with the business community.

Pillar Two: Excellence in Asset Management

Milestone: Implement the Asset Management Plan.

Pillar Three: Excellence in Transportation Systems

Milestone: Promote Silver Line Development.
Milestone: Improve all modes of transportation with infrastructure in acceptable condition and well-maintained.

Pillar Four: Gold Standard in Customer Service

Milestone: Promote and protect Addison Way.

Pillar Five: Gold Standard in Financial Health

Milestone: Continue development and implementation of Long Term Financial Plan.

Pillar Six: Gold Standard in Public Safety

Milestone: Maximize use of cutting edge technology to enhance public safety.

Pillar Seven: Optimize Addison Brand

Milestone: Define and promote Addison Identity.

The Town of Addison Council held a Council Retreat on July 8, 2019, for the purpose of updating the Town's Strategic Plan. The retreat was attended by the Council, City Manager, and Department Heads. SGR facilitated the retreat. As the Council reviewed the current set of Pillars or priorities, they discussed what had gone well, what had not gone well, and gamechangers or surprises that had been experienced, and any adjustments or tweaks that they wanted to make for the upcoming year. This report is a summary of the discussion.

Pillar One: Entrepreneurship and Business Hub

Milestone 1 – Economic Development focus on attracting and retaining entrepreneurship and high-tech conferences.

Milestone 2 – Review Town Ordinances and regulations to modernize them and facilitate redevelopment.

Milestone 3 – Create a specific channel to receive input from business community.

What's Gone Well?

- Growth in Business—119 net new businesses in 2017 with 625,000 square feet new commercial space added. 121 net new businesses in 2018 with over 1 million square feet of new commercial space added.
- There's been a lot of progress on Milestone 1 and 2.

What's Not Gone Well?

- The input channel with the business community has not been established.
- Lost some businesses.
- There's more competition strain on our restaurants from other cities.

Surprises and Gamechangers?

- The Silver Line is moving forward.
- Midtown Development.
- Economic Development Thinking.

Tweaks or Adjustments?

- Milestone 3 should be adjusted to say "Create a specific channel for two way communication with the business community."
- Is there a role for the Town to play as food consumption changes?
- Strengthen bonds and relationships with restaurants.
- Inwood Road Redevelopment.

Pillar Two: Excellence in Asset Management

Milestone: Implement the Asset Management Plan.

What's Gone Well?

- Comprehensive Master Plan was adopted and progress was made on other master plans.
- Asset Management Plan is done.

What's Not Gone Well?

- Estimate on the HVAC Repair was way low.
- Facility Consolidation Study needs more progress.
- The condition of some of our assets was disappointing and surprising.

Surprises and Gamechangers?

- We have about 50,000 assets worth 1 billion dollars.
- Should consider whether roof repairs/replacements are M/O or included in the Bond Campaign.
- The Bond Program is a potential gamechanger.
- If interest rates remain low that will be a game changer.

Tweaks or Adjustments?

- Develop a Contract Management Process.
- Improve the time lag.

Pillar Three: Excellence in Transportation Systems

Milestone 1: Develop a Cotton Belt Strategy.

Milestone 2: All roads in acceptable condition and well maintained.

What's Gone Well?

- A lot of projects have been completed. We've accomplished a lot.
- Traffic signal optimization.
- Master plan of Circle/Cotton Belt.
- Identified streets to replace and plan.
- Concrete plan for Midway Road and the funding.
- We are following through with the Transportation Master Plan.

What's Not Gone Well?

- There's so much street maintenance to do it feels like we're not making much progress.
- Unavoidable delays.
- Following the Transportation Master Plan sometimes slows down fixes that are needed.

Surprises and Gamechangers?

- Overall Cotton Belt approval.
- Associated pedestrian path with Cotton Belt.

Tweaks or Adjustments?

- We need a First Mile/Last Mile Strategy.
- We need to continue to develop infrastructure at the airport to facilitate economic development.
- Milestone 1 should be changed to "Promote Silver Line Development"
- Milestone 2 should be changed to "Improve all modes of transportation with infrastructure in acceptable condition and well-maintained."

Pillar Four: Gold Standard in Customer Service

Milestone: Clarify and protect Addison Way.

What's Gone Well?

- Communication has been very good.
- New Website is up.
- Fixit Addison App.
- Staff newsletter.
- Mayor's Coffee.
- Personal Touch such as City Manager's welcome at Kaboom Town.

What's Not Gone Well?

- Promotion of Fixit Addison App needs to be continued.

Surprises and Gamechangers?

- Ability to leverage information from the survey and find ways to use it.
- Feedback on the Addison survey was very positive.
- New unified development code will be a gamechanger.

Tweaks or Adjustments?

- Should we consider a digital billboard?
- Can we have a 2.0 Version of Fixit Addison App?
- Milestone should be changed to "Promote and Protect the Addison Way."
- Leverage the results from the resident survey.

Pillar Five: Gold Standard in Financial Health

Milestone: Implement and continue development of Long Term Financial Plan.

What's Gone Well?

- Progress on the Bond Campaign.
- All Systems are in place.
- Infrastructure is improving and expanding.
- Assets Management Plan.
- Sales Tax increases.
- Two AAA Bond Ratings.

What's Not Gone Well?

- Nothing listed.

Surprises and Gamechangers?

- 3.5% Tax Cap on Property Taxes.
- Interest Rates.
- If State Legislature continues to erode local control it will be a gamechanger.

Tweaks or Adjustments?

- Milestone 1 should be changed to "Continue development and implementation of Long-Term Financial Plan."

Pillar Six: Gold Standard in Public Safety

Milestone: Maximize use of cutting-edge technology to enhance public safety.

What's Gone Well?

- Many things have gone well in this area.
- Harmony between the fire and police departments.
- Facility protection of public buildings.
- Implementation of LPR Program.
- Progress toward Smart City.
- PPE for Firefighters.
- External recognition of Fire Department by getting ISO 1 Rating.

What's Not Gone Well?

- Nothing listed.

Surprises and Gamechangers?

- Results from LPR Pilot Program.
- PPE for Firefighters.

Tweaks or Adjustments?

- Nothing listed.

Pillar Seven: Optimize Addison Brand

Milestone: Define and promote Addison Identity.

What's Gone Well?

- A lot has gone well in this area.
- Use of many forms of communication. (Social media, weekly emails, website.)

What's Not Gone Well?

- Nothing listed.

Surprises and Gamechangers?

- Competition for special events crowds means we have to stay at the forefront and make sure our events are the best ones.
- Be strategic in our thinking about our events.

Possible Milestones

The Council discussed several possible milestones but determined that the current set of milestones, with some wording adjustments, were the right milestones for the upcoming year. However, some of the suggestions for possible milestones may be

helpful for the staff to consider as they are developing initiatives for the future. Those possible milestones listed are:

- Inwood Road Redevelopment.
- Trails Master Plan.
- Contract Management Process.
- Develop Infrastructure at Airport to facilitate economic development.

Summary

Below is the Strategic Plan for Fiscal Year 2020. SGR recommends that the Council formally adopt this Strategic Plan at an upcoming Regular Council Meeting.

Strategic Plan for Fiscal Year 2020

Pillar One: Entrepreneurship and Business Hub

Milestone: Economic Development focus on attracting and retaining entrepreneurship and high-tech conferences.

Milestone: Review Town Ordinances and regulations to modernize them and facilitate redevelopment.

Milestone: Create a specific channel for two way communication with the business community.

Pillar Two: Excellence in Asset Management

Milestone: Implement the Asset Management Plan.

Pillar Three: Excellence in Transportation Systems

Milestone: Promote Silver Line Development.

Milestone: Improve all modes of transportation with infrastructure in acceptable condition and well-maintained.

Pillar Four: Gold Standard in Customer Service

Milestone: Promote and protect Addison Way.

Pillar Five: Gold Standard in Financial Health

Milestone: Continue development and implementation of Long Term Financial Plan.

Pillar Six: Gold Standard in Public Safety

Milestone: Maximize use of cutting edge technology to enhance public safety.

Pillar Seven: Optimize Addison Brand

Milestone: Define and promote Addison Identity.

Work Session and Regular Meeting **9.**

Meeting Date: 08/27/2019

Department: Infrastructure- Development Services

Pillars: Excellence in Asset Management
Excellence in Transportation Systems

Milestones: Implement the Asset Management Plan

AGENDA CAPTION:

Consider Action to Approve a **Resolution Approving a Contract Agreement Between the Town of Addison and Nu-Way Construction, LLC for Infrastructure and Development Services Related to Addison Airport Fuel Farm Exit Relocation, Perimeter Road Relocation, and Miscellaneous Concrete Repairs and Authorizing the City Manager to Execute the Agreement** in an Amount Not to Exceed $633,907.11.

BACKGROUND:

On December 11, 2018, City Council approved a ground lease with Black Forest Aviation RE, LLC for development of the Galaxy FBO on the approximately 16-acre parcel known commonly as the "Southeast Quadrant" (SEQ) of Addison Airport. To facilitate this redevelopment project, Addison Airport is relocating the exit lane used by fuel delivery tanker trucks at the Addison Airport Fuel Farm (moving it northwards to separate it from the main entrance of the proposed Galaxy FBO development) and relocating an approximately 800-foot-long section of the vehicle service road (perimeter road) that is located east of the south portion of Taxiway Alpha. The perimeter road is being shifted to the west to provide additional ramp space for the proposed Galaxy FBO. These two items are included in the Fiscal Year 2019 and Fiscal Year 2020 capital budgets for the airport.

The airport is also proposing to make repairs to various concrete pavements on the airport including several sections of the east vehicle service road (perimeter road). This work is similar to the concrete work proposed in support of the SEQ redevelopment, so the projects were assembled into a single bid package to make it more attractive to potential bidders.

Specifications for the above-described concrete paving work were advertised on BidSync. The bid package included Base Bid A, B, C and three Additive Alternates. Base Bid A is the fuel farm exit relocation. Base Bid B is the perimeter road relocation. Base Bid C includes the pavement repairs at American Flyers Road (Northbound) and American Flyers Apron Tango. Additive Alternate 1 is the pavement repair at American Flyers Apron Alpha. Additive Alternate 2 are the

pavement repairs at Turbine Aircraft Service Road and the Flightline apron entrance. Additive Alternate 3 are the Perimeter Road and apron repairs at Flexjet. The bid closed on July 25, 2019 and the Town received 3 bids.

Bidder Name	Base Bid A, B, C	Add Alt 1	Add Alt 2	Add Alt 3
Engineer's Estimate	$785,568.50	$90,540.00	$143,854.00	$21,000.00
Nu-Way Construction	$569,781.11	$44,286.00	$84,274.50	$19,840.00
Advanced Transol	$793,909.00	$80,120.00	$146,830.00	$20,720.00
Ed Bell Construction	$1,101,775.00	$140,060.00	$229,690.00	$50,600.00

The total of funds budgeted and available for this project is $720,000. While Nu-Way Construction's bid total for the base bids and all three additive alternates was $718,181.61, awarding all of the additive alternates would not leave adequate allowance for contingencies. Therefore, based on the bid costs and priorities of areas needing repair, airport staff and our engineering consultant recommend the award of Base Bids A, B, C and Additive Alternates 1 and 3 to Nu-Way Construction as the lowest responsive bidder with a total bid of $633,907.11 for those items. Nu-Way Construction has performed work on the Addison Airport and other airports in the region. Staff, as well as Garver (the Airport's consulting engineer), are satisfied with Nu-Way Construction's references and work experience.

RECOMMENDATION:

Administration recommends approval.

Attachments

Resolution - Nu-Way Construction Contract

Recommendation Letter

Images - Base Bids and Additive Alternates

Bid Specifications - Fuel Farm Exit Relocation and Perimeter Road Repairs

Front End Documents - Fuel Farm Exit Relocation and Perimeter Road Repairs

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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 NU-WAY CONSTRUCTION, LLC FOR INFRASTRUCTURE AND DEVELOPMENT SERVICES RELATED TO ADDISON AIRPORT FUEL FARM EXIT RELOCATION, PERIMETER ROAD RELOCATION, AND MISCELLANEOUS CONCRETE REPAIRS IN AN AMOUNT NOT TO EXCEED $633,907.11, 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 Nu-Way Construction, LLC for infrastructure and development services related to Addison Airport Fuel Farm Exit Relocation, Perimeter Road Relocation, and Miscellaneous Concrete Repairs in an amount not to exceed $633,907.11, 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 27th day of August 2019.

_____
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 16th day of AUGUST, 2019, 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 **NU-WAY Construction, LLC**, of the City of Dallas, County of Dallas, State of Texas, Party of the Second Part, hereinafter termed CONTRACTOR.

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

INFRASTRUCTURE AND DEVELOPMENT SERVICES BID NUMBER 19-223, FUEL FARM EXIT RELOCATION AND PERIMETER ROAD REPAIRS

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 sixty **(90)** 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 **Six-Hundred Thirty Three Thousand Nine-Hundred Seven Dollars and Eleven Cents ($633,907.11)** in current funds for the performance of the Contract in accordance with the Proposal submitted thereof for **Base Bids A, B, C, and Additive Alternates 1 and 3,** 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: _____

Nu-Way Construction LLC (CONTRACTOR)

By: _____

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 **NU-WAY Construction, LLC** , 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

3010 Gaylord Parkway
Suite 190
Frisco, TX 75034

TEL 972.377.7480
FAX 972.377.8380

www.GarverUSA.com

CELEBRATING
ONE HUNDRED YEARS
1919 to 2019

July 31, 2019

Joel Jenkinson
Addison Airport
16051 Addison Road, Suite 220
Addison, Texas 75001

Re: Addison Airport
Fuel Farm Exit Relocation and Perimeter Road Repairs
Recommendation of Award

Dear Mr. Jenkinson:

Bids were received for the "Fuel Farm Exit Relocation and Perimeter Road Repairs" project at the Town of Addison Finance Building at 2:00pm on July 25, 2019. The bids have been checked for accuracy and for compliance with the contract documents. A tabulation of the bids received is enclosed with this letter.

A total of three bids were received for this project. **Nu-Way Construction** submitted the low bid for Base Bid A, Base Bid B, and Base Bid C in the total amount of $569,781.11. Nu-Way Construction submitted the low bid for Additive Alternates 1, 2 and 3 in the total amount of $148,400.50. Based on available funding, we recommend that Additive Alternates 1 and 3 be awarded with Base Bids A, B, and C.

We believe that the bid submitted by **Nu-Way Construction** represents a good value for Addison Airport. We recommend that the construction contract for the "Fuel Farm Exit Relocation and Perimeter Road Repairs" project be awarded to **Nu-Way Construction** in the contract amount of **$633,907.11** for **Base Bids A, B, C, and Additive Alternates 1 and 3**.

Please call me if you have any questions.

Sincerely,

GARVER, LLC

Sara Andrews, P.E.
Project Manager

Attachments: Bid Tabulation

ADDISON AIRPORT
FUEL FARM EXIT RELOCATION AND PERIMETER ROAD REPAIRS
BID TABULATION
BID OPENING: JULY 25, 2019; 2:00PM

CONSTRUCTION PROJECT SUMMARY				
DESCRIPTION	**ENGINEER'S ESTIMATE**	**NU-WAY CONSTRUCTION**	**ADVANCED TRANSOL**	**ED BELL CONSTRUCTION**
FUEL FARM EXIT RELOCATION - BASE BID A	$186,037.50	$122,859.61	$146,894.00	**$311,500.00**
PERIMETER ROAD RELOCATION - BASE BID B	$499,331.00	$378,651.50	$568,715.00	**$633,375.00**
PAVEMENT REPAIRS AT AMERICAN FLYERS ROAD (NORTHBOUND) & AMERICAN FLYERS APRON TANGO - BASE BID C	$98,200.00	$68,270.00	$78,300.00	**$156,900.00**
SUBTOTAL (BASE BIDS)	**$783,568.50**	**$569,781.11**	**$793,909.00**	**$1,101,775.00**
PAVEMENT REPAIRS AT AMERICAN FLYERS APRON ALPHA - ADDITIVE ALTERNATE 1	$90,540.00	$44,286.00	$80,120.00	$140,060.00
PAVEMENT REPAIRS AT TURBINE AIRCRAFT SERVICE ROAD & FLIGHTLINE APRON ENTRANCE - ADDITIVE ALTERNATE 2	$143,854.00	$84,274.50	$146,830.00	$229,690.00
PERIMETER ROAD AND APRON REPAIR AT FLEXJET - ADDITIVE ALTERNATE 3	$21,000.00	$19,840.00	$20,720.00	$50,600.00
SUBTOTAL (ADDITIVE ALTERNATES)	**$255,394.00**	**$148,400.50**	**$247,670.00**	**$420,350.00**
TOTAL (BASE BIDS + ADDITIVE ALTERNATES)	**$1,038,962.50**	**$718,181.61**	**$1,041,579.00**	**$1,522,125.00**

ADDISON AIRPORT
FUEL FARM EXIT RELOCATION AND PERIMETER ROAD REPAIRS
BID TABULATION - FUEL FARM EXIT RELOCATION - BASE BID A
BID OPENING: JULY 25, 2019; 2:00PM

ITEM NO.	SPEC. NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	ENGINEER'S ESTIMATE UNIT PRICE	ENGINEER'S ESTIMATE AMOUNT	NU-WAY CONSTRUCTION UNIT PRICE	NU-WAY CONSTRUCTION AMOUNT	ADVANCED TRANSOL UNIT PRICE	ADVANCED TRANSOL AMOUNT	ED BELL CONSTRUCTION UNIT PRICE	ED BELL CONSTRUCTION AMOUNT
1	SS-120-3.1	SITE PREPARATION	L.S.	1	$17,000.00	$17,000.00	$15,000.00	$15,000.00	$14,000.00	$14,000.00	$50,000.00	$50,000.00
2	SS-350-5.1	30' AUTOMATIC SLIDING CANTILEVER GATE AND OPERATOR SYSTEM, INSTALLED	L.S.	1	$35,000.00	$35,000.00	$15,000.00	$15,000.00	$22,000.00	$22,000.00	$25,000.00	$25,000.00
3	F-162-5.1	8-FOOT BLACK PVC COATED CHAIN-LINK FENCE	L.F.	72	$65.00	$4,680.00	$55.50	$3,996.00	$40.00	$2,880.00	$160.00	$11,520.00
4	F-162-5.2	TEMPORARY CHAIN-LINK FENCE	L.F.	154	$35.00	$5,390.00	$19.50	$3,003.00	$15.00	$2,310.00	$20.00	$3,080.00
5	F-162-5.3	FENCE REMOVAL	L.F.	97	$7.50	$727.50	$10.00	$970.00	$10.00	$970.00	$10.00	$970.00
6	F-162-5.4	CONCRETE EROSION CONTROL STRIP	L.F.	72	$65.00	$4,680.00	$13.00	$936.00	$20.00	$1,440.00	$75.00	$5,400.00
7	P-152-4.1	UNCLASSIFIED EXCAVATION	C.Y.	51	$75.00	$3,825.00	$30.00	$1,530.00	$35.00	$1,785.00	$60.00	$3,060.00
8	TX-104-5.1	CONCRETE PAVEMENT REMOVAL	S.Y.	15	$150.00	$2,250.00	$50.00	$750.00	$20.00	$300.00	$50.00	$750.00
9	TX-104-5.2	SIDEWALK REMOVAL	S.Y.	38	$40.00	$1,520.00	$50.00	$1,900.00	$20.00	$760.00	$25.00	$950.00
10	TX-105-5.1	ASPHALT PAVEMENT REMOVAL	S.Y.	109	$30.00	$3,270.00	$50.00	$5,450.00	$20.00	$2,180.00	$20.00	$2,180.00
11	TX-162-5.1	BLOCK SODDING	S.Y.	352	$7.50	$2,640.00	$6.00	$2,112.00	$12.00	$4,224.00	$15.00	$5,280.00
12	TX-170-5.1	IRRIGATION RECONNECTION	L.S.	1	$7,500.00	$7,500.00	$500.00	$500.00	$3,000.00	$3,000.00	$5,000.00	$5,000.00
13	TX-260-6.1	LIME	TON	11	$250.00	$2,750.00	$200.00	$2,200.00	$350.00	$3,850.00	$200.00	$2,200.00
14	TX-260-6.2	LIME-TREATED SUBGRADE (6" THICKNESS)	S.Y.	331	$10.00	$3,310.00	$45.31	$14,997.61	$25.00	$8,275.00	$10.00	$3,310.00
15	TX-360-5.1	CONCRETE PAVEMENT (10" THICKNESS)	S.Y.	306	$115.00	$35,190.00	$65.00	$19,890.00	$95.00	$29,070.00	$200.00	$61,200.00
16	TX-464-5.1	REINFORCED CONCRETE PIPE, 18", CLASS IV	L.F.	79	$120.00	$9,480.00	$75.00	$5,925.00	$100.00	$7,900.00	$100.00	$7,900.00
17	TX-465-5.1	4'X4' SINGLE GRATE PRE-FABRICATED INLET (COMPLETE)	EACH	2	$8,500.00	$17,000.00	$5,000.00	$10,000.00	$9,000.00	$18,000.00	$5,000.00	$10,000.00
18	TX-502-4.1	BARRICADES, SIGNS, AND TRAFFIC HANDLING	L.S.	1	$15,000.00	$15,000.00	$5,000.00	$5,000.00	$10,000.00	$10,000.00	$100,000.00	$100,000.00
19	TX-506-5.1	TEMPORARY EROSION CONTROL	L.S.	1	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$7,000.00	$7,000.00	$3,000.00	$3,000.00
20	TX-531-5.1	CONCRETE SIDEWALK (5")	S.Y.	5	$225.00	$1,125.00	$200.00	$1,000.00	$70.00	$350.00	$300.00	$1,500.00
21	TX-531-5.2	BARRIER FREE RAMP	EACH	2	$3,500.00	$7,000.00	$3,500.00	$7,000.00	$3,000.00	$6,000.00	$2,500.00	$5,000.00
22	TX-752-5.1	TREE REMOVAL	EACH	2	$850.00	$1,700.00	$350.00	$700.00	$300.00	$600.00	$2,100.00	$4,200.00
TOTALS						$186,037.50		$122,859.61		$146,894.00		$311,500.00

Corrected Prices

ADDISON AIRPORT
FUEL FARM EXIT RELOCATION AND PERIMETER ROAD REPAIRS
BID TABULATION - PERIMETER ROAD RELOCATION - BASE BID B
BID OPENING: JULY 25, 2019; 2:00PM

ITEM NO.	SPEC. NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	ENGINEER'S ESTIMATE UNIT PRICE	ENGINEER'S ESTIMATE AMOUNT	NU-WAY CONSTRUCTION UNIT PRICE	NU-WAY CONSTRUCTION AMOUNT	ADVANCED TRANSOL UNIT PRICE	ADVANCED TRANSOL AMOUNT	ED BELL CONSTRUCTION UNIT PRICE	ED BELL CONSTRUCTION AMOUNT
1	SS-120-3.1	SITE PREPARATION	L.S.	1	$40,000.00	$40,000.00	$15,000.00	$15,000.00	$45,000.00	$45,000.00	$50,000.00	$50,000.00
2	F-162-5.2	TEMPORARY CHAIN-LINK FENCE	L.F.	287	$25.00	$7,175.00	$19.50	$5,596.50	$15.00	$4,305.00	$20.00	$5,740.00
3	F-162-5.3	FENCE REMOVAL	L.F.	320	$7.50	$2,400.00	$5.00	$1,600.00	$10.00	$3,200.00	$10.00	$3,200.00
4	P-152-4.2	EMBANKMENT	C.Y.	843	$85.00	$71,655.00	$30.00	$25,290.00	$35.00	$29,505.00	$30.00	$25,290.00
5	P-152-4.3	UNSUITABLE EXCAVATION	C.Y.	150	$50.00	$7,500.00	$30.00	$4,500.00	$25.00	$3,750.00	$20.00	$3,000.00
6	TX-104-5.1	CONCRETE PAVEMENT REMOVAL	S.Y.	373	$35.00	$13,055.00	$30.00	$11,190.00	$20.00	$7,460.00	$50.00	$18,650.00
7	TX-105-5.1	ASPHALT PAVEMENT REMOVAL	S.Y.	2,054	$20.00	$41,080.00	$20.00	$41,080.00	$15.00	$30,810.00	$15.00	$30,810.00
8	TX-162-5.1	BLOCK SODDING	S.Y.	3,268	$6.50	$21,242.00	$6.00	$19,608.00	$10.00	$32,680.00	$15.00	$49,020.00
9	TX-247-6.1	FLEXIBLE BASE (DENSITY CONTROL) (COMPLETE IN PLACE) (TYPE D GRADE 1) (8”)	S.Y.	404	$50.00	$20,200.00	$30.00	$12,120.00	$45.00	$18,180.00	$50.00	$20,200.00
10	TX-260-6.1	LIME	TON	72	$175.00	$12,600.00	$200.00	$14,400.00	$250.00	$18,000.00	$200.00	$14,400.00
11	TX-260-6.2	LIME-TREATED SUBGRADE (6" THICKNESS)	S.Y.	2,532	$7.00	$17,724.00	$6.00	$15,192.00	$25.00	$63,300.00	$10.00	$25,320.00
12	TX-360-5.1	CONCRETE PAVEMENT (10" THICKNESS)	S.Y.	2,170	$85.00	$184,450.00	$65.00	$141,050.00	$95.00	$206,150.00	$137.50	$298,375.00
13	TX-496-5.1	PIPE REMOVAL (LESS THAN 30" DIAMETER)	L.F.	40	$45.00	$1,800.00	$30.00	$1,200.00	$200.00	$8,000.00	$20.00	$800.00
14	TX-496-5.2	INLET REMOVAL	EACH	1	$500.00	$500.00	$2,000.00	$2,000.00	$1,500.00	$1,500.00	$750.00	$750.00
15	TX-506-5.1	TEMPORARY EROSION CONTROL	L.S.	1	$15,000.00	$15,000.00	$3,000.00	$3,000.00	$8,000.00	$8,000.00	$7,500.00	$7,500.00
16	SS-300-5.1	LOCKOUT/TAGOUT AND CONSTANT CURRENT REGULATOR CALIBRATION PROCEDURES	L.S.	1	$5,000.00	$5,000.00	$8,000.00	$8,000.00	$4,000.00	$4,000.00	$15,000.00	$15,000.00
17	SS-301-5.1	EXISTING ELECTRICAL HANDHOLE, RELOCATED	EACH	2	$2,500.00	$5,000.00	$1,500.00	$3,000.00	$4,000.00	$8,000.00	$5,980.00	$11,960.00
18	SS-301-5.2	EXISTING CONCRETE ENCASED, ELECTRICAL JUNCTION STRUCTURE, REMOVED	EACH	2	$200.00	$400.00	$1,500.00	$3,000.00	$1,500.00	$3,000.00	$460.00	$920.00
19	SS-301-5.3	EXISTING BASE MOUNTED GUIDANCE SIGN, REMOVED	EACH	2	$1,000.00	$2,000.00	$1,500.00	$3,000.00	$1,000.00	$2,000.00	$575.00	$1,150.00
20	SS-301-5.4	EXISTING BASE MOUNTED EDGE LIGHT, REMOVED	EACH	4	$250.00	$1,000.00	$350.00	$1,400.00	$1,000.00	$4,000.00	$402.50	$1,610.00
21	SS-301-5.5	EXISTING L-861T BASE MOUNTED TAXIWAY EDGE LIGHT, RELOCATED	EACH	2	$800.00	$1,600.00	$1,000.00	$2,000.00	$5,000.00	$10,000.00	$977.50	$1,955.00
22	SS-310-5.1	TEMPORARY AIRFIELD LIGHTING	L.S.	1	$5,000.00	$5,000.00	$3,000.00	$3,000.00	$8,000.00	$8,000.00	$20,000.00	$20,000.00
23	L-108-5.1	TRENCHING FOR DIRECT-BURIED BARE COUNTERPOISE WIRE, 8-INCH MINIMUM DEPTH	L.F.	200	$1.50	$300.00	$20.00	$4,000.00	$20.00	$4,000.00	$6.50	$1,300.00
24	L-108-5.2	No. 8 AWG, 5kV, L-824, TYPE C CABLE, INSTALLED IN TRENCH, DUCT BANK OR CONDUIT	L.F.	250	$2.00	$500.00	$27.00	$6,750.00	$15.00	$3,750.00	$3.00	$750.00

ITEM NO.	SPEC. NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	ENGINEER'S ESTIMATE UNIT PRICE	ENGINEER'S ESTIMATE AMOUNT	NU-WAY CONSTRUCTION UNIT PRICE	NU-WAY CONSTRUCTION AMOUNT	ADVANCED TRANSOL UNIT PRICE	ADVANCED TRANSOL AMOUNT	ED BELL CONSTRUCTION UNIT PRICE	ED BELL CONSTRUCTION AMOUNT
25	L-108-5.3	No. 6 AWG, SOLID, BARE COUNTERPOISE WIRE, INSTALLED IN TRENCH, ABOVE THE DUCT BANK OR CONDUIT, INCLUDING CONNECTIONS/TERMINATIONS	L.F.	200	$2.00	$400.00	$10.00	$2,000.00	$20.00	$4,000.00	$4.00	$800.00
26	L-110-5.1	NON-ENCASED ELECTRICAL CONDUIT, 1-WAY 2"C	L.F.	200	$15.00	$3,000.00	$25.00	$5,000.00	$25.00	$5,000.00	$10.00	$2,000.00
27	L-110-5.2	NON-ENCASED ELECTRICAL CONDUIT, 1-WAY 4"C	L.F.	825	$10.00	$8,250.00	$23.00	$18,975.00	$25.00	$20,625.00	$15.00	$12,375.00
28	L-110-5.3	CONCRETE ENCASED ELECTRICAL CONDUIT, 1-WAY 4"C	L.F.	100	$25.00	$2,500.00	$27.00	$2,700.00	$25.00	$2,500.00	$30.00	$3,000.00
29	L-125-5.1	L-858(L) BASE MOUNTED, SIZE 2, 4-MODULE GUIDANCE SIGN, INSTALLED	EACH	1	$8,000.00	$8,000.00	$3,000.00	$3,000.00	$10,000.00	$10,000.00	$7,500.00	$7,500.00
	TOTALS					$499,331.00		$378,651.50		$568,715.00		$633,375.00

Corrected Prices

ADDISON AIRPORT
FUEL FARM EXIT RELOCATION AND PERIMETER ROAD REPAIRS
BID TABULATION - PAVEMENT REPAIRS AT AMERICAN FLYERS ROAD (NORTHBOUND) & AMERICAN FLYERS APRON
TANGO - BASE BID C
BID OPENING: JULY 25, 2019; 2:00PM

					ENGINEER'S ESTIMATE		NU-WAY CONSTRUCTION		ADVANCED TRANSOL		ED BELL CONSTRUCTION	
ITEM NO.	SPEC. NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT
1	SS-120-3.1	SITE PREPARATION	L.S.	1	$9,000.00	$9,000.00	$15,000.00	$15,000.00	$7,000.00	$7,000.00	$2,500.00	$2,500.00
2	SS-212-5.1	BIAXIAL GEOGRID	S.Y.	500	$12.00	$6,000.00	$3.50	$1,750.00	$5.00	$2,500.00	$10.00	$5,000.00
3	M-174-5.1	PCC PAVEMENT REPAIR (10") (CLASS P) - FULL SLAB	S.Y.	500	$125.00	$62,500.00	$65.00	$32,500.00	$95.00	$47,500.00	$200.00	$100,000.00
4	P-620-5.1	PAVEMENT MARKINGS, WHITE (TYPE I REFLECTIVE MEDIA)	S.F.	300	$4.00	$1,200.00	$3.00	$900.00	$10.00	$3,000.00	$25.00	$7,500.00
5	TX-275-6.1	CEMENT TREATED (NEW BASE) (6")	S.Y.	500	$25.00	$12,500.00	$10.00	$5,000.00	$25.00	$12,500.00	$50.00	$25,000.00
6	SS-120-3.1	SITE PREPARATION	L.S.	1	$1,000.00	$1,000.00	$10,000.00	$10,000.00	$1,000.00	$1,000.00	$2,500.00	$2,500.00
7	M-174-5.1	PCC PAVEMENT REPAIR (10") (CLASS P) - FULL SLAB	S.Y.	48	$125.00	$6,000.00	$65.00	$3,120.00	$100.00	$4,800.00	$300.00	$14,400.00
	TOTALS					$98,200.00		$68,270.00		$78,300.00		$156,900.00

Corrected Prices

ADDISON AIRPORT
FUEL FARM EXIT RELOCATION AND PERIMETER ROAD REPAIRS
BID TABULATION - PAVEMENT REPAIRS AT AMERICAN FLYERS APRON ALPHA - ADDITIVE ALTERNATE 1
BID OPENING: JULY 25, 2019; 2:00PM

ITEM NO.	SPEC. NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	ENGINEER'S ESTIMATE UNIT PRICE	ENGINEER'S ESTIMATE AMOUNT	NU-WAY CONSTRUCTION UNIT PRICE	NU-WAY CONSTRUCTION AMOUNT	ADVANCED TRANSOL UNIT PRICE	ADVANCED TRANSOL AMOUNT	ED BELL CONSTRUCTION UNIT PRICE	ED BELL CONSTRUCTION AMOUNT
1	SS-120-3.1	SITE PREPARATION	L.S.	1	$9,000.00	$9,000.00	$5,000.00	$5,000.00	$10,000.00	$10,000.00	$2,500.00	$2,500.00
2	SS-212-5.1	BIAXIAL GEOGRID	S.Y.	500	$12.00	$6,000.00	$3.50	$1,750.00	$5.00	$2,500.00	$10.00	$5,000.00
3	M-174-5.1	PCC PAVEMENT REPAIR (10") (CLASS P) - FULL SLAB	S.Y.	500	$125.00	$62,500.00	$65.00	$32,500.00	$120.00	$60,000.00	$200.00	$100,000.00
4	P-620-5.1	PAVEMENT MARKINGS, WHITE (TYPE I REFLECTIVE MEDIA)	S.F.	12	$45.00	$540.00	$3.00	$36.00	$10.00	$120.00	$630.00	$7,560.00
5	TX-275-6.1	CEMENT TREATED (NEW BASE) (6")	S.Y.	500	$25.00	$12,500.00	$10.00	$5,000.00	$15.00	$7,500.00	$50.00	$25,000.00
	TOTALS					$90,540.00		$44,286.00		$80,120.00		$140,060.00

Corrected Prices

ADDISON AIRPORT
FUEL FARM EXIT RELOCATION AND PERIMETER ROAD REPAIRS
BID TABULATION - PAVEMENT REPAIRS AT TURBINE AIRCRAFT SERVICE ROAD & FLIGHTLINE APRON ENTRANCE - ADDITIVE ALTERNATE 2
BID OPENING: JULY 25, 2019; 2:00PM

					ENGINEER'S ESTIMATE		NU-WAY CONSTRUCTION		ADVANCED TRANSOL		ED BELL CONSTRUCTION	
ITEM NO.	SPEC. NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT
1	SS-120-3.1	SITE PREPARATION	L.S.	1	$1,000.00	$1,000.00	$5,000.00	$5,000.00	$1,000.00	$1,000.00	$2,500.00	$2,500.00
2	M-174-5.1	PCC PAVEMENT REPAIR (10") (CLASS P) - FULL SLAB	S.Y.	32	$125.00	$4,000.00	$65.00	$2,080.00	$120.00	$3,840.00	$300.00	$9,600.00
3	SS-120-3.1	SITE PREPARATION	L.S.	1	$13,000.00	$13,000.00	$5,000.00	$5,000.00	$10,000.00	$10,000.00	$2,500.00	$2,500.00
4	SS-212-5.1	BIAXIAL GEOGRID	S.Y.	767	$12.00	$9,204.00	$3.50	$2,684.50	$5.00	$3,835.00	$10.00	$7,670.00
5	M-174-5.2	PCC PAVEMENT REPAIR (12") (CLASS P) - FULL SLAB	S.Y.	767	$125.00	$95,875.00	$80.00	$61,360.00	$150.00	$115,050.00	$210.00	$161,070.00
6	P-620-5.1	PAVEMENT MARKINGS, WHITE (TYPE I REFLECTIVE MEDIA)	S.F.	160	$10.00	$1,600.00	$3.00	$480.00	$10.00	$1,600.00	$50.00	$8,000.00
7	TX-275-6.1	CEMENT TREATED (NEW BASE) (6")	S.Y.	767	$25.00	$19,175.00	$10.00	$7,670.00	$15.00	$11,505.00	$50.00	$38,350.00
	TOTALS					$143,854.00		$84,274.50		$146,830.00		$229,690.00

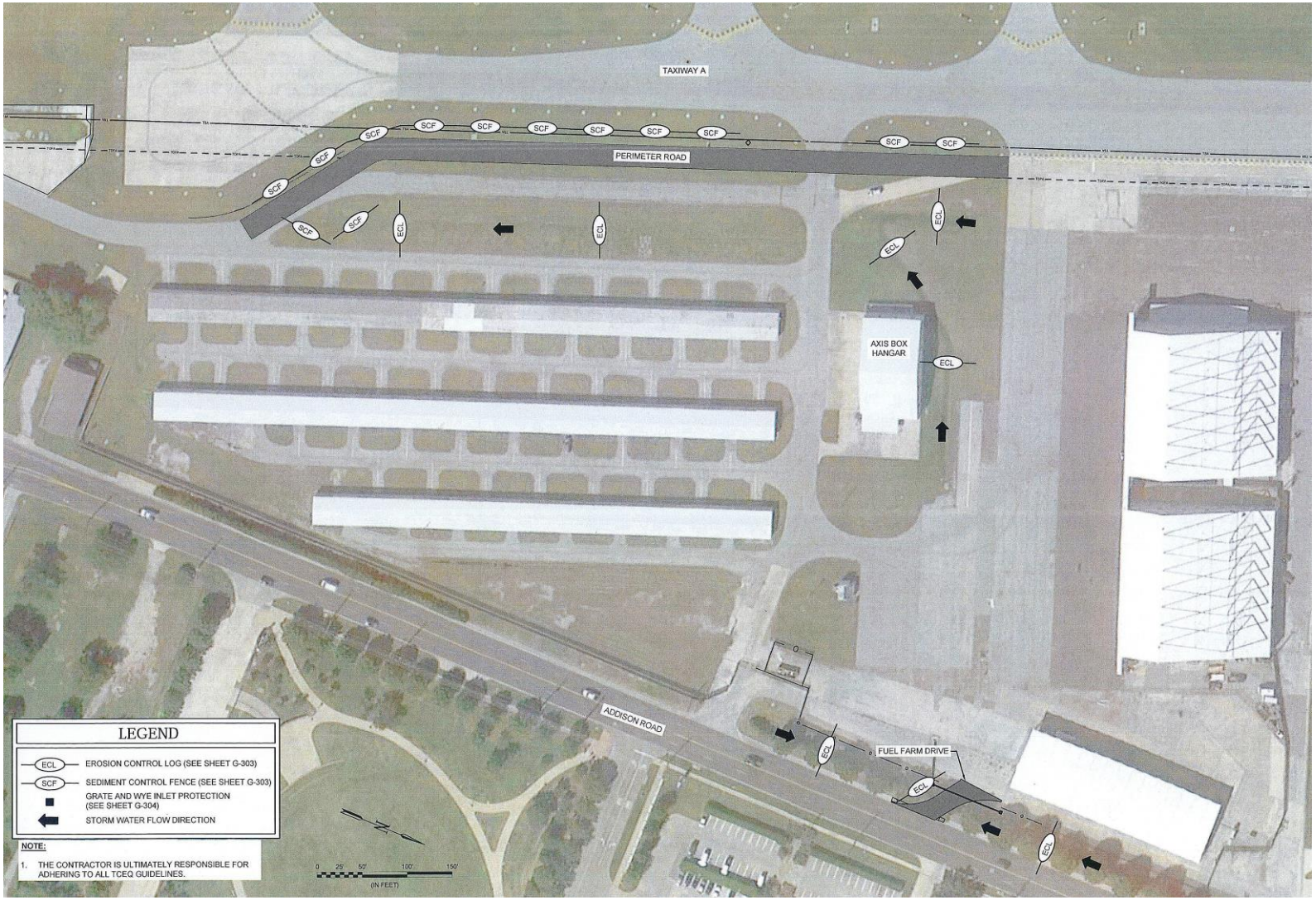
Corrected Prices

ADDISON AIRPORT
FUEL FARM EXIT RELOCATION AND PERIMETER ROAD REPAIRS
BID TABULATION - PERIMETER ROAD AND APRON REPAIR AT FLEXJET - ADDITIVE ALTERNATE 3
BID OPENING: JULY 25, 2019; 2:00PM

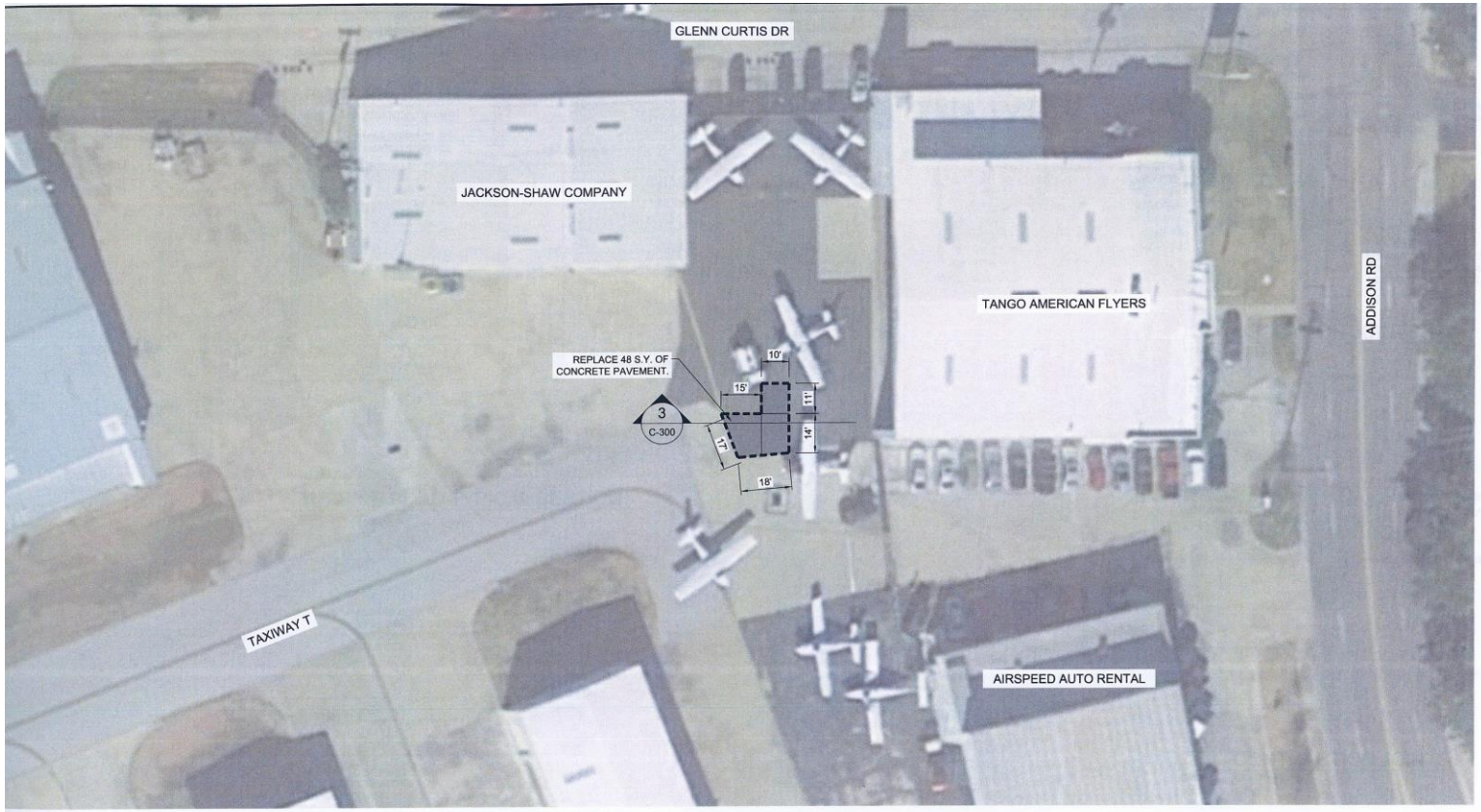
ITEM NO.	SPEC. NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	ENGINEER'S ESTIMATE UNIT PRICE	ENGINEER'S ESTIMATE AMOUNT	NU-WAY CONSTRUCTION UNIT PRICE	NU-WAY CONSTRUCTION AMOUNT	ADVANCED TRANSOL UNIT PRICE	ADVANCED TRANSOL AMOUNT	ED BELL CONSTRUCTION UNIT PRICE	ED BELL CONSTRUCTION AMOUNT
1	SS-120-3.1	SITE PREPARATION	L.S.	1	$2,000.00	$2,000.00	$5,000.00	$5,000.00	$1,000.00	$1,000.00	$2,500.00	$2,500.00
2	M-174-5.1	PCC PAVEMENT REPAIR (10") (CLASS P) - FULL SLAB	S.Y.	96	$125.00	$12,000.00	$65.00	$6,240.00	$120.00	$11,520.00	$300.00	$28,800.00
3	SS-120-3.1	SITE PREPARATION	L.S.	1	$1,000.00	$1,000.00	$5,000.00	$5,000.00	$1,000.00	$1,000.00	$2,500.00	$2,500.00
4	M-174-5.2	PCC PAVEMENT REPAIR (12") (CLASS P) - FULL SLAB	S.Y.	48	$125.00	$6,000.00	$75.00	$3,600.00	$150.00	$7,200.00	$350.00	$16,800.00
	TOTALS					$21,000.00		$19,840.00		$20,720.00		$50,600.00

Corrected Prices

Base Bid A and B



Base Bid C



LEGEND

- NEW CONCRETE PAVEMENT
- ISOLATION JOINT (SEE SHEET C-300)
- CONTRACTION JOINT (SEE SHEET C-300)

KEY MAP



N

0 10' 20' 40' 60'
(IN FEET)

GARVER

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REGISTRATION NO. F-5713

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF SARA A. HOWE, P.E. 105862, ON 06/07/2019. IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.

REV.	DATE	DESCRIPTION	BY

ADDISON AIRPORT
ADDISON, TEXAS

FUEL FARM EXIT RELOCATION AND PERIMETER ROAD REPAIRS

TANGO AMERICAN FLYERS PAVEMENT REPAIR - LAYOUT PLAN

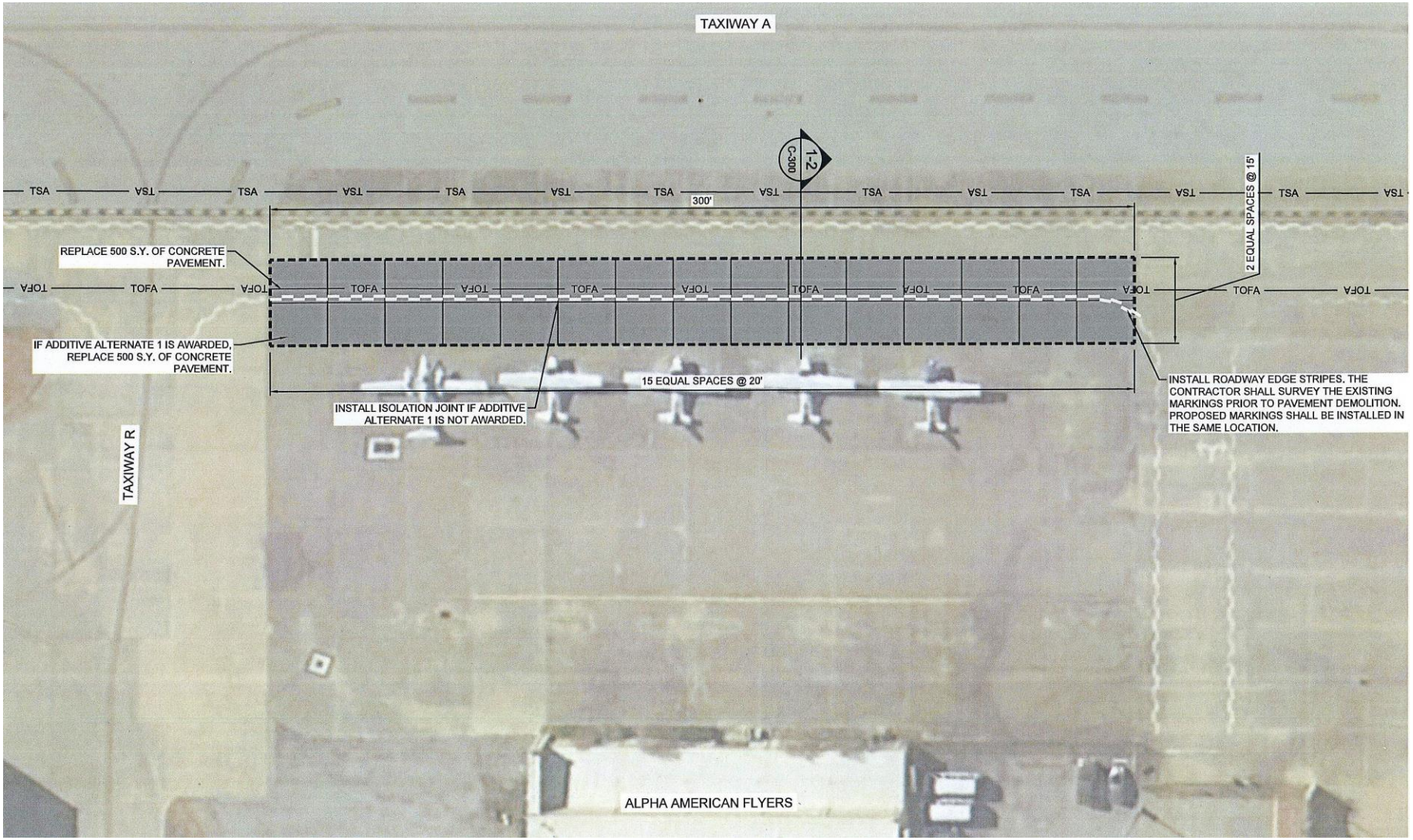
JOB NO.: 19A11000
DATE: JUNE 2019
DESIGNED BY: JAH
DRAWN BY: JAH

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IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
C-304

SHEET NUMBER 29

Base Bid C and Additive Alternate 1



Additive Alternate 3



ADDISON AIRPORT
ADDISON, TEXAS

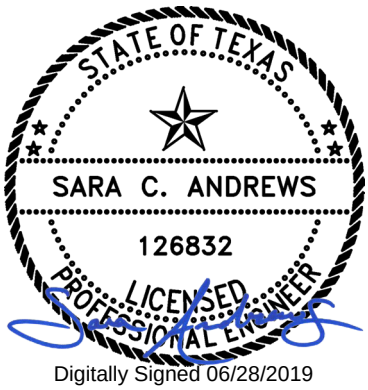
FUEL FARM EXIT RELOCATION AND PERIMETER ROAD REPAIRS
TECHNICAL SPECIFICATIONS

ADS BID NO 19-223

JUNE 2019

PREPARED BY

3010 Gaylord Parkway, Suite 190
Frisco, Texas 75034
(972) 377-7480



Digitally Signed 06/28/2019

GARVER PROJECT NO.
19A11000

ADDISON AIRPORT
FUEL FARM EXIT RELOCATION AND PERIMETER ROAD REPAIRS

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ITEM SS-110 STANDARD SPECIFICATIONS

GENERAL

110-1.1 The standard specifications of the Texas Department of Transportation are bound in a book titled Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges. These specifications are referred to herein as "Standard Specifications." The edition published November 1, 2014 shall apply. A copy of these "Standard Specifications" may be obtained from TxDOT online or at their customary charge.

INCORPORATION AND MODIFICATION

110-2.1 Certain parts of the Standard Specifications are appropriate for inclusion in these Technical Specifications. Such parts are incorporated herein by reference to the proper section or paragraph number. The individual specification numbers noted herein may be different from those in the latest edition of the "Standard Specifications." The most current specification number shall apply. Each such referenced part shall be considered to be a part of these Contract Documents as though copied herein in full.

110-2.2 Certain referenced parts of the Standard Specifications are modified in the Specifications that follow. In case of conflict between the Standard Specifications and the Specifications that follow, the Specifications that follow shall govern.

110-2.3 Individual material test numbers change from time to time. Use the latest applicable test.

110-2.4 Reference in the Standard Specifications to the “Department” is herein changed to the “Owner”.

MEASUREMENT AND PAYMENT

110-3.1 All measurements and payments are defined within the specifications and modification pages. Any specifications that is referred to but not included in the specification/contract documents shall be considered subsidiary to the item in which it is contained.

END OF ITEM SS-110

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ITEM SS-120 SITE PREPARATION

DESCRIPTION

120-1.1 This item covers the preparation of the site for construction of the proposed improvements. The attention of the bidder is directed to the necessity for careful examination of the entire project site to determine, at the time of bid preparation, the full extent of work to be done under the item "Site Preparation." The entire job site shall be cleared of all man-made obstructions and debris, of whatever nature, and made ready in all respects for the construction of the proposed improvements.

The item "Site Preparation" shall include:

1. Mobilization
2. Lighted Barricades
3. Contractor's Access/Haul Road
4. Contractor's Staging Areas
5. Airport Security Requirements
6. Airport Safety Requirements
7. Instrument Control
8. Removal and Disposal of Structures
9. Clean Up

CONSTRUCTION METHODS

120-2.1 MOBILIZATION. The Contractor shall consider and include his cost for providing personnel, equipment, materials, bonds, etc. required for the prosecution of the work under this item.

120-2.2 LIGHTED BARRICADES. The Contractor shall furnish, install, maintain, and remove lighted barricades in accordance with details on the plans and as directed by the Engineer. The lighted barricades shall be constructed and installed as shown on the plans. All lighted shall be constructed in accordance with AC 150/5370-2F (or most current) Operational Safety on Airports During Construction.

All work involved in the furnishing, installation, maintenance, and removal of lighted barricades and barrels will not be measured for separate payment but will be considered subsidiary to the bid item "Site Preparation."

120-2.3 CONTRACTOR'S ACCESS/HAUL ROAD. The Contractor shall layout, construct, maintain, and repair all access/haul roads needed to construct the work. The existing access roads shown on the plans shall be repaired, as determined necessary by the Engineer, at the close of the project. All such work, including all materials and labor, involved in the layout, construction, maintenance, and repair of the Contractor's access/haul roads will not be measured for separate payment but will be considered subsidiary to the bid item "Site Preparation." Any damage to existing pavements or structures, due to the Contractor's hauling or access, will be repaired by the Contractor without additional compensation to a condition equal to or exceeding the existing condition. Temporary pipe culverts shall be installed and maintained as required and shall be of the size as directed by the Engineer. The type of pipe used for temporary pipe shall be at the option of the Contractor. Temporary pipe culverts will not be measured for separate payment but will be considered subsidiary to the access/haul road. All temporary pipe culverts shall be removed by the Contractor and shall remain his property at the close of the project.

120-2.4 CONTRACTOR'S STAGING AREAS. The areas designated in the plans or by the Engineer as the Contractor's staging area shall be cleared and graded by the Contractor as needed for use by the Contractor in constructing the work on this project. All areas used or otherwise occupied by the Contractor for his operations shall be cleaned, regraded, and seeded, as directed by the Engineer, prior to the final acceptance of the project by the Airport. All work involved in the preparation and restoration of areas used or occupied by the Contractor, including clearing, grubbing, regrading, seeding, and installing and removing fence, will not

be measured for separate payment but will be considered subsidiary to the bid item "Site Preparation."

120-2.5 AIRPORT SECURITY REQUIREMENTS. The Contractor shall abide by the Airport Security requirements that are outlined in the Construction Safety and Phasing Plan (CSPP) of the plans. Any costs associated with the Airport Security requirements will not be measured for separate payment but will be considered subsidiary to the bid item "Site Preparation."

120-2.6 AIRPORT SAFETY REQUIREMENTS. The Contractor shall abide by the Airport Safety requirements that are outlined in the Construction Safety and Phasing Plan (CSPP) of the plans. All costs associated with the Airport Safety requirements will not be measured for separate payment but will be considered subsidiary to the bid item "Site Preparation."

120-2.7 INSTRUMENT CONTROL. The Contractor will be furnished survey baselines and benchmarks to control the work as shown on the Plans. The Contractor shall be responsible for the additional instrument control necessary to layout and construct the work. It is the Contractor's responsibility to protect all existing airport survey control points being used. In the event an existing instrument control is damaged or moved, all costs with re-establishing the control points will be

The Contractor shall provide the instrument control as provided for in Section 50 of the General Provisions. The Contractor's instrument control of the work shall not be measured for separate payment but will be considered subsidiary to the bid item "Site Preparation".

120-2.8 REMOVAL AND DISPOSAL OF STRUCTURES. This work applies to structures that are in conflict with the proposed work and are not paid for under other pay items.

This work shall consist of the removal and satisfactory disposal of utility poles; signs, sign supports, sign foundations; driveways; guardrail; retaining walls; sidewalks; Portland cement concrete or asphalt concrete pavements; manholes; drainage structures (including reinforced concrete channels, headwalls, and wingwalls); concrete or masonry foundations (including foundations of poles or signs to be removed) or slabs, all of which are not designated or permitted to remain or paid for by other items. The Contractor shall make his own estimate of the work required for the removal of structures which conflict with the proposed construction. All structures required to be removed may not be designated as such in the plans.

The provisions of this section shall not apply to underground petroleum storage tanks.

The attention of the bidder is directed to the necessity for careful examination of the entire site to determine, at the time of bid preparation, the full extent of work to be accomplished. The entire site shall be cleared of all man-made obstructions and debris, of whatever nature, and prepared in all respects for the construction.

The Contractor shall not unnecessarily interfere with the use of any adjacent sidewalks, streets, or roads.

Materials removed will become the property of the Contractor and shall be removed from the job site, unless specifically designated otherwise.

All surface items such as curb, curb and gutter, driveways, parking areas, walks, steps, asphalt and PCC pavement, and walls shall be separated or broken away from the adjacent part of any structure designated to remain in place by a vertical saw cut along the line designated by the Engineer. The edge of the structure left in place shall be approximately vertical with no abrupt changes in alignment. Any damage to or removal of the structure designated to remain in place shall be repaired or replaced at no cost to the Owner.

Holes, ditches, or other abrupt changes in elevation caused by the removal operations that could obstruct drainage or be considered hazardous or unsightly shall be backfilled, compacted, and left in a workmanlike condition.

Where existing pipe culverts are to be extended or otherwise incorporated into the new work, only such part of the existing structure shall be removed as to provide a proper connection to the new work. The connecting edges or joints shall be cut, chipped, and trimmed to the required lines and grades without weakening or damaging the part of the structure to be retained.

For a pipe culvert extension, the headwall and the attached end joint of concrete pipe or the flared end section on all types of pipe shall be removed to accommodate the extension. This work will not be paid for directly but will be considered included in the items involved in the culvert extension. This item includes any additional construction required to connect existing pipes to the constructed drainage system.

Trenches or voids resulting from the removal or demolition of existing culverts or other structures shall be filled with approved material placed in layers in accordance with Item TX-132.

Masonry and reinforced concrete foundations shall be obliterated, or if in fill sections, may be left in place if covered by not less than 2 feet of embankment.

Concrete foundations for poles to be removed shall be obliterated to a depth of 2 feet below finished grade or as required to accommodate new construction.

The removal and disposal of the various items covered by this specification will not be measured for separate payment but will be subsidiary to the bid item “Site Preparation”.

120-2.9 CLEAN UP. From time to time, the Contractor shall clean up the site in order that the site presents a neat appearance and that the progress of work will not be impeded. One such clean up shall immediately precede final inspection.

Immediately following acceptance of the work by the Owner, the Contractor shall remove all temporary equipment, surplus materials, and debris resulting from his operations, and leave the site in a condition fully acceptable to the Owner.

MEASUREMENT AND PAYMENT

120-3.1 Site preparation will be measured as a lump sum complete item. Work completed and accepted under this item will be paid for at the contract lump sum price bid for "Site Preparation," which price shall be full compensation for furnishing all labor, tools, equipment and incidentals necessary to complete the work.

Periodic payments will be made under this item in proportion to the amount of work accomplished, as determined by the Engineer.

Payment will be made under:

Item SS-120-3.1 Site Preparation - per Lump Sum

END OF ITEM SS-120

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ITEM SS-212 GEOGRID

DESCRIPTION

212-1.1 This item shall consist of furnishing, hauling, and installation of approved geogrid on prepared areas in accordance with this specification at the locations and grades shown on the plans or as directed by the Engineer.

MATERIALS

212-2.1 Provide biaxial geogrid manufactured from a punched polypropylene sheet, with a square aperture shaped, meeting the requirements in Table 1.

Table 1
Geogrid Requirements

Property	Units	MD Values	XMD Values
Aperture Dimension	In	1.0	1.3
Minimum Rib Thickness	in	0.05	0.05
Tensile Strength @ 2% Strain	lb/ft	410	620
Tensile Strength @ 5% Strain	lb/ft	810	1,340
Ultimate Tensile Strength	lb/ft	1,310	1,970
Junction Efficiency	%	93	
Flexural Stiffness	mg-cm	750,000	
Aperture Stability	m-N/deg	0.65	
Resistance to Installation Damage	%SC / %SW / %GP	95 / 93 / 90	
Resistance to Long Term Degradation	%	100	
Resistance to UV Degradation	%	100	

Note—MD and CMD do not necessarily refer to the machine (warp) and cross machine (fill) directions in the manufacturing process. They refer, for drawn products, to the more (CMD) or less (MD) highly drawn ribs where the aperture dimensions are unequal.

CONSTRUCTION METHODS

212-3.1 GENERAL. Prepare the subgrade as indicated in the embankment and excavation specifications. Install geogrid in accordance with the lines and grades as shown on the plans. Place base material in lift thicknesses and compact as shown on the plans or as directed. Do not operate tracked construction equipment on the geogrid until a minimum fill cover of 6 in. is achieved. Rubber tire construction equipment may operate directly on the geogrid at speeds of less than 5 mph if the underlying material will support the loads. Where excessive substructure deformation is apparent, correct grid placement operations as recommended by the manufacturer or as directed.

212-3.2 GEOGRID PLACEMENT. Orient the geogrid length as unrolled parallel to the direction of roadway. Overlap geogrid sections as directed below. Use plastic ties at overlap joints or as directed. Placement of geogrid around corners may require cutting and diagonal lapping. Pin geogrid at the beginning of the backfill

section as directed. Keep geogrid taut at the beginning of the backfilling section but not restrained from stretching or flattening.

1. Longitudinal Joints. Overlap longitudinal joints by a minimum of 1 ft. Space longitudinal ties 10 ft. to 20 ft. or as directed.
2. Transverse Joints. Overlap transverse joints by a minimum of 1 ft. Space transverse ties 4 ft. to 5 ft. or as directed.

212-3.3 DAMAGE REPAIR. As directed, remove and replace contractor damaged or excessively deformed areas without additional compensation. Lap repair areas a minimum of 3 ft. in all directions. Tie each side of repair grid in at least 3 locations but do not exceed normal construction spacing; tie spacing for odd shapes will be as directed. Repair excessively deformed materials underlying the grid as directed.

METHOD OF MEASUREMENT

212-4.1 This Item will be measured by the square yard of placement as shown in the plans with no allowance for overlapping at transverse and longitudinal joints

BASIS OF PAYMENT

212-5.1 This item will be paid for on the basis of the contract unit price per square yard for geogrid, which price shall be full compensation for all labor, equipment, material, staking, and incidentals necessary to satisfactorily complete the items as specified.

Payment will be made under:

Item SS-212-5.1 Biaxial Geogrid - per Square Yard

END OF ITEM SS-212

ITEM SS-300 BASIC ELECTRICAL REQUIREMENTS

DESCRIPTION

300-1.1 This item shall consist of furnishing and installing complete electrical systems as defined in the plans and in these specifications. The work includes the installation, connection and testing of new electrical systems, equipment and all required appurtenances to construct and demonstrate proper operation of the completed electrical systems.

300-1.2 The Contractor shall maintain current copies of all referenced and applicable standards on the job site. The Contractor is responsible to make known to the Engineer any conflict between plans and specifications that he observes or of which he is made aware.

300-1.3 This work shall consist of lockout/tagout and constant current regulator calibration procedures at the airport electrical vault in accordance with the design and details shown in the plans and in compliance with these specification documents.

EQUIPMENT AND MATERIALS

300-2.1 STANDARDS.

a. Applicable National Fire Protection Association (NFPA) codes, including but not limited to:
   (1) NFPA 70 - National Electrical Code.
   (2) NFPA 70E - Standard for Electrical Safety in the Workplace.
   (3) NFPA 101 - Life Safety Code.
   (4) Internet Website: http://www.nfpa.org
b. Applicable Code of Federal Regulations (CFR) codes, including but not limited to:
   (1) 29 CFR 1910 - Occupational Safety and Health Standards (OSHA)
   (2) 29 CFR 1926 - Safety and Health Regulations for Construction.
   (3) Internet Website: http://www.gpoaccess.gov/cfr/index.html
c. ANSI/IEEE C2 - National Electrical Safety Code.
d. NECA 1 – Standard for Good Workmanship in Electrical Construction.
e. Applicable Federal, State and Local Electrical Codes.
f. Applicable Federal, State and Local Energy Codes.
g. Applicable Federal, State and Local Building Codes.
h. Applicable Federal, State and Local Fire Codes.
i. Applicable City Electrical Code.
j. Applicable City Ordinances pertaining to electrical work.
k. Applicable Federal, State and Local - Environmental, Health and Safety Laws and Regulations.

Contractor shall utilize the most current editions of standards, which are current at time of bid and as recognized by the Authority Having Jurisdiction for the respective standard.

300-2.2 GENERAL.

a. Airport lighting equipment and materials covered by Federal Aviation Administration (FAA) specifications shall be certified and listed under Advisory Circular (AC) 150/5345-53, Airport Lighting Equipment Certification Program, current version on the date that the submittals are received by the Engineer. When an equipment advisory circular is being updated and two equipment lists for the same specific equipment are listed in the current certified equipment AC 150/5345-53 addendum, only that equipment qualified to the latest advisory circular will be acceptable.

b. Airport lighting equipment and materials shall also meet the Buy American Preference requirements in 49 USC 50101 and the Aviation Safety and Capacity Expansion Act. The equipment shall be approved and listed on the FAA "Equipment Meeting Buy American Requirements" list located at *www.faa.gov/airports/aip/procurement/federal_contract_provisions/*, current version on the date that the submittals are received by the Engineer, or the Contractor may submit a signed formal letter from the manufacturer that clearly lists the specific equipment, model number, location where it is manufactured, and statement certifying that the equipment and/or materials meet the Buy American Preference requirements.

c. All equipment and materials covered by referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification when requested by the Engineer. All equipment and materials shall be new and meet applicable manufacturer's standards. All electrical components and products shall be tested and listed by an OSHA accepted, nationally recognized testing laboratory (NRTL) to conform to the standards indicated in these contract documents and to the industry standards required in the NEC, NEMA, IEEE, UL, and applicable FAA advisory circulars.

d. Manufacturer's certifications shall not relieve the Contractor of the Contractor's responsibility to provide materials in accordance with these specifications and acceptable to the Engineer. Materials supplied and/or installed that do not materially comply with these specifications shall be removed, when directed by the Engineer and replaced with materials, which do comply with these specifications, at the sole cost of the Contractor.

e. All materials and equipment used to construct this item shall be submitted to the Engineer for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provided they are as good a quality as the original. Clearly and boldly mark each copy to identify pertinent products or models applicable to this project. Indicate all optional equipment and delete non-pertinent data. Submittals for components or electrical equipment and systems shall identify the equipment for which they apply on each submittal sheet. Markings shall be boldly and clearly made with arrows or circles (highlighting is not acceptable). Contractor is solely responsible for delays in project accruing directly or indirectly from late submissions or resubmissions of submittals.

f. The data submitted shall be sufficient, in the opinion of the Engineer, to determine compliance with the Contract Documents plans and specifications. The Engineer reserves the right to reject all equipment, materials or procedures, which, in the Engineer's opinion, does not meet the system design and the standards and codes, specified herein.

g. All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for a period of at least twelve (12) months from final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner.

(1) All LED light fixtures, except for obstruction lighting, shall be warranted by the manufacturer for a minimum of 4 years after date of installation, final acceptance testing by the Engineer, and Owner's beneficial use of the equipment, inclusive of all electronics. Refer to FAA Engineering Brief No. 67D for additional requirements.

h. Refer to Special Provisions Item 31 Shop Drawings paper submittal requirements for Engineer's review.

i. After approval of submitted equipment, the Contractor shall supply the following Operation and Maintenance Manual documentation to the Owner. Two (2) complete sets of documentation shall be supplied for each model of equipment. The documentation shall be securely bound in heavy-duty 3-ring

binders. The information for each piece of equipment shall be indexed using typewritten label tabs. The spine of each binder shall have a typewritten label, which indicates the included equipment types. The documentation shall include:

(1) Approved Submittals and Shop Drawings
(2) Cable Splicer Qualifications, Type and Voltage
(3) State Contractors License with Electrical Classification
(4) Master, Journeyman and Apprentice Electrician Licenses and Certifications
(5) Lockout/Tagout Program
(6) Installation Manuals
(7) Operation Manuals
(8) Maintenance Manuals
(9) Parts Lists, including recommended spare parts. Recommended spare parts shall be furnished with the respective equipment.
(10) Ground Rod Impedance Test Reports
(11) Insulation Resistance Test Reports
(12) Regulator Load and Calibration Reports for testing, checking and adjusting all regulators in the electrical vault

j. After approval of the O&M Manuals, the Contractor shall provide three (3) complete electronic copies of all documentation in Adobe PDF file format on CD-R (non-rewriteable) discs storage media. The electronic files shall contain searchable text and include a hyperlink index for ease in locating information with the PDF file.

k. All requirements herein Item SS-300 shall be applicable to all referenced sections in these contract documents and applicable to all sections, which reference Item SS-300.

l. The Contractor is the single source of responsibility for the installation and integration of the airport's lighting, power, and control systems. New airport lighting equipment and materials shall be fully compatible with all other new and existing airport lighting equipment and systems. Any non-compatible components furnished by the Contractor shall be replaced at no additional cost to the Owner with a similar unit that is approved by the Engineer and compatible with the remainder of the airport lighting system.

300-2.3 OPERATION AND MAINTENANCE DATA.

Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment. Provide bound hard copies and electronic copies as noted in section 300-2.2.

a. Certificate of Substantial Completion, Release and Contractor's Affidavit, executed copies.

b. Final approved equipment submittals, including product data sheets and shop drawings, clearly labeled.

c. Installation manuals: Description of function, installation and calibration manuals, normal operating characteristics and limitations, performance curves, engineering data and tests, and complete nomenclature and commercial numbers of all replaceable parts.

d. Operations manuals: Manufacturer's printed operating instructions and procedures to include start-up, break-in, routine and normal operating instructions; regulation, control, stopping, shutdown, and emergency instructions; summer and winter operating instructions; and all programming and equipment settings.

e. Maintenance manuals: Maintenance procedures for routine preventative maintenance and troubleshooting; disassembly, repair, and reassembly; aligning and adjusting instructions.

f. Service manuals: Servicing instructions and lubrication charts and schedules, including the names and telephone numbers of personnel to contact for both routine periodic and warranty service for equipment and materials provided under this Specification.

g. Final test reports, clearly labeled, including but not limited to, insulation resistance test reports, ground rod impedance test reports, cable pulling tension values logs, and equipment certification tests.

h. Final certified calibration sheets for all equipment and instruments.

i. Preventive maintenance programs for the visual aid facilities and equipment installed in this project, including the applicable equipment sections within Chapter 5 “Preventive Maintenance” from AC 150/5340-26 (latest edition) “Maintenance of Airport Visual Aid Facilities”.

300-2.4 WIRE.

Unless otherwise indicated, conductors No. 10 AWG and smaller shall be solid, and conductors No. 8 AWG and larger shall be stranded.

For electrical work of 600 volts or less, all conductors, terminations, terminal blocks, lugs, connectors, devices and equipment shall be listed, marked, and rated 75 degrees C minimum unless otherwise noted.

Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips that will not damage cables or raceway. Pull ropes and pull wires shall have sufficient tensile strength for the cable(s) to be pulled and installed. Damaged cable or raceway shall be replaced at no additional cost to the Owner. Calculate and do not exceed the maximum allowable pulling tension or maximum allowable sidewall bearing pressure for all conductors and cables.

Install pull wires in empty raceways. Use a polypropylene plastic line with not less than 200-pound tensile strength. Secure and leave at least 12 inches of slack at each end of pull wire to prevent it from slipping back into the conduit. Cap spare raceways with removable tapered plugs, designed for this purpose.

Colorable L-824 cable in solid non-fading colors shall not be used for permanent series circuit identification. The color coding shall be continuous throughout the facility and airfield for each series circuit and conductor so that the circuit and conductor are readily identifiable. Mixing of colors for a series circuit is unacceptable.

300-2.5 CONCRETE. Concrete shall conform to Item Tx-421, Hydraulic Cement Concrete, with a minimum 28-day compressive strength of 3500 PSI (unless otherwise noted) using 1-inch (25-mm) maximum size coarse aggregate, as determined by test cylinders made in accordance with ASTM C 31 and tested in accordance with ASTM C 39.

Flowable backfill material may only be used where specifically indicated in the Plan details.

CONSTRUCTION METHODS

300-3.1 LOCKOUT/TAGOUT PROGRAM. The Contractor shall provide a complete copy of an electrical energy source Lockout/Tagout Program to the Owner, with copy to the Engineer. The document shall clearly identify the on-site master electricians and their contact information, including office and mobile telephone numbers.

The Lockout/Tagout Program shall comply with Part 1910 – Occupational Safety and Health Standards (OSHA) Subpart S – Electrical, and meet the requirements of 29 CFR 1910.147, The Control of Hazardous Energy (Lockout/Tagout), including requirements listed in 1910.331 through 1910.335.

Implementation of the Lockout/Tagout Program and all other related safety requirements are the sole responsibility of the Contractor.

300-3.2 SAFETY PROGRAM. The Contractor shall implement an electrical safety program that complies with NFPA 70E and 29 CFR 1926.

Implementation of the Electrical Safety Program, determining and providing proper Personal Protective Equipment (PPE), training and enforcing personnel to wear the prescribed PPE, conducting work area safety inspections (including correcting deficiencies), and all other related safety requirements are the sole responsibility of the Contractor.

All work involved in the preparation and implementation of the safety program will not be measured for separate payment but will be considered subsidiary to the lockout/tagout bid item.

300-3.3 PRECONSTRUCTION MEETING.

A preconstruction meeting will be held with the Airport, Engineer and Contractor, prior to any work. Complete submittals and shop drawings will be submitted at this time for review. An equipment procurement schedule will be provided by the Contractor with an anticipated field construction start date. The progress construction schedule will be submitted for review each week and shall outline all installation, testing and demolition work.

300-3.4 GENERAL.

The Contractor shall be responsible for coordinating all electrical work with the Utility. The Contractor shall provide temporary service conductors and raceway system. The Contractor shall then provide and connect permanent service conductors and raceway system after the completion.

All secondary conductors and controls, signaling and lighting shown in or on buildings are included in this project. Electrical service shall be extended from the service equipment as indicated.

In general, the various electrical equipment and material to be installed by the various trades under this specification shall be run as indicated, as specified herein, as required by particular conditions at the site, and as required to conform to the generally accepted standards to complete the work in a neat and satisfactory manner. The following is a general outline concerning the running of various systems and is to be excepted where the drawings or conditions at the buildings necessitate deviating from these standards.

The drawings and specifications are complementary; any work required by one, but not by the other, shall be performed as though required by both.

The Contractor shall maintain copies of all equipment installation manuals on site during construction.

All conduits shall be run exposed in the equipment rooms or run concealed as indicated.

The construction details of the building are illustrated on the drawings. Each Contractor shall thoroughly acquaint himself with the details before submitting his bid as no allowances will be made because of the Contractor's unfamiliarity with these details.

The electrical plans do not give exact locations, etc., and do not show all the offsets, control lines, junction boxes, and other installation details. Each Contractor shall carefully lay out his work at the site to

conform to the job conditions, to conform to details of installation supplied by the manufacturers of the equipment to be installed, and thereby to provide complete operating systems.

The electrical plans show diagrammatically the locations of the various electrical outlets and apparatus and the method of circulating and controlling them. Exact locations of these outlets and apparatus shall be determined by reference to the general plans and to all detail drawings, etc., by measurements at the buildings, and in cooperation with other crafts, and in all cases shall be subject to the approval of the Engineer. The Engineer reserves the right to make any reasonable change in location of any outlet or apparatus before installation, without additional cost to the Owner.

These Specifications and the accompanying Drawings are intended to cover systems which will not interfere with the structure of the buildings, which will fit into the several available spaces, and which will insure complete and satisfactory systems. Each bidder shall be responsible for the proper fitting of his material and apparatus into the buildings.

Should the particular equipment which any bidder proposes to install require other space conditions than those indicated on the Drawings, he shall arrange for such space with the Engineer before submitting his bid. Should changes become necessary because of failure to comply with this clause, the Contractor shall make such changes at the Contractor's expense.

Should the particular equipment which any bidder proposes to install require other installation methods, such as larger light base junction structures, etc., he shall include all such equipment and appurtenances in his bid. Should changes become necessary because of failure to coordinate equipment requirements and comply with this clause, the Contractor shall make such changes at the Contractor’s expense.

The Contractor shall be responsible to see that each party furnishes electrical equipment which meets the electrical requirements specified herein and that all systems work together to produce the specified operation.

Where two or more units of the same kind or class of equipment are required, these shall be products of a single manufacturer; however, the component parts need not be the products of one manufacturer.

Each Contractor shall submit working scale drawings of all his apparatus and equipment which in any way varies from these Specifications and Plans, which shall be checked by the Engineer and approved before the work is started, and interferences with the structural conditions shall be corrected by the Contractor before the work proceeds.

Electrical equipment, such as switchgear, switchboards, panelboards, load centers and other power supply equipment, shall not be used as a common enclosure, pull box or junction box for routing conductors of different systems, unless the equipment is specifically designed for this purpose and indicated as such on the Plans.

All electrical equipment shall be securely mounted as indicated in the plans, as required by the contract specifications, as required by guidelines and codes, and as required by the manufacturer using hardware compliant with the environmental conditions.

Interior components of electrical enclosures shall be securely mounted using appropriate hardware within the enclosure. Adhesives or adhesive tapes/strips are not allowed and are prohibited.

Electrical components, including but not limited to, relays, circuit boards, electronics, etc., shall be installed within approved enclosures.

The Contractor shall keep ends of conduits, including those extending through roofs, equipment and fixtures covered or closed with caps or plugs to prevent foreign material from entering during construction.

Where portions of raceways are known to be subjected to different temperatures, where condensation is a problem, and where passing from interior to exterior of a building, the portion of raceway or sleeve shall be filled with an approved material to prevent the circulation of air, prevent condensation, and prevent moisture entry. Sealing of raceways shall not occur until after the conductors and cables have been installed, tested and accepted by the Engineer.

The Contractor shall install any temporary lines and connections required to maintain electric services and safely remove and dispose of them when complete.

All temporary wiring shall conform to OSHA standards. Remove temporary services when work is complete. Any damage to electrical equipment caused by the Contractor shall be repaired at no cost to the Owner.

All non-current carrying parts and neutrals shall be grounded as indicated on the Drawings or as required by the Codes.

White and/or gray outer finish conductors may only be used as grounded conductors or neutral conductors in accordance with NEC.

Install insulated green equipment grounding conductors with all feeder and branch circuits.

Provide separate insulated equipment grounding conductors from grounding system to each electrical equipment, telecommunication equipment, other special electrical system equipment, and appurtenance item location in accordance with NFPA 70 and other applicable standard requirements.

The bidder shall inspect the site, thoroughly acquaint himself with conditions to be met and work to be accomplished. Failure to comply with this shall not constitute grounds for any additional payments.

Where electrical equipment is installed that causes electrical noise interference with other systems either existing or installed under this contract, the offending equipment shall be equipped with isolating transformers, filters, reactors, shielding, or any other means as required for the satisfactory suppression of the interferences, as determined by the Engineer.

All junction boxes, expansion joints, flexible connections, instruments and similar items requiring servicing or repairs shall be installed in an accessible location.

All salvage and equipment removed by the work shall remain the property of the Owner. Material removed from the project shall be stored on the project site where and as directed. Debris shall be removed from the job site and disposed of by the Contractor.

The Contractor shall maintain his work area clean and orderly at all times. Debris shall be removed promptly. The electrical system shall be thoroughly cleaned inside and outside of all enclosures to remove all metal shavings or other work debris, dust, concrete splatter, plaster, paint and lint.

The Contractor shall do all excavating and backfilling made necessary by electrical work and shall remove all surplus or supply any earth required to establish the proper finished grade.

The Contractor shall do all cutting and patching made necessary by electrical work, but in no case shall he cut through or into any structural member without written permission of the Engineer.

All steel conduits, supports, channels, fittings, nuts, bolts, etc. shall be galvanized, corrosion-resistant type unless otherwise noted.

An approved anti-seize compound shall be used on all threads to prevent equipment and thread damage.

Equipment shall be installed in accordance with manufacturer’s recommendation. Make all final electrical

connections and coordinate all items with other trades.

Correct unnecessary damage caused due to installation of work, brought about through carelessness or lack of coordination. All openings, sleeves, and holes to be properly sealed, fire proofed and water proofed. Any water leaks arising from project construction will be immediately corrected to the satisfaction of the Owner and the Engineer.

300-3.5 POWER SUPPLY EQUIPMENT. Electrical equipment, such as switchgear, switchboards, panelboards, load centers, and other power supply equipment, shall not be used as a common enclosure, pull box or junction box for routing conductors of different systems, unless the equipment is specifically designed for this purpose and indicated as such on the Plans.

If shown in the plans, the power supply equipment shall be set on concrete housekeeping pads to provide a minimum space of 3-1/2 inches between the equipment and the floor. All equipment shall be secured to the floor or wall in accordance with the manufacturer's recommendations and these contract document requirements.

300-3.6 DUCT AND CONDUIT. Conduits shall be galvanized rigid steel unless otherwise indicated or specified. Refer to one-line diagram conduit notes for specific requirements.

Conduit runs shall be one trade size continuously with no reducers allowed. Changing of conduit size is only permitted at manholes, handholes, and boxes and conduit bodies used as outlet, device, junction, or pull boxes, including approved, listed fittings with removable covers.

Use an approved, listed adapter/coupling to convert to other types of conduit. Reducer couplings are not allowed.

For underground service entrance, feeder and branch circuit raceways, offsets and bends over 30 degrees and elbows in Schedule 40 PVC conduit runs shall be Schedule 80 PVC conduit. Underground service entrance PVC conduits shall be concrete encased unless otherwise noted. Underground PVC conduits shall be concrete encased under driveways, roadways, parking lots and other paved areas.

Non-encased conduits shall convert to concrete encased ducts under all paved areas and shall extend at least 3 feet beyond the edges of the pavement unless otherwise noted.

The Contractor shall provide a staked centerline or offset for the duct and manhole system - utilizing the drawings and a site inspection of the existing grounds, grades and utility crossings. The Owner and Engineer shall approve the staking plan that shall be indicated on a drawing submitted for approval before starting any excavation for the ducts. The staking plan shall indicate the proposed location, elevation and dimensions of manholes and handholes. The Engineer reserves the right to adjust duct, manhole and handhole locations and elevations before installation at no additional cost to the Owner.

The bottom surface of trenches shall be essentially smooth and free from coarse aggregate.

Install grounding-and-bonding type bushings and bonding jumpers on all service entrance conduits and on all feeder and branch circuit conduits.

Use conduit bushings at each conduit termination. Where No. 4 AWG or larger ungrounded wire is installed, use insulated bushings.

When EMT is allowed, utilize only steel compression fittings. Die-cast and set-screw fittings shall not be used.

Use double lock nuts at each conduit termination. Use weather tight hubs in damp and wet locations. Sealing lock nuts shall not be used.

Grounding continuity to rigid metal conduit shall be accomplished by grounding bushings/adapters with lugs for connection to grounding counterpoise and/or grounding electrode conductor as defined by NEC.

All exposed wiring shall be run in not less than 1/2 inch (12 mm) galvanized rigid steel conduit. All conduits shall be installed to provide for drainage. Conduit shall be attached to wooden structures with galvanized pipe straps and fastened with galvanized wood screws not less than No. 8 nor less than 1-1/4 inches (31 mm) long. There shall be at least two fastenings for each 10-foot (3 m) length.

Existing ducts may require clearing before use. It is the responsibility of the Contractor to locate the existing ducts, identify empty or partially empty conduits and clear the conduits as required. Where new cable is to be installed in existing duct, the full length of the duct shall be cleared of debris by mechanical means before the installation of the new cable. Acceptable methods of clearing existing ducts include "hydro-jetting" and "roto-rooting." All existing cables in each re-used duct shall be replaced for the length of the duct and properly spliced in a method approved by the Engineer. Clearing of existing duct banks or conduits is incidental to the cable pay item.

Dedicated ground rods shall be installed and exothermically welded to the counterpoise wire at each end of a duct bank crossing under pavement.

For concrete markers, the impression of letters shall be done in a manner, approved by the Engineer, to affect a neat, professional appearance. The letters shall be stenciled neatly. After placement, all markers shall be given one coat of high-visibility aviation orange paint, as approved by the Engineer.

Existing concrete markers or survey pins for runway thresholds, duct/conduit/cable/splice markings, utility line markings, taxiway points of tangency markings, or other similar items shall be removed and reinstalled or replaced, depending on the project work requirements, as required by a registered professional surveyor to the satisfaction of the Owner and the Engineer.

300-3.7 BACKFILL, COMPACTION, AND RESTORATION. Refer to the backfill, compaction and restoration requirements within Item P-152 where other compaction requirements are specified (under pavements, embankments, etc.)

Trenches shall be backfilled and compacted in 6” layers to 90% maximum density for cohesive soils and to 100% maximum density for non-cohesive soils, as determined by ASTM D1557. The in-place field density shall be determined in accordance with ASTM D1556, D2167, or D6938.

Backfilling from two directions will not be allowed. No backfilling will be accomplished without the approval of the Engineer or Construction Observer. The Contractor shall ensure all trenches are inspected prior to being covered and prior to encasement. Any uninspected trenches which are prematurely covered shall be exposed for inspection at the Engineer and Owner’s convenience at no additional cost to the Owner. The Construction Observer will coordinate with the Contractor for advance scheduling of trench inspection.

Following restoration of all trenching near airport movement surfaces, the Contractor shall thoroughly visually inspect the area for foreign object debris (FOD) and remove any such FOD that is found. This FOD inspection and removal shall be considered incidental to the pay item of which it is a component part.

All concrete/asphalt pavement removal and repair work shall be installed as separate pay items in accordance with Specification Tx-104 Removing Concrete or Tx-105 Removing Treated and Untreated Base and Asphalt Pavement.

The subgrade below the removed pavement shall be compacted to 90% maximum density for cohesive soils and to 100% maximum density for non-cohesive soils, as determined by ASTM D1557. The in-place field density shall be determined in accordance with ASTM D1556, D2167, or D2922. Subgrade

preparation will not be measured for separate payment, but will be considered subsidiary to Specification Tx-104 Removing Concrete or Tx-105 Removing Treated and Untreated Base and Asphalt Pavement .

300-3.8 CABLE AND UTILITY COORDINATION. The existing and the proposed locations of lighting cable are approximate. The Contractor shall be responsible for field locating and identifying the existing lighting circuits to determine their exact routing. The Contractor shall also be responsible for maintaining the lighting systems in a working condition until the new lighting circuits have been installed and tested. The Contractor shall proactively and expeditiously accomplish this cable identification work prior to performing any modifications to the lighting circuits. Coordinate identification work with the Owner and Engineer and make all corrections, additions, etc. on the as-built drawings.

Underground cable and utilities exist within and adjacent to the limits of construction. An attempt has been made to locate these cables and utilities on the Plans. All existing cable and utilities may not be shown on the Plans and the location of the cables and utilities shown may vary from the location shown on the Plans. Prior to beginning of any type of excavation, the Contractor shall contact the utilities, the airport maintenance staff, FAA field personnel and other organizations as required and make arrangements for the location of the utilities on the ground. The Contractor shall maintain the cable and utility location markings until they are no longer required.

The Contractor shall replace or repair any underground cable or utility that has been damaged by the Contractor during excavation to the satisfaction of the owner of the cable or utility at no additional cost to the Owner.

The Contractor shall be responsible for all coordination work associated with existing and new utilities, their marking, their identification, proposed outages/shutoffs, connections, cutovers, etc.

300-3.9 WIRING. The Contractor shall furnish all labor and materials and shall make complete electrical connections in accordance with the wiring diagram furnished with the project plans. The electrical installation shall conform to the requirements of the latest edition of National Fire Protection Association, NFPA-70, National Electrical Code.

Provide color-coding for phase identification.

Colors for 240/120V Circuits:

a. Phase A: Black
b. Phase B: Red
c. Neutral: White

Colors for 208Y/120V Circuits:

a. Phase A: Black
b. Phase B: Red
c. Phase C: Blue
d. Neutral: White

Colors for 480Y/277V Circuits:

a. Phase A: Brown
b. Phase B: Orange
c. Phase C: Yellow
d. Neutral: Gray

All new electrical cable shall be marked using color-coded plastic electrical tape, which is specifically designed for application on polyethylene-jacketed cable. The tape shall be applied as detailed on the Plans. Marking tape shall be Scotch 35 Vinyl Plastic tape or approved equal.

300-3.10 MARKING AND LABELING. Properly identify all electrical equipment.

Wire/Cable Designation Tape Markers:

a. Indoor Dry Locations: UL Recognized Materials, vinyl or vinyl-cloth, self-adhesive, wraparound, self-laminating, cable/conductor markers with computer printer-generated numbers and letters, minimum 1” width. Provide Brady B-427 with thermal transfer print type or approved equal.

b. Outdoor Locations and Indoor Wet and Damp Locations: White polyolefin, non-adhesive, full circle, heat-shrinkable sleeve, cable/conductor markers with computer printer-generated numbers and letters, minimum 1” width. Provide Brady B-342 with thermal transfer print type or approved equal.

Properly identify all electrical equipment, including but not limited to the following:

a. Switchgear, switchboards, and control panels.
b. Main distribution panel and individual devices within it.
c. Panelboards and individual devices within it.
d. Safety switches and disconnects.
e. Contactors and lighting control center, including all branch circuits.
f. Individually mounted circuit breakers.
g. Starters and relays.
h. Transformers.
i. Generators and automatic transfer switches.

Use permanently attached black phenolic plates with 3/8” white engraved lettering on the face of each, attached with minimum two sheet metal screws. Starters and relays connected under this Specification shall be identified whether furnished under this Specification or under other Specifications of this contract. Plates shall be indoor or outdoor rated as required by installation location.

Panelboard identification plates shall indicate panel by identification name, voltage system, ampacity rating and type, AIC rating, and feeder source description.

Identify each receptacle, light switch, junction box, etc. with panelboard identification and circuit number. For all wiring device covers, use hot, stamped, or engraved machine printing with black-filled lettering on face of plate, and durable wire markers or tags inside outlet boxes.

Identify fire alarm junction boxes with red covers and mechanical control junction boxes with blue covers.

Install all identification as required by current adopted editions of the NFPA 70 - National Electrical Code and NFPA 70E - Standard for Electrical Safety in the Workplace.

300-3.11 REMOVAL AND RELOCATION OF EXISTING EQUIPMENT. The Contractor shall carefully remove all salvageable equipment as indicated on the Plans. Any equipment which is damaged during the removal operation shall be subject to a reduction in payment for removal of the equipment. All equipment which is removed during this project shall be transported to a site on the Airfield or removed from the Airfield and properly disposed of as directed by the Owner and the Engineer.

The Contractor shall carefully relocate existing equipment as indicated in the Plans. Any equipment that is damaged during the relocation operation shall be replaced at no additional cost to the Owner.

Any existing electrical equipment, conduit, cables, etc. that is damaged during construction shall be replaced at no additional cost to the Owner to the satisfaction of the Owner and the Engineer.

300-3.12 5 kV AND UNDER 600V CABLE CONNECTIONS.

Cable splicing/terminating personnel shall be licensed electricians who have the minimum continuous experience in terminating/splicing medium voltage cable as listed in Item L-108. The qualifications for these airfield lighting cable splicers shall be submitted for review and approval by the Engineer prior to

any work. The Engineer may request sample splices be performed in his presence by the proposed personnel to clearly demonstrate that they have the skill and experience to perform this work. Connector kits and cables shall be provided in sufficient quantity by the Contractor in demonstrating these qualifications at no additional cost to the Owner.

Field-attached plug-in splices using FAA certified L-823 plug and receptacle connector kits, properly sized to the cable being used, shall be installed as shown in the plans. This work shall include the taping and heat shrinking. Refer to Item L-108 for additional requirements.

As an option, the Contractor may utilize enhanced FAA certified L-823 connector kits, such as the Amerace 54Super Kit. These kits do not require taping or heat shrinking. These kits shall be installed in accordance with the manufacturer's installation requirements. Note that the mixing of connector kits is unacceptable. The Contractor shall clearly list and submit the connector kits he proposes to utilize on the project for approval prior to any field construction work, and he shall only install that type during construction unless otherwise noted by the Engineer.

For under 600V cable connections of voltage powered circuits, splices whether direct buried or within an underground enclosure shall only utilize approved cast splices, employing a plastic mold and using epoxy resin equivalent to that manufactured by 3M Company, or an approved equivalent.

300-3.13 CERTIFICATION AND PERFORMANCE. Equipment and materials covered by FAA Advisory Circulars are referred to by item numbers and approved equipment is listed within the AC 150/5345-53 Airport Lighting Equipment Certification Program's monthly Addendum, which contains a complete and updated listing of the certified equipment and manufacturers and is listed in the FAA Buy American Preference equipment list, which is also updated monthly. The Contractor shall provide and install new certified equipment that works reliably and efficiently with the existing equipment to remain in service. The Contractor shall provide any additional accessories and/or appurtenances required to provide fully functional electrical systems to the satisfaction of the Owner and Engineer, at no additional cost to the Owner.

The Contractor shall ascertain that all lighting system components furnished (including FAA certified and approved equipment) are compatible in all respects with each other and the remainder of the new and existing systems. Any non-compatible components furnished by the Contractor shall be replaced at no additional cost to the Owner with a similar unit that is approved by the Engineer and compatible with the remainder of the airport lighting system.

300-3.14 AS-BUILT DRAWINGS. The Contractor shall keep one (1) full-sized set of prints for As-Built Drawings at the site, in good order, and annotated to show all changes made during the construction process.

The Contractor shall locate all underground and concealed work, identifying all equipment, conduit, circuit numbers, motors, feeders, breakers, switches, and starters. The Contractor will certify accuracy by endorsement. As-Built drawings shall be correct in every detail, so Owner can properly operate, maintain, and repair exposed and concealed work.

The As-Built drawings shall indicate all control system labeling and marking.

The Contractor shall store the As-Built drawings on the site. Drawings shall not be rolled. Make corrections, additions, etc., with pencil, with date and authorization of change.

As-Built drawings must be submitted to Engineer before project will be accepted.

Minor deviations from the Plans and Specifications shall be as approved by the Engineer.

Upon completion of the installation, the Contractor shall adjust the systems to the satisfaction of the Engineer.

300-3.15 TESTING.

General Electrical Testing: Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification and certify compliance with test parameters. Tests shall be conducted in the presence of the Engineer and shall be to his/her satisfaction. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest. Perform infrared scan tests and inspections of service and power distribution equipment at the respective hangars and provide reports. Electrical equipment will be considered defective if it does not pass tests and inspections. Reports shall include notations of deficiencies, remedial action taken and observations after remedial action.

System and Equipment Testing: All installations shall be fully tested by continuous operation for not less than 24 hours as completed systems prior to acceptance. These tests shall include the functioning of each control not less than 10 times.

Test equipment and instruments utilized by the Contractor shall have been calibrated following the manufacturer's recommended schedule to verify their accuracy prior to performing the testing work. The Contractor shall provide instrument calibration certificates on test equipment when requested by the Engineer. Retesting work due to inaccurate or defective instruments shall be performed by the Contractor to the satisfaction of the Engineer at no additional cost to the Owner.

a. Regulator Calibration:

The Contractor shall check and calibrate both new and existing regulators utilizing the enclosed "Constant Current Regulator Calibration Report". Refer to the material section on constant current regulators for additional requirements.

New regulators are calibrated at the factory prior to shipping, while existing regulators typically need checks and calibrations on a routine basis so that they do not get out of tolerance. The intent is to check and/or calibrate these regulators using a high accuracy meter prior to energizing and placing the airfield lighting system in service.

Utilize a high accuracy true RMS ammeter with high accuracy clamp-on current probe when making these measurements (use round type probes, accuracy + or – 2% required, sized per the cable diameter and circuit ampacity to achieve the best accuracy). Adjust regulators per manufacturer's instructions to meet the output currents on each brightness step as listed in Tables 5-2 and 5-3 in AC 150/5340-26.

b. Megger Testing:

The Contractor shall perform megger testing on each existing regulator circuit prior to any work on the electrical system. This information shall be recorded and documented by the Contractor and submitted to the Engineer. The Contractor shall perform megger tests on each regulator circuit after the acceptance test period. This acceptance test information shall be recorded and documented by the Contractor and submitted to the Engineer. Megger test shall be performed in accordance with the requirements of Item L-108.

The Contractor shall submit his initial megger test reports on the enclosed "Insulation-Resistance Test Report" form prior to any work on the electrical system. This report shall be submitted to the Engineer and approved by the Owner prior to Contractor proceeding with his work.

After final acceptance testing has been completed, the Contractor shall complete and submit his final megger test reports to the Engineer and insert copies of the initial and final megger test reports in the Operation and Maintenance Manuals.

Megger testing shall be performed using an insulation meter, such as a Fluke 1507 Insulation Resistance Multimeter, Ideal 61-797 Digital Insulation Meter, or approved equal having an insulation test range up to 10 Gigohms or greater.

Insulation resistance testers for 5kV series circuits shall utilize the 1000V DC source output for testing. The test equipment shall be submitted for review and approval by the Engineer prior to performing the tests.

The Contractor shall be responsible to maintain an insulation resistance equal to minimum 80% of the initial testing value through the end of the contract warranty period. This requirement is based on AC 150/5340-26C which states that resistance values inevitably decline over the service life of the circuit and that a 10-20 percent decline per year is considered normal. Note that AC 150/5340-26C cancels AC 150/5340-26B; thus, refer to the current edition of the maintenance AC for requirements in this project.

For existing circuit insulation resistance requirements, refer to “Existing Circuits” section of Item L-108.

The insulation resistance to ground for 600V rated cables shall be not less than 100 Megohms when measured per NETA standards.

The installations shall be tested in operation as a completed unit prior to acceptance. Tests shall include taking megger and voltage readings in accordance with manufacturer’s requirements. Testing equipment shall be furnished by the Contractor.

c. Ground Rod Impedance Testing:

The enclosed “Ground Rod Impedance Test Report” form shall be used, and testing shall be performed in the presence of the Engineer.

As-Built drawings shall indicate the location of all installed ground rods. Each ground rod shall have a unique identifier that corresponds with its submitted ground impedance test report.

Three-pole fall-of-potential testers that can measure the ground resistance of a ground rod using auxiliary electrodes (staked testing), such as a Fluke 1621 Earth Ground Tester, shall be used for testing individual dedicated equipment ground rods at fixtures and equipment, or for testing isolated counterpoise ground rods not yet connected to the counterpoise wire.

Clamp-on testers that can measure the ground resistance of a ground rod without using auxiliary ground rods (stakeless testing), such as a Fluke 1630 Earth Ground Clamp Meter or approved equal, shall be used for testing counterpoise ground rods which have already been connected to the counterpoise wire, or ground ring ground rods which have already been connected to the established ground ring system.

Ground impedance test equipment shall be submitted for review and approval by the Engineer prior to performing the tests.

If the ground rod’s impedance exceeds 25 ohms, an additional rod shall be driven in a location suitable and approved by the Engineer. However, the additional rod must satisfy the requirements of NEC 250.53 and not be less than 6 feet away from any other ground rod electrode. Additional ground rods shall not be measured for separate payment but shall be considered subsidiary to the counterpoise or respective equipment pay item.

The Contractor shall perform additional tests if required and requested by the Engineer at no additional cost.

The Contractor shall coordinate with the resident Engineer to approve tests daily before proceeding. The Contractor shall fill out a separate test report for each date. Test reports shall be submitted weekly to the Engineer.

Airport lighting equipment and special systems shall be tested in accordance with applicable FAA Advisory Circular requirements and the manufacturer's installation instructions. These tests shall also include those system requirements listed within AC 150/5340-26 Maintenance of Airport Visual Aid Facilities.

300-3.16 INSPECTION FEES AND PERMITS. The Contractor shall obtain and pay for all necessary construction permits, licenses, government charges, and inspection fees necessary for prosecution of the Work. Unless otherwise noted, the Contractor shall pay all charges of utility owners for connections for providing permanent service to the Work, ready for subsequent utility account transfer to the Owner after final acceptance.

300-3.17 WORK SUPERVISION.

State of Texas: The electrical contractor (whether the general contractor or a subcontractor) shall be a licensed contractor in the state of Texas having an electrical classification suitable for performing the work required in these contract documents.

The Contractor shall designate in writing the qualified electrical supervisor who shall provide supervision to all electrical work on this project. The minimum qualifications for the electrical supervisor shall be a master electrician as defined by Texas Electrical Safety and Licensing Advisory Board. The supervisor or his appointed alternate possessing at least a journeyman electrician license shall be on site whenever electrical work is being performed. The qualifications of the electrical supervisor shall be subject to approval of the Owner and the Engineer.

All master and journeyman electricians shall be licensed in accordance with Texas Board requirements. The website located at https://www.tdlr.texas.gov/electricians/eleclaw.htm publishes the text of this statutory requirement. No unlicensed electrical workers shall perform electrical work on this project. Apprentice electricians in a ratio of not more than one apprentice per journeyman electrician will be allowed if the apprentices are licensed and actively participating in an apprenticeship program recognized and approved by the Texas Electrical Safety and Licensing Advisory Board.

METHOD OF MEASUREMENT

300-4.1 The quantity of lockout/tagout and constant current regulator calibration procedures to be paid for shall consist of all lockout/tagout procedure work and all constant current regulator calibration work completed in place, accepted and ready for operation. This item does not include measurement for constant current regulator equipment.

BASIS OF PAYMENT

300-5.1 Payment will be made at the contract unit price for each complete item, measured as provided above, and accepted by the Engineer. This price shall be full compensation for furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete this item to the satisfaction of the Engineer.

Payment will be made under:

Item SS-300-5.1 Lockout/Tagout and Constant Current Regulator Calibration Procedures – per Lump Sum

MATERIAL REQUIREMENTS

Commercial Item Description A-A-59544	Cable and Wire, Electrical (Power, Fixed Installation)
Fed. Spec. W-C-1094	Conduit and Conduit Fittings; Plastic, Rigid
Fed. Spec. W-P-115	Panel, Power Distribution
Fed. Std. 595	Colors
Underwriters Laboratories Standard 6	Rigid Metal Conduit
Underwriters Laboratories Standard 514	Fittings for Conduit and Outlet Boxes
Underwriters Laboratories Laboratories Standard 651	Schedule 40 and 80 Rigid PVC Conduit (for Direct Burial)
Underwriters Laboratories Standard 1242	Intermediate Metal Conduit
CFR 1910	Occupational Safety and Health Regulations
CFR 1926	Safety and Health Regulations for Construction
ANSI/IEEE C2	National Electrical Safety Code
NFPA 70	National Electrical Code (NEC)
NFPA 70E	Standard for Electrical Safety in the Workplace
NFPA 101	Life Safety Code
NFPA 780	Standard for the Installation of Lightning Protection Systems
29 CFR 1910	Occupational Safety and Health Standards (OSHA)
29 CFR 1926	Safety and Health Regulations for Construction
Jaquith Industries, Inc.	The Design, Installation, and Maintenance of In-Pavement Airport Lighting

FAA ADVISORY CIRCULARS

AC 150/5300-13	Airport Design
AC 150/5340-18	Standards for Airport Sign Systems
AC 150/5340-26	Maintenance of Airport Visual Aid Facilities
AC 150/5340-30	Design and Installation Details for Airport Visual Aids
AC 150/5345-3	Specification for L-821 Panels for Control of Airport Lighting
AC 150/5345-5	Specifications for Airport Lighting Circuit Selector Switch
AC 150/5345-7	Specification for L-824 for Underground Electrical Cable for Airport Lighting Circuits
AC 150/5345-10	Specification for Constant Current Regulators and Regulator Monitors
AC 150/5345-26	Specification for L-823 Plug and Receptacle, Cable Connectors
AC 150/5345-28	Standard for Precision Approach Path Indicator (PAPI) Systems
AC 150/5345-39	Specification for L-853 Runway and Taxiway Retroreflective Markers
AC 150/5345-42	Specification for Airport Light Base and Transformer Housings, Junction Boxes, and Accessories
AC 150/5345-44	Specification for Taxiway and Runway Signs
AC 150/5345-46	Specification for Runway and Taxiway Light Fixtures
AC 150/5345-47	Isolation Transformers for Airport Lighting Systems
AC 150/5346-49	Specification L-854, Radio Control Equipment
AC 150/5345-51	Specification for Discharge-Type Flashing Light Equipment
AC 150/5345-53	Airport Lighting Equipment Certification Program
AC 150/5345-56	Specification for L-890 Airport Lighting Control and Monitoring System (ALCMS)

END OF ITEM SS-300

CONSTANT CURRENT REGULATOR CALIBRATION REPORT

Standard Requirements: FAA AC 150/5340-26 (latest edition) Maintenance of Airport Visual Aid Facilities

Owner / Sponsor: _____ Engineer: Garver, LLC

Airport:_____ Contractor: _____

Project Title: _____ Garver Project Number:_____

Vault ID / Location: _____ Date: _____

Weather / Site Conditions: _____ Last Two Weeks of Rain: _____inches

Constant Current Regulator #: _____ Serves: _____

	Completed	Comments
1. Check all control equipment for proper operation.	☐	_____
2. Perform short-circuit test. Record results and recalibrate if necessary.	☐	_____
3. Perform open-circuit test on regulators with open circuit protection. Open circuit protective device should de-energize the regulator. Record results.	☐	_____
4. Check and record regulator input voltage and current.	☐	_____
Input Voltage: _____ Input Current: _____		
5. Check and record regulator output load. (ONLY if regulator has monitoring package)	☐	_____
Volt-Amperes: _____		
6. Check and record output current on each brightness step. If output current is outside of the allowable range, adjust the regulator's on-board potentiometer to re-calibrate the output current within the allowable range. Re-record the new output current on this form.	☐	_____

3-Step CCR			5-Step CCR				
B10: _____	B30: _____	B100: _____	1: _____	2: _____	3: _____	4: _____	5: _____
Nominal: 4.8A	5.5A	6.6A	2.8A	3.4A	4.1A	5.2A	6.6A

Tested By: _____ (Signature and Date)

Test Equipment: _____ (Manufacturer and Model No.)

Engineer Witness: _____ (Signature and Date)

Owner / Sponsor Witness: _____ (Signature and Date)

INSULATION RESISTANCE TEST REPORT

Owner / Sponsor: _____ Engineer: Garver, LLC_____

Airport:_____ Contractor: _____

Project Title: _____ Garver Project Number:_____

Vault ID / Location: _____ Date Initial / Final Tests: _____

Weather / Site Conditions (Initial Test): _____ Last Two Weeks of Rain:_____inches

Weather / Site Conditions (Final Test): _____ Last Two Weeks of Rain:_____inches

		Initial Test Results		Final Test Results	
	Circuit Designation and Color Code	Regulator Size (kW)	Megger Reading Before Field Work (Megohms)	Regulator Size (kW)	Megger Reading After Field Work (Megohms)
1					
2					
3					
4					
5					
6					
Tested By:					
Test Equipment:					
Engineer Witness:					
Owner/Sponsor Witness:					

Provide signature/date and manufacturer/model no. as required in the fields above.

Initial Test Record – Owner Disposition

Owner / Sponsor: _____ (Signature and Date)

Check one only: ☐ Proceed with Installation ☐ Hold

GROUND ROD IMPEDANCE TEST REPORT

Owner / Sponsor: _____ Engineer: Garver, LLC_____

Airport:_____ Contractor: _____

Project Title: _____ Garver Project Number:_____

Date: _____ Weather / Site Conditions: _____

Fall-of-Potential Style Tester (F):
Manufacturer:_____ Model #: _____

Clamp-On Style Tester (C):
Manufacturer:_____ Model #: _____

Ground Rod #	Test Equipment Style (F or C)	Impedance Value (Ohms)	Ground Rod #	Test Equipment Style (F or C)	Impedance Value (Ohms)

Tested By:	
Engineer Witness:	

Provide signature/date in the fields above.

Page _____ of _____

ITEM SS-301 ELECTRICAL DEMOLITION AND RELOCATION WORK

DESCRIPTION

301-1.1 This item shall consist of the removal and satisfactory disposal of existing runway and taxiway edge lights, in-pavement lights, guidance signs, markers, manholes, handholes, junction structures, racks, pads, equipment, poles, towers, shelters, and other incidentals, all of which are not designated or permitted to remain, in accordance with this specification, the referenced specifications and drawings, and applicable advisory circulars. This work shall include the removal of indicated equipment, materials, and incidentals necessary for a complete item removal, including all restoration work, as a completed unit to the satisfaction of the Engineer.

301-1.2 The Contractor shall maintain current copies of all referenced and applicable standards on the job site. The Contractor is responsible to make known to the Engineer any conflict between plans and specifications that he observes or of which he is made aware.

301-1.3 This item shall also consist of the relocation of existing lights, signs, systems and incidentals, in accordance with this specification, the referenced specifications and drawings, and applicable advisory circulars. This work shall include the removal and storage of indicated equipment and materials, and reinstallation at the new location, including all incidentals necessary for a complete relocation, as a completed unit to the satisfaction of the Engineer.

MATERIALS

301-2.1 All backfill and repair materials used in electrical demolition, repair and restoration work shall comply with the referenced specifications and be approved by the Engineer.

Airport lighting equipment and materials shall meet the requirements outlined in Item SS-300.

CONSTRUCTION METHODS

301-3.1 GENERAL. No demolition shall be started until the removal and/or relocation work has been laid out and approved by the Engineer. All material shall be disposed of off-site. All hauling and disposal will be considered a necessary and incidental part of the work. Hauling cost shall be considered by the Contractor and included in the contract unit price for the pay of items of work involved. No payment will be made separately or directly for hauling on any part of the work.

Equipment removal shall typically include removing the equipment and its accessories, removing foundations/pads, removing existing conduits, conductors and appurtenances, removal of conduit to below grade, and removal of existing circuits back to source. The work shall include restoring the area to match existing, including filling and tamping all holes with earth, and clearing and leveling the site.

The Contractor shall remove all existing underground cable, which is unused or rendered unusable by this project, when such is exposed or made accessible during this work. All such wiring removed shall become property of the Contractor and shall be immediately removed from the project. Wiring in conduit shall be removed as indicated or if new wiring is shown to be installed in its place. Existing wiring shall not be reused or reinstalled.

Wiring not exposed shall be abandoned in place, if a reasonable effort will not remove it. No measurement or payment will be made for this cable removal work. Damage to turf or other systems will not be permitted to salvage or retrieve existing cable.

Any damage to electrical equipment, systems, structures, conduits, cables, and accessories or other

utilities, designated to remain in place, shall be repaired or replaced expeditiously at no additional cost to the Owner and to the satisfaction of the Owner and Engineer.

Holes, ditches, or other abrupt changes in elevation caused by the removal operations that could obstruct drainage or be considered hazardous or unsightly shall be backfilled, compacted, and left in a workmanlike condition.

Trenches or voids resulting from the removal or demolition of existing electrical equipment or other structures shall be filled with approved material placed in layers in accordance with Item Tx-132.

Concrete foundations and pads to be removed shall be obliterated full depth.

301-3.2 REMOVAL AND/OR RELOCATION OF LIGHT FIXTURES AND EQUIPMENT. Light fixtures and other equipment which are to be removed shall be carefully excavated. All concrete bases and concrete anchors shall be removed by the Contractor. The removed lights, guidance signs, isolation transformers and wiring harnesses shall then be given to the Owner, or properly disposed of if so directed by the Owner. The ground around the removed lighting equipment shall be backfilled and properly compacted. Light fixtures and equipment which are to be relocated shall be stored on site and reinstalled with new lamps, new transformers, and all other new required accessories as indicated in the plans.

301-3.3 REMOVAL OF EXISTING EQUIPMENT. The Contractor shall carefully remove all salvageable equipment as indicated in the plans. Any equipment that is damaged during the removal and/or relocation operation shall be subject to a reduction in payment for removal and/or relocation of the equipment. All equipment that is removed during this project shall be transported to a site on the Airfield or removed from the Airfield and properly disposed of as directed by the Owner and the Engineer.

301-3.4 RELOCATION OF EXISTING EQUIPMENT. Existing equipment that is to be relocated shall be carefully disconnected from the existing electrical system. The equipment shall be stored on site in an enclosed area protected from the weather as directed by the Owner and Engineer. The Contractor shall remove existing concrete bases and shall backfill and compact these areas to match existing. The electrical power circuit shall be field located and extended to the new installation location unless otherwise noted in the Plans. Coordinate the extension of the electrical service with the extension of the electrical duct serving the equipment and install duct, splice and cable markers to mark the new complete route.

Refer to the plans for additional installation requirements concerning the relocation of existing lights, signs, systems and incidentals.

Any equipment that is damaged during the relocation operation shall be subject to a reduction in payment for removal and/or relocation of the equipment.

Any equipment that is damaged during the relocation operation shall be repaired or replaced by the Contractor at his expense to the satisfaction of the Owner and Engineer.

301-3.5 CLEARING OF EXISTING DUCT BANKS OR CONDUITS. Where new cable is to be installed in an existing duct bank or conduit, the full length of the duct bank or conduit shall be cleared of debris by mechanical means before installation of the new cable. Acceptable means of clearing existing duct banks or conduits may include using a mandrel, “hydro-jetting” method, or “roto-rooting” method as approved by the Engineer.

Where existing cables are being removed from an existing duct bank or conduit and replaced with new cables, the Contractor shall use the existing cable to clear the conduit and to pull in the new cable. No separate payment will be made for clearing these duct banks or conduits or for the existing cable removal. Clearing of these existing duct banks or conduits is incidental to the cable pay item unless otherwise noted.

METHOD OF MEASUREMENT

301-4.1 The quantity of existing lights or guidance signs, removed, to be measured under this item shall be the number of each complete unit removed, and accepted by the Engineer.

This item shall include removing and storing the existing equipment as directed by the Engineer.

Where the light base and concrete structure are indicated to be removed or demolished, the item shall include restoring the area to match existing, including removing the complete concrete item, filling and tamping all holes with earth, and clearing and leveling the site.

Where the light base and concrete structure are to remain, a new blank cover shall be installed for protecting the light base during the construction work. Blank covers shall be removed when the existing equipment is reinstalled and given to the Owner after completion of construction work in the respective area.

301-4.2 The quantity of existing lights or guidance signs, relocated, to be measured under this item shall be the number of each complete unit removed, stored, and reinstalled at the new location, complete with new isolation transformer, new lamps, new concrete bases and cans, new base plates, new cover plates, new gaskets, new frangible couplings, new bolts and washers, new connectors, new safety ground rods, and new appurtenances, as completed units in place, ready for operation, and accepted by the Engineer.

BASIS OF PAYMENT

301-5.1 Payment will be made at the contract unit price for each complete item, measured as provided above, and accepted by the Engineer. This price shall be full compensation for furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete this item to the satisfaction of the Engineer.

Payment will be made under:

Item SS-301-5.1	Existing Electrical Handhole, Relocated –per Each
Item SS-301-5.2	Existing Concrete Encased, Electrical Junction Structure, Removed –per Each
Item SS-301-5.3	Existing Base Mounted Guidance Sign, Removed -- per Each
Item SS-301-5.4	Existing Base Mounted Edge Light, Removed -- per Each
Item SS-301-5.5	Existing L-861T Base Mounted Taxiway Edge Light, Relocated -- per Each

END OF ITEM SS-301

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ITEM SS-310 AIRPORT LIGHTING SYSTEMS

DESCRIPTION

310-1.1 This item shall consist of furnishing and installing airport runway and taxiway edge lighting systems, retroreflective markers, guidance signs, runway centerline and touchdown zone lighting systems, other taxiway lighting systems, and other approach lighting aid systems, in accordance with this specification, the referenced specifications and drawings, and applicable advisory circulars. The system shall be installed at the locations and in accordance with the dimensions, design and details shown on the plans. This work shall include the furnishing of all equipment, materials, services and incidentals necessary to place it in operating condition as a completed unit to the satisfaction of the Engineer.

310-1.2 The Contractor shall maintain current copies of all referenced and applicable standards on the job site. The Contractor is responsible to make known to the Engineer any conflict between plans and specifications that he observes or of which he is made aware.

EQUIPMENT AND MATERIALS

310-2.1 GENERAL.

a. Airport lighting equipment and materials shall meet the requirements outlined in Item SS-300 and the applicable Item L Series Specifications.

b. For pre-cast or prefabricated concrete encased light base installations, the Contractor shall submit and coordinate the construction of the proposed pre-cast units with the Engineer onsite to review and approve the construction process. The Contractor shall submit his proposed installation process for review and approval by the Engineer. The Contractor shall provide additional items and work if required and requested by the Engineer for the construction and installation of the pre-cast units at no additional cost to the Owner.

Pre-cast or prefabricated concrete encased light bases may only be assembled at the Contactor's staging area at the airport to allow the Engineer to check and approve all such construction items. Pre-cast bases assembled offsite will not be allowed.

310-2.2 GUIDANCE SIGNS. Guidance signs shall be L-858(L), meeting the criteria set forth in AC 150/5345-44, Specification for Taxiway and Runway Signs, and suitable for base mounting. Each unit shall be furnished with the required panels, mounting assemblies, frangible couplings, transformer, intensity control, identification tag, metal tethers, fasteners and safety ground rods.

Style 2 and Style 3 signs shall meet the luminance requirements in AC 150/5345-44 throughout the current ranges of the associated series circuit.

Guidance signs shall have an integral on/off switch for airport maintenance use.

Signs shall be furnished with permanent type nameplates that are both weather and sunlight resistant. Nameplates which are completed with ink markers or similar methods will not be accepted.

Refer to the guidance sign index in the Plans for information on each sign's size, style, class and mode.

The complete sign installation shall be designed to withstand a 200-mph wind load.

310-2.3 ISOLATION TRANSFORMERS. New isolation transformers shall be Type L-830 and have a wattage rating suitable for the wattage of the fixture and sign lamps. The transformer shall be listed in FAA Circular AC 150/5345-47.

CONSTRUCTION METHODS

310-3.1 GENERAL. The installation and testing details for the lighting system shall be as specified in the applicable advisory circulars.

The Contractor is responsible for all surveying and measurement which is required to accurately position and aim airfield lighting systems and equipment.

Airfield lighting systems and equipment that are improperly installed shall be removed and re-installed correctly as directed by the Engineer. No payment will be made for the removal and reinstallation of airfield lighting systems and equipment improperly installed. All remedial work shall be to the satisfaction of the Engineer.

310-3.2 LIGHTING LAYOUT PLANS. The Contractor shall stake the airfield lighting systems, prior to installation of any trench, cable or lighting apparatus. The intent is to stake the installation at the locations indicated, noting any deviation from plan dimensions to the Engineer prior to installation. The Contractor shall obtain the services of an experienced and licensed surveyor to perform this work.

The Engineer shall provide electronic CADD files to the Contractor for this staking work. The Contractor shall stake the items and his surveyor shall provide a CADD file submittal back to the Engineer. Based upon this submittal, the Engineer shall coordinate and provide directions on any adjustments necessary to meet existing field condition requirements and comply with FAA Advisory Circular requirements on the layout and spacing of equipment.

The Contractor and his surveyor shall then make any electronic CADD file spacing adjustments and/or field staking adjustments prior to installation at no additional cost to the Owner.

Refer to General Provisions Section 50 Control of Work for additional construction layout and staking requirements.

310-3.3 PLACING THE EQUIPMENT. The equipment shall be mounted on concrete pads as shown in the plans. Secure the equipment and make all final connections.

310-3.4 MOUNTING, LEVELING, AND AIMING. The concrete support to which the equipment is fastened shall be accurately leveled before mounting the equipment. The units shall be properly aimed, as recommended by the manufacturer of the supplied equipment. This adjustment shall be accomplished using factory-approved aiming devices and techniques.

310-3.5 PLACING LIGHTS. All equipment shall be installed at locations indicated in the plans. Lights shall be laid out by locating the two control points by station as indicated on the plans and measuring the indicated individual separation distances. Light bases shall be located within 1 inch +/- longitudinally and 0.5 inches +/- transversely of the location indicated unless deviation is approved by the Engineer. Excavation for installation of light bases shall be backfilled with at least 4 inches of granular leveling course, as approved by the Engineer. Fixture height shall be as indicated on the Drawings.

For pre-cast or prefabricated concrete encased light base installations, a leveling course of sand shall be placed in the bottom of the excavated hole, sufficient for accurately installing, leveling and placing the lights in accordance with the requirements in this specification and AC 150/5340-30. Concrete encased light bases shall be allowed to cure a minimum of 7 days prior to installation.

Utilize a bubble level device to level all light fixtures in the horizontal light plane during the day, and then check at night to ensure uniformity in light output.

Provide factory-approved alignment tools and aiming devices to properly level and align fixtures as required

by the FAA Advisory Circulars and manufacturer's installation instructions. After all light fixture installations are completed and accepted by the Engineer, these alignment tools and aiming devices shall become property of the Owner and shall be delivered and stored as directed by the Owner.

310-3.6 PLACING SIGNS. All signs shall be installed at the approximate location indicated in the plans. The specific requirements for sign location are specified in AC 150/5340-18, Standards for Airport Sign Systems. Specific requirements of this AC are also shown on the Plans. Signs shall be located within 1 inch +/- longitudinally or 0.5 inches +/- transversely of the required location unless deviation is approved by the Engineer. The locations for the signs shall be staked by the Contractor and approved by the Engineer before installation begins.

Provide single module signs with one tether. Provide multiple module signs with a tether at both ends.

310-3.7 TRANSFORMER INSTALLATION. The transformer for base mounted fixtures shall be placed inside the base. The transformer for stake mounted fixtures shall be located uniformly as shown on the plans. The primary cable connections shall be made with L-823 connectors as described in Item L-108 and have 3 feet of slack cable. The secondary leads connected to the lamp leads by means of a disconnecting plug and receptacle provided with the unit, and this joint shall not be taped. The secondary joint shall be fastened with a holding ring provided for this purpose.

310-3.8 UNIT ASSEMBLY. All electrical equipment, including edge lights, guidance signs and other visual aid units shall be assembled in accordance with the manufacturer's installation procedures. Anti-seize compound shall be used on all screws, nuts, and threads, including frangible coupling threads. If coated bolts are used (ceramic metallic/fluoropolymer coating), then do not apply anti-seize compound.

Provide and install all spacers, shims, and gaskets as required, and verify they are in place before installing the light fixture on the base.

Bolts and washers for new and existing bases shall be new. Do not reuse existing hardware.

The minimum thread engagement into top flange of the base shall be 0.5 inches.

Coordinate recommended torque values with the light fixture manufacturer, light base can manufacturer, stainless steel bolts and hardware used, and exact anti-seize compound used, to prevent light base thread damage. Utilize a dial-type torque wrench for accuracy and to prevent over-tightening bolts. Never use impact wrenches/drills when removing or installing bolts.

310-3.9 IDENTIFICATION NUMBERS. An identifying number shall be assigned to each light and sign in accordance with the plans or as approved by the Engineer and Owner. This number shall be imprinted with reflective black with 1/2" letters on a non-corrosive metal disc 2" minimum diameter and attached to the pavement side of the fixture with a metal screw.

310-3.10 TEMPORARY AIRFIELD LIGHTING. Refer to the Airfield Lighting Phasing Plans and Details for additional requirements. Existing lighting circuits shall remain operational by use of temporary circuits. New lighting circuits shall also be connected and remain operational by use of temporary circuits. This item shall include all work to maintain the existing and new lighting circuits during construction and allow all taxiways and runways in operation to remain lighted, including that portion through the construction area, as indicated in the Phasing Plans and as directed by the Engineer.

The Contractor shall perform initial field work including location and verification of existing circuits and submit plans for the temporary airfield lighting required in each work phase, for review and approval by the Engineer and Owner, prior to starting work of that phase. This work shall include megger testing of circuits and circuit segments before and after installation and connection of jumpers.

The Contractor shall install couplings and other required fittings/appurtenances in conduit systems at last pavement joint within each phase for connecting to conduit systems in the next phase, or for connecting to existing conduit systems to remain.

310-3.11 TESTING. The installation shall be tested in operation as a completed unit prior to acceptance. Tests shall include taking megger and voltage readings as outlined in Item SS-300 and Item L-108. Testing equipment shall be furnished by the Contractor. Refer to Item L-108 for additional test requirements.

Tests shall be conducted in the presence of the Engineer and shall be to his/her satisfaction.

All installations shall be fully tested by continuous operation for not less than 24 hours as completed systems prior to acceptance. These tests shall include the functioning of each control not less than 10 times.

Equipment and materials covered by FAA Advisory Circulars are referred to by item numbers and approved equipment is listed within the AC 150/5345-53 Airport Lighting Equipment Certification Program's monthly Addendum, which contains a complete and updated listing of the certified equipment and manufacturers, and is listed in the FAA Buy American Preference equipment list, which is also updated monthly. The Contractor shall provide and install new certified equipment that works reliably and efficiently with the existing equipment to remain in service. The Contractor shall provide any additional accessories and/or appurtenances required to provide fully functional electrical systems to the satisfaction of the Owner and Engineer, at no additional cost to the Owner.

The Contractor shall ascertain that all lighting system components furnished (including FAA certified and approved equipment) are compatible in all respects with each other and the remainder of the new and existing systems. Any non-compatible components furnished by the Contractor shall be replaced at no additional cost to the Owner with a similar unit that is approved by the Engineer and compatible with the remainder of the airport lighting system.

METHOD OF MEASUREMENT

310-4.1 Temporary airfield lighting shall be measured as a lump sum complete item, including all work completed in place and ready for operation, and including the installation, protection, and removal of all temporary cables, conduits, lighting, grounding, marking, and associated items and appurtenances, as indicated in the Drawings and as directed by the Engineer.

BASIS OF PAYMENT

310-5.1 Payment will be made at the contract unit price for each complete item, measured as provided above, and accepted by the Engineer. This price shall be full compensation for furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete this item to the satisfaction of the Engineer.

310-5.2 Payment will be made at the contract lump sum price for each complete item, measured as provided above, and accepted by the Engineer. This price shall be full compensation for furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete this item to the satisfaction of the Engineer.

Payment will be made under:

Item SS-310-5.1 Temporary Airfield Lighting -- per Lump Sum

END OF ITEM SS-310

ITEM SS-350 AUTOMATIC GATE OPERATORS

DESCRIPTION

350-1.1 This item shall consist of furnishing and installing gate operator systems, in accordance with this specification, the referenced specifications and drawings, and applicable security regulations. The systems shall be installed at the locations and in accordance with the dimensions, design and details shown on the plans. This work shall include the furnishing of all equipment, materials, services, and incidentals necessary to place it in operating condition as a completed unit to the satisfaction of the Engineer.

350-1.2 The Contractor shall maintain current copies of all referenced and applicable standards on the job site. The Contractor is responsible to make known to the Engineer any conflict between plans and specifications that he observes or of which he is made aware.

EQUIPMENT AND MATERIALS

350-2.1 GENERAL.

a. All equipment and materials covered by the referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification as requested by the Engineer. All equipment and materials in this specification shall meet the requirements and be installed in accordance with the Plans and Specifications. All equipment and materials shall be new and meet applicable manufacturer's standards. All electrical components shall be UL listed products, including gate operator standards UL 325 and UL 991 (latest editions).

b. Automatic gate operator equipment shall be provided from one manufacturer for the gate operator system, infrared thru-beam detectors package, photodetectors and reflectors package, transmitter safety edge package, and loop detectors and loops. The intent of this requirement is to minimize maintenance and spare parts efforts by the Owner for the new equipment. Provide the services of a factory-authorized service representative to supervise the field assembly and connection of components and the pre-testing, testing, and adjustment of the system. The specific type of gate operator shall have been in production for a period of not less than three years. The existing gate operator equipment was manufactured by Hysecurity.

c. All materials for gate construction shall meet the requirements of Item F-162 Chain-Link Fences.

d. Airport lighting equipment and materials shall meet the requirements outlined in Item SS-300.

350-2.2 SLIDING GATE OPERATOR. The existing gate operator for the fuel farm exit gate is a Hysecurity gate operator that shall be relocated.

350-2.3 PRIMARY AND SECONDARY SAFETY PROTECTION PACKAGE. A complete primary and secondary entrapment protection package shall be installed on the gate to cause the gate to reverse if the gate strikes an object in its path. This package shall include infrared thru-beam detectors package, photodetectors and reflectors package, transmitter/receiver/edge contacts package, loop detectors package, and all required appurtenances for complete installation.

350-2.4 VEHICLE LOOP DETECTOR AND LOOP DETECTOR WIRE. The vehicle loop detector shall be an electronic device that will detect the presence and motion of vehicles that pass over a sensing loop embedded in the pavement. When a vehicle passes over the sensing loop, the detector produces a signal that activates the gate operator. The detector shall be an automatic tuning type with minimum 3 sensitivity levels plus sensitivity boost, minimum 3 frequency settings, and relay outputs as required. The detector

shall test for loop faults. Provide loop detector equipment with all required accessories for a complete installation. The loop detector wire shall be #18 AWG, stranded, copper wire, 600 Volt, Type XLPE insulated and UL listed. Provide matching asphalt or concrete sealant as required.

350-2.5 TIMERS. Timers shall include maximum run and auto close timers. The auto close timer shall be used to close the gate after a pre-set delay. The delay shall be adjustable and set as directed by the Owner and Engineer during installation and testing.

350-2.6 POWER, CONTROL, AND COMMUNICATION SURGE PROTECTION. Each gate operator shall be equipped with a surge protection module on the incoming AC power lines. The unit shall have LED indication on the integrity of the unit. Modules shall be rated 120/240-volt, 1 phase, 3 wire, and the surge suppression shall be UL 1449 Third Edition Listed. Furnish and install low voltage, surge suppression modules on all control and communication lines to protect all equipment at both ends.

350-2.7 WIRE. Wire shall be copper Type THHN/THWN-2 of the size indicated on the plans. Control wiring shall be minimum #18 AWG twisted shielded pair. Furnish and install all power, control and communication conductors and cables as required in accordance with the manufacturer's shop drawings and make all final connections.

CONSTRUCTION METHODS

350-3.1 GENERAL. The gate operating system shall be installed at the locations shown on the plans. The gate systems shall include all necessary items to provide a fully functional unit. The Contractor shall submit a dimensioned layout plan with conduit placements shown for all components to the Engineer for approval.

350-3.2 PRECONSTRUCTION MEETING. A preconstruction meeting will be held with the Owner, Engineer, Contractor, Electrical Subcontractor and an experienced field representative of the gate operator system equipment. This meeting shall be held before any rough-in work begins on site to review the plans, to explain details or precautions necessary to assure that all gate operator equipment, including general layout and loop layout requirements, will work properly, and to determine that all required conduits and wiring are properly laid out. Scaled plan layout drawings of all equipment shall be submitted for review and approval prior to any work.

350-3.3 COORDINATION. The Contractor shall examine all phases of the work as shown on the drawings and as specified herein. The Contractor shall coordinate between the various trades such that the work will be performed in an orderly and efficient manner.

350-3.4 SCHEDULE OF WORK. All work shall be accomplished during the working time specified. The Contractor shall accomplish his work in such a manner to meet scheduled completion dates and to avoid delaying other trades. Due to the nature of some work and the Owner's operating schedule, work may have to be performed on weekends or late night. No additional costs to the Owner for this work schedule will be considered.

Any work that requires an electrical outage or which might reasonably cause an unintentional electrical outage of the airport terminal shall be performed between midnight and 4:00 a.m. and full service restored by 4:00 a.m.

All electrical outages shall be scheduled and coordinated with the Airport Manager. Ten- (10) day written notice shall be required before initiating of an outage with twenty-four (24) hour verbal notice also required before initiating an outage. In the written Notice, the Contractor shall state the date of the proposed outage, time of start, approximate time of completion and purpose of the outage. The Airport Manager retains the right to cancel any outage and may order the Contractor to restore the system in case of an emergency.

350-3.5 PROTECTING OF MATERIALS. The Contractor shall provide proper storage as required to adequately protect all materials stored at the job site. Failure to comply with this requirement may be cause for the rejection or replacement of some or all the materials.

350-3.6 WORKMANSHIP. Work shall be performed neatly and carefully by craftsmen skilled in the trade involved. Faulty or careless work will not be accepted. Unacceptable work shall be corrected by the Contractor at no charge to the Owner.

350-3.7 SPLICING. Connections shall be made by experienced personnel. All splicing shall be done in splice boxes or junction boxes. No splices are allowed in conduit. Underground splices shall be waterproof poured resin type as manufactured by 3-M or approved equal.

350-3.8 INCIDENTALS. The Contractor shall provide all items incidental to the work as shown or required to complete the installation.

350-3.9 SAFETY. It is incumbent on the Contractor to maintain the integrity of the airport electrical system for safe and reliable operation. The Contractor shall take necessary precautions to avoid damage to electric utilities, telephone circuits, and other cables. Any utility damage done by the Contractor shall be repaired as directed by the Utility's Owner or Engineer at no cost to the Owner.

350-3.10 SURGE PROTECTION. Provide surge suppression devices to protect all power, control and signal lines on all equipment.

350-3.11 GATE OPERATOR INSTALLATION. The Contractor shall install each gate operator as shown on the plans and in accordance with the manufacturer's requirements. Any installation method differing from those shown on the plans shall be approved by the Engineer in writing prior to construction. Concrete pads shall be 24" in depth with steel reinforcing bars. Each pad shall have ½" x 6" L bolts embedded in the concrete with a minimum of 1" of bolt protruding above the concrete surface or by means of ½ inch wedge anchors with 4 to 6 inch penetration. Each pad shall be finished smooth and level. Each gate operator shall be secured to the pad. All conduits entering each gate operator shall be attached to the gate operator using double lock nuts and grounding bushings. Each gate operator shall be effectively grounded to a dedicated 3/4" x 10' copper clad steel ground rod with exothermic weld connection below grade.

350-3.12 VEHICLE DETECTOR INSTALLATION. The Contractor shall construct saw-cut loops for existing pavement installation. The installation work shall include cutting the loop shape in the pavement, laying the loop wire in the slot, pressing in a backer rod to keep the wire compacted and in place, and finishing with an approved saw-cut loop sealant to fill the slot and protect the wire. The Contractor shall cut the pavement grooves for the detector loop installation to match dimensions shown on the plans.

Loop wire shall be free of any cuts or nicks. Replace any damaged wire.

The lead wires to the detector at the gate operator shall be twisted together in accordance with the manufacturer's installation instructions. The complete vehicle detector shall be checked for proper operation before sealing pavement cuts. The loop detectors at the gate operator shall be adjusted per manufacturer's instructions.

350-3.13 GATE OPERATOR MISCELLANEOUS.

a. Wiring. All power wiring shall be copper conductor with 600V, Type THHN/THWN-2 insulation and shall be of the sizes indicated on the plans. All control wiring shall be copper. Before installation of wiring, conduits shall be mandreled to remove all debris from conduits. No splices or connections shall be allowed inside conduit. The Contractor shall furnish all necessary labor and materials and shall make complete aboveground electrical connections.

b. Underground Conduit Installation. Underground conduit shall be installed at the locations

shown on the plans and as detailed on the plans. Where conduit is installed under existing pavement, pavement shall be restored to original conditions as detailed on the plans.

c. Exposed Conduit Installation. Exposed conduit of the sizes shown shall be installed at the locations indicated on the plans. All exposed conduit shall be galvanized rigid steel (GRS) unless otherwise noted. All conduits shall be installed to provide for drainage. Bends shall be either factory made or field bent with bending machine intended for that use. Conduit shall be supported at a minimum of 10-foot intervals with malleable iron conduit straps. Perforated iron strap or tie-wire will not be allowed for conduit support. Transition from exposed to underground conduit shall be made using long sweep 90-degree bends. Where conduit changes from rigid steel to PVC conduit, suitable PVC-to-steel adapters shall be used. Crushed or deformed conduit shall not be used. Grounding bushings shall be installed on all GRS conduits and connected to the grounding system.

d. Switches. Switches shall be heavy-duty enclosed safety switches (when available in manufacturers catalog) of the sizes indicated on the plans. Switches shall be non-fusible sized as indicated on the plans. Switches shall have a neutral bus. Switches shall be installed at the locations shown on the plans and as required for disconnecting means on the gate operator.

e. Power Service. The Contractor shall furnish and install the necessary labor, materials, methods and excavation if required to allow installation of the electrical power supply to the gate systems shown. This shall include circuit breakers in existing panels, panels, boxes, conduit adapters, finishing new wires in new and existing conduits, and re-sealing waterproof entries as required. The Contractor shall determine the location and type of power available and shall reflect all equipment, installation and labor to utilize the existing power source in his bid price.

f. Connections. The Contractor shall install the equipment and make all connections in accordance with these Plans and Specifications. Electrical power and materials as called for in the plans shall be brought to and connected with the parking gates and traffic control units in accordance with the manufacturer's requirements. Provide and install control and signal wiring and make final connections to all equipment.

g. Materials. All equipment and materials shall be installed in accordance with the plans and the manufacturer's recommended instructions and specifications.

h. Adjustments. Adjust and tune system and test components, wiring, and functions to verify that system is fully operational. Replace malfunctioning or damaged items. Retest until satisfactory performance and conditions required are achieved, including but not limited to, proper operation of equipment and controls.

350-3.14 REMOVAL OF EXISTING EQUIPMENT. The Contractor shall carefully remove all salvageable equipment as indicated in the plans. Any equipment that is damaged during the removal and/or relocation operation shall be subject to a reduction in payment for removal and/or relocation of the equipment. All equipment that is removed during this project shall be transported to a location on site or removed from the site and properly disposed of as directed by the Owner and the Engineer.

350-3.15 TRAINING. Provide the services of a factory-authorized service representative to demonstrate the system and train Owner's maintenance personnel in the procedures and schedules involved in operating, troubleshooting, servicing, and preventive maintenance of the system. Provide a minimum of one day (8 hours) of technician training at a time coordinated with the Owner. Schedule the training with the Owner at least 10 days in advance and notify the Engineer.

350-3.16 GATE OPERATOR TESTING. The Contractor shall furnish all the necessary labor and equipment for testing the following work:

a. Power wiring 600 volts and less. Make insulation tests with a "Megger," demonstrate that neither short circuits nor ground faults exist, and that wiring complies with NEC. Megger testing shall be

performed in the presence of the Owner. Contractor shall document and submit megger test reports that include the equipment name, phase or wire number and all observed values for each wire. The Contractor shall perform additional megger tests if required and requested by the Engineer at no additional cost.

b. Detector loop resistant tests. Check that the resistance to ground is no less than 500 Megohms using a 500V megger. Utilize manufacturer's typical test forms to record this data for each loop, including the model and make of the megger. Forms shall be signed and dated by the contractor's representative. Make all loop tests before installation of the saw-cut sealant.

c. Put entire electrical system in operation, test all equipment, test all safety devices, remedy all defects, and make all necessary adjustments. Demonstrate that the entire system functions satisfactorily, as specified, as indicated, and as approved.

d. Schedule and perform an acceptance test of the system for proper operation with the Owner and Engineer. The system equipment shall be considered acceptable after being 100 percent operational and after having performed satisfactorily for fourteen (14) continuous business days with no down time.

e. The installation shall be tested in operation as a completed unit prior to acceptance. Tests shall include taking megger and voltage readings. Testing equipment shall be furnished by the Contractor. Tests shall be conducted in the presence of the Engineer and shall be to his/her satisfaction.

f. The Contractor shall conduct a final acceptance operating test for two weeks of continuous duty before acceptance. Failure to complete the tests will require restarting the test without use of any spare parts. Two failures will be reason to reject the entire gate operator and access control system at no cost to the Owner.

350-3.17 WARRANTY. The manufacturer shall furnish his recommended spare parts, installation manual, instruction manual, maintenance manuals, and input voltage surge protection. The system shall be warranted for one year from acceptance of the project. Any failure which occurs in the warranty period shall be replaced by new factory tested assemblies at no additional cost to the Owner.

METHOD OF MEASUREMENT

350-4.1 The quantity of electrically operated gates, to be measured under this item, shall be the number of each installed, as completed and accepted units in place, ready for operation, and accepted by the Engineer. The installation shall include gate, existing operator relocated and installed, vehicle loops and detectors, mounting posts, primary and secondary safety package equipment, surge suppression devices, lightning protection devices, panels, circuit breakers, boxes, enclosures, all required conduits and wiring, concrete pads, bollards, and all other required appurtenances. Cable, conduit and trenching required shall be considered subsidiary to the electrically operated gate installation and will not be measured for separate payment.

BASIS OF PAYMENT

350-5.1 Payment will be made at the contract unit price for each complete item, measured as provided above, and accepted by the Engineer. This price shall be full compensation for furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete this item to the satisfaction of the Engineer.

Payment includes installation of keypad system, installation of vehicle detectors and loops, installation of

safety edge equipment, concrete pads, bollards, asphalt and concrete removal/repair work, and all required electrical power equipment, conduit and wiring. This item shall also include all conduit, wire, and other infrastructure work outside and beyond the terminal building required for the establishment of electrical services to the gate operator.

Lump sum payments will be based on successful completion of three major portions of the work to the satisfaction of the Engineer.

- 50% Infrastructure in the ground is completed, including items such as concrete foundations, reinforcing, conduits, wiring, etc.

- 25% System equipment is installed, equipment is mounted and aimed, support structures installed, wires pulled/terminated between equipment items, system energized and tested, system is fully functional, ready for commissioning.

- 25% System is commissioned and determined to be fully functional to users as approved by The Town of Addison.

Payment will be made under:

Item SS-350-5.1 30’ Automatic Sliding Cantilever Gate and Operator System, Installed – per Each

MATERIAL REQUIREMENTS

UL 325	Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems
UL 991	Standard for Tests for Safety-Related Controls Employing Solid State Devices

END OF ITEM SS-350

ITEM F-162 CHAIN-LINK FENCE

DESCRIPTION

162-1.1 This item shall consist of furnishing and erecting a chain-link fence in accordance with these specifications, the details shown on the plans, and in conformity with the lines and grades shown on the plans or established by the RPR.

162-1.2 *This item shall consist of the removal of the existing fence, salvage and delivery of the above ground materials, and disposal of all concrete.*

162-1.3 *This item shall consist of the construction of a concrete erosion control strip along the fence, in accordance with these specifications and in conformity with the locations, lines and grades shown on the plans.*

MATERIALS

162-2.1 Fabric. The fabric shall be woven with a 9-gauge **black** polyvinyl chloride (PVC)-coated steel wire in a 2-inch (50 mm) mesh and shall meet the requirements of **ASTM F668, Class 2b**

~~**162-2.2 Barbed wire.** Barbed wire shall be 2-strand 12-1/2 gauge **[** zinc-coated **] [** aluminum-coated **]** wire with 4-point barbs and shall conform to the requirements of **[ ]**.~~

162-2.3 Posts, rails, and braces. Line posts, rails, and braces shall conform to the requirements of ASTM F1043 or ASTM F1083 as follows:

- Galvanized tubular steel pipe shall conform to the requirements of Group IA, (Schedule 40) coatings conforming to Type A, or Group IC (High Strength Pipe), External coating Type B, and internal coating Type B or D.
- Roll Formed Steel Shapes (C-Sections) shall conform to the requirements of Group IIA, and be galvanized in accordance with the requirements of ASTM F1043, Type A.
- Hot-Rolled Shapes (H Beams) shall meet the requirements of Group III, and be galvanized in accordance with the requirements of ASTM F1043, Type A.
- Aluminum Pipe shall conform to the requirements of Group IB.
- Aluminum Shapes shall conform to the requirements of Group IIB.
- Vinyl or polyester coated steel shall conform to the requirements of ASTM F1043, Paragraph 7.3, Optional Supplemental Color Coating.
- Composite posts shall conform to the strength requirements of ASTM F1043 or ASTM F1083. The strength loss of composite posts shall not exceed 10% when subjected to 3,600 hours of exposure to light and water in accordance with ASTM G152, ASTM G153, ASTM G154, and ASTM G155.
- Posts, rails, and braces furnished for use in conjunction with aluminum alloy fabric shall be aluminum alloy or composite.

Posts, rails, and braces, with the exception of galvanized steel conforming to ASTM F1043 or ASTM F1083, Group 1A, Type A, or aluminum alloy, shall demonstrate the ability to withstand testing in salt spray in accordance with ASTM B117 as follows:

- External: 1,000 hours with a maximum of 5% red rust.
- Internal: 650 hours with a maximum of 5% red rust.

The dimensions of the posts, rails, and braces shall be in accordance with Tables I through VI of Federal Specification RR-F-191/3.

162-2.4 Gates. Gate frames shall consist of **black** polyvinyl chloride (PVC)-coated steel wire and shall conform to the specifications for the same material under paragraph 162-2.3. The fabric shall be of the same type material as used in the fence.

162-2.5 Wire ties and tension wires. Wire ties for use in conjunction with a given type of fabric shall be of the same material and coating weight identified with the fabric type. Tension wire shall be 7-gauge marcelled steel wire with the same coating as the fabric type and shall conform to ASTM A824.

All material shall conform to Federal Specification RR-F-191/4.

162-2.6 Miscellaneous fittings and hardware. Miscellaneous steel fittings and hardware for use with zinc-coated steel fabric shall be of commercial grade steel or better quality, wrought or cast as appropriate to the article, and sufficient in strength to provide a balanced design when used in conjunction with fabric posts, and wires of the quality specified herein. All steel fittings and hardware shall be protected with a zinc coating applied in conformance with ASTM A153. Barbed wire support arms shall withstand a load of 250 pounds applied vertically to the outermost end of the arm.

Miscellaneous steel fittings and hardware for use with PVC-coated fabric shall be coated to match the fence fabric in conformance with ASTM F 626.

162-2.7 Concrete. Concrete shall have a minimum 28-day compressive strength of 3000 psi. *Any concrete placed at or above the ground surface shall contain 3-7 percent air content.*

162-2.8 Marking. Each roll of fabric shall carry a tag showing the kind of base metal (steel, aluminum, or aluminum alloy number), kind of coating, the gauge of the wire, the length of fencing in the roll, and the name of the manufacturer. Posts, wire, and other fittings shall be identified as to manufacturer, kind of base metal (steel, aluminum, or aluminum alloy number), and kind of coating.

162-2.9 TEMPORARY CHAIN-LINK FENCING. Temporary chain-link fencing, as commonly used across the industry, shall be erected as existing fence is removed to maintain airport security. The contractor is permitted to re-use undamaged material from fence removed on site in order to construct the temporary fencing.

162-2.9 Submittals.

a. Submission. *Submittals shall clearly indicate the name, address and location of the authorized manufacturer's representative supplying the equipment, including written certification of the representative's authorization by the manufacturer and responsible territory. Submittals shall be clearly marked to indicate the Specification Number for which the item is being submitted and the complete model number of each type of equipment to be furnished. Materials submittals shall be grouped by Specification Number.*

b. Warranty. *Warranty and service policy for each type of equipment submitted shall be furnished with the submittals. This shall include written certification guaranteeing materials to be free of defects for one (1) year from date of final acceptance, and shall further guarantee that should any defects appear within this period, the equipment will be replaced or repaired to the satisfaction of the Owner and the RPR without charge.*

c. Final Documentation. *After approval of submitted equipment, the contractor shall supply the following documentation to the Owner. Six (6) complete sets of documentation shall be supplied for each model of equipment. The documentation shall be securely bound in heavy-duty 3-ring binders. The information for each piece of equipment shall be indexed using typewritten label tabs. The spine of each binder shall have a typewritten label that indicates the included equipment types. The documentation shall include:*

(1) Installation manual
(2) Operation manual
(3) Maintenance manual
(4) Parts list including recommended spare parts

CONSTRUCTION METHODS

162-3.1 General. The fence shall be constructed in accordance with the details on the plans and as specified here using new materials. All work shall be performed in a workmanlike manner satisfactory to the RPR. The Contractor shall layout the fence line based on the plans. The Contractor shall span the opening below the fence with barbed wire at all locations where it is not practical to conform the fence to the general contour of the ground surface because of natural or manmade features such as drainage ditches. The new fence shall be permanently tied to the terminals of existing fences as shown on the plans. The Contractor shall stake down the woven wire fence at several points between posts as shown on the plans.

The Contractor shall arrange the work so that construction of the new fence will immediately follow the removal of existing fences. The length of unfenced section at any time shall not exceed 300 feet (90 m). The work shall progress in this manner and at the close of the working day the newly constructed fence shall be tied to the existing fence.

162-3.2 Clearing fence line. Clearing shall consist of the removal of all stumps, brush, rocks, trees, or other obstructions that will interfere with proper construction of the fence. Stumps within the cleared area of the fence shall be grubbed or excavated. The bottom of the fence shall be placed a uniform distance above ground, as specified in the plans. When shown on the plans or as directed by the RPR, the existing fences which interfere with the new fence location shall be removed by the Contractor as a part of the construction work unless such removal is listed as a separate item in the bid schedule. All holes remaining after post and stump removal shall be refilled with suitable soil, gravel, or other suitable material and compacted with tampers.

The cost of removing and disposing of the material shall not constitute a pay item and shall be considered incidental to fence construction.

162-3.3 Installing posts. All posts shall be set in concrete at the required dimension and depth and at the spacing shown on the plans.

The concrete shall be thoroughly compacted around the posts by tamping or vibrating and shall have a smooth finish slightly higher than the ground and sloped to drain away from the posts. All posts shall be set plumb and to the required grade and alignment. No materials shall be installed on the posts, nor shall the posts be disturbed in any manner within seven (7) days after the individual post footing is completed.

Should rock be encountered at a depth less than the planned footing depth, a hole 2 inches larger than the greatest dimension of the posts shall be drilled to a depth of 12 inches. After the posts are set, the remainder of the drilled hole shall be filled with grout, composed of one part Portland cement and two parts mortar sand. Any remaining space above the rock shall be filled with concrete in the manner described above.

In lieu of drilling, the rock may be excavated to the required footing depth. No extra compensation shall be made for rock excavation.

162-3.4 Installing top rails. The top rail shall be continuous and shall pass through the post tops. The coupling used to join the top rail lengths shall allow for expansion.

162-3.5 Installing braces. Horizontal brace rails, with diagonal truss rods and turnbuckles, shall be installed at all terminal posts.

162-3.6 Installing fabric. The wire fabric shall be firmly attached to the posts and braced as shown on the plans. All wire shall be stretched taut and shall be installed to the required elevations. The fence shall generally follow the contour of the ground, with the bottom of the fence fabric no less than one inch or more than 4 inches from the ground surface. Grading shall be performed where necessary to provide a neat appearance.

At locations of small natural swales or drainage ditches and where it is not practical to have the fence conform to the general contour of the ground surface, longer posts may be used and multiple strands of barbed wire stretched to span the opening below the fence. The vertical clearance between strands of barbed wire shall be 6 inches or less.

162-3.7 Electrical grounds. Electrical grounds shall be constructed where a power line passes over the fence*, at 500-foot intervals, and within 50 feet of every end post.* The ground shall be accomplished with a copper clad rod *10* ~~8~~ feet long and a minimum of ¾ ~~5/8~~ inches in diameter driven vertically until the top is 6 inches below the ground surface. A No. 6 solid copper conductor shall be clamped to the rod and to the fence in such a manner that each element of the fence is grounded. Installation of ground rods shall not constitute a pay item and shall be considered incidental to fence construction. The Contractor shall comply with FAA-STD-019, Lightning and Surge Protection, Grounding, Bonding and Shielding Requirements for Facilities and Electronic Equipment, paragraph 4.2.3.8, Lightning Protection for Fences and Gates, when fencing is adjacent to FAA facilities.

162-3.8 Cleaning up. The Contractor shall remove from the vicinity of the completed work all tools, buildings, equipment, etc., used during construction. All disturbed areas shall be seeded per TX-164. ***Disturbed areas to be seeded outside specified seeding limits shall not be paid for separately but considered subsidiary to SS-120.***

162-3.9 TEMPORARY CHAIN-LINK FENCING. Temporary chain link-fence shall be installed according to the details in the plans. The removal of existing fence shall be considered subsidiary to Temporary chain link-fence.

Post holes within natural ground and all disturbed areas shall be filled with material to match the surrounding conditions and tamped flush with the surface.

Bolt holes within existing pavement shall be filled with an epoxy that adheres to ASTM C881 Type IV, Grade 1.

162-3.9 Fence and Gate Removal. *The existing fence* ***and/or gate*** *material shall not be destroyed during removal without prior approval of the Engineer. Existing fence* ***and gates****, including fabric, top rails, fasteners, posts, and other miscellaneous above ground hardware to be removed will not be reused but will delivered to the Owner to a location as directed by the RPR after removal* ***(except for temporary fence construction or otherwise specified)****. Construction requirements shall be as shown on the Plans and/or as approved by the RPR.*

Posts shall not be cut off and abandoned in place. Post holes and all disturbed areas shall be filled with material to match the surrounding conditions and tamped flush with the surface. The concrete erosion control strip shall be removed and disposed of off-site.

Any concrete erosion control strip, concrete structure, poles or other items within 5 feet on each site of exiting fence specified to be removed shall be removed and disposed of off-site. The RPR and/or engineer shall approve of the removal of any structure before the work takes place. This work shall be considered subsidiary to fence removal.

At the point where fence removal stops and existing fence is to remain, the remaining (existing) fence end section shall be reconstructed/repaired to provide adequate support and security. At these locations, the Contractor shall determine how the fence is to be reconstructed and submit his determination to the RPR for approval. End panels will be required at horizontal and vertical deflections in accordance with the requirements for the new fence.

162-3.10 Erosion Control Strip.

a. Subgrade. *The subgrade shall be excavated or filled to the required grade. Soft and yielding material shall be removed and replaced with suitable material and the entire subgrade shall be thoroughly compacted with approved mechanical equipment.*

b. Forms. *Forms shall be constructed of metal or wood, free from warp, and of sufficient strength to resist springing during the process of depositing concrete. They shall be securely staked, braced, set and held firmly to the required line and grade. Forms shall be cleaned and oiled before concrete is placed against them.*

c. Placing and Finishing. *The concrete shall be deposited in the forms upon the wetted subgrade to such depth that when it is compacted and finished, the top shall be at the required elevation. It shall be*

thoroughly consolidated and the edges along the form spaded to prevent honeycomb. The top shall then be struck off with a straightedge and tamped or vibrated sufficiently to flush mortar to the surface, after which it shall be finished with a wood float to a smooth and even surface.

Transverse joints shall be cut with a ½" jointer at each fence post, or as directed by the RPR.

Plastering will not be permitted but minor defects shall be filled with a cement mortar (1 part Portland cement to 2 parts concrete sand) applied with a wood float.

When completed, the concrete shall be properly cured by covering with polyethylene sheets conforming to ASTM C171 or a liquid membrane forming compound conforming to ASTM C309, Type 2, or other methods approved by the Engineer.

***d. Backfilling.** After the forms have been removed, the spaces on each side shall be backfilled with suitable material, which shall be firmly compacted by means of approved mechanical equipment and neatly graded.*

***e. Expansion Joints.** A space not less than ½" wide shall be left between the sides of the skirt and adjacent pavement or other structure and at 100 foot intervals, as directed. This space shall be filled with approved premolded joint filler meeting the requirements of ASTM D1752.*

METHOD OF MEASUREMENT

162-4.1 Chain-link fence will be measured for payment by the linear foot. Measurement will be along the top of the fence from center to center of end posts, excluding the length occupied by gate openings.

~~**162-4.2** Gates will be measured as complete units.~~

162-4.2 Temporary Chain-link fence will be measured for payment by the linear foot regardless of the source of material. Additional temporary chain-link fence needed or otherwise used during construction that is not shown in the plan, shall not be measured for separate payment. Only the plan quantity shall be paid for.

Costs associated with the erection, repair and removal of temporary fencing shall be measured and paid by the bid item "Temporary Fence."

***162-4.3** Fence removal will be measured for payment by the linear foot. Measurement will be along the bottom of the fence from center to center of end posts, excluding the length occupied by gate openings.*

***162-4.4** The concrete erosion control strip will be measured by the linear foot measured in the direction of the constructed perimeter fence, complete and accepted.*

BASIS OF PAYMENT

162-5.1 Payment for chain-link fence will be made at the contract unit price per linear foot.

~~**162-5.2** Payment for vehicle or pedestrian gates will be made at the contract unit price for each gate.~~

162-5.2 Payment for temporary chain-link fence shall be full compensation for furnishing all materials, and for all preparation, erection, installation of these materials, removal of temporary fence, repair of post holes, repair of bolt holes and for all labor equipment, tools, and incidentals necessary to complete the item.

***162-5.3** Payment for fence removal will be made at the contract unit price per linear foot. Payment shall include removal, salvage, and delivery of all above ground materials; for removal and disposal of the posts and concrete footings; for removal and disposal of concrete erosion control strip; for the backfill of post holes and all disturbed areas; and for all labor, equipment, tools, excavation, and incidentals necessary to complete the work.*

***162-5.4** Payment for concrete erosion control strip will be paid for at the contract unit price bid per linear foot. Payment shall include furnishing materials, including premolded joint filler; constructing the concrete*

skirt; excavating and backfilling; and furnishing all equipment, labor, and incidentals necessary to complete the work.

The price shall be full compensation for furnishing all materials, and for all preparation, erection, and installation of these materials, and for all labor equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item F-162-5.1	8-Foot Black PVC Coated Chain-Link Fence — per Linear Foot
Item F-162-5.2	Temporary Chain-Link Fence — per Linear Foot
Item F-162-5.3	Fence Removal – per Linear Foot
Item F-162-5.4	Concrete Erosion Control Strip – per Linear Foot

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM A121	Standard Specification for Metallic-Coated Carbon Steel Barbed Wire
ASTM A153	Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A392	Standard Specification for Zinc-Coated Steel Chain-Link Fence Fabric
ASTM A491	Standard Specification for Aluminum-Coated Steel Chain-Link Fence Fabric
ASTM A824	Standard Specification for Metallic-Coated Steel Marcelled Tension Wire for Use with Chain Link Fence
ASTM B117	Standard Practice for Operating Salt Spray (Fog) Apparatus
ASTM F668	Standard Specification for Polyvinyl Chloride (PVC), Polyolefin and other Organic Polymer Coated Steel Chain-Link Fence Fabric
ASTM F1043	Standard Specification for Strength and Protective Coatings on Steel Industrial Fence Framework
ASTM F1083	Standard Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures
ASTM F1183	Standard Specification for Aluminum Alloy Chain Link Fence Fabric
ASTM F1345	Standard Specification for Zinc 5% Aluminum-Mischmetal Alloy Coated Steel Chain-Link Fence Fabric
ASTM G152	Standard Practice for Operating Open Flame Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials
ASTM G153	Standard Practice for Operating Enclosed Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials
ASTM G154	Standard Practice for Operating Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of Nonmetallic Materials

ASTM G155 Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Nonmetallic Materials

Federal Specifications (FED SPEC)

FED SPEC RR-F-191/3 Fencing, Wire and Post, Metal (Chain-Link Fence Posts, Top Rails and Braces)

FED SPEC RR-F-191/4 Fencing, Wire and Post, Metal (Chain-Link Fence Accessories)

FAA Standard

FAA-STD-019 Lightning and Surge Protection, Grounding, Bonding and Shielding Requirements for Facilities and Electronic Equipment

FAA Orders

5300.38 AIP Handbook

END OF ITEM F-162

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ITEM M-170 CRACK AND JOINT REPAIR

DESCRIPTION

170-5.1 This item includes the crack sealing and the repair and replacement of existing joint sealants in rigid (PCC) pavements using a self-leveling silicone sealant, respectively. The items include the removal of existing joint materials, preparation of cracks and joints, and the installation of sealant in the cracks and joints. Silicone should not be used to seal flexible pavement to flexible pavement joints.

MATERIALS

170-2.1 **Silicone Sealant**. The sealant for PCC crack repair and joint replacement will be a one-part silicone material formulation capable of being applied with a pressure applicator. The sealant will be a self-leveling, nonacid producing and cure on exposure to air. The sealant will be a low modulus type, as stated by the manufacturer, and meet the following requirements of ASTM D 5893:

Table 1: Silicone Sealant Material Requirements

Physical Requirements	ASTM D 5893 Requirements
Cure Evaluation	Pass at 21 days
Extrusion Rate (ASTM C 1183)	Type S, 50 ml/min. minimum
Tack Free Time (ASTM C 679)	5 hr. maximum
Hardness (ASTM C 661)	
-29°C (-20°F), Type A2	25 max.
23°C (73°F), Type 00	30 min.
Rubber Properties in Tension	
Ultimate Elongation	600% minimum
Stress at 150% Elongation	310 K pa (45 psi) max..
Resilience	75% minimum

170-2.2 **Basker Rod Material**. The backer rod will be compatible with the sealant. The backer rod will be non-reactive and non-adhesive with the pavement or the sealant. The backer rod will conform to the requirements of ASTM D 5249. The use of a backer rod material or bond breaker in the bottom of the joint/crack to be filled is recommended to control the depth of the sealant, to achieve the desired shape factor, reservoir width to depth ration, and to support the sealant against indentation and sag. Backer rod materials and bond breakers should be compatible with the sealant, should not adhere to the sealant, should be compressible without extruding the sealant, and should recover to maintain contact with the joint/crack faces when the joint/crack is open. The backer rod will be 25 percent larger in diameter than the width of the reservoir.

CONSTRUCTION METHODS

170-3.1 **Time of Application – Silicone Sealant.** Joints/Cracks will be sealed as soon after completion of the pavement preparation as feasible and preferably before the pavement is opened to traffic. The pavement temperature must be above 40°F (4°C) at the time of installation of the coldapplied joint/crack sealing material. For new rigid pavement, manufacturers may recommend waiting a period of 3 weeks for curing prior to sealant application.

170-3.2 **Preparation of Joints in Rigid (PCC) Pavements**

a. Removal of Existing Sealant. All existing joint sealants will be removed by plowing or use of hand tools. Any remaining sealant / debris will be removed by use of wire brushes or other tools as necessary. In some instances, re-sawing the joints may be required. This is only recommended in areas where the existing joint faces cannot be thoroughly cleaned to satisfactorily promote the effectiveness and adherence of the new sealant. If re-sawing the joints is required, immediately after sawing, the resulting slurry will be completely removed from the joint and adjacent area by flushing with a jet of water, and by use of other tools as necessary. The joints will be allowed sufficient time to dry prior to re-sealing. The joint reservoir width to depth ratio should be as close to 2:1 as practical, with a minimum width of 3/8 inches preferred, when re-sawing is required. The use of backer material is recommended to obtain the desired ratio at the reservoir or as recommended by the sealant manufacturer.

b. Prior to Sealing. Immediately before sealing, the joints will be thoroughly cleaned of all remaining laitance and other foreign material. Cleaning will be accomplished by sandblasting. Sandblasting will be accomplished in a minimum of two passes. One pass per joint face with the nozzle held at an angle directly toward the joint face and not more that 3 inches from it. Upon completion of cleaning, the joints will be blown out with compressed air free of oil and water. Only air compressors with operable oil and water traps will be used to prepare the joints for sealing. The joint faces will be surface dry when the seal is applied. The surface of the installed sealant material will be 1/4-inch to 3/8-inch below the existing pavement surface.

170-3.3 **Preparation of Cracks in Rigid (PCC) Pavements**

a. Removal of Existing Sealant. All cracks will be cleaned of any debris or laitance by use of wire brushes or other tools as necessary. In some instances, sawing the cracks may be required. If sawing the cracks is required, immediately after sawing, the resulting slurry will be completely removed from the crack and 56 September 28, 2007 AC 150/5380-6B Appendix B adjacent area by flushing with a jet of water, and by use of other tools as necessary. The crack will be allowed sufficient time to dry prior to sealing. When sawing cracks, the reservoir ratio should be 2:1 with a 3/8-inch minimum width recommended.

b. Prior to Sealing. Immediately before sealing, the cracks will be thoroughly cleaned of all remaining laitance and other foreign material. Cleaning will be accomplished by sandblasting. Sandblasting will be accomplished in a minimum of two passes. One pass per crack face with the nozzle held at an angle directly toward the crack face and not more that 3 inches from it. Upon completion of cleaning, the cracks will be blown out with compressed air free of oil and water. Only air compressors with operable oil and water traps will be used to prepare the cracks for sealing. The crack faces will be surface dry when the seal is applied. The surface of the installed sealant material will be 1/4-inch to 3/8-inch below the existing pavement surface.

170-3.4 **Installation of Sealants in Rigid (PCC) Pavements.** The joint/crack sealant will be applied uniformly solid from bottom to top and will be filled without formation of entrapped air or voids. Backing rod material will be placed as per sealant manufacturer's requirements and will be both non-reactive and non-adhesive to the pavement and the sealant material. A direct connecting pressure type extruding device with nozzles shaped for insertion into the joint will be provided. Any sealant spilled on the surface of the pavement, structures and/or lighting fixtures will be removed immediately.

METHOD OF MEASUREMENT

170-4.1 The ~~crack and~~ joint repair will not be measured separately but be subsidiary in the item in which it is containted, completed, and accepted.

BASIS OF PAYMENT

170-5.1 Payment for sealing material will not be measured separately but be subsidiary in the item in which it is containted. The price shall consider the full compensation for furnishing all materials, for all

preparation, delivering, and placing of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

TESTING REQUIREMENTS

ASTM C 661 Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer

ASTM C 679 Standard Test Method for Tack-Free Time of Elastomeric Sealants

ASTM C 1183 Standard Test Method for Extrusion Rate of Elastomeric Sealants

MATERIAL REQUIREMENTS

ASTM D 5249 Standard Specification for Backer Material for Use with Cold- and Hot-Applied Joint Sealants in Portland Cement Concrete and Asphalt Joints

ASTM D 5893 Standard Specification for Cold Applied, Single Component, Chemically Curing Silicone Joint Sealant for Portland Cement Concrete Pavements

END OF ITEM M-170

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ITEM M-174 REPAIR OF PAVEMENT DISTRESSES IN RIGID (PORTLAND CEMENT CONCRETE) PAVEMENTS

DESCRIPTION

174-2.1 This item consists of repairing pavement distresses in rigid (Portland Cement Concrete) pavements. This work consists of: saw cutting, chipping, and removing the existing unsound PCC pavement; cleaning and preparing the area for the repair materials. This work also includes placing, vibrating, and finishing the repair material to reconstruct the PCC pavements, in accordance with this specification.

MATERIALS

174-2.1 **Concrete Material for Full Slab Repairs.** The mix designs shall be in accordance with Item 421 Hydraulic Cement Concrete of the Texas Department of Transportation Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges, except as modified herein. The mix shall be developed using the procedures contained in the Portland Cement Association's (PCA) publication, "Design and Control of Concrete Mixtures".

a. **Type 1 – Conventional Concrete Mixture, Class P.** The conventional concrete mixture will conform to TxDOT Item 421, Class P. The Class P concrete shall be designed to meet a minimum average compressive strength of 5,000 psi at 28 days. This repair method is considered a permanent, long term repair as it is typically used for large repair areas requiring 3 cubic yards or more of mix supplied by a local concrete mixing plant.

174-2.2 **Nonabsorbent Board.** The nonabsorbent board will be used as a joint form for the joint reservoir to be protected. The nonabsorbent board will be a standard 1/2-inch asphalt impregnated fiberboard. For joint widths greater than 1/2-inch, the width of the nonabsorbent board will be adjusted to fit the larger joint width.

174-2.3 **Curing Compound.** The curing compound will be a white pigmented impervious membrane conforming to the requirements of ASTM C 309. The curing compound will be of such character that the film will harden within 30 minutes after application.

174-2.4 **Joint Seal**. The joint seal for the joints in the concrete pavement shall meet the requirements of ASTM D 5893, Type SL.

174-2.5 **Isolation Joint Filler.** Non-extruded premolded compressible material for isolation joints shall conform to the requirements of ASTM D1751 and shall be where shown on the plans. The filler for each joint shall be furnished in a single piece for the full depth and width required for the joint, unless otherwise specified by the Engineer. When the use of more than one piece is required for a joint, the abutting ends shall be fastened securely and held accurately to shape by stapling or other positive fastening means satisfactory to the Engineer.

174-2.6 **Backer Rod.** The Backer Rod shall be a non-moisture absorbing, closed-cell, expanded polyethylene foam rod. The rod shall be compatible with the sealant and no bond or reaction shall occur between the rod and the sealant.

174-2.7 **Steel Reinforcement.** Reinforcing shall consist of **deformed carbon steel bars** conforming to the requirements of ASTM A615**.**

174-2.8 **Dowel and Tie Bars.** Dowel bars shall be plain steel bars conforming to ASTM A615 and shall be free from burring or other deformation restricting slippage in the concrete. Before delivery to the construction site each dowel bar shall be epoxy coated per ASTM A1078. The dowels shall be coated with a bond-breaker recommended by the manufacturer. Dowel sleeves or inserts are not permitted.

Grout retention rings shall be fully circular metal or plastic devices capable of supporting the dowel until the grout hardens.

Tie bars shall be deformed steel bars and conform to the requirements of ASTM A615. Tie bars designated as Grade 60 in ASTM A615 or ASTM A706 shall be used for construction requiring bent bars.

CONSTRUCTION METHODS

174-3.1 **Removal of Existing Pavement.** The existing concrete pavement to be removed shall be freed from the pavement to remain by sawing through the complete depth of the slab 1 foot inside the perimeter of the final removal limits or outside the dowels, whichever is greater when the limits of removal are located on the joints. The pavement between the perimeter of the pavement removal and the saw cut shall be carefully broken up and removed using hand-held jackhammers, weighing 30 pounds or less, or other light-duty equipment which will not cause distress in the pavement which is to remain in place. The Contractor shall have the option of sawing through the dowels at the joint, removing the pavement and installing new dowels. Where the perimeter of the removal limits is not located on the joint and there are no dowels present, then the perimeter shall be sawcut the full depth of the pavement. The pavement inside the sawcut shall be removed by methods suitable to the Engineer which will not cause distress in the pavement which is to remain in place. If the material is to be wasted on the airport site, it shall be reduced to a maximum size designated by the Engineer. The Contractor's removal operation shall not cause damage to cables, utility ducts, pipelines, or drainage structures under the pavement. Concrete slabs that are damaged by under breaking shall be removed. Any damage shall be repaired at the Contractor's expense.

All existing pavement removed shall be disposed of off-site. All hauling will be considered a necessary and incidental part of the work. Its costs shall be considered by the Contractor and included in the contract unit price for the pay items of work involved. No payment will be made separately or directly for hauling on any part of the work.

174-3.2 **Limitations on Mixing and Placing.**

a. **Full Slab Repairs.** No concrete shall be mixed, placed, or finished when the natural light is insufficient, unless an adequate and approved artificial lighting system is operated.

    1. **Cold Weather**. Unless authorized in writing by the Engineer, mixing and concreting operations shall be discontinued when a descending air temperature in the shade and away from artificial heat reaches 40°F and shall not be resumed until an ascending air temperature in the shade and away from artificial heat reaches 35°F.

       The aggregate shall be free of ice, snow, and frozen lumps before entering the mixer. The temperature of the mixed concrete shall not be less than 50°F at the time of placement. Concrete shall not be placed on frozen material nor shall frozen aggregates be used in the concrete.

       When concreting is authorized during cold weather, water and/or the aggregates may be heated to not more than 150°F. The apparatus used shall heat the mass uniformly and shall be arranged to preclude the possible occurrence of overheated areas which might be detrimental to the materials.

       Upon completion of placement operations, the concrete shall be maintained at an ambient temperature of at least 50°F for a period of 72 hours after placing and at a temperature above freezing for the remainder of the curing time. The Contractor shall be responsible for the

quality and strength of the concrete placed during cold weather; and any concrete damaged shall be removed and replaced at the Contractor's expense.

2. **Hot Weather**. During periods of hot weather when the maximum daily air temperature exceeds 85°F, the following precautions shall be taken.

   The forms and/or the underlying surface shall be sprinkled with water immediately before placing the concrete. The concrete shall be placed at the coolest temperature practicable, and in no case shall the temperature of the concrete when placed exceed 90°F. The aggregates and/or mixing water shall be cooled as necessary to maintain the concrete temperature at or not more than the specified maximum.

   The finished surfaces of the newly laid pavement shall be kept damp by applying a water-fog or mist with approved spraying equipment until the pavement is covered by the curing medium. When necessary, wind screens shall be provided to protect the concrete from an evaporation rate in excess of 0.2 psf per hour. When conditions are such that problems with plastic cracking can be expected, and particularly if any plastic cracking begins to occur, the Contractor shall immediately take such additional measures as necessary to protect the concrete surface. Such measures shall consist of wind screens, more effective fog sprays, and similar measures commencing immediately behind the paver. If these measures are not effective in preventing plastic cracking, paving operations shall be immediately stopped.

   Concrete should be continuous moisture cured for the entire curing period and shall commence as soon as the surfaces are finished and continue for at least 24 hours. However, if moisture curing is not practical beyond 24 hours, the concrete surface shall be protected from drying with application of a liquid membrane-forming curing compound while the surfaces are still damp. Other curing methods may be approved by the Engineer.

3. **Consolidation.** Concrete shall be vibrated with an approved hand-operated immersion vibrator. Vibrators shall not be used to transport or spread the concrete. Hand-operated vibrators shall not be operated in the concrete at one location for more than 20 seconds. Insertion locations for hand-operated vibrators shall be between 6 to 15 inches on centers. For each paving train, at least one additional vibrator spud, or sufficient parts for rapid replacement and repair of vibrators shall be maintained at the paving site at all times. Any evidence of inadequate consolidation (honeycomb along the edges, large air pockets, or any other evidence) shall require the immediate stopping of the paving operation and adjustment of the equipment or procedures as approved by the Engineer.

4. **Finishing**. In addition to approved mechanical internal vibrators for consolidating the concrete, provide a strike-off and tamping screed and a longitudinal float for hand finishing. The screed shall be at least one foot longer than the width of pavement being finished, of an approved design, and sufficiently rigid to retain its shape, and shall be constructed of metal or other suitable material shod with metal. The longitudinal float shall be at least 10 feet long, of approved design, and rigid and substantially braced, and shall maintain a plane surface on the bottom. Grate tampers (jitterbugs) shall not be used.

   As soon as placed and vibrated, the concrete shall be struck off and screeded to the crown and cross-section and to such elevation above grade that when consolidated and finished, the surface of the pavement will be at the required elevation. In addition to previously specified complete coverage with handheld immersion vibrators, the entire surface shall be tamped with the strike- off and tamping template, and the tamping operation continued until the required compaction and reduction of internal and surface voids are accomplished. Immediately following the final tamping of the surface, the pavement shall be floated longitudinally from bridges resting on the side forms and spanning but not touching the concrete. If necessary, additional concrete shall be placed, consolidated and screeded, and the float operated until a satisfactory surface has been produced. The floating operation shall

be advanced not more than half the length of the float and then continued over the new and previously floated surfaces.

5. **Surface Texture**. The surface of the pavement shall be finished with either a brush or broom, or burlap drag for all newly constructed concrete pavements. It is important that the texturing equipment not tear or unduly roughen the pavement surface during the operation. Any imperfections resulting from the texturing operation shall be corrected to the satisfaction of the Engineer.

6. **Curing**. Immediately after finishing operations are completed and marring of the concrete will not occur, the entire surface of the newly placed concrete shall be cured for a 7-day cure period in accordance with one of the methods below. Failure to provide sufficient cover material of whatever kind the Contractor may elect to use, or lack of water to adequately take care of both curing and other requirements, shall be cause for immediate suspension of concreting operations. The concrete shall not be left exposed for more than 1/2 hour during the curing period.

   The entire surface of the pavement shall be sprayed uniformly with white pigmented curing compound immediately after the finishing of the surface and before the set of the concrete has taken place. The curing compound shall not be applied during rainfall. Hand spraying shall be applied with a double application rate to ensure coverage. The curing compound shall be of such character that the film will harden within 30 minutes after application. Should the film become damaged from any cause, including sawing operations, within the required curing period, the damaged portions shall be repaired immediately with additional compound or other approved means. Upon removal of side forms, the sides of the exposed slabs shall be protected immediately to provide a curing treatment equal to that provided for the surface. Curing shall be applied immediately after the bleed water is gone from the surface.

174-3.3 **Repair of Distresses in PCC Pavements.**

a. **Full Slab Repairs.** These are considered structural failures and require full-depth repairs. The procedures for repairing these types of distresses are as follows:

   1. Make full-depth saw cuts at constructed joints. The FAA recommends that full-depth cuts be made at a distance of at least 2 feet beyond the limits of the break. Make the saw cuts so the repair area is rectangular.
   2. Use appropriate-sized impact equipment (e.g., jackhammer) to remove material within the limits of the saw cuts. When using a hoe-ram or removing the concrete by lifting, make a second saw cut inside the perimeter cuts to provide expansion. Remove by hand any loose materials that remain. During the repair, try to minimize any disturbance to the subgrade soils or base materials.
   3. Restore subgrade or subbase materials to the base elevation of the panel being repaired by using flowable backfill.
   4. Use tie-bars consisting of #4 deformed bars (#5 bars for pavements more than 12 inches thick) in the faces of the parent panel. Install by drilling into the face and using an epoxy bonding agent. Use equidistant spacing of the bars, but do not install them more than 24 inches apart. When spacing bars, do not allow their ends to overlap with those of other tie-bars or dowels.
   5. Use dowel bars, of the type and size of the existing dowel bars, in the joint that parallels the direction of traffic. On aprons and areas where traffic may be oblique to joints, install dowels in both joint faces. Dowels are installed by drilling and epoxying. Dowel bars will spaced at least one bar spacing away from faces parallel to the dowel bar. Space dowel bar ends at least one bar spacing apart at corners of intersecting joints. Oil exposed dowel bar ends prior to backfilling with concrete.

6. Install nonabsorbent board within the limits of the joint seal reservoirs along the adjacent concrete panels. When repairing multiple panels, restore the joint seal reservoirs with the nonabsorbent filler board.
7. Fill the repair area with concrete, being sure to consolidate the concrete along the limits of repair. Exercise caution when working adjacent to existing concrete faces, particularly during consolidation, and watch for segregation of the concrete. Finish the surface to match existing surface when practical.
8. After the concrete cures, remove the nonabsorbent board by sawing. Reinstall joint seal material per specification M-170.

METHOD OF MEASUREMENT

174-4.1 The full slab and partial slab repairs will be measured by the **square yard of the specified thickness and concrete class** for the material in place, completed, and accepted. All work to remove the existing material, dispose off-site, prepare the repair area, install necessary dowels and reinforcing steel, joint material, labor, and any incidentals to complete the work shall be included.

BASIS OF PAYMENT

175-5.1 Payment for full slab and partial slab repairs will be made at the contract unit price bid per **square yard of the specified thickness and concrete class**. This price will be full compensation for furnishing all materials, for all preparation, delivering, and placing of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item M-174-5.1 PCC Pavement Repair (10”) (Class P) – Full Slab – per square yard

Item M-174-5.2 PCC Pavement Repair (12”) (Class P) – Full Slab – per square yard

TESTING REQUIREMENTS

ASTM C 39 Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens

ASTM C 109 Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50-mm] Cube Specimens)

ASTM C 882 Standard Test Method for Bond Strength of Epoxy-Resin Systems Used With Concrete by Slant Shear

MATERIAL REQUIREMENTS

ASTM C 33 Standard Specification for Concrete Aggregates

ASTM C 309 Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete

END ITEM M-174

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ITEM P-152 EXCAVATION, SUBGRADE, AND EMBANKMENT

DESCRIPTION

152-1.1 This item covers excavation, disposal, placement, and compaction of all materials within the limits of the work required to construct safety areas, runways, taxiways, aprons, and intermediate areas as well as other areas for drainage, building construction, parking, or other purposes in accordance with these specifications and in conformity to the dimensions and typical sections shown on the plans.

152-1.2 Classification. All material excavated shall be classified as defined below:

a. Unclassified excavation. Unclassified excavation shall consist of the excavation and disposal of all material, regardless of its nature.

152-1.3 Unsuitable excavation. Unsuitable material shall be disposed in designated waste areas as shown on the plans. Materials containing vegetable or organic matter, such as muck, peat, organic silt, or sod shall be considered unsuitable for use in embankment construction. Material suitable for topsoil may be used on the embankment slope when approved by the RPR. *Undercutting of material unsatisfactory for subgrade foundation, roads, shoulders, or areas intended for turfing shall be considered unsuitable excavation and shall be excavated to the depth specified by the Engineer below the subgrade.*

CONSTRUCTION METHODS

152-2.1 General. Before beginning excavation, grading, and embankment operations in any area, the area shall be cleared or cleared and grubbed in accordance with Item P-151.

The suitability of material to be placed in embankments shall be subject to approval by the RPR. All unsuitable material shall be disposed of in waste areas as shown on the plans. All waste areas shall be graded to allow positive drainage of the area and adjacent areas. The surface elevation of waste areas shall be specified on the plans or approved by the RPR.

When the Contractor's excavating operations encounter artifacts of historical or archaeological significance, the operations shall be temporarily discontinued and the RPR notified per Section 70, paragraph 70-20. At the direction of the RPR, the Contractor shall excavate the site in such a manner as to preserve the artifacts encountered and allow for their removal. Such excavation will be paid for as extra work.

Areas outside the limits of the pavement areas where the top layer of soil has become compacted by hauling or other Contractor activities shall be scarified and disked to a depth of 4 inches, to loosen and pulverize the soil. Stones or rock fragments larger than 4 inches in their greatest dimension will not be permitted in the top 6 inches of the subgrade.

If it is necessary to interrupt existing surface drainage, sewers or under-drainage, conduits, utilities, or similar underground structures, the Contractor shall be responsible for and shall take all necessary precautions to preserve them or provide temporary services. When such facilities are encountered, the Contractor shall notify the RPR, who shall arrange for their removal if necessary. The Contractor, at their own expense, shall satisfactorily repair or pay the cost of all damage to such facilities or structures that may result from any of the Contractor's operations during the period of the contract.

a. Blasting. Blasting shall not be allowed.

152-2.2 Excavation. No excavation shall be started until the work has been staked out by the Contractor and the RPR has obtained from the Contractor, the survey notes of the elevations and measurements of the ground surface. The Contractor and RPR shall agree that the original ground lines shown on the original topographic mapping are accurate, or agree to any adjustments made to the original ground lines.

Volumetric quantities were calculated using design cross sections which were created for this project using the DTM files of the applicable design surfaces and generating End Area Volume Reports. Paper copies of design cross sections and a paper copy of the original topographic map will be issued to the successful bidder.

All areas to be excavated shall be stripped of vegetation and topsoil. Topsoil shall be stockpiled for future use in areas designated on the plans or by the RPR. All suitable excavated material shall be used in the formation of embankment, subgrade, or other purposes as shown on the plans. All unsuitable material shall be disposed of *as described in paragraph 152-1.3* ~~shown on the plans~~.

The grade shall be maintained so that the surface is well drained at all times.

When the volume of the excavation exceeds that required to construct the embankments to the grades as indicated on the plans, the excess shall be used to grade the areas of ultimate development or disposed as directed by the RPR. When the volume of excavation is not sufficient for constructing the embankments to the grades indicated, the deficiency shall be obtained from borrow areas.

a. Selective grading. When *the quality of material varies significantly* ~~selective grading is indicated on the plans~~, the more suitable material designated by the RPR shall be used in constructing the embankment or in capping the pavement subgrade. If, at the time of excavation, it is not possible to place this material in its final location, it shall be stockpiled in approved areas until it can be placed. The more suitable material shall then be placed and compacted as specified. Selective grading shall be considered incidental to the work involved. The cost of stockpiling and placing the material shall be included in the various pay items of work involved.

b. Undercutting. Rock, shale, hardpan, loose rock, boulders, or other material unsatisfactory for safety areas, subgrades, roads, shoulders, or any areas intended for turf shall be excavated to a minimum depth of 12 inches below the subgrade or to the depth specified by the RPR. Muck, peat, matted roots, or other yielding material, unsatisfactory for subgrade foundation, shall be removed to the depth specified. Unsuitable materials shall be disposed off the airport. The cost is incidental to this item. This excavated material shall be paid for at the contract unit price per cubic yard for Unsuitable Excavation. The excavated area shall be backfilled with suitable material obtained from the grading operations or borrow areas and compacted to specified densities. The necessary backfill will constitute a *necessary part of Unsuitable Excavation* ~~part of the embankment~~. Where rock cuts are made, backfill with select material. Any pockets created in the rock surface shall be drained in accordance with the details shown on the plans. Undercutting will be paid as Unsuitable Excavation.

c. Over-break. Over-break, including slides, is that portion of any material displaced or loosened beyond the finished work as planned or authorized by the RPR. All over-break shall be graded or removed by the Contractor and disposed of as directed by the RPR. The RPR shall determine if the displacement of such material was unavoidable and their own decision shall be final. Payment will not be made for the removal and disposal of over-break that the RPR determines as avoidable. Unavoidable over-break will be classified as “Unclassified Excavation.”

d. Removal of utilities. The removal of existing structures and utilities required to permit the orderly progress of work *may* ~~will~~ be accomplished by someone other than the Contractor. All existing foundations shall be excavated at least 2 feet below the top of subgrade or as indicated on the plans, and the material disposed of as directed by the RPR. All foundations thus excavated shall be backfilled with suitable material and compacted as specified for embankment or as shown on the plans. *All work associated with the excavation, removal, backfill, disposal, and/or stockpiling of existing structures and culverts will not be measured for separate payment but will be considered subsidiary to “Unclassified Excavation”.*

152-2.3 Borrow excavation. Borrow areas are not required.

152-2.4 Drainage excavation. Drainage excavation shall consist of excavating drainage ditches including intercepting, inlet, or outlet ditches; or other types as shown on the plans. The work shall be performed in sequence with the other construction. Ditches shall be constructed prior to starting adjacent excavation operations. All satisfactory material shall be placed in embankment fills; unsuitable material shall be placed in designated waste areas or as directed by the RPR. All necessary work shall be performed true to final line, elevation, and cross-section. The Contractor shall maintain ditches constructed on the project to the required cross-section and shall keep them free of debris or obstructions until the project is accepted.

152-2.5 Preparation of cut areas or areas where existing pavement has been removed. In those areas on which a subbase or base course is to be placed, the top 12 inches of subgrade shall be compacted to

not less than 100 % of maximum density for non-cohesive soils, and 95% of maximum density for cohesive soils as determined by **ASTM D1557**. As used in this specification, "non-cohesive" shall mean those soils having a plasticity index (PI) of less than 3 as determined by ASTM D4318.

152-2.6 Preparation of embankment area. All sod and vegetative matter shall be removed from the surface upon which the embankment is to be placed. The cleared surface shall be broken up by plowing or scarifying to a minimum depth of 6 inches and shall then be compacted per paragraph 152-2.10.

Sloped surfaces steeper than one (1) vertical to four (4) horizontal shall be plowed, stepped, benched, or broken up so that the fill material will bond with the existing material. When the subgrade is part fill and part excavation or natural ground, the excavated or natural ground portion shall be scarified to a depth of 12 inches and compacted as specified for the adjacent fill.

No direct payment shall be made for the work performed under this section. The necessary clearing and grubbing and the quantity of excavation removed will be paid for under the respective items of work.

152-2.7 Control Strip. The first half-day of construction of subgrade and/or embankment shall be considered as a control strip for the Contractor to demonstrate, in the presence of the RPR, that the materials, equipment, and construction processes meet the requirements of this specification. The sequence and manner of rolling necessary to obtain specified density requirements shall be determined. The maximum compacted thickness may be increased to a maximum of 12 inches upon the Contractor's demonstration that approved equipment and operations will uniformly compact the lift to the specified density. The RPR must witness this demonstration and approve the lift thickness prior to full production.

Control strips that do not meet specification requirements shall be reworked, re-compacted, or removed and replaced at the Contractor's expense. Full operations shall not begin until the control strip has been accepted by the RPR. The Contractor shall use the same equipment, materials, and construction methods for the remainder of construction, unless adjustments made by the Contractor are approved in advance by the RPR.

152-2.8 Formation of embankments. The material shall be constructed in lifts as established in the control strip, but not less than 6 inches nor more than 12 inches of compacted thickness.

When more than one lift is required to establish the layer thickness shown on the plans, the construction procedure described here shall apply to each lift. No lift shall be covered by subsequent lifts until tests verify that compaction requirements have been met. The Contractor shall rework, re-compact and retest any material placed which does not meet the specifications.

The lifts shall be placed, to produce a soil structure as shown on the typical cross-section or as directed by the RPR. Materials such as brush, hedge, roots, stumps, grass and other organic matter, shall not be incorporated or buried in the embankment.

Earthwork operations shall be suspended at any time when satisfactory results cannot be obtained due to rain, freezing, or other unsatisfactory weather conditions in the field. Frozen material shall not be placed in the embankment nor shall embankment be placed upon frozen material. Material shall not be placed on surfaces that are muddy, frozen, or contain frost. The Contractor shall drag, blade, or slope the embankment to provide surface drainage at all times.

The material in each lift shall be within ±2% of optimum moisture content before rolling to obtain the prescribed compaction. The material shall be moistened or aerated as necessary to achieve a uniform moisture content throughout the lift. Natural drying may be accelerated by blending in dry material or manipulation alone to increase the rate of evaporation.

The Contractor shall make the necessary corrections and adjustments in methods, materials or moisture content to achieve the specified embankment density.

The Contractor will take samples of excavated materials which will be used in embankment for testing and develop a Moisture-Density Relations of Soils Report (Proctor) in accordance with **ASTM D 1557**. A new Proctor shall be developed for each soil type based on visual classification.

Density tests will be taken by the RPR for every 3,000 square yards of compacted embankment for each lift which is required to be compacted, or other appropriate frequencies as determined by the RPR.

If the material has greater than 30% retained on the 3/4-inch (19.0 mm) sieve, follow AASHTO T-180 Annex Correction of maximum dry density and optimum moisture for oversized particles.

Rolling operations shall be continued until the embankment is compacted to not less than 100% of maximum density for non-cohesive soils, and 95% of maximum density for cohesive soils as determined by ASTM **D1557**. Under all areas to be paved, the embankments shall be compacted to a depth of **6"** and to a density of not less than **95** percent of the maximum density as determined by ASTM **D1557**. As used in this specification, "non-cohesive" shall mean those soils having a plasticity index (PI) of less than 3 as determined by ASTM D4318.

~~On all areas outside of the pavement areas, no compaction will be required on the top **[** 4 inches] which shall be prepared for a seedbed in accordance with **[** Item T-901 **] [** T-906 **]**.~~

The in-place field density shall be determined in accordance with ASTM 6938 using Procedure A, the direct transmission method, and ASTM D6938 shall be used to determine the moisture content of the material. The machine shall be calibrated in accordance with ASTM D6938.. The Contractor's laboratory shall perform all density tests in the RPR's presence and provide the test results upon completion to the RPR for acceptance. If the specified density is not attained, the area represented by the test or as designated by the RPR shall be reworked and/or re-compacted and additional random tests made. This procedure shall be followed until the specified density is reached.

Compaction areas shall be kept separate, and no lift shall be covered by another lift until the proper density is obtained.

During construction of the embankment, the Contractor shall route all construction equipment evenly over the entire width of the embankment as each lift is placed. Lift placement shall begin in the deepest portion of the embankment fill. As placement progresses, the lifts shall be constructed approximately parallel to the finished pavement grade line.

When rock, concrete pavement, asphalt pavement, and other embankment material are excavated at approximately the same time as the subgrade, the material shall be incorporated into the outer portion of the embankment and the subgrade material shall be incorporated under the future paved areas. Stones, fragmentary rock, and recycled pavement larger than 4 inches in their greatest dimensions will not be allowed in the top 12 inches of the subgrade. Rockfill shall be brought up in lifts as specified or as directed by the RPR and the finer material shall be used to fill the voids forming a dense, compact mass. Rock, cement concrete pavement, asphalt pavement, and other embankment material shall not be disposed of except at places and in the manner designated on the plans or by the RPR.

When the excavated material consists predominantly of rock fragments of such size that the material cannot be placed in lifts of the prescribed thickness without crushing, pulverizing or further breaking down the pieces, such material may be placed in the embankment as directed in lifts not exceeding 2 feet in thickness. Each lift shall be leveled and smoothed with suitable equipment by distribution of spalls and finer fragments of rock. The lift shall not be constructed above an elevation 4 feet below the finished subgrade.

There will be no separate measurement of payment for compacted embankment. All costs incidental to placing in lifts, compacting, discing, watering, mixing, sloping, and other operations necessary for construction of embankments will be included in the contract price for excavation, borrow, or other items.

152-2.9 Proof rolling. The purpose of proof rolling the subgrade is to identify any weak areas in the subgrade and not for compaction of the subgrade. Before start of embankment, the subgrade area shall be proof rolled with a 15 ton Proof Roller with tires spaced not more than 32 inches on-center with tires inflated to 125 psi in the presence of the RPR. Apply a minimum of **50%** coverage, or as specified by the RPR, under pavement areas. A coverage is defined as the application of one tire print over the designated area. Soft areas of subgrade that deflect more than 1 inch or show permanent deformation greater than 1 inch shall be removed and replaced with suitable material or reworked to conform to the moisture content

and compaction requirements in accordance with these specifications. Removal and replacement of soft areas is incidental to this item.

152-2.10 Compaction requirements. The subgrade under areas to be paved shall be compacted to a depth of 12 inches and to a density of not less than 100 percent of the maximum dry density as determined by ASTM D1557. The subgrade in areas outside the limits of the pavement areas shall be compacted to a depth of 12 inches and to a density of not less than 95 percent of the maximum density as determined by ASTM D698.

The material to be compacted shall be within ±2% of optimum moisture content before being rolled to obtain the prescribed compaction (except for expansive soils). When the material has greater than 30 percent retained on the ¾ inch (19.0 mm) sieve, follow the methods in ASTM D1557**.** Tests for moisture content and compaction will be taken at a minimum of **3,000** S.Y. of subgrade. All quality assurance testing shall be done by the Contractor's laboratory in the presence of the RPR, and density test results shall be furnished upon completion to the RPR for acceptance determination.

The in-place field density shall be determined in accordance with ASTM D6938 using Procedure A, the direct transmission method, and ASTM D6938 shall be used to determine the moisture content of the material. The machine shall be calibrated in accordance with ASTM D6938 within 12 months prior to its use on this contract. The gage shall be field standardized daily.

Maximum density refers to maximum dry density at optimum moisture content unless otherwise specified.

If the specified density is not attained, the entire lot shall be reworked and/or re-compacted and additional random tests made. This procedure shall be followed until the specified density is reached.

All cut-and-fill slopes shall be uniformly dressed to the slope, cross-section, and alignment shown on the plans or as directed by the RPR and the finished subgrade shall be maintained.

152-2.11 Finishing and protection of subgrade. Finishing and protection of the subgrade is incidental to this item. Grading and compacting of the subgrade shall be performed so that it will drain readily. All low areas, holes or depressions in the subgrade shall be brought to grade. Scarifying, blading, rolling and other methods shall be performed to provide a thoroughly compacted subgrade shaped to the lines and grades shown on the plans. All ruts or rough places that develop in the completed subgrade shall be graded, re-compacted, and retested. The Contractor shall protect the subgrade from damage and limit hauling over the finished subgrade to only traffic essential for construction purposes.

The Contractor shall maintain the completed course in satisfactory condition throughout placement of subsequent layers. No subbase, base, or surface course shall be placed on the subgrade until the subgrade has been accepted by the RPR.

152-2.12 Haul. All hauling will be considered a necessary and incidental part of the work. The Contractor shall include the cost in the contract unit price for the pay of items of work involved. No payment will be made separately or directly for hauling on any part of the work.

The Contractor's equipment shall not cause damage to any excavated surface, compacted lift or to the subgrade as a result of hauling operations. Any damage caused as a result of the Contractor's hauling operations shall be repaired at the Contractor's expense.

The Contractor shall be responsible for providing, maintaining and removing any haul roads or routes within or outside of the work area, and shall return the affected areas to their former condition, unless otherwise authorized in writing by the Owner. No separate payment will be made for any work or materials associated with providing, maintaining and removing haul roads or routes.

152-2.13 Surface Tolerances. In those areas on which a subbase or base course is to be placed, the surface shall be tested for smoothness and accuracy of grade and crown. Any portion lacking the required smoothness or failing in accuracy of grade or crown shall be scarified to a depth of at least 3 inches, reshaped and re-compacted to grade until the required smoothness and accuracy are obtained and approved by the RPR. The Contractor shall perform all final smoothness and grade checks in the presence

of the RPR. Any deviation in surface tolerances shall be corrected by the Contractor at the Contractor's expense.

a. Smoothness. The finished surface shall not vary more than +/- ½ inch when tested with a 12-foot straightedge applied parallel with and at right angles to the centerline. The straightedge shall be moved continuously forward at half the length of the 12-footstraightedge for the full length of each line on a 50-foot grid.

b. Grade. The grade and crown shall be measured on a 50-foot grid and shall be within +/-0.05 feet of the specified grade.

On safety areas, turfed areas and other designated areas within the grading limits where no subbase or base is to placed, grade shall not vary more than 0.10 feet from specified grade. Any deviation in excess of this amount shall be corrected by loosening, adding or removing materials, and reshaping.

152-2.14 Topsoil. When topsoil is specified or required as shown on the plans or under Item T-905, it shall be salvaged from stripping or other grading operations. The topsoil shall meet the requirements of Item T-905. If, at the time of excavation or stripping, the topsoil cannot be placed in its final section of finished construction, the material shall be stockpiled at approved locations. Stockpiles shall be located as shown on the plans and the approved CSPP, and shall not be placed on areas that subsequently will require any excavation or embankment fill. If, in the judgment of the RPR, it is practical to place the salvaged topsoil at the time of excavation or stripping, the material shall be placed in its final position without stockpiling or further re-handling.

Upon completion of grading operations, stockpiled topsoil shall be handled and placed as shown on the plans and as required in Item T-905. Topsoil shall be paid for as provided in Item T-905. No direct payment will be made for topsoil under Item P-152.

METHOD OF MEASUREMENT

152-3.1 The quantity of excavation/embankment to be paid for shall be the number of cubic yards measured in its original position. Measurement shall not include the quantity of materials excavated without authorization beyond normal slope lines, or the quantity of material used for purposes other than those directed**.**

Measurement of excavation/embankment shall be based on plan quantities. These quantities are believed to be correct and shall be utilized for final excavation quantity payment not withstanding any adjustments to the project by written direction of the Engineer. Should the contractor find discrepancies and/or errors, he/she shall bring the discrepancy and/or error to the attention of the Engineer immediately and corrections shall be made to the quantity of excavation to be paid for by change order. It is expressly understood by the contractor that upon disturbance of the existing ground and no notification to the engineer of possible errors, that the contractor accepts as final payment the quantities of excavation as detailed on the plans and laid out in the proposal. No adjustment has been made to the plan quantities for the construction or demolition of existing drainage structures. The Contractor shall make his own determination as to the amount of unsuitable excavated material which may be encountered and the resulting additional borrow material required for the construction of the embankment. There will be no adjustment for additional embankment required to construct the project if the excavated material is deemed unsuitable.

~~**152-3.2** Borrow material shall be paid for on the basis of the number of cubic yards measured in its original position at the borrow pit.~~

~~**152-3.3** Stockpiled material shall be paid for on the basis of the number of cubic yards measured in the stockpiled position as soon as the material has been stockpiled.~~

152-3.2 For payment specified by the cubic yard, measurement for all excavation/embankment shall be computed by the average end area method. The end area is that bound by the original ground line

established by field cross-sections and the final theoretical pay line established by excavation/embankment cross-sections shown on the plans, subject to verification by the Engineer. After completion of all excavation/embankment operations and prior to the placing of base or subbase material, the final excavation/embankment shall be verified by the Engineer by means of field cross-sections taken randomly at intervals not exceeding 500 linear feet.

In cut sections, the additional cut required to construct the topsoil layer to the plan grade has not been measured and will not be measured for separate payment but will be subsidiary to "Unclassified Excavation". In fill sections, the additional fill required to replace the stripped material has not been measured and will not be measured for payment but will be subsidiary to "Embankment".

No allowance has been made in the measurement for shrink/swell. The Contractor shall make his own determination as to the amount of shrink/swell involved in the construction of the embankment.

The Contractor shall make his own determination as to the suitability of the excavated material to be placed in embankments and the resulting additional off-site material required for the construction of the embankment. Additional off-site material required for the formation of embankment shall not be measured for separate payment but shall be considered subsidiary to "Unclassified Excavation".

***152-3.3** Unsuitable excavation shall be measured from the surface of the ground, after stripping has been accomplished, or from the bottom of the planned excavation, to the depth of the excavation as directed by the Engineer. Measurements will be taken by the Engineer, and the volume of excavation will be calculated by the average end area method. The necessary refilling of unsuitable areas will not be measured for separate payment but will be subsidiary to "Unsuitable Excavation". Only that amount of excavation directed by the Engineer will be measured for payment.*

BASIS OF PAYMENT

152-4.1 Unclassified excavation payment shall be made at the contract unit price per cubic yard. This price shall be full compensation for furnishing all materials, labor, equipment, tools, and incidentals necessary to complete the item.

152-4.2 For embankment in place, payment shall be made at the contract unit price per cubic yard. This price shall be full compensation for furnishing all materials, labor, equipment, tools, and incidentals necessary to complete the item.

***152-4.4** Unsuitable excavation shall be paid for at the contract unit price bid per cubic yard for "Unsuitable Excavation", which price shall be full compensation for all excavation; for disposal or placement of unsuitable material (in accordance with section 152-1.3), including loading, hauling, spreading, and compaction; for compaction and preparation of subgrade; for the refilling, rolling, and compaction of all undercut areas; and for all equipment, tools, labor, and incidentals necessary to complete the work.*

Payment will be made under:

Item P-152-4.1	Unclassified Excavation - per cubic yard
Item P-152-4.2	Embankment - per cubic yard
Item P-152-4.3	*Unsuitable Excavation—per cubic yard*

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

American Association of State Highway and Transportation Officials (AASHTO)

AASHTO T-180	Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop

ASTM International (ASTM)

ASTM D698	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft^3 (600 kN-m/m^3))
ASTM D1556	Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D1557	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft^3 (2700 kN-m/m^3))
ASTM D6938	Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

Advisory Circulars (AC)

AC 150/5370-2	Operational Safety on Airports During Construction Software

Software

FAARFIELD – FAA Rigid and Flexible Iterative Elastic Layered Design

U.S. Department of Transportation

FAA RD-76-66	Design and Construction of Airport Pavements on Expansive Soils

END OF ITEM P-152

ITEM P-620 RUNWAY AND TAXIWAY MARKING

DESCRIPTION

620-1.1 This item shall consist of the preparation and painting of numbers, markings, and stripes on the surface of runways, taxiways, and aprons, in accordance with these specifications and at the locations shown on the plans, or as directed by the Resident Project Representative (RPR). The terms “paint” and “marking material” as well as “painting” and “application of markings” are interchangeable throughout this specification.

MATERIALS

620-2.1 Materials acceptance. The Contractor shall furnish manufacturer’s certified test reports, for materials shipped to the project. The certified test reports shall include a statement that the materials meet the specification requirements. This certification along with a copy of the paint manufacturer’s surface preparation; marking materials, including adhesion, flow promoting and/or floatation additive; and application requirements must be submitted and approved by the Resident Project Representative (RPR) prior to the initial application of markings. The reports can be used for material acceptance or the RPR may perform verification testing. The reports shall not be interpreted as a basis for payment. The Contractor shall notify the RPR upon arrival of a shipment of materials to the site. All material shall arrive in sealed containers that are easily quantifiable for inspection by the RPR.

620-2.2 Marking materials.

Table 1. Marking Materials

Paint[1]				Glass Beads[2]	
Type	**Color**	**Fed Std. 595 Number**	**Application Rate Maximum**	**Type**	**Application Rate Minimum**
Waterborne, Type II	White	37925	115 ft^2/gal	I	8 lb/gal

[1] See paragraph 620-2.2a

[2] See paragraph 620-2.2b

a. Paint. Paint shall be waterborne in accordance with the requirements of this paragraph. Paint colors shall comply with Federal Standard No. 595. **White - 37925.**

Waterborne. Paint shall meet the requirements of Federal Specification TT-P-1952F, Type II. The non-volatile portion of the vehicle for all paint types shall be composed of a 100% acrylic polymer as determined by infrared spectral analysis. The acrylic resin used for Type III shall be 100% cross linking acrylic as evidenced by infrared peaks at wavelengths 1568, 1624, and 1672 cm-l with intensities equal to those produced by an acrylic resin known to be 100% cross linking.

b. Reflective media. Glass beads for white and yellow paint shall meet the requirements for Federal Specification TT-B-1325D Type I.

~~Glass beads for red and pink paint shall meet the requirements for Type I, Gradation A .~~

Glass beads shall be treated with all compatible coupling agents recommended by the manufacturers of the paint and reflective media to ensure adhesion and embedment.

Glass beads shall not be used in black and green paint.

Type III glass beads shall not be used in red and pink paint.

CONSTRUCTION METHODS

620-3.1 Weather limitations. Painting shall only be performed when the surface is dry, and the ambient temperature and the pavement surface temperature meet the manufacturer's recommendations in accordance with paragraph 620-2.1. Painting operations shall be discontinued when the ambient or surface temperatures does not meet the manufacturer's recommendations. Markings shall not be applied when the wind speed exceeds 10 mph unless windscreens are used to shroud the material guns. Markings shall not be applied when weather conditions are forecasts to not be within the manufacturers' recommendations for application and dry time.

620-3.2 Equipment. Equipment shall include the apparatus necessary to properly clean the existing surface, a mechanical marking machine, a bead dispensing machine, and such auxiliary hand-painting equipment as may be necessary to satisfactorily complete the job.

The mechanical marker shall be an atomizing spray-type or airless type marking machine with automatic glass bead dispensers suitable for application of traffic paint. It shall produce an even and uniform film thickness and appearance of both paint and glass beads at the required coverage and shall apply markings of uniform cross-sections and clear-cut edges without running or spattering and without over spray. The marking equipment for both paint and beads shall be calibrated daily.

620-3.3 Preparation of surfaces. Immediately before application of the paint, the surface shall be dry and free from dirt, grease, oil, laitance, or other contaminates that would reduce the bond between the paint and the pavement. Use of any chemicals or impact abrasives during surface preparation shall be approved in advance by the RPR. After the cleaning operations, sweeping, blowing, or rinsing with pressurized water shall be performed to ensure the surface is clean and free of grit or other debris left from the cleaning process.

a. Preparation of new pavement surfaces. The area to be painted shall be cleaned by broom, blower, water blasting, or by other methods approved by the RPR to remove all contaminants, including PCC curing compounds, minimizing damage to the pavement surface.

b. Preparation of pavement to remove existing markings. Existing pavement markings shall be removed by rotary grinding, water blasting, or by other methods approved by the RPR minimizing damage to the pavement surface. The removal area may need to be larger than the area of the markings to eliminate ghost markings. After removal of markings on asphalt pavements, apply a fog seal or seal coat to 'block out' the removal area to eliminate 'ghost' markings.

c. Preparation of pavement markings prior to remarking. Prior to remarking existing markings, loose existing markings must be removed minimizing damage to the pavement surface, with a method approved by the RPR. After removal, the surface shall be cleaned of all residue or debris.

Prior to the application of markings, the Contractor shall certify in writing that the surface is dry and free from dirt, grease, oil, laitance, or other foreign material that would prevent the bond of the paint to the pavement or existing markings. This certification along with a copy of the paint manufactures application and surface preparation requirements must be submitted to the RPR prior to the initial application of markings.

620-3.4 Layout of markings. The proposed markings shall be laid out in advance of the paint application. ~~The locations of markings to receive glass beads shall be shown on the plans.~~

620-3.5 Application. A period of **30** days shall elapse between placement of surface course or seal coat and application of the permanent paint markings. Paint shall be applied at the locations and to the dimensions and spacing shown on the plans. Paint shall not be applied until the layout and condition of the surface has been approved by the RPR.

The edges of the markings shall not vary from a straight line more than 1/2 inch in 50 feet, and marking dimensions and spacing shall be within the following tolerances:

Marking Dimensions and Spacing Tolerance

Dimension and Spacing	Tolerance
36 inch or less	±1/2 inch
greater than 36 inch to 6 feet	±1 inch
greater than 6 feet to 60 feet	±2 inch
greater than 60 feet	±3 inch

The paint shall be mixed in accordance with the manufacturer's instructions and applied to the pavement with a marking machine at the rate shown in Table 1. The addition of thinner will not be permitted.

Glass beads shall be distributed upon the marked areas at the locations shown on the plans to receive glass beads immediately after application of the paint. A dispenser shall be furnished that is properly designed for attachment to the marking machine and suitable for dispensing glass beads. Glass beads shall be applied at the rate shown in Table 1. Glass beads shall not be applied to black paint or green paint. Glass beads shall adhere to the cured paint or all marking operations shall cease until corrections are made. Different bead types shall not be mixed. Regular monitoring of glass bead embedment and distribution should be performed.

620-3.6 Application--preformed thermoplastic airport pavement markings.

Preformed thermoplastic pavement markings not used.

620-3.7 Control strip. Prior to the full application of airfield markings, the Contractor shall prepare a control strip in the presence of the RPR. The Contractor shall demonstrate the surface preparation method and all striping equipment to be used on the project. The marking equipment must achieve the prescribed application rate of paint and population of glass beads (per Table 1) that are properly embedded and evenly distributed across the full width of the marking. Prior to acceptance of the control strip, markings must be evaluated during darkness to ensure a uniform appearance.

620-3.8 Retro-reflectance. Reflectance shall be measured with a portable retro-reflectometer meeting ASTM E1710 (or equivalent). A total of 6 reading shall be taken over a 6 square foot area with 3 readings taken from each direction. The average shall be equal to or above the minimum levels of all readings which are within 30% of each other.

Minimum Retro-Reflectance Values

Material	Retro-reflectance mcd/m^2/lux		
	White	Yellow	Red
Initial Type I	300	175	35
Initial Type III	600	300	35
Initial Thermoplastic	225	100	35
All materials, remark when less than[1]	100	75	10

[1] Prior to remarking determine if removal of contaminants on markings will restore retro-reflectance

620-3.9 Protection and cleanup. After application of the markings, all markings shall be protected from damage until dry. All surfaces shall be protected from excess moisture and/or rain and from disfiguration by spatter, splashes, spillage, or drippings. The Contractor shall remove from the work area all debris, waste, loose reflective media, and by-products generated by the surface preparation and application operations to the satisfaction of the RPR. The Contractor shall dispose of these wastes in strict compliance with all applicable state, local, and federal environmental statutes and regulations.

METHOD OF MEASUREMENT

620-4.1a The quantity of surface preparation shall be ***subsidiary to the item in which it is contained.*** ~~measured by the number of square feet for each type of surface preparation specified in paragraph 620-3.3.~~

620-4.1b The quantity of markings shall be paid for shall be measured by the number of square feet of painting**.**

620-4.1c The quantity of reflective media shall ***subsidiary to the item in which it is contained.*** ~~be paid for by **[** the number of pounds **] [** lump sum **]** of reflective media.~~

BASIS OF PAYMENT

620-5.1 This price shall be full compensation for furnishing all materials and for all labor, equipment, tools, and incidentals necessary to complete the item complete in place and accepted by the RPR in accordance with these specifications.

~~**620-5.1a** Payment for surface preparation shall be made at the contract price for **[** the number of square feet for each type of surface preparation specified in paragraph 620-3.3 **] [** lump sum **]**.~~

620-5.1 Payment for markings shall be made at the contract price for by the number of square feet of painting**.**

~~**620-5.3c** Payment for reflective media shall be made at the contract price for **[** the number of pounds of reflective media **] [** lump sum **]**.~~

Payment will be made under:

Item P-620-5.1	Pavement Markings, White (Type I Reflective Media) - per square foot

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM D476	Standard Classification for Dry Pigmentary Titanium Dioxide Products
ASTM D968	Standard Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive
ASTM D1652	Standard Test Method for Epoxy Content of Epoxy Resins
ASTM D2074	Standard Test Method for Total, Primary, Secondary, and Tertiary Amine Values of Fatty Amines by Alternative Indicator Method
ASTM D2240	Standard Test Method for Rubber Property - Durometer Hardness
ASTM D7585	Standard Practice for Evaluating Retroreflective Pavement Markings Using Portable Hand-Operated Instruments
ASTM E303	Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester

ASTM E1710	Standard Test Method for Measurement of Retroreflective Pavement Marking Materials with CEN-Prescribed Geometry Using a Portable Retroreflectometer
ASTM E2302	Standard Test Method for Measurement of the Luminance Coefficient Under Diffuse Illumination of Pavement Marking Materials Using a Portable Reflectometer
ASTM G154	Standard Practice for Operating Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of Nonmetallic Materials

Code of Federal Regulations (CFR)

40 CFR Part 60, Appendix A-7, Method 24	Determination of volatile matter content, water content, density, volume solids, and weight solids of surface coatings
29 CFR Part 1910.1200	Hazard Communication

Federal Specifications (FED SPEC)

FED SPEC TT-B-1325D	Beads (Glass Spheres) Retro-Reflective
FED SPEC TT-P-1952F	Paint, Traffic and Airfield Marking, Waterborne
FED STD 595	Colors used in Government Procurement

Commercial Item Description

A-A-2886B	Paint, Traffic, Solvent Based

Advisory Circulars (AC)

AC 150/5340-1	Standards for Airport Markings
AC 150/5320-12	Measurement, Construction, and Maintenance of Skid Resistant Airport Pavement Surfaces

END OF ITEM P-620

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Item 104
Removing Concrete

1. DESCRIPTION

Break, remove, and salvage or dispose of existing hydraulic cement concrete.

2. CONSTRUCTION

Remove existing hydraulic cement concrete from locations shown on the plans. Avoid damaging concrete that will remain in place. Saw-cut and remove the existing concrete to neat lines. Replace ***or repair*** any concrete damaged by the Contractor at no expense to the ~~Department.~~ Owner ***by methods approved by the engineer.*** Accept ownership and properly dispose of broken concrete in accordance with federal, state, and local regulations unless otherwise shown on the plans.

3. MEASUREMENT

Removing concrete pavement, floors, porches, patios, riprap, medians, foundations, sidewalks, driveways, and other appurtenances will be measured by the square yard (regardless of thickness) ~~or by the cubic yard of calculated volume, in its original position.~~

Removing curb, curb and gutter, and concrete traffic barrier ***shall not be measured for separate payment but shall be considered subsidiary to pavement and/or sidewalk removal.*** ~~will be measured by the foot in its original position. The removal of monolithic concrete curb or dowelled concrete curb will be included in the concrete pavement measurement.~~

~~Removing retaining walls will be measured by the square yard along the front face from the top of the wall to the top of the footing.~~

~~This is a plans quantity measurement Item. The quantity to be paid is the quantity shown in the proposal, unless modified by Article 9.2., "Plans Quantity Measurement." Additional measurements or calculations will be made if adjustments of quantities are required.~~

The unit of measurement for 'Pavement Removal' shall be the number of square yards removed by the Contractor regardless of thickness. In areas to be replaced with a proposed pavement section; all pavement, existing base, and soil shall be removed to the bottom of the proposed section. All soil and base to be removed shall be removed according to the embankment specification. In areas to be replaced with unpaved areas, the ground shall be prepared according to the embankment specification and built back to proposed grade lines or existing grades lines if proposed grade lines are not given. Any pavement removed outside the limits of removal because the pavement was damaged by negligence on the part of the Contractor shall not be included in the measurement for payment.

"Concerete Pavement Removal" shall be paid for by the square yard of concrete pavement material removed (regardless of thickness).

"Sidewalk Removal" shall be paid for by the square yard of sidewalk pavement removal (regardless of thickness).

4. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Removing Concrete" of the type specified. This price is full compensation for breaking the concrete; loading, hauling, and salvaging or disposing of the material; and equipment, labor, tools, and incidentals.

~~Removing retaining wall footings will not be paid for directly but will be considered subsidiary to this Item.~~

Payment will be made under:

Item TX-104-5.1	***Concrete Pavement Removal — per square yard***
Item TX-104-5.2	***Sidewalk Removal — per square yard***

Item 105

Removing Treated and Untreated Base and Asphalt Pavement

1. DESCRIPTION

Break, remove, and ~~store or~~ dispose of existing asphalt pavement, including surface treatments, and treated or untreated base materials.

2. CONSTRUCTION

Break material retained by the Department into pieces not larger than 24 in. unless otherwise shown on the plans. Remove existing asphalt pavement before disturbing stabilized base. Avoid contamination of the asphalt materials and damage to adjacent areas. Repair material damaged by operations outside the designated locations.

~~Stockpile materials designated salvageable at designated sites when shown on the plans or as directed. Prepare stockpile site by removing vegetation and trash and by providing for proper drainage.~~ Material not designated to be salvaged will become the property of the Contractor. When this material is disposed of, do so in accordance with federal, state, and local regulations. ***All existing pavement removed shall be disposed of off-site. All hauling will be considered a necessary and incidental part of the work. Its costs shall be considered by the Contractor and included in the contract unit price for the pay items of work involved. No payment will be made separately or directly for hauling on any part of the work.***

Pavement designated to remain shall be protected. Contractor is responsible for repairing any damage to pavement designated to remain by methods approved by the engineer.

3. MEASUREMENT

~~This Item will be measured by the 100-ft. station along the baseline of each roadbed, by the square yard of existing treated or untreated base and asphalt pavement in its original position, or by the cubic yard of existing treated or untreated base and asphalt pavement in its original position, as calculated by the average end area method. Square yard and cubic yard measurement will be established by the widths and depths shown on the plans and the lengths measured in the field.~~

The unit of measurement for pavement removal shall be the number of square yards removed by the Contractor regardless of thickness. In areas to be replaced with a proposed pavement section; all pavement, existing base, and soil shall be removed to the bottom of the proposed section. All soil and base to be removed shall be removed according to the embankment specification. In areas to be replaced with unpaved areas, the ground shall be prepared according to the embankment specification and built back to proposed grade lines or existing grade lines if proposed grade lines are not given. Any pavement removed outside the limits of removal because the pavement was damaged by negligence on the part of the Contractor shall not be included in the measurement for payment.

4. PAYMENT

The work performed in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "***Asphalt Pavement Removal*** ~~Removing Treated and Untreated Base and Asphalt Pavement" of the depth specified~~. This price is full compensation for breaking the material, loading, hauling, unloading, stockpiling or disposing; repair to areas outside designated locations for removal; and

equipment, labor, tools, and incidentals.

Payment will be made under:

Item TX-105-5.1	***Asphalt Pavement Removal — per square yard***

Item 162
Sodding for Erosion Control

1. DESCRIPTION

Provide and install grass sod as shown on the plans or as directed.

2. MATERIALS

Use live, growing grass sod of the type specified on the plans. Use grass sod with a healthy root system and dense matted roots throughout the soil of the sod for a minimum thickness of 1 in. Do not use sod from areas where the grass is thinned out. Keep sod material moist from the time it is dug until it is planted. Grass sod with dried roots is unacceptable.

2.1. **Block Sod**. Use block, rolled, or solid sod free from noxious weeds, Johnson grass, other grasses, or any matter deleterious to the growth and subsistence of the sod.

2.2. **Mulch Sod**. Use mulch sod from an approved source, free from noxious weeds, Johnson grass, other grasses, or any matter deleterious to the growth and subsistence of the sod.

2.3. **Fertilizer**. Furnish fertilizer in accordance with Article 166.2., "Materials."

2.4. **Water**. Furnish water in accordance with Article 168.2., "Materials."

2.5. **Mulch**. Use straw mulch consisting of oat, wheat, or rice straw or hay mulch of either Bermudagrass or prairie grasses. Use straw or hay mulch free of Johnson grass and other noxious and foreign materials. Keep the mulch dry and do not use molded or rotted material.

2.6. **Tacking Methods**. Use a tacking agent applied in accordance with the manufacturer's recommendations or a crimping method on all straw or hay mulch operations. Use tacking agents as approved or as specified on the plans.

3. CONSTRUCTION

Cultivate the area to a depth of 4 in. before placing the sod. Plant the sod specified and mulch, if required, after the area has been completed to lines and grades as shown on the plans. Apply fertilizer uniformly over the entire area in accordance with Article 166.3., "Construction," and water in accordance with Article 168.3., "Construction." Plant between the average date of the last freeze in the Spring and 6 weeks before the average date for the first freeze in the Fall according to the Texas Almanac for the project area.

3.1. **Sodding Types**.

3.1.1. **Spot Sodding**. Use only Bermudagrass sod. Create furrows parallel to the roadway, approximately 5 in. deep and on 18-in. centers. Sod a continuous row not less than 3 in. wide in the 2 furrows adjacent to the roadway. Place 3-in. squares of sod on 15-in. centers in the remaining furrows. Place sod so that the root system will be completely covered by the soil. Firm all sides of the sod with the soil without covering the sod with soil.

3.1.2. **Block Sodding**. Place sod over the prepared area. Roll or tamp the sodded area to form a thoroughly compacted, solid mat filling all voids in the sodded area with additional sod. Trim and remove all visible netting and backing materials. Keep sod along edges of curbs, driveways, walkways, etc., trimmed until acceptance.

3.1.3. **Mulch Sodding**. Mow sod source to no shorter than 4 in., rake and remove cuttings. Disk the sod in 2 directions, cutting the sod to a minimum of 4 in. Excavate the sod material to a depth of no more than 6 in. Keep excavated material moist or it will be rejected. Distribute the mulch sod uniformly over the area to a depth of 6 in. loose, unless otherwise shown on the plans, and roll with a light roller or other suitable equipment.

Add or reshape the mulch sod to meet the requirements of Section 162.3.2., "Finishing."

3.2. **Finishing**. Smooth and shape the area after planting to conform to the desired cross-sections. Spread any excess soil uniformly over adjacent areas or dispose of the excess soil as directed.

3.3. **Straw or Hay Mulch**. Apply straw or hay mulch for "Spot Sodding" and "Mulch Sodding" uniformly over the area as shown on the plans. Apply straw mulch at 2 to 2-1/2 tons per acre. Apply hay mulch at 1-1/2 to 2 tons per acre. Use a tacking method over the mulched area.

3.4. ***Establishing Turf.***

3.4.1. ***General. The Contractor shall provide general care for the sodded areas as soon as the sod has been laid and shall continue until final inspection and acceptance of the work.***

3.4.2. ***Protection. All sodded areas shall be protected against traffic or other use by warning signs or barricades approved by the Engineer.***

3.4.3. ***Mowing. The Contractor shall mow the sodded areas with approved mowing equipment, depending upon climatic and growth conditions and the needs for mowing specific areas. In the event that weeds or other undesirable vegetation are permitted to grow to such an extent that, either cut or uncut, they threaten to smother the sodded species, they shall be mowed and the clippings raked and removed from the area.***

3.4.4. ***Repairing. When the surface has become gullied or otherwise damaged during the period covered by this contract, the affected areas shall be repaired to re-establish the grade and the condition of the soil, as directed by the Engineer, and shall then be sodded as specified in paragraph 3.1.2.***

3.4.5. ***Watering. Contractor shall water sod in accordance with Tx-168 Vegetative Watering and this specification. Adequate water and watering equipment must be on hand before sodding begins, and sod shall be kept moist until it has become established and its continued growth assured. In all cases, watering shall be done in a manner that will avoid erosion from the application of excessive quantities and will avoid damage to the finished surface.***

4. MEASUREMENT

"Spot Sodding," "Block Sodding," and "Straw or Hay Mulch" will be measured by the square yard in its final position. "Mulch Sodding" will be measured by the square yard in its final position or by the cubic yard in vehicles as delivered to the planting site.

5. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Spot Sodding," "Block Sodding," "Straw or Hay Mulch," or "Mulch Sodding." This price is full compensation for securing a source, excavation, loading, hauling, placing, rolling, finishing, furnishing materials, equipment, labor, tools, supplies, and incidentals. Fertilizer will not be paid for directly but will be subsidiary to this Item.

~~Unless otherwise specified on the plans, water, except for that used for maintaining and preparing the sod before planting, will be measured and paid for in accordance with Item 168, "Vegetative Watering."~~ ***All watering associated with maintaining, preparing, and establishing the sod shall be considered***

subsidiary to TX-162 Sodding for Erosion Control.

Payment will be made under:

Item TX 162- 5.1 Block Sodding — per Square Yard

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Item 170
Irrigation System

1. DESCRIPTION

Furnish and install an irrigation system as shown on the plans.

2. MATERIALS

Unless otherwise shown on the plans, use materials that meet the following:

2.1. **Irrigation Pipe**. Use polyvinyl chloride (PVC) pipe meeting ASTM D2241, SDR 13.5, SDR 17, SDR 21; or ASTM D1785, Schedule 40.

2.2. **Fittings**. Furnish fittings as shown on the plans. PVC fittings must meet ASTM D2466.

2.3. **Encasement Pipe**. Use PVC pipe meeting ASTM D1785, Schedule 40, with an inside diameter at least 1 in. larger than the outside diameter of the irrigation pipe, unless otherwise shown on the plans.

2.4. **Low-Voltage Wire**. Use minimum 14 gauge UL-approved wire for direct burial.

2.5. **Bentonite Slurry**. Use a viscous mixture of commercial bentonite and fresh water containing 2% to 8% bentonite by weight.

2.6. **Accessories**. Use valves, sprinkler heads, and controllers that meet the requirements shown on the plans. Use backflow preventers that meet the requirements of the controlling water utility authority.

2.7. **Electrical Service**. Use materials meeting the requirements of Section 170.3.1., "Electrical Service," for installations requiring over 100 V.

All material shall be approved by the town of Addison and the engineer.

3. CONSTRUCTION

~~Perform irrigation system work under the supervision of a person possessing an irrigator's license issued by the TCEQ. Provide documentation of this license. Follow the codes of the controlling utility authority for water and electrical connection and service.~~

Coordinate irrigation system installation with plant installation, when plant installation is specified, to ensure that watering requirements are met. Prevent damage to vegetation, slopes, utilities, structures, and other amenities. Repair any damage within the right of way caused by the Contractor. Perform the following activities as required:

3.1. **Electrical Service**. Construct installations requiring over 100 V in accordance with the details shown on the plans and the pertinent requirements of the following:

- Item 618, "Conduit"
- Item 620, "Electrical Conductors"
- Item 622, "Duct Cable"
- Item 624, "Ground Boxes"
- Item 628, "Electrical Services"

3.2. **Excavation and Trenching**. Excavate and trench to a sufficient depth to provide for a minimum of 12-in. soil cover for all lines or as shown on the plans. Use common trenches for irrigation lines and wire runs where feasible. Protect trenches and boring pits less than 5 ft. deep using approved methods. Protect trenches and boring pits 5 ft. deep or deeper in accordance with Item 402, "Trench Excavation Protection," and Item 403, "Temporary Special Shoring."

3.3. **Boring**. Bore at the locations shown on the plans or as directed. Avoid weakening or damaging roadways or other facilities. Bore the lengths in one direction only. Maintain horizontal and vertical alignment to an accuracy of 1 in. in 10 ft. Use water or other approved fluids in connection with boring operations only to lubricate cuttings.

Bentonite slurry may be used in unconsolidated soil formations to consolidate cuttings for the bit, seal the walls of the hole, and furnish lubrication for subsequent removal of cuttings and installation of the pipe immediately thereafter.

3.4. **Water Jetting**. Use water jetting only when shown on the plans or approved in writing. Water jet the lengths in one direction only. Cease operations and complete all necessary work by boring when jetting operations fail to produce a smooth stable hole.

3.5. **Encasement**. Provide a minimum of 12 in. of cover over encasement pipe. Cover is measured to the top of the subgrade for paved areas and to the bottom of the slab for sidewalks or non-load-bearing slabs.

3.6. **Pipe and Valve Assembly**. Assemble pipe and fittings as recommended by the manufacturers. Clean pipe and fittings of dust, dirt, and moisture before assembly. Make connections between plastic pipe and metal valves with threaded fittings and plastic adapters. Install backflow preventers as required by ordinances of the controlling water utility authority. Install pipe, valves, and valve boxes a minimum of 12 in. from sidewalks, buildings, walls, and other objects, or as directed.

3.7. **Sprinkler Heads and Drip Tubing**. Install sprinkler heads and drip tubing in accordance with the manufacturer's recommendations at locations shown on the plans or as directed.

3.8. **Controller**. Install controllers in accordance with the manufacturer's recommendations at locations shown on the plans or as directed.

3.9. **Low-Voltage Wire**. Install wire in trenches below the pipe or in a minimum 1-in. PVC pipe with at least 12 in. of cover over its entire run. Install wire in continuous lengths. Splice wire, if required, in valve boxes using waterproof materials.

3.10. **Closing and Flushing of PVC Pipe**. Cap or plug pipe after installation to prevent entry of foreign materials that would obstruct the flow of water. Leave caps or plugs in place until removal is necessary for completion of the installation. Thoroughly flush all water lines.

3.11. **Hydrostatic Tests**. Notify the Engineer in writing at least 48 hr. before testing. Center load all pipe with enough backfill to prevent arching or slipping while under pressure. After all welded joints have cured for at least 24 hr., test the main lines from the meter to the valves, with all valves closed, for at least 2 consecutive hours by applying a continuous and static minimum 80-psi water pressure. Repair leaks if necessary and retest. Maintain the lines under static pressure for 24 hr. without leaks before final approval.

3.12. **Backfill and Compaction**. Backfill trenches and other excavations with soil free of objectionable material after the irrigation system is fully operational, all tests and inspections have been performed, and the results are approved. Backfill and compact in 8-in. layers. Smooth and shape disturbed soil to final grade or as directed.

4. MEASUREMENT

This Item will be measured by the lump sum. ~~or by each complete system.~~ ***Irrigation reconnection includes all work to repair and adjust the existing irrigation system due to the construction of the fuel farm drive. The work shall include (but is not limited to) installing PVC conduit under the***

proposed fuel farm drive, adjusting the location of sprinkler heads and the replacement of sprinkler heads. The contractor shall propose the layout of the irrigation system to the engineer and receive approval from the engineer and the town.

5. PAYMENT

For "lump sum" measurement, the work performed and the materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Irrigation ***Reconnection*** ~~System~~." ~~For "each" measurement, the work performed and the materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Irrigation System." of the design specified.~~ This price is full compensation for furnishing and installing all components; flushing and testing water lines; furnishing and operating equipment; and labor, tools, and incidentals. Protection methods for excavations 5 ft. deep or deeper will be measured and paid for as required under Item 402, "Trench Excavation Protection," or Item 403, "Temporary Special Shoring." Electrical work required in accordance with Section 170.3.1., "Electrical Service," will be measured and paid for under Item 628, "Electrical Services." Power and water consumed will be paid for by the Department unless otherwise shown on the plans. Backflow preventer, system inspection, and maintenance fees will be paid by the Department unless otherwise shown on the plans.

Payment will be made under:

Item Tx-170-5.1 Irrigation Reconnection - per Lump Sum

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Item 216
Proof Rolling

1. DESCRIPTION

Proof-roll earthwork, base, or both to locate unstable areas.

2. EQUIPMENT

2.1. **Specified Equipment**. Furnish rollers that weigh at least 25 tons when loaded. The maximum acceptable load is 50 tons. Provide rollers that meet the requirements of Section 210.2.4., "Pneumatic Tire Rollers."

2.2. **Alternative Equipment**. The Contractor may use alternate compaction equipment that produces results equivalent to the specified equipment in the same period of time as approved. Discontinue the use of the alternative equipment and furnish the specified equipment if the desired results are not achieved.

3. CONSTRUCTION

Perform proof rolling as directed. Adjust the load and tire inflation pressures within the range of the manufacturer's charts or tabulations, as directed. Make at least 2 coverages with the proof roller. Offset each trip of the roller by at most one tire width. Operate rollers at a speed between 2 and 6 mph, as directed. Correct unstable or nonuniform areas, if found, in accordance with the applicable Item.

4. MEASUREMENT

~~Rolling will be measured by the hour operated on surfaces being tested.~~ ***Proof rolling shall not be measured for separate payment.***

5. PAYMENT

~~The work performed and equipment furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Proof Rolling." This price is full compensation for furnishing and operating equipment and for labor, materials, tools, and incidentals.~~ ***Proof rolling shall be considered subsidiary to the items in which it is required. There shall be no separate payment for proof rolling.***

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Item 247
Flexible Base

1. DESCRIPTION

Construct a foundation course composed of flexible base.

2. MATERIALS

Furnish uncontaminated materials of uniform quality that meet the requirements of the plans and specifications. Notify the Engineer of the proposed material sources and of changes to material sources. The Engineer may sample and test project materials at any time before compaction throughout the duration of the project to assure specification compliance. Use Tex-100-E material definitions.

2.1. **Aggregate**. Furnish aggregate of the type and grade shown on the plans and meeting the requirements of Table 1. Each source must meet Table 1 requirements for liquid limit, plasticity index, and wet ball mill for the grade specified. Do not use additives, such as but not limited to lime, cement, or fly ash to modify aggregates to meet the requirements of Table 1 unless shown on the plans.

Table 1
Material Requirements

Property	Test Method	Grade 1–2	Grade 3	Grade 4[2]	Grade 5
Sampling	Tex-400-A				
Master gradation sieve size (cumulative % retained)	Tex-110-E				
2-1/2"		0	0	As shown on the plans	0
1-3/4"		0–10	0–10		0–5
7/8"		10–35	–		10–35
3/8"		30–65	–		35–65
#4		45–75	45–75		45–75
#40		65–90	50–85		70–90
Liquid Limit, % Max	Tex-104-E	40	40	As shown on the plans	35
Plasticity Index, Max[1]	Tex-106-E	10	12	As shown on the plans	10
Plasticity index, Min[1]		As shown on the plans	As shown on the plans	As shown on the plans	As shown on the plans
Wet ball mill, % Max	Tex-116-E	40	–	As shown on the plans	40
Wet ball mill, % Max increase passing the #40 sieve		20	–	As shown on the plans	20
Min compressive strength, psi	Tex-117-E			As shown on the plans	
lateral pressure 0 psi		35	–		–
lateral pressure 3 psi		–	–		90
lateral pressure 15 psi		175	–		175

1. Determine plastic index in accordance with Tex-107-E (linear shrinkage) when liquid limit is unattainable as defined in Tex-104-E.
2. Grade 4 may be further designated as Grade 4A, Grade 4B, etc.

2.1.1. **Material Tolerances**. The Engineer may accept material if no more than 1 of the 5 most recent gradation tests has an individual sieve outside the specified limits of the gradation.

When target grading is required by the plans, no single failing test may exceed the master grading by more than 5 percentage points on sieves No. 4 and larger or 3 percentage points on sieves smaller than No. 4.

The Engineer may accept material if no more than 1 of the 5 most recent plasticity index tests is outside the specified limit. No single failing test may exceed the allowable limit by more than 2 points.

2.1.2. **Material Types**. Do not use fillers or binders unless approved. Furnish the type specified on the plans in accordance with the following:

~~2.1.2.1.~~ ~~**Type A**. Crushed stone produced and graded from oversize quarried aggregate that originates from a single, naturally occurring source. Do not use gravel or multiple sources.~~

~~2.1.2.2.~~ ~~**Type B**. Crushed or uncrushed gravel. Blending of 2 or more sources is allowed.~~

~~2.1.2.3.~~ ~~**Type C**. Crushed gravel with a minimum of 60% of the particles retained on a No. 4 sieve with 2 or more crushed faces as determined by Tex-460-A, Part I. Blending of 2 or more sources is allowed.~~

2.1.2.4. **Type D**. Type A material or crushed concrete. Crushed concrete containing gravel will be considered Type D material. Crushed concrete must meet the requirements in Section 247.2.1.3.2., "Recycled Material (Including Crushed Concrete) Requirements," and be managed in a way to provide for uniform quality. The Engineer may require separate dedicated stockpiles in order to verify compliance.

~~2.1.2.5.~~ ~~**Type E**. Caliche, iron ore or as otherwise shown on the plans.~~

2.1.3. **Recycled Material**. Reclaimed asphalt pavement (RAP) and other recycled materials may be used when shown on the plans. Request approval to blend 2 or more sources of recycled materials.

2.1.3.1. **Limits on Percentage**. Do not exceed 20% RAP by weight, when RAP is allowed, unless otherwise shown on the plans. The percentage limitations for other recycled materials will be as shown on the plans.

2.1.3.2. **Recycled Material (Including Crushed Concrete) Requirements**.

2.1.3.2.1. **Contractor-Furnished Recycled Materials**. Provide recycled materials, other than RAP, that have a maximum sulfate content of 3,000 ppm when tested in accordance with Tex-145-E. When the Contractor furnishes the recycled materials, including crushed concrete, the final product will be subject to the requirements of Table 1 for the grade specified. Certify compliance with DMS-11000, "Evaluating and Using Nonhazardous Recyclable Materials Guidelines," for Contractor furnished recycled materials. In addition, recycled materials must be free from reinforcing steel and other objectionable material and have at most 1.5% deleterious material when tested in accordance with Tex-413-A. For RAP, do not exceed a maximum percent loss from decantation of 5.0% when tested in accordance with Tex-406-A. Test RAP without removing the asphalt.

2.1.3.2.2. **Department-Furnished Required Recycled Materials**. When the Department furnishes and requires the use of recycled materials, unless otherwise shown on the plans:

- Department-required recycled material will not be subject to the requirements in Table 1,
- Contractor-furnished materials are subject to the requirements in Table 1 and this Item,
- the final product, blended, will be subject to the requirements in Table 1, and
- for final product, unblended (100% Department-furnished required recycled material), the liquid limit, plasticity index, wet ball mill, and compressive strength is waived.

Crush Department-furnished RAP so that 100% passes the 2 in. sieve. The Contractor is responsible for uniformly blending to meet the percentage required.

2.1.3.2.3. **Department-Furnished and Allowed Recycled Materials**. When the Department furnishes and allows the use of recycled materials or allows the Contractor to furnish recycled materials, the final blended product is subject to the requirements of Table 1 and the plans.

2.1.3.3. **Recycled Material Sources**. Department-owned recycled material is available to the Contractor only when shown on the plans. Return unused Department-owned recycled materials to the Department stockpile location designated by the Engineer unless otherwise shown on the plans.

The use of Contractor-owned recycled materials is allowed when shown on the plans. Contractor-owned surplus recycled materials remain the property of the Contractor. Remove Contractor-owned recycled materials from the project and dispose of them in accordance with federal, state, and local regulations before project acceptance. Do not intermingle Contractor-owned recycled material with Department-owned recycled material unless approved.

2.2. **Water**. Furnish water free of industrial wastes and other objectionable matter.

2.3. **Material Sources**. Expose the vertical faces of all strata of material proposed for use when non-commercial sources are used. Secure and process the material by successive vertical cuts extending through all exposed strata, when directed.

3. EQUIPMENT

Provide machinery, tools, and equipment necessary for proper execution of the work.

3.1. Provide rollers in accordance with Item 210, “Rolling.” Provide proof rollers in accordance with Item 216, “Proof Rolling,” when required.

3.2. When ride quality measurement is required, provide a high speed or lightweight inertial profiler certified at the Texas A&M Transportation Institute. Provide equipment certification documentation. Display a current decal on the equipment indicating the certification expiration date.

4. CONSTRUCTION

Construct each layer uniformly, free of loose or segregated areas, and with the required density and moisture content. Provide a smooth surface that conforms to the typical sections, lines, and grades shown on the plans or as directed.

Stockpile base material temporarily at an approved location before delivery to the roadway. Build stockpiles in layers no greater than 2 ft. thick. Stockpiles must have a total height between 10 and 16 ft. unless otherwise approved. After construction and acceptance of the stockpile, loading from the stockpile for delivery is allowed. Load by making successive vertical cuts through the entire depth of the stockpile.

Do not add or remove material from temporary stockpiles that require sampling and testing before delivery unless otherwise approved. Charges for additional sampling and testing required as a result of adding or removing material will be deducted from the Contractor’s estimates.

Haul approved flexible base in clean trucks. Deliver the required quantity to each 100-ft. station or designated stockpile site as shown on the plans. Prepare stockpile sites as directed. When delivery is to the 100-ft. station, manipulate in accordance with the applicable Items.

4.1. **Preparation of Subgrade or Existing Base**. Remove or scarify existing asphalt concrete pavement in accordance with Item 105, “Removing Treated and Untreated Base and Asphalt Pavement,” when shown on the plans or as directed. Shape the subgrade or existing base to conform to the typical sections shown on the plans or as directed.

When new base is required to be mixed with existing base, deliver, place, and spread the new flexible base in the required amount per station. Manipulate and thoroughly mix the new base with existing material to provide a uniform mixture to the specified depth before shaping.

Proof roll the roadbed in accordance with Item 216, “Proof Rolling,” before pulverizing or scarifying when shown on the plans or directed. Correct soft spots as directed.

4.2. **Placing**. Spread and shape flexible base into a uniform layer with an approved spreader the same day as delivered unless otherwise approved. Construct layers to the thickness shown on the plans. Maintain the shape of the course. Control dust by sprinkling, as directed. Correct or replace segregated areas as directed, at no additional expense to the Department.

Place successive base courses and finish courses using the same construction methods required for the first course.

4.3. **Compaction**. Compact using density control unless otherwise shown on the plans. Multiple lifts are permitted when shown on the plans or approved. Bring each layer to the moisture content directed. When necessary, sprinkle the material in accordance with Item 204, “Sprinkling.”

Begin rolling longitudinally at the sides and proceed towards the center, overlapping on successive trips by at least 1/2 the width of the roller unit. Begin rolling at the low side and progress toward the high side on superelevated curves. Offset alternate trips of the roller. Operate rollers at a speed between 2 and 6 mph as directed.

Rework, recompact, and refinish material that fails to meet or that loses required moisture, density, stability, or finish requirements before the next course is placed or the project is accepted. Continue work until specification requirements are met. Perform the work at no additional expense to the Department.

Before final acceptance, the Engineer will select the locations of tests and measure the flexible base depth in accordance with Tex-140-E. Correct areas deficient by more than 1/2 in. in thickness by scarifying, adding material as required, reshaping, recompacting, and refinishing at the Contractor’s expense.

4.3.1. **Ordinary Compaction**. Roll with approved compaction equipment as directed. Correct irregularities, depressions, and weak spots immediately by scarifying the areas affected, adding or removing approved material as required, reshaping, and recompacting.

4.3.2. **Density Control**. Compact to at least 100% of the maximum dry density determined by Tex-113-E, unless otherwise shown on the plans. Maintain moisture during compaction within ±2 percentage points of the optimum moisture content as determined by Tex-113-E. Measure the moisture content of the material in accordance with Tex-115-E or Tex-103-E during compaction daily and report the results the same day to the Engineer, unless otherwise shown on the plans or directed. Do not achieve density by drying the material after compaction.

The Engineer will determine roadway density and moisture content of completed sections in accordance with Tex-115-E. The Engineer may accept the section if no more than 1 of the 5 most recent density tests is below the specified density and the failing test is no more than 3 pcf below the specified density.

4.4. **Finishing**. After completing compaction, clip, skin, or tight-blade the surface with a maintainer or subgrade trimmer to a depth of approximately 1/4 in. Remove loosened material and dispose of it at an approved location. Seal the clipped surface immediately by rolling with a pneumatic tire roller until a smooth surface is attained. Add small increments of water as needed during rolling. Shape and maintain the course and surface in conformity with the typical sections, lines, and grades as shown on the plans or as directed.

Correct grade deviations greater than 1/4 in. in 16 feet measured longitudinally or greater than 1/4 in. over the entire width of the cross-section in areas where surfacing is to be placed. Correct by loosening and adding, or removing material. Reshape and re-compact in accordance with Section 247.4.3., “Compaction.”

4.5. **Curing**. Cure the finished section until the moisture content is at least 2 percentage points below optimum or as directed before applying the next successive course or prime coat.

4.6. **Ride Quality**. This section applies to the final travel lanes that receive a 1 or 2 course surface treatment for the final surface, unless otherwise shown on the plans. Measure ride quality of the base course after placement of the prime coat and before placement of the surface treatment, unless otherwise approved. Use a certified profiler operator from the Department's MPL. When requested, furnish the Engineer documentation for the person certified to operate the profiler.

Provide all profile measurements to the Engineer in electronic data files within 3 days after placement of the prime coat using the format specified in Tex-1001-S. The Engineer will use Department software to evaluate longitudinal profiles to determine areas requiring corrective action. Correct 0.1-mi.sections having an average international roughness index (IRI) value greater than 100.0 in. per mile to an IRI value of 100.0 in. per mile or less for each wheel path, unless otherwise shown on the plans.

Re-profile and correct sections that fail to maintain ride quality until placement of the next course, as directed. Correct re-profiled sections until specification requirements are met, as approved. Perform this work at no additional expense to the Department.

5. MEASUREMENT

Flexible base will be measured as follows:

- **Flexible Base (Complete In Place)**. The ton, square yard, or any cubic yard method.
- ~~**Flexible Base (Roadway Delivery)**. The ton or any cubic yard method.~~
- ~~**Flexible Base (Stockpile Delivery)**. The ton, cubic yard in vehicle, or cubic yard in stockpile~~.

Measurement by the cubic yard in final position and square yard is a plans quantity measurement. The quantity to be paid for is the quantity shown in the proposal unless modified by Article 9.2., "Plans Quantity Measurement." Additional measurements or calculations will be made if adjustments of quantities are required.

Measurement is further defined for payment as follows.

~~5.1. **Cubic Yard in Vehicle**. By the cubic yard in vehicles of uniform capacity at the point of delivery.~~

~~5.2. **Cubic Yard in Stockpile**. By the cubic yard in the final stockpile position by the method of average end areas.~~

~~5.3. **Cubic Yard in Final Position**. By the cubic yard in the completed and accepted final position. The volume of base course is computed in place by the method of average end areas between the original subgrade or existing base surfaces and the lines, grades, and slopes of the accepted base course as shown on the plans.~~

5.4. **Square Yard**. By the square yard of surface area in the completed and accepted final position. The surface area of the base course is based on the width of flexible base as shown on the plans.

~~5.5. **Ton**. By the ton of dry weight in vehicles as delivered. The dry weight is determined by deducting the weight of the moisture in the material at the time of weighing from the gross weight of the material. The Engineer will determine the moisture content in the material in accordance with Tex-103-E from samples taken at the time of weighing.~~

~~When material is measured in trucks, the weight of the material will be determined on certified scales, or the Contractor must provide a set of standard platform truck scales at a location approved by the Engineer. Scales must conform to the requirements of Item 520, "Weighing and Measuring Equipment."~~

6. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for the types of work shown below. No additional payment

will be made for thickness or width exceeding that shown on the typical section or provided on the plans for cubic yard in the final position or square yard measurement.

Sprinkling and rolling, except proof rolling, will not be paid for directly but will be subsidiary to this Item unless otherwise shown on the plans. When proof rolling is shown on the plans or directed, it will be paid for in accordance with Item 216, “Proof Rolling.”

Where subgrade is constructed under this Contract, correction of soft spots in the subgrade will be at the Contractor’s expense. Where subgrade is not constructed under this Contract, correction of soft spots in the subgrade will be paid in accordance with pertinent Items or Article 4.4., “Changes in the Work.”

6.1. **Flexible Base (Complete In Place)**. Payment will be made for the type and grade specified. For cubic yard measurement, “In Vehicle,” “In Stockpile,” or “In Final Position” will be specified. For square yard measurement, a depth will be specified. This price is full compensation for furnishing materials, temporary stockpiling, assistance provided in stockpile sampling and operations to level stockpiles for measurement, loading, hauling, delivery of materials, spreading, blading, mixing, shaping, placing, compacting, reworking, finishing, correcting locations where thickness is deficient, curing, furnishing scales and labor for weighing and measuring, and equipment, labor, tools, and incidentals.

~~6.2. **Flexible Base (Roadway Delivery)**. Payment will be made for the type and grade specified. For cubic yard measurement, “In Vehicle,” “In Stockpile,” or “In Final Position” will be specified. The unit price bid will not include processing at the roadway. This price is full compensation for furnishing materials, temporary stockpiling, assistance provided in stockpile sampling and operations to level stockpiles for measurement, loading, hauling, delivery of materials, furnishing scales and labor for weighing and measuring, and equipment, labor, tools, and incidentals.~~

~~6.3. **Flexible Base (Stockpile Delivery)**. Payment will be made for the type and grade specified. For cubic yard measurement, “In Vehicle” or “In Stockpile” will be specified. The unit price bid will not include processing at the roadway. This price is full compensation for furnishing and disposing of materials, preparing the stockpile area, temporary or permanent stockpiling, assistance provided in stockpile sampling and operations to level stockpiles for measurement, loading, hauling, delivery of materials to the stockpile, furnishing scales and labor for weighing and measuring, and equipment, labor, tools, and incidentals.~~

Payment will be made under:

Item TX-247-6.1 Flexible Base (Density Control) (Complete in Place) (Type D Grade 1) (8”) – Per Square Yard

Item 260
Lime Treatment (Road-Mixed)

1. DESCRIPTION

Mix and compact lime, water, and subgrade or base (with or without asphaltic concrete pavement) in the roadway.

2. MATERIALS

Furnish uncontaminated materials of uniform quality that meet the requirements of the plans and specifications. Notify the Engineer of the proposed material sources and of changes to material sources. Obtain verification from the Engineer that the specification requirements are met before using the sources. The Engineer may sample and test project materials at any time before compaction. Use Tex-100-E for material definitions.

2.1. **Lime**. Furnish lime that meets the requirements of DMS-6350 "Lime and Lime Slurry," and DMS-6330, "Pre-Qualification of Lime Sources." Use hydrated lime, commercial lime slurry, quicklime, or carbide lime slurry as shown on the plans. Do not use quicklime when sulfates are present in quantities greater than 3,000 ppm. When furnishing quicklime, provide it in bulk.

2.2. **Subgrade**. The Engineer will determine the sulfate content of the existing subgrade in accordance with Tex-145-E and organic content in accordance with Tex-148-E before lime treatment begins. Suspend operations when material to be treated has a sulfate content greater than 7,000 ppm or an organic content greater than 1.0% and proceed as directed.

2.3. **Flexible Base**. Unless otherwise shown on the plans, furnish base material that meets the requirements of Item 247, "Flexible Base," for the type and grade shown on the plans, before the addition of lime.

2.4. **Water**. Furnish water free of industrial wastes and other objectionable material.

2.5. **Asphalt**. When asphalt or emulsion is permitted for curing purposes, furnish materials that meet the requirements of Item 300, "Asphalts, Oils, and Emulsions," as shown on the plans or as directed.

2.6. **Mix Design**. The Engineer will determine the target lime content and optimum moisture content in accordance with Tex-121-E or prior experience with the project materials. The Contractor may propose a mix design developed in accordance with Tex-121-E. The Engineer will use Tex-121-E to verify the Contractor's proposed mix design before acceptance. Reimburse the Department for subsequent mix designs or partial designs necessitated by changes in the material or requests by the Contractor. Limit the amount of recycled asphalt pavement to no more than 50% of the mix unless otherwise shown on the plans or directed.

3. EQUIPMENT

Provide machinery, tools, and equipment necessary for proper execution of the work. Provide rollers in accordance with Item 210, "Rolling." Provide proof rollers in accordance with Item 216, "Proof Rolling," when required.

3.1. **Storage Facility**. Store quicklime and dry hydrated lime in closed, weatherproof containers.

3.2. **Slurry Equipment**. Use slurry tanks equipped with agitation devices to slurry hydrated lime or quicklime on the project or other approved location. The Engineer may approve other slurrying methods.

3.3. Provide a pump for agitating the slurry when the distributor truck is not equipped with an agitator. Equip the distributor truck with a sampling device in accordance with Tex-600-J, Part I, when using commercial lime slurry or carbide lime slurry.

3.4. **Hydrated Lime Distribution Equipment**. Provide equipment to spread lime evenly across the area to be treated. Provide equipment with a rotary vane feeder to spread lime, when shown on the plans.

3.5. **Pulverization Equipment**. Provide pulverization equipment that:

- cuts and pulverizes material uniformly to the proper depth with cutters that plane to a uniform surface over the entire width of the cut,
- provides a visible indication of the depth of cut at all times, and
- uniformly mixes the materials.

4. CONSTRUCTION

Construct each layer uniformly, free of loose or segregated areas, and with the required density and moisture content. Provide a smooth surface that conforms to the typical sections, lines, and grades shown on the plans or as directed.

4.1. **Preparation of Subgrade or Existing Base for Treatment**. Before treating, remove existing asphalt pavement in accordance with Item 105, "Removing Treated and Untreated Base and Asphalt Pavement," when shown on the plans or as directed. Shape existing material in accordance with applicable bid items to conform to typical sections shown on the plans and as directed.

Unless otherwise approved, proof roll the roadbed in accordance with Item 216, "Proof Rolling," before pulverizing or scarifying existing material. Correct soft spots as directed.

When material is imported from a borrow source, notify the Engineer of the location of the borrow source well in advance to allow time for testing and approval to avoid delay to the project. Stockpile as directed. The Engineer will test the borrow source and determine the sulfate and organic contents. When the borrow source has a sulfate content greater than 3,000 ppm or an organic content greater than 1.0%, proceed as directed.

When new base material is required to be mixed with existing base, deliver, place, and spread the new material in the required amount per station. Manipulate and thoroughly mix new base with existing material to provide a uniform mixture to the specified depth before shaping.

4.2. **Pulverization**. Pulverize or scarify existing material after shaping so that 100% passes a 2-1/2 in. sieve. If the material cannot be uniformly processed to the required depth in a single pass, excavate and windrow the material to expose a secondary grade to achieve processing to plan depth.

4.3. **Application of Lime**. Uniformly apply lime using ~~dry or~~ slurry placement as shown on the plans or as directed. Add lime at the percentage determined in Section 260.2.6., "Mix Design." Apply lime only on an area where mixing can be completed during the same working day.

Start lime application only when the air temperature is at least 35°F and rising or is at least 40°F. The temperature will be taken in the shade and away from artificial heat. Suspend application when the Engineer determines that weather conditions are unsuitable.

Minimize dust and scattering of lime by wind. Do not apply lime when wind conditions, in the opinion of the Engineer, cause blowing lime to become dangerous to traffic or objectionable to adjacent property owners. ~~When pebble grade quicklime is placed dry, mix the material and lime thoroughly at the time of lime application.~~ Use of quicklime can be dangerous. Inform users of the recommended precautions for handling and storage.

4.3.1. ~~**Dry Placement**. Before applying lime, bring the prepared roadway to approximately 2 percentage points above optimum moisture content. When necessary, sprinkle in accordance with Item 204, "Sprinkling." Distribute the required quantity of hydrated lime or pebble grade quicklime with approved equipment. Only hydrated lime may be distributed by bag. Do not use a motor grader to spread hydrated lime.~~

4.3.2. **Slurry Placement**. Provide slurry free of objectionable materials, at or above the minimum dry solids content, and with a uniform consistency that will allow ease of handling and uniform application. Deliver commercial lime slurry or carbide lime slurry to the jobsite, or use hydrated lime or quicklime to prepare lime slurry at the jobsite or other approved location, as specified. When dry quicklime is applied as slurry, use 80% of the amount shown on the plans.

Distribute slurry uniformly by making successive passes over a measured section of roadway until the specified lime content is reached. Uniformly spread the residue from quicklime slurry over the length of the roadway being processed, unless otherwise directed.

4.4. **Mixing**. Begin mixing within 6 hr. of application of lime. Hydrated lime exposed to the open air for 6 hr. or more between application and mixing, or that experiences excessive loss due to washing or blowing, will not be accepted for payment.

Thoroughly mix the material and lime using approved equipment. When treating subgrade, bring the moisture content above the optimum moisture content to insure adequate chemical reaction of the lime and subgrade materials. Allow the mixture to mellow for 1 to 4 days, as directed. When pebble grade quicklime is used, allow the mixture to mellow for 2 to 4 days, as directed. Sprinkle the treated materials during the mixing and mellowing operation, as directed, to achieve adequate hydration and proper moisture content. When the material to be treated has a sulfate content greater than 3,000 ppm but less than or equal to 7,000 ppm, mellow for a minimum of 7 days. Maintain in a continuously moist condition by sprinkling in accordance with Item 204, "Sprinkling." After mellowing, resume mixing until a homogeneous, friable mixture is obtained. After mixing, the Engineer may sample the mixture at roadway moisture and test in accordance with Tex-101-E, Part III, to determine compliance with the gradation requirements in Table 1.

Table 1
Gradation Requirements (Minimum % Passing)

Sieve Size	Base	Subgrade
1-3/4"	100	100
3/4"	85	85
#4	–	60

4.5. **Compaction**. Compact the mixture using density control, unless otherwise shown on the plans. Multiple lifts are permitted when shown on the plans or approved. Bring each layer to the moisture content directed. Sprinkle the treated material in accordance with Item 204, "Sprinkling" or aerate the treated material to adjust the moisture content during compaction so that it is no more than 1.0 percentage points below optimum and 2.0 percentage points above optimum as determined by Tex-121-E. Measure the moisture content of the material in accordance with Tex-115-E or Tex-103-E during compaction daily and report the results the same day, unless otherwise shown on the plans or directed.

Begin rolling longitudinally at the sides and proceed toward the center, overlapping on successive trips by at least 1/2 the width of the roller unit. On superelevated curves, begin rolling at the low side and progress toward the high side. Offset alternate trips of the roller. Operate rollers at a speed between 2 and 6 mph as directed.

Before final acceptance, the Engineer will select the locations of tests in each unit and measure the treated depth in accordance with Tex-140-E. Correct areas deficient by more than 1/2 in. in thickness or more than 1/2% in target lime content by adding lime as required, reshaping, recompacting, and refinishing at the Contractor's expense.

Rework, recompact, and refinish material that fails to meet or that loses required moisture, density, stability, or finish before the next course is placed or the project is accepted. Continue work until specification

requirements are met. Rework in accordance with Section 260.4.6., "Reworking a Section." Perform the work at no additional expense to the Department.

4.5.1. **Ordinary Compaction**. Roll with approved compaction equipment, as directed. Correct irregularities, depressions, and weak spots immediately by scarifying the areas affected, adding or removing treated material as required, reshaping, and recompacting.

4.5.2. **Density Control**. The Engineer will determine roadway density and moisture content of completed sections in accordance with Tex-115-E. The Engineer may accept the section if no more than 1 of the 5 most recent density tests is below the specified density and the failing test is no more than 3 pcf below the specified density.

4.5.2.1. **Subgrade**. Compact to at least 95% of the maximum density determined in accordance with Tex-121-E, unless otherwise shown on the plans.

4.5.2.2. **Base**. Compact the bottom course to at least 95% of the maximum density determined in accordance with Tex-121-E, unless otherwise shown on the plans. Compact subsequent courses treated under this Item to at least 98% of the maximum density determined in accordance with Tex-121-E, unless otherwise shown on the plans.

4.6. **Reworking a Section**. When a section is reworked within 72 hr. after completion of compaction, rework the section to provide the required density. When a section is reworked more than 72 hr. after completion of compaction, add additional lime at 25% of the percentage determined in Section 260.2.6., "Mix Design." Reworking includes loosening, adding material or removing unacceptable material if necessary, mixing as directed, compacting, and finishing. When density control is specified, determine a new maximum density of the reworked material in accordance with Tex-121-E, and compact to at least 95% of this density.

4.7. **Finishing**. Immediately after completing compaction of the final course, clip, skin, or tight-blade the surface of the lime-treated material with a maintainer or subgrade trimmer to a depth of approximately 1/4 in. Remove loosened material and dispose of at an approved location. Roll the clipped surface immediately with a pneumatic tire roller until a smooth surface is attained. Add small amounts of water as needed during rolling. Shape and maintain the course and surface in conformity with the typical sections, lines, and grades shown on the plans or as directed.

Finish grade of constructed subgrade to within 0.1 ft. in the cross-section and 0.1 ft. in 16 ft. measured longitudinally.

Correct grade deviations of constructed base greater than 1/4 in. in 16 ft. measured longitudinally or greater than 1/4 in. over the entire width of the cross-section in areas where surfacing is to be placed. Remove excess material, reshape, and roll with a pneumatic-tire roller. Correct as directed if material is more than 1/4 in. low. Do not surface patch. The 72-hr. time limit required for completion of placement, compaction, and finishing does not apply to finishing required just before applying the surface course.

4.8. **Curing**. Cure for the minimum number of days shown in Table 2 by sprinkling in accordance with Item 204, "Sprinkling," or by applying an asphalt material at a rate of 0.05 to 0.20 gal. per square yard as directed. Maintain moisture during curing. Upon completion of curing, maintain the moisture content in accordance with Section 132.3.5., "Maintenance of Moisture and Reworking," for subgrade and Section 247.4.5., "Curing" for bases before placing subsequent courses. Do not allow equipment on the finished course during curing except as required for sprinkling, unless otherwise approved. Apply seals or additional courses within 14 calendar days of final compaction.

Table 2
Minimum Curing Requirements before Placing Subsequent Courses[1]

Untreated Material	Curing (Days)
PI ≤ 35	2
PI > 35	5

1. Subject to the approval of the Engineer. Proof rolling may be required as an indicator of adequate curing.

5. MEASUREMENT

5.1. **Lime**. When lime is furnished in trucks, the weight of lime will be determined on certified scales, or the Contractor must provide a set of standard platform truck scales at a location approved by the Engineer. Scales must conform to the requirements of Item 520, "Weighing and Measuring Equipment."

When lime is furnished in bags, indicate the manufacturer's certified weight. Bags varying more than 5% from that weight may be rejected. The average weight of bags in any shipment, as determined by weighing 10 bags taken at random, must be at least the manufacturer's certified weight.

5.1.1. **Hydrated Lime**.

~~5.1.1.1.~~ ~~**Dry**. Lime will be measured by the ton (dry weight).~~

5.1.1.2. **Slurry**. Lime slurry will be measured by the ton (dry weight) of the hydrated lime used to prepare the slurry at the jobsite.

5.1.2. **Commercial Lime Slurry**. Lime slurry will be measured by the ton (dry weight) as calculated from the minimum percent dry solids content of the slurry, multiplied by the weight of the slurry in tons delivered.

5.1.3. **Quicklime**.

~~5.1.3.1.~~ ~~**Dry**. Lime will be measured by the ton (dry weight) of the quicklime.~~

5.1.3.2. **Slurry**. Lime slurry will be measured by the ton (dry weight) of the quicklime used to prepare the slurry multiplied by a conversion factor of 1.28 to give the quantity of equivalent hydrated lime, which will be the basis of payment.

~~5.1.4.~~ ~~**Carbide Lime Slurry**. Lime slurry will be measured by the ton (dry weight) as calculated from the minimum percent dry solids content of the slurry, multiplied by the weight of the slurry in tons delivered.~~

5.2. **Lime Treatment**. Lime treatment will be measured by the square yard of surface area. The dimensions for determining the surface area are established by the widths shown on the plans and the lengths measured at placement.

6. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid in accordance with Section 260.6.1., "Lime," and Section 260.6.2., "Lime Treatment."

Furnishing and delivering new base will be paid for in accordance with Section 247.6.2., "Flexible Base (Roadway Delivery)." Mixing, spreading, blading, shaping, compacting, and finishing new or existing base material will be paid for in accordance with Section 260.6.2., "Lime Treatment." Removal and disposal of existing asphalt concrete pavement will be paid for in accordance with pertinent Items or Article 4.4., "Changes in the Work."

Sprinkling and rolling, except proof rolling, will not be paid for directly but will be subsidiary to this Item, unless otherwise shown on the plans. When proof rolling is shown on the plans or directed by the Engineer, it will be paid for in accordance with Item 216, "Proof Rolling."

Where subgrade is constructed under this Contract, correction of soft spots in the subgrade or existing base will be at the Contractor's expense. Where subgrade is not constructed under this Contract, correction of soft spots in the subgrade or existing base will be paid for in accordance with pertinent Items or Article 4.4., "Changes in the Work."

Where subgrade to be treated under this Contract has sulfates greater than 7,000 ppm, work will be paid for in accordance with Article 4.4., "Changes in the Work."

Asphalt used solely for curing will not be paid for directly but will be subsidiary to this Item. Asphalt placed for curing and priming will be paid for under Item 310, "Prime Coat."

6.1. **Lime**. Lime will be paid for at the unit price bid for "Lime" of one of the following types:

- Hydrated Lime (Dry),
- Hydrated Lime (Slurry),
- Commercial Lime Slurry,
- Quicklime (Dry),
- Quicklime (Slurry), or
- Carbide Lime Slurry.

This price is full compensation for materials, delivery, equipment, labor, tools, and incidentals.

Lime used for reworking a section in accordance with Section 260.4.6., "Reworking a Section," will not be paid for directly but will be subsidiary to this Item.

6.2. **Lime Treatment**. Lime treatment will be paid for at the unit price bid for "Lime Treatment (Existing Material)," "Lime Treatment (New Base)," or "Lime Treatment (Mixing Existing Material and New Base)," for the depth specified. No payment will be made for thickness or width exceeding that shown on the plans. This price is full compensation for shaping existing material, loosening, mixing, pulverizing, spreading, applying lime, compacting, finishing, curing, curing materials, blading, shaping and maintaining shape, replacing mixture, disposing of loosened materials, processing, hauling, preparing secondary subgrade, water, equipment, labor, tools, and incidentals.

Payment will be made under:

Item Tx-260-6.1	***Lime — per ton***
Item Tx-260-6.2	***Lime Treated Subgrade (6" Thickness) — per square yard***

Item 275
Cement Treatment (Road-Mixed)

1. DESCRIPTION

Mix and compact cement, water, and subgrade or base (with or without asphalt concrete pavement) in the roadway.

2. MATERIALS

Furnish uncontaminated materials of uniform quality that meet the requirements of the plans and specifications. Notify the Engineer of the proposed material sources and of changes to material sources. The Engineer will verify that the specification requirements are met before the sources can be used. The Engineer may sample and test project materials at any time before compaction. Use Tex-100-E for material definitions.

2.1. **Cement**. Furnish hydraulic cement that meets the requirements of DMS-4600, "Hydraulic Cement," and the Department's *Hydraulic Cement Quality Monitoring Program* (HCQMP). Sources not on the HCQMP will require testing and approval before use.

~~2.2.~~ ~~**Subgrade**. The Engineer will determine the sulfate content in accordance with Tex-145-E and organic content in accordance with Tex-148-E before cement treatment begins. Suspend operations when material to be treated has a sulfate content greater than 7,000 ppm or an organic content greater than 1.0% and proceed as directed.~~

2.3. **Flexible Base**. Unless otherwise shown on the plans, furnish base material that meets the requirements of Item 247, "Flexible Base," for the type and grade shown on the plans, before the addition of cement.

2.4. **Water**. Furnish water free of industrial waste and other objectionable material.

~~2.5.~~ ~~**Asphalt**. When permitted for curing purposes, furnish asphalt or emulsion that meets the requirements of Item 300, "Asphalts, Oils, and Emulsions," as shown on the plans or directed.~~

2.6. **Mix Design**. The Engineer will determine the target cement content and optimum moisture content to produce a stabilized mixture that meets the strength requirements shown on the plans. The mix will be designed in accordance with Tex-120-E or will be based on prior experience with the project materials. The Contractor may propose a mix design developed in accordance with Tex-120-E. Meet strength requirements when shown on the plans. The Engineer will use Tex-120-E to verify the Contractor's proposed mix design before acceptance. Reimburse the Department for subsequent mix designs or partial designs necessitated by changes in the material or requests by the Contractor. Limit the amount of recycled asphalt pavement to no more than 50% of the mix unless otherwise shown on the plans or directed.

3. EQUIPMENT

Provide machinery, tools, and equipment necessary for proper execution of the work. Provide rollers in accordance with Item 210, "Rolling." Provide proof rollers in accordance with Item 216, "Proof Rolling," when required.

3.1. **Cement Storage Facility**. Store cement in closed, weatherproof containers.

3.2. **Cement Slurry Equipment**. Use slurry tanks equipped with agitation devices to slurry cement on the project or other approved location. The Engineer may approve other slurrying methods. Provide a pump for agitating the slurry when the distributor truck is not equipped with an agitator. Equip the distributor truck with an approved sampling device.

3.3. **Dry Cement Distribution Equipment**. Provide equipment to spread cement evenly across the area to be treated. Provide equipment with a rotary vane feeder when shown on the plans.

3.4. **Pulverization Equipment**. Provide pulverization equipment that:

- cuts and pulverizes material uniformly to the proper depth with cutters that will plane to a uniform surface over the entire width of the cut,
- provides a visible indication of the depth of cut at all times, and
- uniformly mixes the materials.

4. CONSTRUCTION

Construct each layer uniformly, free of loose or segregated areas and with the required density and moisture content. Provide a smooth surface that conforms to the typical sections, lines, and grades shown on the plans or as directed.

4.1. **Preparation of Subgrade or Existing Base for Treatment**. Before treating, remove existing asphalt concrete pavement in accordance with pertinent Items and the plans or as directed. Shape existing material in accordance with applicable bid items to conform to the typical sections shown on the plans and as directed.

When shown on the plans or directed, proof roll the roadbed in accordance with Item 216, “Proof Rolling,” before pulverizing or scarifying existing material. Correct soft spots as directed.

Provide the borrow source location well in advance when material is imported, to allow time for testing and approval to avoid delay to the project. Stockpile as directed. The Engineer will test the borrow source and determine the sulfate and organic contents. When the borrow source has a sulfate content greater than 3,000 ppm or an organic content greater than 1.0%, proceed as directed.

When new base is required to be mixed with existing base, deliver, place, and spread the new material in the required amount per station. Manipulate and thoroughly mix new base with existing material to provide a uniform mixture to the specified depth before shaping.

4.2. **Pulverization**. Pulverize or scarify existing material after shaping so that 100% passes a 2-1/2 in. sieve. If the material cannot be uniformly processed to the required depth in a single pass, excavate and windrow the material to expose a secondary grade to achieve processing to plan depth.

4.3. **Application of Cement**. Uniformly apply cement using dry placement unless otherwise shown on the plans. Add cement at the percentage determined in Section 275.2.6., “Mix Design.” Apply cement only on an area where mixing, compacting, and finishing can be completed during the same working day.

Start cement application only when the air temperature is at least 35°F and rising or is at least 40°F. The temperature will be taken in the shade and away from artificial heat. Suspend application when the Engineer determines that weather conditions are unsuitable.

4.3.1. **Dry Placement**. Before applying cement, bring the prepared roadway to approximately optimum moisture content. When necessary, sprinkle in accordance with Item 204, “Sprinkling.” Distribute the required quantity of dry cement with approved equipment. Minimize dust and scattering of cement by wind. Do not apply cement when wind conditions, in the opinion of the Engineer, cause blowing cement to become dangerous to traffic or objectionable to adjacent property owners.

4.3.2. **Slurry Placement**. Mix the required quantity of cement with water, as approved. Provide slurry free of objectionable materials and with a uniform consistency that can be easily applied. Agitate the slurry continuously. Apply slurry within 2 hours of adding water and when the roadway is at a moisture content drier than optimum. Distribute slurry uniformly by making successive passes over a measured section of the roadway until the specified cement content is reached.

4.4. **Mixing**. Thoroughly mix the material and cement using approved equipment. Mix until a homogeneous mixture is obtained. Sprinkle the treated materials during the mixing operation, as directed, to maintain optimum mixing moisture. Spread and shape the completed mixture in a uniform layer.

After mixing, the Engineer may sample the mixture at roadway moisture and test in accordance with Tex-101-E, Part III, to determine compliance with the gradation requirements in Table 1. When strength requirements are shown on the plans, the Engineer may sample the mixture to verify strength in accordance with Tex-120-E and adjust cement content to achieve the target strength for work going forward.

Table 1
Gradation Requirements Minimum % Passing

Sieve Size	Base	Subgrade
1-3/4"	100	100
3/4"	85	85
#4	–	60

4.5. **Compaction**. Compact the mixture in one lift using density control unless otherwise shown on the plans. Complete compaction within 2 hours after the application of water to the mixture of material and cement.

Sprinkle the treated material in accordance with Item 204, "Sprinkling," or aerate the treated material to adjust the moisture content during compaction so that it is within 2.0 percentage points of optimum as determined by Tex-120-E. Measure the moisture content of the material in accordance with Tex-115-E or Tex-103-E during compaction daily and report the results the same day to the Engineer, unless otherwise shown on the plans or directed. Adjust operations as required.

Begin rolling longitudinally at the sides and proceed towards the center, overlapping on successive trips by at least one-half the width of the roller unit. On superelevated curves, begin rolling at the low side and progress toward the high side. Offset alternate trips of the roller. Operate rollers at a speed between 2 and 6 mph, as directed.

Before final acceptance, the Engineer will select the locations of tests in each unit and measure the treated depth in accordance with Tex-140-E. Correct areas deficient by more than 1/2 in. in thickness or more than 1/2% in target cement content by adding cement as required, reshaping, re-compacting, and refinishing at the Contractor's expense.

Remove or rework areas that lose required stability, compaction, or finish, as directed. When a section is reworked more than 4 hr. after completion of compaction, add additional cement as directed. Provide additional work and material at no additional cost to the Department.

4.5.1. **Ordinary Compaction**. Roll with approved compaction equipment, as directed. Correct irregularities, depressions, and weak spots immediately by scarifying the areas affected, adding or removing treated material as required, reshaping, and recompacting.

4.5.2. **Density Control**. Achieve at least 95% of the maximum density determined in accordance with Tex-120-E when compaction is complete. The Engineer will determine roadway density and moisture content in accordance with Tex-115-E. The Engineer may verify strength in accordance with Tex-120-E and adjust cement content to achieve the target strength for work going forward. Remove material that does not meet density requirements or rework by adding the target cement content, reshaping, recompacting, and refinishing at the Contractor's expense.

The Engineer may accept the section if no more than 1 of the 5 most recent density tests is below the specified density and the failing test is no more than 3 pcf below the specified density.

4.6. **Finishing**. Immediately after completing compaction, clip, skin, or tight-blade the surface of the cement treated material with a maintainer or subgrade trimmer to a depth of approximately 1/4 in. Remove loosened material and dispose of it at an approved location. Roll the clipped surface immediately with a pneumatic-tire roller until a smooth surface is attained. Add small increments of water as needed during rolling. Shape and maintain the course and surface in conformity with the typical sections, lines and grades shown on the plans or as directed.

Finish grade of constructed subgrade to within 0.1 ft. in the cross-section and 0.1 ft. in 16 ft. measured longitudinally.

Correct grade deviations of constructed base greater than 1/4 in. in 16 ft. measured longitudinally or greater than 1/4 in. over the entire width of the cross-section in areas where surfacing is to be placed. Remove excess material, reshape, and roll with a pneumatic-tire roller. Correct as directed if material is more than 1/4 in. low. Do not surface patch.

4.7. **Microcracking**. When shown on the plans, maintain moisture content of the finished cement treated base for a period of 24 to 48 hr. During this time, but not sooner than 24 hr., roll the finished course with a vibratory roller to induce microcracking. The vibratory roller must be in accordance with Item 210, “Rolling,” with a static weight equal to or more than 12 tons and the vibratory drum must be not less than 20 in. wide. The roller must travel at a speed of 2 mph, vibrating at maximum amplitude, and make 2 to 4 passes with 100% coverage exclusive of the outside 1 ft. of the surface crown, unless otherwise directed by the Engineer. Additional passes may be required to achieve the desired crack pattern as directed. Notify the Engineer 24 hours before the microcracking begins.

4.8. **Curing**. Cure for at least 3 days by sprinkling in accordance with Item 204, “Sprinkling,” or by applying an asphalt material at the rate of 0.05 to 0.20 gal. per square yard, as shown on the plans or directed. When a section is microcracked, cure section for an additional 2 days after microcracking. Maintain the moisture content during curing at no lower than 2 percentage points below optimum. Continue curing until placing another course.

5. MEASUREMENT

5.1. **Cement**. Cement will be measured by the ton (dry weight). When cement is furnished in trucks, the weight of cement will be determined on certified scales, or the Contractor must provide a set of standard platform truck scales at a location approved by the Engineer. Scales must conform to the requirements of Item 520, “Weighing and Measuring Equipment.”

When cement is furnished in bags, indicate the manufacturer’s certified weight. Bags varying more than 5% from that weight may be rejected. The average weight of bags in any shipment, as determined by weighing 10 bags taken at random, must be at least the manufacturer’s certified weight.

Cement slurry will be measured by the ton (dry weight) of the cement used to prepare the slurry at the jobsite or from the minimum percent dry solids content of the slurry, multiplied by the weight of the slurry in tons delivered.

5.2. **Cement Treatment**. Cement treatment will be measured by the square yard of surface area. The dimensions for determining the surface areas are established by the widths shown on the plans and lengths measured at placement.

6. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid in accordance with Section 275.5.1., "Cement," and Section 275.5.2., "Cement Treatment."

Furnishing and delivering new base will be paid for in accordance with Section 247.6.2., "Flexible Base (Roadway Delivery)." Mixing, spreading, blading, shaping, compacting, and finishing new or existing base material will be paid for under Section 275.6.2., "Cement Treatment." Removal and disposal of existing asphalt concrete pavement will be paid for in accordance with pertinent Items or Article 4.4., "Changes in the Work."

Sprinkling and rolling, except proof-rolling, will not be paid for directly but will be subsidiary to this Item, unless otherwise shown on the plans. When proof-rolling is shown on the plans or directed by the Engineer, it will be paid for in accordance with Item 216, "Proof Rolling."

Where subgrade is constructed under this Contract, correction of soft spots in the subgrade or existing base will be at the Contractor's expense. Where subgrade is not constructed under this Contract, correction of soft spots in the subgrade or existing base will be in accordance with pertinent Items or Article 4.4., "Changes in the Work."

Where subgrade to be treated under this Contract has sulfates greater than 7,000 ppm, work will be paid for in accordance with Article 4.4., "Changes in the Work."

Asphalt used solely for curing will not be paid for directly but will be subsidiary to this Item. Asphalt placed for the purpose of curing and priming will be paid for under Item 310, "Prime Coat."

6.1. **Cement**. Cement will ***not be paid for separately but be considered subsidiary to the item in which it is contained.*** ~~be paid for at the unit price bid for "Cement." This price is full compensation for materials, delivery, equipment, labor, tools, and incidentals.~~

6.2. **Cement Treatment**. Cement treatment will be paid for at the unit price bid for ~~"Cement Treatment (Existing Material),"~~ "Cement Treatment (New Base)," ~~or "Cement Treatment (Mixing Existing Material and New Base),"~~ for the depth specified. No payment will be made for thickness or width exceeding that shown on the plans. This price is full compensation for shaping existing material, loosening, mixing, pulverizing, spreading, applying cement, compacting, microcracking, finishing, curing, curing materials, blading, shaping and maintaining shape, replacing mixture, disposing of loosened materials, processing, hauling, preparing secondary subgrade, water, equipment, labor, tools, and incidentals.

Payment will be made under:

Item TX-275-6.1	***Cement Treated (New Base)(6") — per square yard***

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Item 360
Concrete Pavement

1. DESCRIPTION

Construct hydraulic cement concrete pavement with or without curbs on the concrete pavement.

2. MATERIALS

2.1. **Hydraulic Cement Concrete**. Provide hydraulic cement concrete in accordance with Item 421, "Hydraulic Cement Concrete." Use compressive strength testing unless otherwise shown on the plans. Provide Class P concrete designed to meet a minimum average compressive strength of 3,200 psi or a minimum average flexural strength of 450 psi at 7 days or a minimum average compressive strength of 4,000 psi or a minimum average flexural strength of 570 psi at 28 days. Test in accordance with Tex-448-A or Tex-418-A.

Obtain written approval if the concrete mix design exceeds 520 lb. of cementitious material.

Use coarse aggregates for continuously reinforced concrete pavements to produce concrete with a coefficient of thermal expansion not more than 5.5×10^{-6} in./in./°F. Provide satisfactory Tex-428-A test data from an approved testing laboratory if the coarse aggregate coefficient of thermal expansion listed on the Department's *Concrete Rated Source Quality Catalog* is not equal to or less than 5.5×10^{-6} in./in./°F.

Provide Class HES concrete for very early opening of small pavement areas or leave-outs to traffic when shown on the plans or allowed. Design Class HES to meet the requirements of Class P and a minimum average compressive strength of 3,200 psi or a minimum average flexural strength of 450 psi in 24 hr., unless other early strength and time requirements are shown on the plans or allowed.

Use Class A or P concrete for curbs that are placed separately from the pavement. Provide concrete that is workable and cohesive, possesses satisfactory finishing qualities, and conforms to the mix design and mix design slump.

2.2. **Reinforcing Steel**. Provide Grade 60 or above, deformed steel for bar reinforcement in accordance with Item 440, "Reinforcement for Concrete." Provide positioning and supporting devices (baskets and chairs) capable of securing and holding the reinforcing steel in proper position before and during paving. Provide corrosion protection when shown on the plans.

2.2.1. **Dowels**. Provide smooth, straight dowels of the size shown on the plans, free of burrs, and conforming to the requirements of Item 440, "Reinforcement for Concrete." Coat dowels with a thin film of grease, wax, silicone or other approved de-bonding material. Provide dowel caps on the lubricated end of each dowel bar used in an expansion joint. Provide dowel caps filled with a soft compressible material with enough range of movement to allow complete closure of the expansion joint.

2.2.2. **Tie Bars**. Provide straight deformed steel tie bars. Provide either multiple-piece tie bars or single-piece tie bars as shown on the plans. Furnish multiple piece tie bar assemblies from the list of approved multiple-piece tie bars that have been prequalified in accordance with DMS-4515 "Multiple Piece Tie Bars for Concrete Pavements," when used. Multiple-piece tie bars used on individual projects must be sampled in accordance with Tex-711-I, and tested in accordance with DMS-4515 "Multiple Piece Tie Bars for Concrete Pavements."

2.3. **Alternative Reinforcing Materials**. Provide reinforcement materials of the dimensions and with the physical properties specified when allowed or required by the plans. Provide manufacturer's certification of required material properties.

2.4. **Curing Materials**. Provide Type 2 membrane curing compound conforming to DMS-4650, "Hydraulic Cement Concrete Curing Materials and Evaporation Retardants." Provide SS-1 emulsified asphalt conforming to Item 300, "Asphalts, Oils, and Emulsions," for concrete pavement to be overlaid with asphalt concrete under this Contract unless otherwise shown on the plans or approved. Provide materials for other methods of curing conforming to the requirements of Item 422, "Concrete Superstructures." Provide insulating blankets for curing fast track concrete pavement with a minimum thermal resistance (R) rating of 0.5 hour-square foot F/BTU. Use insulating blankets that are free from tears and are in good condition.

2.5. **Epoxy**. Provide Type III, Class C epoxy in accordance with DMS-6100, "Epoxies and Adhesives," for installing all drilled-in reinforcing steel. Submit a work plan and request approval for the use of epoxy types other than Type III, Class C.

2.6. **Evaporation Retardant**. Provide evaporation retardant conforming to DMS-4650., "Hydraulic Cement Concrete Curing Materials and Evaporation Retardants."

2.7. **Joint Sealants and Fillers**. Provide Class 5 or Class 8 joint-sealant materials and fillers unless otherwise shown on the plans or approved and other sealant materials of the size, shape, and type shown on the plans in accordance with DMS-6310, "Joint Sealants and Fillers."

3. EQUIPMENT

Furnish and maintain all equipment in good working condition. Use measuring, mixing, and delivery equipment conforming to the requirements of Item 421, "Hydraulic Cement Concrete." Obtain approval for other equipment used.

3.1. **Placing, Consolidating, and Finishing Equipment**. Provide approved self-propelled paving equipment that uniformly distributes the concrete with minimal segregation and provides a smooth machine-finished consolidated concrete pavement conforming to plan line and grade. Provide an approved automatic grade control system on slip-forming equipment. Provide approved mechanically-operated finishing floats capable of producing a uniformly smooth pavement surface. Provide equipment capable of providing a fine, light water fog mist.

Provide mechanically-operated vibratory equipment capable of adequately consolidating the concrete. Provide immersion vibrators on the paving equipment at sufficiently close intervals to provide uniform vibration and consolidation of the concrete over the entire width and depth of the pavement and in accordance with the manufacturer's recommendations. Provide immersion vibrator units that operate at a frequency in air of at least 8,000 cycles per minute. Provide enough hand-operated immersion vibrators for timely and proper consolidation of the concrete along forms, at all joints and in areas not covered by other vibratory equipment. Surface vibrators may be used to supplement equipment-mounted immersion vibrators. Provide tachometers to verify the proper operation of all vibrators.

For small or irregular areas or when approved, the paving equipment described in this Section is not required.

3.2. **Forming Equipment**.

3.2.1. **Pavement Forms**. Provide metal side forms of sufficient cross-section, strength, and rigidity to support the paving equipment and resist the impact and vibration of the operation without visible springing or settlement. Use forms that are free from detrimental kinks, bends, or warps that could affect ride quality or alignment. Provide flexible or curved metal or wood forms for curves of 100-ft. radius or less.

3.2.2. **Curb Forms**. Provide curb forms for separately placed curbs that are not slipformed that conform to the requirements of Item 529, "Concrete Curb, Gutter, and Combined Curb and Gutter."

3.3. **Reinforcing Steel Inserting Equipment**. Provide inserting equipment that accurately inserts and positions reinforcing steel in the plastic concrete parallel to the profile grade and horizontal alignment in accordance to plan details when approved.

3.4. **Texturing Equipment**.

3.4.1. **Carpet Drag**. Provide a carpet drag mounted on a work bridge or a manual moveable support system. Provide a single piece of carpet of sufficient transverse length to span the full width of the pavement being placed and adjustable so that a sufficient longitudinal length of carpet is in contact with the concrete being placed to produce the desired texture. Obtain approval to vary the length and width of the carpet to accommodate specific applications.

3.4.2. **Tining Equipment**. Provide a self-propelled metal tine device equipped with steel tines with cross-section approximately 1/32 in. thick × 1/12 in. wide. Provide tines for transverse tining equipment spaced at approximately 1 in., center-to-center, or provide tines for longitudinal tining equipment spaced at approximately 3/4 in., center-to-center. Manual methods that produce an equivalent texture may be used when it is impractical to use self-propelled equipment, such as for small areas, narrow width sections, and in emergencies due to equipment breakdown.

3.5. **Curing Equipment**. Provide a self-propelled machine for applying membrane curing compound using mechanically-pressurized spraying equipment with atomizing nozzles. Provide equipment and controls that maintain the required uniform rate of application over the entire paving area. Provide curing equipment that is independent of all other equipment when required to meet the requirements of Section 360.4.9., "Curing." Hand-operated pressurized spraying equipment with atomizing nozzles may only be used on small or irregular areas, narrow width sections, or in emergencies due to equipment breakdown.

3.6. **Sawing Equipment**. Provide power-driven concrete saws to saw the joints shown on the plans. Provide standby power-driven concrete saws during concrete sawing operations. Provide adequate illumination for nighttime sawing.

3.7. **Grinding Equipment**. Provide self-propelled powered grinding equipment that is specifically designed to smooth and texture concrete pavement using circular diamond blades when required. Provide equipment with automatic grade control capable of grinding at least a 3-ft. width longitudinally in each pass without damaging the concrete.

3.8. **Testing Equipment**. Provide testing equipment regardless of job-control testing responsibilities in accordance with Item 421, "Hydraulic Cement Concrete," unless otherwise shown on the plans or specified.

3.9. **Coring Equipment**. Provide coring equipment capable of extracting cores in accordance with the requirements of Tex-424-A when required.

3.10. **Miscellaneous Equipment**. Furnish both 10-ft. and 15-ft. steel or magnesium long-handled, standard straightedges. Furnish enough work bridges, long enough to span the pavement, for finishing and inspection operations.

4. CONSTRUCTION

Obtain approval for adjustments to plan grade-line to maintain thickness over minor subgrade or base high spots while maintaining clearances and drainage. Maintain subgrade or base in a smooth, clean, compacted condition in conformity with the required section and established grade until the pavement concrete is placed. Keep subgrade or base damp with water before placing pavement concrete.

Adequately light the active work areas for all nighttime operations. Provide and maintain tools and materials to perform testing.

4.1. **Paving and Quality Control Plan**. Submit a paving and quality control plan for approval before beginning pavement construction operations. Include details of all operations in the concrete paving process, including methods to construct transverse joints, methods to consolidate concrete at joints, longitudinal construction joint layout, sequencing, curing, lighting, early opening, leave-outs, sawing, inspection, testing, construction methods, other details and description of all equipment. List certified personnel performing the testing. Submit revisions to the paving and quality control plan for approval.

4.2. **Job-Control Testing**. Perform all fresh and hardened concrete job-control testing at the specified frequency unless otherwise shown on the plans. Provide job-control testing personnel meeting the requirements of Item 421, "Hydraulic Cement Concrete." Provide and maintain testing equipment, including strength testing equipment at a location acceptable to the Engineer. Use of a commercial laboratory is acceptable. Maintain all testing equipment calibrated in accordance with pertinent test methods. Make strength-testing equipment available to the Engineer for verification testing.

Provide the Engineer the opportunity to witness all tests. The Engineer may require a retest if not given the opportunity to witness. Furnish a copy of all test results to the Engineer daily. Check the first few concrete loads for slump and temperature to verify concrete conformance and consistency on start-up production days. Sample and prepare strength-test specimens (2 specimens per test) on the first day of production and for each 3,000 sq. yd. or fraction thereof of concrete pavement thereafter. Prepare at least 1 set of strength- test specimens for each production day. Perform slump and temperature tests each time strength specimens are made. Monitor concrete temperature to ensure that concrete is consistently within the temperature requirements. The Engineer will direct random job-control sampling and testing. Immediately investigate and take corrective action as approved if any Contractor test result, including tests performed for verification purposes, does not meet specification requirements.

The Engineer will perform job-control testing when the testing by the Contractor is waived by the plans; however, this does not waive the Contractor's responsibility for providing materials and work in accordance with this Item.

4.2.1. **Job-Control Strength**. Use 7-day job-control concrete strength testing in accordance with Tex-448-A or Tex-418-A unless otherwise shown on the plans or permitted.

Use a compressive strength of 3,200 psi or a lower job-control strength value proven to meet a 28-day compressive strength of 4,000 psi as correlated in accordance with Tex-427-A for 7-day job-control by compressive strength. ~~Use a flexural strength of 450 psi or a lower job-control strength value proven to meet a 28-day flexural strength of 570 psi as correlated in accordance with Tex-427-A for 7-day job-control by flexural strength.~~ ***Compressive strength tests shall be performed.***

Job control of concrete strength may be correlated to an age other than 7 days in accordance with Tex-427-A when approved. Job-control strength of Class HES concrete is based on the required strength and time.

Investigate the strength test procedures, the quality of materials, the concrete production operations, and other possible problem areas to determine the cause when a job-control concrete strength test value is more than 10% below the required job-control strength or when 3 consecutive job-control strength values fall below the required job-control strength. Take necessary action to correct the problem, including redesign of the concrete mix if needed. The Engineer ~~may~~ ***will*** suspend concrete paving if the Contractor is unable to identify, document, and correct the cause of low-strength test values in a timely manner. The Engineer will evaluate the structural adequacy of the pavements if any job-control strength is more than 15% below the required job-control strength. Remove and replace pavements found to be ~~structurally inadequate~~ ***15% below the required job-control strength*** at no additional cost ~~when directed~~.

4.2.2. **Split-Sample Verification Testing**. Perform split-sample verification testing with the Engineer on random samples taken and split by the Engineer at a rate of at least 1 for every 10 job-control samples. The Engineer will evaluate the results of split-sample verification testing. Immediately investigate and take corrective action as approved when results of split-sample verification testing differ more than the allowable differences shown in Table 1, or the average of 10 job-control strength results and the Engineer's split-sample strength result differ by more than 10%.

Table 1
Verification Testing Limits

Test Method	Allowable Differences
Temperature, Tex-422-A	2°F
Slump, Tex-415-A	1 in.
Flexural strength, Tex-448-A	19%
Compressive strength, Tex-418-A	10%

4.3. **Reinforcing Steel and Joint Assemblies**. Accurately place and secure in position all reinforcing steel as shown on the plans. Place dowels at mid-depth of the pavement slab, parallel to the surface. Place dowels for transverse contraction joints parallel to the pavement edge. Tolerances for location and alignment of dowels will be shown on the plans. Stagger the lap locations so that no more than 1/3 of the longitudinal steel is spliced in any given 12-ft. width and 2-ft. length of the pavement. Use multiple-piece tie bars, drill and epoxy grout tie bars, or, if approved, mechanically-inserted single-piece tie bars at longitudinal construction joints. Verify that tie bars that are drilled and epoxied or mechanically inserted into concrete at longitudinal construction joints develop a pullout resistance equal to a minimum of 3/4 of the yield strength of the steel after 7 days. Test 15 bars using ASTM E488, except that alternate approved equipment may be used. All 15 tested bars must meet the required pullout strength. Perform corrective measures to provide equivalent pullout resistance if any of the test results do not meet the required minimum pullout strength. Repair damage from testing. Acceptable corrective measures include but are not limited to installation of additional or longer tie bars.

4.3.1. **Manual Placement**. Secure reinforcing bars at alternate intersections with wire ties or locking support chairs. Tie all splices with wire.

4.3.2. **Mechanical Placement**. Complete the work using manual placement methods described above if mechanical placement of reinforcement results in steel misalignment or improper location, poor concrete consolidation, or other inadequacies.

4.4. **Joints**. Install joints as shown on the plans. Joint sealants are not required on concrete pavement that is to be overlaid with asphaltic materials. Clean and seal joints in accordance with Item 438, “Cleaning and Sealing Joints.” Repair excessive spalling of the joint saw groove using an approved method before installing the sealant. Seal all joints before opening the pavement to all traffic. Install a rigid transverse bulkhead, for the reinforcing steel, and shaped accurately to the cross-section of the pavement when placing of concrete is stopped.

4.4.1. **Placing Reinforcement at Joints**. Complete and place the assembly of parts at pavement joints at the required location and elevation, with all parts rigidly secured in the required position, when shown on the plans.

4.4.2. **Transverse Construction Joints**.

4.4.2.1. **Continuously Reinforced Concrete Pavement (CRCP)**. Install additional longitudinal reinforcement through the bulkhead when shown on the plans. Protect the reinforcing steel immediately beyond the construction joint from damage, vibration, and impact.

4.4.2.2. **Concrete Pavement Contraction Design (CPCD)**. Install and rigidly secure a complete joint assembly and bulkhead in the planned transverse contraction joint location when the placing of concrete is intentionally stopped. Install a transverse construction joint either at a planned transverse contraction joint location or mid-slab between planned transverse contraction joints when the placing of concrete is unintentionally stopped. Install tie bars of the size and spacing used in the longitudinal joints for mid-slab construction joints.

4.4.2.3. **Curb Joints**. Provide joints in the curb of the same type and location as the adjacent pavement. Use expansion joint material of the same thickness, type, and quality required for the pavement and of the section shown for the curb. Extend expansion joints through the curb. Construct curb joints at all transverse pavement joints. Place reinforcing steel into the plastic concrete pavement for non-monolithic curbs as shown on the plans unless otherwise approved. Form or saw the weakened plane joint across the full width

of concrete pavement and through the monolithic curbs. Construct curb joints in accordance with Item 529, "Concrete Curb, Gutter, and Combined Curb and Gutter."

4.5. **Placing and Removing Forms**. Use clean and oiled forms. Secure forms on a base or firm subgrade that is accurately graded and that provides stable support without deflection and movement by form riding equipment. Pin every form at least at the middle and near each end. Tightly join and key form sections together to prevent relative displacement.

Set side forms far enough in advance of concrete placement to permit inspection. Check conformity of the grade, alignment, and stability of forms immediately before placing concrete, and make all necessary corrections. Use a straightedge or other approved method to test the top of forms to ensure that the ride quality requirements for the completed pavement will be met. Stop paving operations if forms settle or deflect more than 1/8 in. under finishing operations. Reset forms to line and grade, and refinish the concrete surface to correct grade.

Avoid damage to the edge of the pavement when removing forms. Repair damage resulting from form removal and honeycombed areas with a mortar mix within 24 hr. after form removal unless otherwise approved. Clean joint face and repair honeycombed or damaged areas within 24 hr. after a bulkhead for a transverse construction joint has been removed unless otherwise approved. Promptly apply membrane curing compound to the edge of the concrete pavement when forms are removed before 72 hr. after concrete placement.

Forms that are not the same depth as the pavement, but are within 2 in. of that depth are permitted if the subbase is trenched or the full width and length of the form base is supported with a firm material to produce the required pavement thickness. Promptly repair the form trench after use. Use flexible or curved wood or metal forms for curves of 100-ft. radius or less.

4.6. **Concrete Delivery**. Clean delivery equipment as necessary to prevent accumulation of old concrete before loading fresh concrete. Use agitated delivery equipment for concrete designed to have a slump of more than 5 in. Segregated concrete is subject to rejection.

Begin the discharge of concrete delivered in agitated delivery equipment conforming to the requirements of Item 421, "Hydraulic Cement Concrete." Place non-agitated concrete within 45 min. after batching. Reduce times as directed when hot weather or other conditions cause quick setting of the concrete.

4.7. **Concrete Placement**. Do not allow the pavement edge to deviate from the established paving line by more than 1/2 in. at any point. Place the concrete as near as possible to its final location, and minimize segregation and rehandling. Distribute concrete using shovels where hand spreading is necessary. Do not use rakes or vibrators to distribute concrete.

4.7.1. **Consolidation**. Consolidate all concrete by approved mechanical vibrators operated on the front of the paving equipment. Use immersion-type vibrators that simultaneously consolidate the full width of the placement when machine finishing. Keep vibrators from dislodging reinforcement. Use hand-operated vibrators to consolidate concrete along forms, at all joints and in areas not accessible to the machine-mounted vibrators. Do not operate machine-mounted vibrators while the paving equipment is stationary. Vibrator operations are subject to review.

4.7.2. **Curbs**. Conform to the requirements of Item 529, "Concrete Curb, Gutter, and Combined Curb and Gutter" where curbs are placed separately.

4.7.3. **Temperature Restrictions**. Place concrete that is between 40°F and 95°F when measured in accordance with Tex-422-A at the time of discharge, except that concrete may be used if it was already in transit when the temperature was found to exceed the allowable maximum. Take immediate corrective action or cease concrete production when the concrete temperature exceeds 95°F.

Do not place concrete when the ambient temperature in the shade is below 40°F and falling unless approved. Concrete may be placed when the ambient temperature in the shade is above 35°F and rising or

above 40°F. Protect the pavement with an approved insulating material capable of protecting the concrete for the specified curing period when temperatures warrant protection against freezing. Submit for approval proposed measures to protect the concrete from anticipated freezing weather for the first 72 hr. after placement. Repair or replace all concrete damaged by freezing.

4.8. **Spreading and Finishing**. Finish all concrete pavement with approved self-propelled equipment. Use power-driven spreaders, power-driven vibrators, power-driven strike-off, screed, or approved alternate equipment. Use the transverse finishing equipment to compact and strike-off the concrete to the required section and grade without surface voids. Use float equipment for final finishing. Use concrete with a consistency that allows completion of all finishing operations without addition of water to the surface. Use the minimal amount of water fog mist necessary to maintain a moist surface. Reduce fogging if float or straightedge operations result in excess slurry.

4.8.1. **Finished Surface**. Perform sufficient checks with long-handled 10-ft. and 15-ft. straightedges on the plastic concrete to ensure the final surface is within the tolerances specified in Surface Test A in Item 585, "Ride Quality for Pavement Surfaces." Check with the straightedge parallel to the centerline.

4.8.2. **Maintenance of Surface Moisture**. Prevent surface drying of the pavement before application of the curing system by means that may include water fogging, the use of wind screens, and the use of evaporation retardants. Apply evaporation retardant at the manufacturer's recommended rate. Reapply the evaporation retardant as needed to maintain the concrete surface in a moist condition until curing system is applied. Do not use evaporation retardant as a finishing aid. Failure to take acceptable precautions to prevent surface drying of the pavement will be cause for shutdown of pavement operations.

4.8.3. **Surface Texturing**. Complete final texturing before the concrete has attained its initial set. Drag the carpet longitudinally along the pavement surface with the carpet contact surface area adjusted to provide a satisfactory coarsely textured surface. Prevent the carpet from getting plugged with grout. Do not perform carpet dragging operations while there is excessive bleed water.

A metal-tine texture finish is required unless otherwise shown on the plans. Provide transverse tining unless otherwise shown on the plans. Immediately following the carpet drag, apply a single coat of evaporation retardant, if needed, at the rate recommended by the manufacturer. Provide the metal-tine finish immediately after the concrete surface has set enough for consistent tining. Operate the metal-tine device to obtain grooves approximately 3/16 in. deep, with a minimum depth of 1/8 in., and approximately 1/12 in. wide. Do not overlap a previously tined area. Use manual methods to achieve similar results on ramps, small or irregular areas, and narrow width sections of pavements. Repair damage to the edge of the slab and joints immediately after texturing. Do not tine pavement that will be overlaid or that is scheduled for blanket diamond grinding or shot blasting.

Target a carpet drag texture of 0.04 in., as measured by Tex-436-A, when carpet drag is the only surface texture required on the plans. Ensure adequate and consistent macro-texture is achieved by applying enough weight to the carpet and by keeping the carpet from getting plugged with grout. Correct any location with a texture less than 0.03 in. by diamond grinding or shot blasting. The Engineer will determine the test locations at points located transversely to the direction of traffic in the outside wheel path.

4.8.4. **Small, Irregular Area, or Narrow Width Placements**. Use hand equipment and procedures that produce a consolidated and finished pavement section to the line and grade where machine placements and finishing of concrete pavement are not practical.

4.8.5. **Emergency Procedures**. Use hand-operated equipment for applying texture, evaporation retardant, and cure in the event of equipment breakdown.

4.9. **Curing**. Keep the concrete pavement surface from drying as described in Section 360.4.8.2., "Maintenance of Surface Moisture," until the curing material has been applied. Maintain and promptly repair damage to curing materials on exposed surfaces of concrete pavement continuously for at least 3 curing days. A curing day is defined as a 24-hr. period when either the temperature taken in the shade away from artificial heat is above 50°F for at least 19 hr. or the surface temperature of the concrete is maintained above 40°F for 24 hr.

Curing begins when the concrete curing system has been applied. Stop concrete paving if curing compound is not being applied promptly and maintained adequately. Other methods of curing in accordance with Item 422, "Concrete Superstructures," may be used when specified or approved.

4.9.1. **Membrane Curing**. Spray the concrete surface uniformly with 2 coats of membrane curing compound at an individual application rate of no more than 180 sq. ft. per gallon. Apply the curing compound before allowing the concrete surface to dry.

Manage finishing and texturing operations to ensure placement of curing compound on a moist concrete surface, relatively free of bleed water, to prevent any plastic shrinkage cracking. Time the application of curing compound to prevent plastic shrinkage cracking.

Maintain curing compounds in a uniformly agitated condition, free of settlement before and during application. Do not thin or dilute the curing compound.

Apply additional compound at the same rate of coverage to correct damage where the coating shows discontinuities or other defects or if rain falls on the newly coated surface before the film has dried enough to resist damage. Ensure that the curing compound coats the sides of the tining grooves.

~~4.9.2. **Asphalt Curing**. Apply a uniform coating of asphalt curing at a rate of 90 to 180 sq. ft. per gallon when an asphaltic concrete overlay is required. Apply curing immediately after texturing and once the free moisture (sheen) has disappeared. Obtain approval to add water to the emulsion to improve spray distribution. Maintain the asphalt application rate when using diluted emulsions. Maintain the emulsion in a mixed condition during application.~~

4.9.3. **Curing Class HES Concrete**. Provide membrane curing in accordance with Section 360.4.9.1., "Membrane Curing," for all Class HES concrete pavement. Promptly follow by wet mat curing in accordance with Section 422.4.8., "Final Curing," until opening strength is achieved but not less than 24 hr.

4.9.4. **Curing Fast-Track Concrete**. Provide wet mat curing unless otherwise shown on the plans or as directed. Cure in accordance with Section 422.4.8., "Final Curing." Apply a Type 1-D or Type 2 membrane cure instead of wet mat curing if the air temperature is below 65°F and insulating blankets are used.

4.10. **Sawing Joints**. Saw joints to the depth shown on the plans as soon as sawing can be accomplished without damage to the pavement regardless of time of day or weather conditions. Some minor raveling of the saw- cut is acceptable. Use a chalk line, string line, sawing template, or other approved method to provide a true joint alignment. Provide enough saws to match the paving production rate to ensure sawing completion at the earliest possible time to avoid uncontrolled cracking. Reduce paving production if necessary to ensure timely sawing of joints. Promptly restore membrane cure damaged within the first 72 hr. of curing.

4.11. **Protection of Pavement and Opening to Traffic**. Testing for early opening is the responsibility of the Contractor regardless of job-control testing responsibilities unless otherwise shown on the plans or as directed. Testing result interpretation for opening to traffic is subject to approval.

4.11.1. **Protection of Pavement**. Erect and maintain barricades and other standard and approved devices that will exclude all vehicles and equipment from the newly placed pavement for the periods specified. Protect the pavement from damage due to crossings using approved methods before opening to traffic. Where a detour is not readily available or economically feasible, an occasional crossing of the roadway with overweight equipment may be permitted for relocating equipment only but not for hauling material. When an occasional crossing of overweight equipment is permitted, temporary matting or other approved methods may be required.

Maintain an adequate supply of sheeting or other material to cover and protect fresh concrete surface from weather damage. Apply as needed to protect the pavement surface from weather.

4.11.2. **Opening Pavement to All Traffic**. Pavement that is 7 days old may be opened to all traffic. Clean pavement, place stable material against the pavement edges, seal joints, and perform all other traffic safety related work before opening to traffic.

4.11.3. **Opening Pavement to Construction Equipment**. Unless otherwise shown on the plans, concrete pavement may be opened early to concrete paving equipment and related delivery equipment after the concrete is at least 48 hr. old and opening strength has been demonstrated in accordance with Section 360.4.11.4., "Early Opening to All Traffic," before curing is complete. Keep delivery equipment at least 2 ft. from the edge of the concrete pavement. Keep tracks of the paving equipment at least 1 ft. from the pavement edge. Protect textured surfaces from the paving equipment. Restore damaged membrane curing as soon as possible. Repair pavement damaged by paving or delivery equipment before opening to all traffic.

4.11.4. **Early Opening to All Traffic**. Concrete pavement may be opened after curing is complete and the concrete has attained a flexural strength of 450 psi or a compressive strength of 3,200 psi, except that pavement using Class HES concrete may be opened after 24 hr. if the specified strength is achieved.

4.11.4.1. **Strength Testing**. Test concrete specimens cured under the same conditions as the portion of the pavement involved.

4.11.4.2. **Maturity Method**. Use the maturity method, Tex-426-A, to estimate concrete strength for early opening pavement to traffic unless otherwise shown on the plans. Install at least 2 maturity sensors for each day's placement in areas where the maturity method will be used for early opening. Maturity sensors, when used, will be installed near the day's final placement for areas being evaluated for early opening. Use test specimens to verify the strength–maturity relationship in accordance with Tex-426-A, starting with the first day's placement corresponding to the early opening pavement section.

Verify the strength–maturity relationship at least every 10 days of production after the first day. Establish a new strength–maturity relationship when the strength specimens deviate more than 10% from the maturity-estimated strengths. Suspend use of the maturity method for opening pavements to traffic when the strength–maturity relationship deviates by more than 10% until a new strength–maturity relationship is established.

The Engineer will determine the frequency of verification when the maturity method is used intermittently or for only specific areas.

4.11.5. **Fast Track Concrete Pavement**. Open the pavement after the concrete has been cured for at least 8 hr. and attained a minimum compressive strength of 1,800 psi or a minimum flexural strength of 255 psi when tested in accordance with Section 360.4.11.4.1., "Strength Testing," or Section 360.4.11.4.2., "Maturity Method," unless otherwise directed. Cover the pavement with insulating blankets when the air temperature is below 65°F until the pavement is opened to traffic.

4.11.6. **Emergency Opening to Traffic**. Open the pavement to traffic under emergency conditions, when the pavement is at least 72 hr. old when directed in writing. Remove all obstructing materials, place stable material against the pavement edges, and perform other work involved in providing for the safety of traffic as required for emergency opening.

4.12. **Pavement Thickness**. The Engineer will check the thickness in accordance with Tex-423-A unless other methods are shown on the plans. The Engineer will perform 1 thickness test consisting of 1 reading at approximately the center of each lane every 500 ft. or fraction thereof. Core where directed, in accordance with Tex-424-A, to verify deficiencies of more than 0.2 in. from plan thickness and to determine the limits of deficiencies of more than 0.75 in. from plan thickness. Fill core holes using an approved concrete mixture and method.

4.12.1. **Thickness Deficiencies Greater than 0.2 in.** Take one 4-in. diameter core at that location to verify the measurement when any depth test measured in accordance with Tex-423-A is deficient by more than 0.2 in. from the plan thickness.

Take 2 additional cores from the unit (as defined in Section 360.4.12.3., "Pavement Units for Payment Adjustment") at intervals of at least 150 ft. and at selected locations if the core is deficient by more than 0.2 in., but not by more than 0.75 in. from the plan thickness, and determine the thickness of the unit for payment purposes by averaging the length of the 3 cores. In calculations of the average thickness of this unit

of pavement, measurements in excess of the specified thickness by more than 0.2 in. will be considered as the specified thickness plus 0.2 in.

4.12.2. **Thickness Deficiencies Greater than 0.75 in.** Take additional cores at 10-ft. intervals in each direction parallel to the centerline to determine the boundary of the deficient area if a core is deficient by more than 0.75 in. The Engineer will evaluate any area of pavement found deficient in thickness by more than 0.75 in., but not more than 1 in. Remove and replace the deficient areas without additional compensation or retain deficient areas without compensation, as directed. Remove and replace any area of pavement found deficient in thickness by more than 1 in. without additional compensation.

4.12.3. **Pavement Units for Payment Adjustment**. Limits for applying a payment adjustment for deficient pavement thickness from 0.20 in. to not more than 0.75 in. are 500 ft. of pavement in each lane. Lane width will be as shown on typical sections and pavement design standards.

For greater than 0.75 in. deficient thickness, the limits for applying zero payment or requiring removal will be defined by coring or equivalent nondestructive means as determined by the Engineer. The remaining portion of the unit determined to be less than 0.75 in. deficient will be subject to the payment adjustment based on the average core thickness at each end of the 10-ft. interval investigation as determined by the Engineer.

Shoulders will be measured for thickness unless otherwise shown on the plans. Shoulders 6 ft. wide or wider will be considered as lanes. Shoulders less than 6 ft. wide will be considered part of the adjacent lane.

Limits for applying payment adjustment for deficient pavement thickness for ramps, widenings, acceleration and deceleration lanes, and other miscellaneous areas are 500 ft. in length. Areas less than 500 ft. in length will be individually evaluated for payment adjustment based on the plan area.

4.13. **Ride Quality**. Measure ride quality in accordance with Item 585, "Ride Quality for Pavement Surfaces," unless otherwise shown on the plans.

5. MEASUREMENT

This Item will be measured as follows:

5.1. **Concrete Pavement**. Concrete pavement will be measured by the square yard of surface area in place. The surface area includes the portion of the pavement slab extending beneath the curb.

5.2. **Curb**. Curb on concrete pavement will be measured by the foot in place.

6. PAYMENT

These prices are full compensation for materials, equipment, labor, tools, and incidentals.

6.1. **Concrete Pavement**. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the adjusted unit price bid for "Concrete Pavement" of the type and depth specified as adjusted in accordance with Section 360.6.2., "Deficient Thickness Adjustment."

6.2. **Deficient Thickness Adjustment**. Where the average thickness of pavement is deficient in thickness by more than 0.2 in. but not more than 0.75 in., payment will be made using the adjustment factor as specified in Table 2 applied to the bid price for the deficient area for each unit as defined under Section 360.4.12.3., "Pavement Units for Payment Adjustment."

Table 2
Deficient Thickness Price Adjustment Factor

Deficiency in Thickness Determined by Cores (in.)	Proportional Part of Contract Price Allowed (Adjustment Factor)
Not deficient	1.00
Over 0.00 through 0.20	1.00
Over 0.20 through 0.30	0.80
Over 0.30 through 0.40	0.72
Over 0.40 through 0.50	0.68
Over 0.50 through 0.75	0.57

6.3. **Curb**. Work performed and furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Curb" of the type specified.

Payment will be made under:

Item TX-360-5.1 ***Concrete Pavement (10" Thickness) — per Square Yard***

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Item 421
Hydraulic Cement Concrete

1. DESCRIPTION

Furnish hydraulic cement concrete for concrete pavements, concrete structures, and other concrete construction.

2. MATERIALS

Use materials from prequalified sources listed on the Department website. Provide coarse and fine aggregates from sources listed in the Department's *Concrete Rated Source Quality Catalog* (CRSQC). Use materials from non-listed sources only when tested and approved by the Engineer before use. Allow 30 calendar days for the Engineer to sample, test, and report results for non-listed sources. Do not combine approved material with unapproved material.

2.1. **Cement**. Furnish cement conforming to DMS-4600, "Hydraulic Cement."

2.2. **Supplementary Cementing Materials (SCM)**.

- **Fly Ash**. Furnish fly ash, ultra-fine fly ash (UFFA), and modified Class F fly ash (MFFA) conforming to DMS-4610, "Fly Ash."
- **Slag Cement**. Furnish Slag Cement conforming to DMS-4620, "Ground Granulated Blast Furnace Slag."
- **Silica Fume**. Furnish silica fume conforming to DMS-4630, "Silica Fume."
- **Metakaolin**. Furnish metakaolin conforming to DMS-4635, "Metakaolin."

2.3. **Cementitious Material**. Cementitious materials are the cement and supplementary cementing materials used in concrete.

2.4. **Chemical Admixtures**. Furnish admixtures conforming to DMS-4640, "Chemical Admixtures for Concrete."

2.5. **Water**. Furnish mixing and curing water that is free from oils, acids, organic matter, or other deleterious substances. Water from municipal supplies approved by the Texas Department of Health will not require testing. Provide test reports showing compliance with Table 1 before use when using water from other sources.

Water that is a blend of concrete wash water and other acceptable water sources, certified by the concrete producer as complying with the requirements of both Table 1 and Table 2, may be used as mix water. Test the blended water weekly for 4 weeks for compliance with Table 1 and Table 2 or provide previous test results. Then test every month for compliance. Provide water test results upon request.

Table 1
Chemical Limits for Mix Water

Contaminant	Test Method	Maximum Concentration (ppm or mg\L)
Chloride (Cl)	ASTM C114	
Prestressed concrete		500
Bridge decks & superstructure		500
All other concrete		1,000
Sulfate (S04)	ASTM C114	2,000
Alkalies (Na20 + 0.658K20)	ASTM C114	600
Total solids	ASTM C1603	50,000

Table 2
Acceptance Criteria for Questionable Water Supplies

Property	Test Method	Limits
Compressive strength, min % control at 7 days	ASTM C31, ASTM C39[1,2]	90
Time of set, deviation from control, h:min.	ASTM C403	From 1:00 early to 1:30 later

1. Base comparisons on fixed proportions and the same volume of test water compared to the control mix using 100% potable water or distilled water.
2. Base comparisons on sets consisting of at least 2 standard specimens made from a composite sample.

Do not use mix water that has an adverse effect on the air-entraining agent, on any other chemical admixture, or on strength or time of set of the concrete. Use mixing and curing water free of iron and other impurities that may cause staining or discoloration when using white hydraulic cement.

2.6. **Aggregate**.

2.6.1. **Coarse Aggregate**. Provide coarse aggregate consisting of durable particles of gravel, crushed blast furnace slag, recycled crushed hydraulic cement concrete, crushed stone, or combinations which are free from frozen material and from injurious amounts of salt, alkali, vegetable matter, or other objectionable material, either free or as an adherent coating. Provide coarse aggregate of uniform quality throughout.

Provide coarse aggregate with the requirements listed in Table 3 unless otherwise shown on the plan.

Table 3
Coarse Aggregate Requirements

Description	Test Method	Limit
Weight of Clay Lumps, % Max	Tex-413-A	0.25
Weight of Shale, % Max		1.0
Weight of Laminate and Friable Particle, % Max		5.0
L.A. Abrasion Wear, % Max	Tex-410-A	40
5-Cycle Magnesium Sulfate Soundness,[1,2] non-air-entrained concrete, % Max	Tex-411-A	25
5-Cycle Magnesium Sulfate Soundness,[1,3] air-entrained concrete, % Max		18
Loss by Decantation, % Max	Tex-406-A	1.5

1. Recycled crushed hydraulic cement concrete is not subject to 5-cycle magnesium sulfate soundness requirements.
2. Allowed when air-entrained concrete is used at the Contractor's option.
3. 0nly when air-entrained concrete is required by the plans.

Increase the loss by decantation limit to 3.0% for all classes of concrete and 5.0% for Class A, B, and P if the material finer than the No. 200 sieve is determined to be at least 85% calcium carbonate in accordance with Tex-406-A, Part III, in the case of coarse aggregates made primarily from crushing stone unless otherwise shown on the plans. Provide test results upon request.

Provide coarse aggregate conforming to the gradation requirements shown in Table 4 when tested in accordance with Tex-401-A unless otherwise specified.

Table 4
Coarse Aggregate Gradation Chart

Aggregate Grade No.[1]	Maximum Nominal Size	Percent Passing on Each Sieve								
		2-1/2"	2"	1-1/2"	1"	3/4"	1/2"	3/8"	#4	#8
1	2"	100	80–100	50–85		20–40			0–10	
2	1-1/2"		100	95–100		35–70		10–30	0–10	
3	1-1/2"		100	95–100		60–90	25–60		0–10	
4 (57)	1"			100	95–100		25–60		0–10	0–5
5 (67)	3/4"				100	90–100		20–55	0–10	0–5
6 (7)	1/2"					100	90–100	40–70	0–15	0–5
7	3/8"						100	70–95	0–25	
8	3/8"						100	95–100	20–65	0–10

1. Corresponding ASTM C33 gradation shown in parentheses.

2.6.2. **Fine Aggregate**. Provide fine aggregate consisting of clean, hard, durable particles of natural, manufactured sand, recycled crushed hydraulic cement concrete, slag, lightweight aggregate, or a combination thereof. Provide fine aggregate free from frozen material and from injurious amounts of salt, alkali, vegetable matter, or other objectionable material.

Provide fine aggregates with the requirements in Table 5 unless otherwise shown on the plans.

Table 5
Fine Aggregate Requirements

Description	Test Method	Limit
Weight of Clay Lumps, % Max	Tex-413-A	0.50
0rganic Impurities[1]	Tex-408-A	Color not darker than standard
Sand Equivalent	Tex-203-F	80
Fineness Modulus	Tex-402-A	2.3 to 3.1

1. 0nly when air-entrained concrete is specified.

Provide fine aggregate or combinations of aggregates conforming to the gradation requirements shown in Table 6 when tested in accordance with Tex-401-A unless otherwise specified.

Table 6
Fine Aggregate Gradation Chart (Grade 1)

Sieve Size	Percent Passing
3/8"	100
#4	95–100
#8	80–100
#16	50–85
#30	25–65
#50	10–35[1]
#100	0–10
#200	0–3[2]

1. 6–35 when sand equivalent value is greater than 85.
2. 0–6 for manufactured sand.

2.6.3. **Intermediate Aggregate**. Provide intermediate aggregate consisting of clean, hard, durable particles of natural, manufactured sand, slag, recycled crushed hydraulic cement concrete, lightweight aggregate, or a combination thereof when optimized aggregate gradation (0AG) concrete is specified or when used at the Contractor's option. Provide intermediate aggregate free from frozen material and injurious amounts of salt, alkali, vegetable matter, or other objectionable material.

Provide intermediate aggregate with the requirements in Table 7.

Table 7
Intermediate Aggregate Requirements

Description	Test Method	Limit
Weight of Clay Lumps, % Max	Tex-413-A	0.50
L.A. Abrasion Wear,[1] % Max	Tex-410-A	40
5-Cycle Magnesium Sulfate Soundness,[1,2,3] non-air-entrained concrete, % Max	Tex-411-A	25
5-Cycle Magnesium Sulfate Soundness,[1,2,4] air-entrained concrete, % Max		18
0rganic Impurities[5]	Tex-408-A	Color not darker than standard
Loss by Decantation,[1] % Max	Tex-406-A	1.5

1. 0nly applies to the portion retained on the No. 4 sieve, if more than 30% of the intermediate aggregate is retained on the No. 4 sieve.
2. Recycled crushed hydraulic cement concrete is not subject to 5-cycle magnesium sulfate soundness requirements.
3. Allowed when air-entrained concrete is used at the Contractor's option.
4. 0nly when air-entrained concrete is required by the plans.
5. 0nly applies to the portion passing the 3/8 in. sieve, if more than 30% of the intermediate aggregate is passing the 3/8 in. sieve.

For the portion retained on the No. 4 sieve, if more than 30% of the intermediate aggregate is retained on the No. 4 sieve, and in the case of aggregates made primarily from crushing stone, unless otherwise shown on the plans, the loss by decantation may be increased to 3.0% for all classes of concrete and 5.0% for Class A, B, and P if the material finer than the No. 200 sieve is determined to be at least 85% calcium carbonate in accordance with Tex-406-A, Part III. Provide test results upon request.

2.7. **Mortar and Grout**. Furnish pre-packaged grouts conforming to DMS-4675, "Cementitious Grouts and Mortars for Miscellaneous Applications," when specified for applications other than post-tension grouting.

Section 421.4.2.6., "Mix Design Options," does not apply for mortar and grout.

2.8. **Storage of Materials**.

2.8.1. **Cement and Supplementary Cementing Materials**. Store all cement and supplementary cementing materials in weatherproof enclosures that will protect them from dampness or absorption of moisture.

When permitted, small quantities of packaged cementitious material may be stored in the open, on a raised platform, and under waterproof covering for up to 48 hr.

2.8.2. **Aggregates**. Handle and store concrete aggregates in a manner that prevents contamination with foreign materials. Clear and level the sites for the stockpiles of all vegetation if the aggregates are stored on the ground and do not use the bottom 6-in. layer of aggregate without cleaning the aggregate before use.

Maintain separate stockpiles and prevent intermixing when conditions require the use of 2 or more grades of coarse aggregates. Separate the stockpiles using physical barriers where space is limited. Store aggregates from different sources in different stockpiles unless the Engineer authorizes pre-blending of the aggregates. Minimize segregation in stockpiles. Remix and test stockpiles when segregation is apparent.

Sprinkle stockpiles to control moisture and temperature as necessary. Maintain reasonably uniform moisture content in aggregate stockpiles.

2.8.3. **Chemical Admixtures**. Store admixtures in accordance with manufacturer's recommendations and prevent admixtures from freezing.

3. EQUIPMENT

3.1. **Concrete Plants and Mixing Equipment**. Except for volumetric stationary plant or truck (auger) mixers, each plant and truck mixer must be currently certified by the National Ready Mixed Concrete Association (NRMCA) or have an inspection report signed and sealed by a licensed professional engineer showing concrete measuring, mixing, and delivery equipment meets all requirements of ASTM C94. A new certification or signed and sealed report is required every time a plant is moved. Plants with a licensed professional engineer's inspection require re-inspection every 2 yr. Provide a copy of the certification or the

signed and sealed inspection report to the Engineer. Remove equipment or facilities from service until corrected when they fail to meet specification requirements.

When allowed on the plans or by the Engineer, for concrete classes not identified as structural concrete in Table 8 or for Class C concrete not used for bridge-class structures, the Engineer may inspect and approve all plants and trucks instead of the NRMCA or non-Department engineer-sealed certifications. The criteria and frequency of Engineer approval of plants and trucks is the same used for NRMCA certification.

Inspect and furnish inspection reports on the condition of blades and fins and their percent wear from the original manufacturer's design for truck mixers and agitators annually. Repair mixing equipment exhibiting 10% or more wear before use. If an inspection within 12 mo. is not practical, a 2-mo. grace period (for a maximum of 14 mo. between inspections) is permitted.

3.1.1. **Scales**. Check all scales before beginning of operations, after each move, or whenever their accuracy or adequacy is questioned, and at least once every 6 mo. Immediately correct deficiencies, and recalibrate. Provide a record of calibration showing scales in compliance with ASTM C94 requirements. Check batching accuracy of volumetric water batching devices at least every 90 days. Check batching accuracy of chemical admixture dispensing devices at least every 6 mo. Perform daily checks as necessary to ensure measuring accuracy.

3.1.2. **Volumetric Mixers**. Provide volumetric mixers with rating plates defining the capacity and the performance of the mixer in accordance with the Volumetric Mixer Manufacturers Bureau or equivalent. Provide volumetric mixers that comply with ASTM C685. Provide test data showing mixers meet the uniformity test requirements of Tex-472-A.

Unless allowed on the plans or by the Engineer, volumetric truck (auger) mixers may not supply classes of concrete identified as structural concrete in Table 8.

3.1.3. **Agitators and Truck and Stationary Mixers**. Provide stationary and truck mixers capable of combining the ingredients of the concrete into a thoroughly mixed and uniform mass and capable of discharging the concrete so at least 5 of the 6 requirements of Tex-472-A are met.

Perform concrete uniformity tests on mixers or agitators in accordance with Tex-472-A as directed, to resolve issues of mix uniformity and mixer performance.

Perform the mixer or agitator uniformity test at the full rated capacity of the equipment. Remove all equipment that fails the uniformity test from service.

Inspect and maintain mixers and agitators. Keep them free of concrete buildup, and repair or replace worn or damaged blades or fins.

Ensure all mixers have a plate affixed showing manufacturer's recommended operating speed and rated capacity for mixing and agitating.

3.2. **Hauling Equipment**. Provide hauling equipment capable of maintaining the mixed concrete in a thoroughly mixed and uniform mass, and discharging the concrete with a satisfactory degree of uniformity.

Provide equipment with smooth, mortar-tight metal containers equipped with gates that prevent accidental discharge of the concrete when using non-agitating equipment for transporting concrete.

Maintain hauling equipment clean and free of built-up concrete.

3.3. **Testing Equipment**. Furnish and maintain the following in accordance with the pertinent test procedure unless otherwise shown on the plans or specified:

- sieves necessary to perform aggregate gradation analysis when optimized aggregate gradation is specified,

- equipment necessary to perform Tex-415-A and Tex-422-A,
- equipment necessary to perform Tex-409-A or Tex-425-A,
- test molds,
- curing facilities,
- maturity meters if used, and
- wheelbarrow or other container acceptable for the sampling of the concrete.

Provide strength-testing equipment when required in accordance with the Contract-controlling test unless shown otherwise.

4. CONSTRUCTION

4.1. **Classification of Concrete Mix Designs**. Provide classes of concrete meeting the requirements shown in Table 8.

A higher-strength class of concrete with equal or lower water-to-cementitious material (w/cm) ratio may be substituted for the specified class of concrete when approved.

4.2. **Mix Design Proportioning**. Furnish mix designs using ACI 211, Tex-470-A, or other approved procedures for the classes of concrete listed in Table 8 unless a design method is indicated on the plans. Perform mix design proportioning by absolute volume method unless otherwise approved. Perform cement replacement using equivalent weight method unless otherwise approved.

Do not exceed the maximum w/cm ratio listed in Table 8 when designing the mixture.

4.2.1. **Cementitious Materials**. Do not exceed 700 lb. of cementitious material per cubic yard of concrete unless otherwise specified or approved.

- Use cement of the same type and from the same source for monolithic placements.
- Do not use supplementary cementing materials when white hydraulic cement is specified.

Table 8
Concrete Classes

Class of Concrete	Design Strength,[1] Min f'_c (psi)	Max w/cm Ratio	Coarse Aggregate Grades[2,3,4]	Cement Types	Mix Design Options	Exceptions to Mix Design Options	General Usage[5]
A	3,000	0.60	1–4, 8	I, II, I/II, IL, IP, IS, IT, V	1, 2, 4, & 7	When the cementitious material content does not exceed 520 lb./cu. yd., Class C fly ash may be used instead of Class F fly ash.	Inlets, manholes, curb, gutter, curb & gutter, conc. retards, sidewalks, driveways, back-up walls, anchors, non-reinforced drilled shafts
B	~~2,000~~ ***2,500***	0.60	2–7				Riprap, traffic signal controller foundations, small roadside signs, and anchors
C[6]	3,600	0.45	1–6	I, II, I/II, IP, IS, IT,[7] V	1–8		Drilled shafts, bridge substructure, bridge railing, culverts except top slab of direct traffic culverts, headwalls, wing walls, approach slabs, inlets, manholes, concrete traffic barrier (cast-in-place)
E	3,000	0.50	2–5	I, II, I/II, IL, IP, IS, IT,[7] V	1–8	When the cementitious material content does not exceed 520 lb./cu. yd., Class C fly ash may be used instead of Class F fly ash.	Seal concrete
F[6]	Note[8]	0.45	2–5	I, II, I/II, IP, IS, IT,[7] V			Railroad structures; occasionally for bridge piers, columns, or bents

Table 8 (continued)
Concrete Classes

Class of Concrete	Design Strength,[1] Min f'_c (psi)	Max wlcm Ratio	Coarse Aggregate Grades[2,3,4]	Cement Types	Mix Design Options	Exceptions to Mix Design Options	General Usage[5]
H[6]	Note[8]	0.45	3–6	I, II, I/II, III, IP, IS, IT,[7] V	1–5	Do not use Type III cement in mass placement concrete. Up to 20% of blended cement may be replaced with listed SCMs when 0ption 4 is used for precast concrete.	Precast concrete, post-tension members
S[6]	4,000	0.45	2–5	I, II, I/II, IP, IS, IT,[7] V	1–8		Bridge slabs, top slabs of direct traffic culverts
P	See Item 360, "Concrete Pavement."	0.50	2–3	I, II, I/II, IL, IP, IS, IT, V	1–8	When the cementitious material content does not exceed 520 lb./cu. yd., Class C fly ash may be used instead of Class F fly ash.	Concrete pavement
C0[6]	4,600	0.40	6	I, II, I/II, IP, IS, IT,[7] V	1–8		Bridge deck concrete overlay
LMC[6]	4,000	0.40	6–8				Latex-modified concrete overlay
SS[6]	3,600	0.45	4–6			Use a minimum cementitious material content of 658 lb./cu. yd. of concrete.	Slurry displacement shafts, underwater drilled shafts
K[6]	Note[8]	0.40	Note[8]	I, II, I/II, III IP, IS, IT,[7] V			Note[8]
HES	Note[8]	0.45	Note[8]	I, IL, II, I/II, III		Mix design options do not apply. 700 lb. of cementitious material per cubic yard limit does not apply.	Concrete pavement, concrete pavement repair
"X" (HPC) [6,9,10]	Note[11]	0.45	Note[11]	I, II, I/II, III IP, IS, IT,[7] V	1–5, & 8	Maximum fly ash replacement for 0ptions 1 and 3 may be increased to 45%. Up to 20% of a blended cement may be replaced with listed SCMs for 0ption 4. Do not use 0ption 8 for precast concrete.	
"X" (SRC) [6,9,10]	Note[11]	0.45	Note[11]	I/II, II, IP, IS, IT,[7] V	1–4 , & 7	Do not use Class C Fly Ash Type III-MS may be used where allowed. Type I and Type III cements may be used with 0ptions 1–3, with a maximum w/cm of 0.40. Up to 20% of blended cement may be replaced with listed SCMs when 0ption 4 is used for precast concrete. Do not use 0ption 7 for precast concrete.	

1. Design strength must be attained within 56 days.
2. Do not use Grade 1 coarse aggregate except in massive foundations with 4 in. minimum clear spacing between reinforcing steel bars, unless otherwise permitted. Do not use Grade 1 aggregate in drilled shafts.
3. Use Grade 8 aggregate in extruded curbs unless otherwise approved.
4. 0ther grades of coarse aggregate maybe used in non-structural concrete classes when allowed by the Engineer.
5. For information only.
6. Structural concrete classes.
7. Do not use Type IT cements containing > 5% limestone.
8. As shown on the plans or specified.
9. "X" denotes class of concrete shown on the plans or specified.
10. (HPC): High Performance Concrete, (SRC): Sulfate Resistant Concrete.
11. Same as class of concrete shown on the plans.

4.2.2. **Aggregates**. Recycled crushed hydraulic cement concrete may be used as a coarse or fine aggregate in Class A, B, D, E, and P concrete. Limit recycled crushed concrete fine aggregate to a maximum of 20% of the fine aggregate.

Use light-colored aggregates when white hydraulic cement is specified.

Use fine aggregate with an acid insoluble residue of at least 60% by weight when tested in accordance with Tex-612-J in all concrete subject to direct traffic.

Use the following equation to determine if the aggregate combination meets the acid insoluble residue requirement when blending fine aggregate or using an intermediate aggregate:

$$\frac{(A_1 \times P_1)+(A_2 \times P_2)+(A_{ia} \times P_{ia})}{100} \geq 60\%$$

where:
A_1 = acid insoluble (%) of fine aggregate 1
A_2 = acid insoluble (%) of fine aggregate 2
A_{ia} = acid insoluble (%) of intermediate aggregate passing the 3/8 in. sieve
P_1 = percent by weight of fine aggregate 1 of the fine aggregate blend
P_2 = percent by weight of fine aggregate 2 of the fine aggregate blend
P_{ia} = percent by weight of intermediate aggregate passing the 3/8 in. sieve

Alternatively to the above equation, blend fine aggregate with a micro-deval loss of less than 12%, when tested in accordance with Tex-461-A, with at least 40% of a fine aggregate with an acid insoluble residue of at least 60%.

4.2.3. **Chemical Admixtures**. Do not use Type C, Type E, Type F, or Type G admixtures in Class S bridge deck concrete. Do not use chemical admixtures containing calcium chloride in any concrete.

Use a 30% calcium nitrite solution when a corrosion-inhibiting admixture is required. The corrosion-inhibiting admixture must be set neutral unless otherwise approved. Dose the admixture at the rate of gallons of admixture per cubic yard of concrete shown on the plans.

4.2.4. **Air Entrainment**. Use an approved air-entraining admixture when air-entrained concrete is specified, or when an air-entraining admixture is used at the Contractor's option, and do not exceed the manufacturer's recommended dosage. Ensure the minimum entrained air content is at least 3.0% for all classes of concrete except Class P when air-entrained concrete is specified, during trial batch, or when providing previous field data.

4.2.5. **Slump**. Provide concrete with a slump in accordance with Table 9 unless otherwise specified. When approved, the slump of a given concrete mix may be increased above the values shown in Table 9 using chemical admixtures, provided the admixture-treated concrete has the same or lower water-to-cementitious material ratio and does not exhibit segregation or excessive bleeding. Request approval to exceed the slump limits in Table 9 sufficiently in advance for proper evaluation by the Engineer.

Perform job-control testing of slump in accordance with Section 421.4.8.3.1., "Job-Control Testing."

Table 9
Placement Slump Requirements

General Usage[1]	Placement Slump Range,[2] in.
Walls (over 9 in. thick), caps, columns, piers, approach slabs, concrete overlays	3 to 5
Bridge slabs, top slabs of direct traffic culverts, latex-modified concrete for bridge deck overlays	3 to 5-1/2
Inlets, manholes, walls (less than 9 in. thick), bridge railing, culverts, concrete traffic barrier, concrete pavement (formed), seal concrete	4 to 5-1/2
Precast concrete	4 to 9
Underwater concrete placements	6 to 8-1/2
Drilled shafts, slurry displaced and underwater drilled shafts	See Item 416, "Drilled Shaft Foundations."
Curb, gutter, curb and gutter, concrete retards, sidewalk, driveways, anchors, riprap, small roadside sign foundations, concrete pavement repair, concrete repair	As approved

1. For information only.
2. For fiber reinforced concrete, perform slump before addition of fibers.

4.2.6. **Mix Design Options**.

4.2.6.1. **Option 1**. Replace 20% to 35% of the cement with Class F fly ash.

4.2.6.2. **Option 2**. Replace 35% to 50% of the cement with slag cement or MFFA.

4.2.6.3. **Option 3**. Replace 35% to 50% of the cement with a combination of Class F fly ash, slag cement, MFFA, UFFA, metakaolin, or silica fume; however, no more than 35% may be fly ash, and no more than 10% may be silica fume.

4.2.6.4. **Option 4**. Use Type IP, Type IS, or Type IT cement as allowed in Table 5 for each class of concrete. Up to 10% of a Type IP, Type IS, or Type IT cement may be replaced with Class F fly ash, slag cement, or silica fume. Use no more than 10% silica fume in the final cementitious material mixture if the Type IT cement contains silica fume, and silica fume is used to replace the cement.

4.2.6.5. **Option 5**. Replace 35% to 50% of the cement with a combination of Class C fly ash and at least 6% of silica fume, UFFA, or metakaolin. However, no more than 35% may be Class C fly ash, and no more than 10% may be silica fume.

4.2.6.6. **Option 6**. Use a lithium nitrate admixture at a minimum dosage determined by testing conducted in accordance with Tex-471-A, "Lithium Dosage Determination Using Accelerated Mortar Bar Testing." Before use of the mix, provide an annual certified test report signed and sealed by a licensed professional engineer, from a laboratory on the Department's MPL, certified by the Construction Division as being capable of testing according to Tex-471-A, "Lithium Dosage Determination Using Accelerated Mortar Bar Testing."

4.2.6.7. **Option 7**. Ensure the total alkali contribution from the cement in the concrete does not exceed 3.5 lb. per cubic yard of concrete when using hydraulic cement not containing SCMs calculated as follows:

$$\text{lb. alkali per cu. yd.} = \frac{(\text{lb. cement per cu. yd.}) \times (\%\ Na_2O \text{ equivalent in cement})}{100}$$

4.2.6.8. **Option 8**. Perform annual testing as required for any deviations from 0ptions 1–5 or use mix design options listed in Table 10. Laboratories performing ASTM C1260, ASTM C1567, and ASTM C1293 testing must be listed on the Department's MPL. Before use of the mix, provide a certified test report signed and sealed by a licensed professional engineer demonstrating the proposed mixture conforms to the requirements of Table 10.

Provide a certified test report signed and sealed by a licensed professional engineer, when HPC is required, and less than 20% of the cement is replaced with SCMs, demonstrating ASTM C1202 test results indicate the permeability of the concrete is less than 1,500 coulombs tested immediately after either of the following curing schedules:

- Moisture cure specimens 56 days at 73°F.
- Moisture cure specimens 7 days at 73°F followed by 21 days at 100°F.

Table 10
Option 8 Testing and Mix Design Requirements

Scenario	ASTM C1260 Result		Testing Requirements for Mix Design Materials or Prescriptive Mix Design Options[1]
	Mix Design Fine Aggregate	Mix Design Coarse Aggregate	
A	> 0.10%	> 0.10%	Determine the dosage of SCMs needed to limit the 14-day expansion of each aggregate[2] to 0.08% when tested individually in accordance with ASTM C1567, or Use a minimum of 40% Class C fly ash with a maximum Ca0[3] content of 25%.
B	Š 0.10%	Š 0.10%	Use a minimum of 40% Class C fly ash with a maximum Ca0[3] content of 25%, or Use any ternary combination which replaces 35% to 50% of cement.
	Š 0.10%	ASTM C1293 1 yr. Expansion Š 0.04%	Use a minimum of 20% of any Class C fly ash, or Use any ternary combination which replaces 35% to 50% of cement.
C	Š 0.10%	> 0.10%	Determine the dosage of SCMs needed to limit the 14-day expansion of coarse and intermediate[2] aggregate to 0.08% when tested individually in accordance with ASTM C1567, or Use a minimum of 40% Class C fly ash with a maximum Ca0[3] content of 25%.
D	> 0.10%	Š 0.10%	Use a minimum of 40% Class C fly ash with a maximum Ca0[3] content of 25%, or Use any ternary combination which replaces 35% to 50% of cement.
	> 0.10%	ASTM C1293 1 yr. Expansion Š 0.04%	Determine the dosage of SCMs needed to limit the 14-day expansion of fine aggregate to 0.08% when tested in accordance with ASTM C1567.

1. Do not use Class C fly ash if the ASTM C1260 value of the fine, intermediate, or coarse aggregate is 0.30% or greater, unless the fly ash is used as part of a ternary system.
2. Intermediate size aggregates will fall under the requirements of mix design coarse aggregate.
3. Average the Ca0 content from the previous ten values as listed on the mill certificate.

4.2.7. **Optimized Aggregate Gradation (OAG) Concrete**. The gradation requirements in Table 3 and Table 4 do not apply when 0AG concrete is specified or used by the Contractor unless otherwise shown on the plans. Use Tex-470 to establish the optimized aggregate gradation. Use at least 420 lb. per cubic yard of cementitious material when 0AG concrete is used unless otherwise approved. Use a coarse aggregate with a maximum nominal size of 1-1/2 in. for Class P concrete. Use a coarse aggregate for all other classes of concrete with a maximum nominal size not larger than:

- 1/5 the narrowest dimension between sides of forms, or
- 1/3 the depth of slabs, or
- 3/4 the minimum clear spacing between individual reinforcing bars or wires, bundles of bars, individual tendons, bundled tendons, or ducts.

Make necessary adjustments to individual aggregate stockpile proportions during 0AG concrete production when the gradation deviates from the optimized gradation requirements.

4.2.8. **Self-Consolidating Concrete (SCC)**. Provide SCC meeting the following requirements shown in Table 11 when approved for use in precast concrete. Use concrete with a slump flow that can be placed without vibration and will not segregate or excessively bleed.

Increase the slump flow of a given concrete mix above the values shown in Table 11 when approved, provided the concrete has the same or lower water-to-cementitious material ratio and meets all other requirements listed in Table 11. Request approval to exceed the slump flow limits sufficiently in advance for proper evaluation by the Engineer.

Table 11
Mix Design Requirements for SCC

Tests	Test Method	Acceptable Limits
Slump Flow for Precast Concrete	ASTM C1611	22 to 27[1]
Slump Flow for Drilled Shafts	ASTM C1611	19 to 24[1]
T_{50}, sec	ASTM C1611	2 to 7
VSI Rating	ASTM C1611	0 or 1
Passing Ability, in.	ASTM C1621	Š 2
Segregation Column, %	ASTM C1610	Š 10
Bleeding, %	ASTM C232	Š 2.5

1. These slump flow limits are generally acceptable for most applications. However, slump flow limits may be adjusted during mix design approval process and when approved by the Engineer.

4.3. **Concrete Trial Batches**. Perform preliminary and final trial batches when required by the plans, or when previous satisfactory field data is not available. Submit previous satisfactory field data to the Engineer showing the proposed mix design conforms to specification requirements when trial batches are not required and before concrete is placed.

Perform preliminary and final trial batches for all self-consolidating concrete mix designs.

4.3.1. **Preliminary Trial Batches**. Perform all necessary preliminary trial batch testing when required, and provide documentation including mix design, material proportions, and test results substantiating the mix design conforms to specification requirements.

4.3.2. **Final Trial batches**. Make all final trial batches using the proposed ingredients in a mixer that is representative of the mixers to be used on the job when required. Make the batch size at least 50% of the mixer's rated capacity. Perform fresh concrete tests for air content and slump, and make, cure, and test strength specimens for compliance with specification requirements. Test at least one set of design strength specimens, consisting of 2 specimens per set, at 7-day, 28-day, and at least one additional age unless otherwise directed. Before placing, provide the Engineer the option of witnessing final trial batches, including the testing of the concrete. If not provided this option, the Engineer may require additional trial batches, including testing, before the concrete is placed.

Conduct all testing listed in Table 11 when performing trial batches for self-consolidating concrete. Make an additional mixture with 3% more water than the preliminary trial batch. Make necessary adjustments to the mix design if this additional mixture does not meet requirements of Table 11. Cast and evaluate mock-ups for precast concrete that are representative of the actual product as directed. Provide the Engineer the option of witnessing final trial batches, including the testing of the concrete and the casting of the mock-ups before placement. If not provided this option, the Engineer may require additional trial batches, including testing and mock-ups, before the concrete is placed.

Establish 7-day compressive strength target values using the following formula for each Class A, B, and E concrete mix designs to be used:

$$\text{Target value} = \text{Minimum design strength} \times \frac{\text{7 - day avg. trial batch strength}}{\text{28 - day avg. trial batch strength}}$$

Submit previous satisfactory field data, data from a new trial batch, or other evidence showing the change will not adversely affect the relevant properties of the concrete when changes are made to the type, brand, or source of aggregates, cement, SCM, water, or chemical admixtures. Submit the data for approval before making changes to the mix design. A change in vendor does not necessarily constitute a change in materials or source. The Engineer may waive new trial batches when there is a prior record of satisfactory performance with the ingredients. During concrete production, dosage changes of chemical admixtures used in the trial batches will not require a re-evaluation of the mix design.

The Contractor has the option of performing trial batches in conjunction with concrete placements except for SCC mixtures, when new trial batches are required during the course of the project. If the concrete fails to meet any requirement, the Engineer will determine acceptability and payment adjustments.

Establish the strength–maturity relationship in accordance with Tex-426-A when the maturity method is specified or permitted. When using the maturity method, any changes in any of the ingredients, including changes in proportions, will require the development of a new strength–maturity relationship for the mix.

4.3.3. **Mix Design of Record**. 0nce a trial batch or previously satisfactory field data substantiates the mix design, the proportions and mixing methods used become the mix design of record. Do not exceed mix design water-to-cement ratio.

4.4. **Production Testing**.

4.4.1. **Aggregate Moisture Testing**. Determine moisture content per Tex-409-A or Tex-425-A for coarse, intermediate, and fine aggregates at least twice a week, when there is an apparent change, or for new shipments of aggregate. When aggregate hoppers or storage bins are equipped with properly maintained electronic moisture probes for continuous moisture determination, moisture tests per Tex-409-A or Tex-425-A are not required. Electronic moisture probes, however, must be verified at least every 90 days against Tex-409-A and be accurate to within 1.0% of the actual moisture content.

When producing SCC, and when aggregate hoppers or storage bins are not equipped with electric moisture probes, determine the moisture content of the aggregates before producing the first concrete batch each day. Thereafter, determine the moisture content every 4 hr. or when there is an apparent change while SCC is being produced.

4.4.2. **Aggregate Gradation Testing**. Perform a sieve analysis in accordance with Tex-401-A on each stockpile used in the blend at least one day before producing 0AG concrete when producing optimized aggregate gradation concrete. Perform sieve analysis on each stockpile after every 10,000 cubic yards of 0AG concrete produced. Provide sieve analysis data to the Engineer.

4.5. **Measurement of Materials**.

4.5.1. **Non-Volumetric Mixers**. Measure aggregates by weight. Correct batch weight measurements for aggregate moisture content. Measure mixing water, consisting of water added to the batch, ice added to the batch, water occurring as surface moisture on the aggregates, and water introduced in the form of admixtures, by volume or weight. Measure ice by weight. Measure cement and supplementary cementing materials in a hopper and on a separate scale from those used for other materials. Measure the cement first when measuring the cumulative weight. Measure concrete chemical admixtures by weight or volume. Measure batch materials within the tolerances of Table 12.

Table 12
Mix Design Batching Tolerances—Non-Volumetric Mixers

Material	Tolerance (%)
Cement, wt.	-1 to +3
SCM, wt.	-1 to +3
Cement + SCM (cumulative weighing), wt.	-1 to +3
Water, wt. or volume	±3[1]
Fine aggregate, wt.	±2
Coarse aggregate, wt.	±2
Fine + coarse aggregate (cumulative weighing), wt.	±1
Chemical admixtures, wt. or volume	±3

1. Allowable deviation from target weight not including water withheld or moisture in the aggregate. The Engineer will verify the water-to-cementitious material ratio is within specified limits.

Ensure the quantity measured, when measuring cementitious materials at less than 30% of scale capacity, is accurate to not less than the required amount and not more than 4% in excess. Ensure the cumulative quantity, when measuring aggregates in a cumulative weigh batcher at less than 30% of the scale capacity,

is measured accurate to ±0.3% of scale capacity or ±3% of the required cumulative weight, whichever is less.

Measure cement in number of bags under special circumstances when approved. Use the weights listed on the packaging. Weighing bags of cement is not required. Ensure fractional bags are not used except for small hand-mixed batches of approximately 5 cu. ft. or less and when an approved method of volumetric or weight measurement is used.

4.5.2. **Volumetric Mixers**. Provide an accurate method of measuring all ingredients by volume, and calibrate equipment to assure correct measurement of materials within the specified tolerances. Base tolerances on volume–weight relationship established by calibration, and measure the various ingredients within the tolerances of Table 13. Correct batch measurements for aggregate moisture content.

Table 13
Mix Design Batching Tolerances—Volumetric Mixers

Material	Tolerance
Cement, wt. %	0 to +4
SCM, wt. %	0 to +4
Fine aggregate, wt. %	±2
Coarse aggregate, wt. %	±2
Admixtures, wt. or volume %	±3
Water, wt. or volume %	±1

4.6. **Mixing and Delivering Concrete**.

4.6.1. **Mixing Concrete**. 0perate mixers and agitators within the limits of the rated capacity and speed of rotation for mixing and agitation as designated by the manufacturer of the equipment. Provide concrete in a thoroughly mixed and uniform mass with a satisfactory degree of uniformity when tested in accordance with Tex-472-A.

Do not top-load new concrete onto returned concrete.

Adjust mixing times and batching operations as necessary when the concrete contains silica fume to ensure the material is completely and uniformly dispersed in the mix. The dispersion of the silica fume within the mix will be verified by the Construction Division, Materials and Pavements Section, using cylinders made from trial batches. Make necessary changes to the batching operations, if uniform dispersion is not achieved, until uniform and complete dispersion of the silica fume is achieved.

Mix concrete by hand methods or in a small motor-driven mixer when permitted, for small placements of less than 2 cu. yd. For such placements, proportion the mix by volume or weight.

4.6.2. **Delivering Concrete**. Deliver concrete to the project in a thoroughly mixed and uniform mass, and discharge the concrete with a satisfactory degree of uniformity. Conduct testing in accordance with Tex-472-A when there is a reason to suspect the uniformity of concrete and as directed.

Maintain concrete delivery and placement rates sufficient to prevent cold joints.

Adding chemical admixtures or the portion of water withheld is only permitted at the jobsite, under the supervision of the Engineer, to adjust the slump or slump flow of the concrete. Do not add water or chemical admixtures to the batch after more than an amount needed to conduct slump testing has been discharged. Turn the drum or blades at least 30 additional revolutions at mixing speed to ensure thorough and uniform mixing of the concrete. When this water is added, do not exceed the approved mix design water-to-cementitious material ratio.

Before unloading, furnish the delivery ticket for the batch of concrete containing the information required on Department Form 596, “Concrete Batch Ticket.” The Engineer will verify all required information is provided on the delivery tickets. The Engineer may suspend concrete operations until the corrective actions are

implemented if delivery tickets do not provide the required information. The Engineer will verify the design water-to-cementitious material ratio is not exceeded.

Begin the discharge of concrete delivered in truck mixers within the times listed in Table 14. Concrete may be discharged after these times provided the concrete temperature and slump meet the requirements listed in this Item and other pertinent Items. Perform these tests with certified testing personnel per
Section 421.4.8.1., "Certification of Testing Personnel." Provide the Engineer the option of witnessing testing of the concrete. If not provided this option, the Engineer may require additional testing before the concrete is placed.

Table 14
Concrete Discharge Times

Fresh Concrete Temperature, °F	Max Time After Batching for Concrete Not Containing Type B or D Admixtures, min.	Max Time After Batching for Concrete Containing Type B or D Admixtures,[1] min.
90 and above	45	75
75 Š T < 90	60	90
T < 75	90	120

1. Concrete must contain at least the minimum manufacturer's recommended dosage of Type B or D admixture.

4.7. **Placing, Finishing, and Curing Concrete**. Place, finish, and cure concrete in accordance with the pertinent Items.

4.8. **Sampling and Testing of Concrete**. Unless otherwise specified, all fresh and hardened concrete is subject to testing as follows:

4.8.1. **Certification of Testing Personnel**. Contractor personnel performing testing must be either ACI-certified or qualified by a Department-recognized equivalent written and performance testing program for the tests being performed. Personnel performing these tests are subject to Department approval. Use of a commercial laboratory is permitted at the Contractor's option. All personnel performing testing using the maturity method must be qualified by a training program recognized by the Department before using this method on the job.

4.8.2. **Fresh Concrete**. Provide safe access and assistance to the Engineer during sampling. Fresh concrete will be sampled for testing at the discharge end if using belt conveyors or pumps. When it is impractical to sample at the discharge end, a sample will be taken at the time of discharge from the delivery equipment and correlation testing will be performed and documented to ensure specification requirements are met at the discharge end.

4.8.3. **Testing of Fresh Concrete**. Test for the fresh properties listed in Table 15.

Table 15
Fresh Concrete Tests

Tests	Test Methods
Slump[1]	Tex-415-A
Temperature[1]	Tex-422-A
Air Content[2]	Tex-414-A, Tex-416-A or ASTM C457

1. Job-control testing performed by the Contractor.
2. 0nly required during concrete trial batch when air-entrained concrete is specified on the plans.

Concrete with a slump lower than the minimum placement slump in Table 9 after the addition of all water withheld, or concrete exhibiting segregation and excessive bleeding may be rejected.

When SCC exceeds the maximum placement slump flow or VSI rating, the Engineer will immediately resample and retest the concrete slump flow and VSI rating. If the concrete exceeds the maximum placement slump flow or VSI rating after the retest, the concrete will be rejected.

4.8.3.1. **Job-Control Testing**. Perform job-control concrete temperature and slump testing as specified in Table 16 unless otherwise specified. Provide the Engineer the opportunity to witness the testing. The Engineer may require a retest if not given the opportunity to witness. Immediately notify the Engineer of any concrete temperature or slump nonconformity issues. Furnish a copy of all test results to the Engineer daily.

Table 16
Job-Control Testing
Frequencies

Concrete Placements	Frequency
Bridge Deck Placements	Test the first few loads, then every fifth load delivered.
All 0ther Structural Class Concrete Placements	0ne test every 60 cu. yd. or fraction thereof.
Non-Structural Class Concrete Placements	0ne test every 180 cu. yd. or fraction thereof.

Immediately resample and retest the concrete slump when the concrete exceeds the slump range at time of placement. If the concrete exceeds the slump range after the retest, and is used at the Contractor's option, the Engineer will make strength specimens as specified in Article 421.5., "Acceptance of Concrete."

4.8.3.2. **Strength Specimen Handling**. Remove specimens from their molds and deliver Department test specimens to curing facilities within 24 to 48 hr. after molding, in accordance with pertinent test procedures unless otherwise shown on the plans or directed. Clean and prepare molds for reuse if necessary.

5. ACCEPTANCE OF CONCRETE

The Engineer will sample and test the fresh and hardened concrete for acceptance. The test results will be reported to the Contractor and the concrete supplier. Investigate the quality of the materials, the concrete production operations, and other possible problem areas to determine the cause for any concrete that fails to meet the required strengths as outlined below. Take necessary actions to correct the problem including redesign of the concrete mix. The Engineer may suspend all concrete operations under the pertinent Items if the Contractor is unable to identify, document, and correct the cause of the low strengths in a timely manner. Resume concrete operations only after obtaining approval for any proposed corrective actions. Concrete failing to meet the required strength as outlined below will be evaluated using the procedures listed in
Article 421.6., "Measurement and Payment."

5.1. **Structural Concrete**. For concrete classes identified as structural concrete in Table 8, the Engineer will make and test 7-day and 28-day specimens. Acceptance will be based on attaining the design strength given in Table 8.

5.2. **Class P and Class HES**. The Engineer will base acceptance in accordance with Item 360, "Concrete Pavement," and Item 361, "Repair of Concrete Pavement."

5.3. **All Other Concrete**. For concrete classes not identified as structural concrete in Table 8, the Engineer will make and test 7-day specimens. The Engineer will base acceptance on the 7-day target value established in accordance with Section 421.4.3., "Concrete Trial Batches."

6. MEASUREMENT AND PAYMENT

The work performed, materials furnished, equipment, labor, tools, and incidentals will not be measured or paid for directly but will be subsidiary to pertinent Items.

The following procedure will be used to evaluate concrete where one or more project acceptance test specimens fail to meet the required design strength specified in this Item or on the plans:

- The concrete for a given placement will be considered structurally adequate and accepted at full price if the average of all test results for specimens made at the time of placement meets the required design strength provided no single test result is less than 85% of the required design strength.

- The Engineer will perform a structural review of the concrete to determine its adequacy to remain in service if the average of all test results for specimens made at the time of placement is less than the required design strength or if any test results are less than 85% of the required design strength. If the in-situ concrete strength is needed for the structural review, take cores at locations designated by the Engineer in accordance with Tex-424-A. The Engineer will test the cores. The coring and testing will be at the Contractor's expense.
- If all of the tested cores meet the required design strength, the concrete will be paid for at full price.
- If any of the tested cores do not meet the required design strength, but the average strength attained is determined to be structurally adequate, the Engineer will determine the limits of the pay adjustment using the following formula:

$$A = B_p\left[-5.37\left(\frac{S_a}{S_s}\right)^2 + 11.69\left(\frac{S_a}{S_s}\right) - 5.32\right]$$

where:
A = Amount to be paid per unit of measure for the entire placement in question
S_a = Actual average strength from cylinders or cores. Use values from cores, if taken.
S_s = Minimum required strength (specified)
B_p = Unit Bid Price

- If the structural review determines the concrete is not adequate to remain in service, the Engineer will determine the limits of the concrete to be removed.
- The decision to reject structurally inadequate concrete or to apply the pay adjustment factor will be made no later than 56 days after placement.

Item 464
Reinforced Concrete Pipe

1. DESCRIPTION

Furnish and install reinforced concrete pipe, materials for precast concrete pipe culverts, or precast concrete storm drain mains, laterals, stubs, and inlet leads.

2. MATERIALS

2.1. **Fabrication**. Fabrication plants must be approved by the Construction Division in accordance with DMS-7310, "Reinforced Concrete Pipe and Machine-Made Precast Concrete Box Culvert Fabrication and Plant Qualification," before furnishing precast reinforced concrete pipe for Department projects. The Department's MPL has a list of approved reinforced concrete pipe plants.

Furnish material and fabricate reinforced concrete pipe in accordance with DMS-7310, "Reinforced Concrete Pipe and Machine-Made Precast Concrete Box Culvert Fabrication and Plant Qualification."

2.2. **Design**.

2.2.1. **General**. The class and D-load equivalents are shown in Table 1. Furnish arch pipe in accordance with ASTM C506 and the dimensions shown in Table 2. Furnish horizontal elliptical pipe in accordance with ASTM C507 and the dimensions shown in Table 3. For arch pipe and horizontal elliptical pipe the minimum height of cover required is 1 ft.

Table 1
Circular Pipe
ASTM C76 & ASTM C655

Class	D-Load
I	800
II	1,000
III	1,350
IV	2,000
V	3,000

Table 2
Arch Pipe

Design Size	Equivalent Diameter (in.)	Rise (in.)	Span (in.)
1	18	13-1/2	22
2	21	15-1/2	26
3	24	18	28-1/2
4	30	22-1/2	36-1/4
5	36	26-5/8	43-3/4
6	42	31-5/16	51-1/8
7	48	36	58-1/2
8	54	40	65
9	60	45	73
10	72	54	88

Table 3
Horizontal Elliptical Pipe

Design Size	Equivalent Diameter (in.)	Rise (in.)	Span (in.)
1	18	14	23
2	24	19	30
3	27	22	34
4	30	24	38
5	33	27	42
6	36	29	45
7	39	32	49
8	42	34	53
9	48	38	60
10	54	43	68

2.2.2. **Jacking, Boring, or Tunneling**. Design pipe for jacking, boring, or tunneling considering the specific installation conditions such as the soil conditions, installation methods, anticipated deflection angles, and jacking stresses. Provide design notes and drawings signed and sealed by a Texas licensed professional engineer when requested.

2.3. **Marking**. Furnish each section of reinforced concrete pipe marked with the following information specified in DMS-7310, "Reinforced Concrete Pipe and Machine-Made Precast Concrete Box Culvert Fabrication and Plant Qualification."

- class or D-load of pipe,
- ASTM designation,
- date of manufacture,
- pipe size,
- name or trademark of fabricator and plant location,
- designated fabricator's approval stamp,
- pipe to be used for jacking and boring (when applicable), and
- designation "SR" for pipe meeting sulfate-resistant concrete plan requirements (when applicable).

Clearly mark 1 end of each section during the process of manufacture or immediately thereafter for pipe with elliptical reinforcement. Mark the pipe on the inside and outside of opposite walls to show the location of the top or bottom of the pipe as it should be installed unless the external shape of the pipe is such that the correct position of the top and bottom is obvious. Mark the pipe section by indenting or painting with waterproof paint.

2.4. **Inspection**. Provide access for inspection of the finished pipe at the project site before and during installation.

2.5. **Causes for Rejection**. Individual section of pipe may be rejected for any of the conditions stated in the Annex of DMS-7310, "Reinforced Concrete Pipe and Machine-Made Precast Concrete Box Culvert Fabrication and Plant Qualification."

2.6. **Repairs**. Make repairs if necessary as stated in the Annex of DMS-7310, "Reinforced Concrete Pipe and Machine-Made Precast Concrete Box Culvert Fabrication and Plant Qualification."

2.7. **Jointing Materials**. Use any of the following materials for the making of joints unless otherwise shown on the plans. Furnish a manufacturer's certificate of compliance for all jointing materials except mortar.

2.7.1. **Mortar**. Provide mortar for joints that meets the requirements of Section 464.3.3., "Jointing."

2.7.2. **Cold-Applied, Plastic Asphalt Sewer Joint Compound**. Provide a material that consists of natural or processed asphalt base, suitable volatile solvents, and inert filler. Ensure the consistency is such that the

ends of the pipe can be coated with a layer of the compound up to 1/2 in. thick by means of a trowel. Provide a joint compound that cures to a firm, stiff plastic condition after application. Provide a material of a uniform mixture. Stir any small separation found in the container into a uniform mix before using.

Provide a material that meets the requirements of Table 4 when tested in accordance with Tex-526-C.

Table 4
Cold-Applied, Plastic Asphalt Sewer Joint Compound Material Requirements

Composition	Analysis
Asphalt base, 100%–% volatiles–% ash, % by weight	28–45
Volatiles, 212°F evaporation, 24 hr., % by weight	10–26
Mineral matter, determined as ash, % by weight	30–55
Consistency, cone penetration, 150 q, 5 sec., 77°F	150–275

2.7.3. **Rubber Gaskets**. Provide gaskets that conform to ASTM C1619 Class A or C. Meet the requirements of ASTM C443 for design of the pipe joints and permissible variations in dimensions.

2.7.4. **Pre-Formed Flexible Joint Sealants**. Pre-formed flexible joint sealants may be used for sealing joints of tongue-and-groove concrete pipe. Provide flexible joint sealants that meet the requirements of ASTM C990. Use flexible joint sealants that do not depend on oxidizing, evaporating, or chemical action for its adhesive or cohesive strength. Supply in extruded rope form of suitable cross-section. Provide a size of the pre-formed flexible joint sealant in accordance with the manufacturer's recommendations and large enough to properly seal the joint. Protect flexible joint sealants with a suitable wrapper able to maintain the integrity of the jointing material when the wrapper is removed.

3. CONSTRUCTION

3.1. **Excavation, Shaping, Bedding, and Backfill**. Excavate, shape, bed, and backfill in accordance with Item 400, "Excavation and Backfill for Structures," except where jacking, boring, or tunneling methods are permitted. Jack, bore, or tunnel the pipe in accordance with Item 476, "Jacking, Boring, or Tunneling Pipe or Box." Immediate backfilling is permitted if joints consist of materials other than mortar. Take special precautions in placing and compacting the backfill to avoid any movement of the pipe or damage to the joints. Do not use heavy earth-moving equipment to haul over the structure until a minimum of 4 ft. of permanent or temporary compacted fill has been placed over the structure unless otherwise shown on the plans or permitted in writing. Remove and replace pipe damaged by the Contractor at no expense to the Department.

3.2. **Laying Pipe**. Start the laying of pipe on the bedding at the outlet end with the spigot or tongue end pointing downstream, and proceed toward the inlet end with the abutting sections properly matched, true to the established lines and grades unless otherwise authorized. Fit, match, and lay the pipe to form a smooth, uniform conduit. Cut cross trenches in the foundation to allow the barrel of the pipe to rest firmly upon the bedding where bell-and-spigot pipe is used. Cut cross trenches no more than 2 in. larger than the bell ends of the pipe. Lower sections of pipe into the trench without damaging the pipe or disturbing the bedding and the sides of the trench. Carefully clean the ends of the pipe before the pipe is placed. Prevent the earth or bedding material from entering the pipe as it is laid. Lay the pipe in the trench, when elliptical pipe with circular reinforcing or circular pipe with elliptical reinforcing is used, so the markings for the top or bottom are not more than 5° from the vertical plane through the longitudinal axis of the pipe. Remove and re-lay, without extra compensation, pipe that is not in alignment or shows excessive settlement after laying.

Lay multiple lines of reinforced concrete pipe with the centerlines of the individual barrels parallel. Use the clear distances between outer surfaces of adjacent pipes shown in Table 5 unless otherwise shown on the plans. Use the equivalent diameter from Table 2 or Table 3 for arch pipe or horizontal elliptical pipe to determine the clear distance requirement in Table 5.

Table 5
Minimum Clear Distance between Pipes

Equivalent Diameter	Min Clear Distance
18 in.	9 in.
24 in.	11 in.
30 in.	1 ft. 1 in.
36 in.	1 ft. 3 in.
42 in.	1 ft. 5 in.
48 in.	1 ft. 7 in.
54 in.	1 ft. 11 in.
60 to 84 in.	2 ft.

3.3. **Jointing**. Make available an appropriate rolling device similar to an automobile mechanic's "creeper" for conveyance through small-size pipe structures.

3.3.1. **Joints Sealed with Hydraulic Cement Mortar**. Use Type S mortar meeting the requirements of ASTM C270. Clean and wet the pipe ends before making the joint. Plaster the lower half of the bell or groove and the upper half of the tongue or spigot with mortar. Pack mortar into the joint from both inside and outside the pipe after the pipes are tightly jointed. Finish the inside smooth and flush with adjacent joints of pipe. Form a bead of semicircular cross-section over tongue-and-groove joints outside the pipe, extending at least 1 in. on each side of the joint. Form the mortar for bell-and-spigot joints to a 45° fillet between the outer edge of the bell and the spigot. Cure mortar joints by keeping the joints wet for at least 48 hr. or until the backfill has been completed, whichever comes first. Place fill or backfill once the mortar jointing material has cured for at least 6 hr. Conduct jointing only when the atmospheric temperature is above 40°F. Protect mortared joints against freezing by backfilling or other approved methods for at least 24 hr.

Driveway culverts do not require mortar banding on the outside of the pipe.

Furnish pipes, with approval, that are large enough for a person to enter with the groove between 1/2 in. and 3/4 in. longer than the tongue. Such pipe may be laid and backfilled without mortar joints. Clean the space on the interior of the pipe between the end of the tongue and the groove of all foreign material, thoroughly wet and fill with mortar around the entire circumference of the pipe, and finish flush after the backfilling has been completed.

3.3.2. **Joints Using Cold-Applied, Plastic Asphalt Sewer Joint Compound**. Ensure both ends of the pipes are clean and dry. Trowel or otherwise place a 1/2–in. thick layer of the compound in the groove end of the pipe covering at least 2/3 of the joint face around the entire circumference. Shove home the tongue end of the next pipe with enough pressure to make a tight joint. Remove any excess mastic projecting into the pipe after the joint is made. Backfill after the joint has been inspected and approved.

3.3.3. **Joints Using Rubber Gaskets**. Make the joint assembly according to the recommendations of the gasket manufacturer. Make joints watertight when using rubber gaskets. Backfill after the joint has been inspected and approved.

3.3.4. **Joints Using Pre-Formed Flexible Joint Sealants**. Install pre-formed flexible joint sealants in accordance with the manufacturer's recommendations. Place the joint sealer so no dirt or other deleterious materials come in contact with the joint sealing material. Pull or push home the pipe with enough force to properly seal the joint. Remove any joint material pushed out into the interior of the pipe that would tend to obstruct the flow. Store pre-formed flexible joint sealants in an area warmed naturally or artificially to above 70°F in an approved manner when the atmospheric temperature is below 60°F. Apply flexible joint sealants to pipe joints immediately before placing pipe in trench, and connect pipe to previously laid pipe. Backfill after the joint has been inspected and approved.

3.4. **Connections and Stub Ends**. Make connections of concrete pipe to existing pipes, pipe storm drains, or storm drain appurtenances as shown on the plans.

Mortar or concrete the bottom of existing structures if necessary to eliminate any drainage pockets created by the connections. Repair any damage to the existing structure resulting from making the connections.

Make connections between concrete pipe and corrugated metal pipe with a suitable concrete collar and a minimum thickness of 4 in. unless otherwise shown on the plans.

Finish stub ends for connections to future work not shown on the plans by installing watertight plugs into the free end of the pipe.

Fill lift holes with concrete, mortar, or precast concrete plugs after the pipe is in place.

4. MEASUREMENT

This Item will be measured by the ***linear*** foot. Measurement will be made between the ends of the pipe barrel along the flow line, not including safety end treatments. Safety end treatments will be measured in accordance with Item 467, "Safety End Treatment." Pipe that will be jacked, bored, or tunneled will be measured in accordance with Item 476, "Jacking, Boring, or Tunneling Pipe or Box." Measurement of spurs, branches, or new connecting pipe will be made from the intersection of the flow line with the outside surface of the pipe into which it connects. Where inlets, headwalls, catch basins, manholes, junction chambers, or other structures are included in lines of pipe, the length of pipe tying into the structure wall will be included for measurement, but no other portion of the structure length or width will be included.

For multiple pipes, the measured length will be the sum of the lengths of the barrels.

This is a plans quantity measurement Item. The quantity to be paid is the quantity shown in the proposal unless modified by Article 9.2., "Plans Quantity Measurement." Additional measurements or calculations will be made if adjustments of quantities are required.

5. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Reinforced Concrete Pipe," "Reinforced Concrete Pipe (Arch)," or "Reinforced Concrete Pipe (Elliptical)" of the size and D-load specified or of the size and class specified. This price is full compensation for constructing, furnishing, transporting, placing, and joining pipes; shaping the bed; cutting pipes on skew or slope; connecting to new or existing structures; breaking back, removing, and disposing of portions of the existing structure; replacing portions of the existing structure; cutting pipe ends on skew or slope; and equipment, labor, tools, and incidentals.

Protection methods for excavations greater than 5 ft. deep will be measured and paid for as required under Item 402, "Trench Excavation Protection," or Item 403, "Temporary Special Shoring." Excavation, shaping, bedding, and backfill will be paid for in accordance with Item 400, "Excavation and Backfill for Structures." When jacking, boring, or tunneling is used at the Contractor's option, payment will be made under this Item. When jacking, boring or tunneling is required, payment will be made under Item 476, "Jacking, Boring or Tunneling Pipe or Box."

Payment will be made under:

Item TX-464-5.1	***Reinforced Concrete Pipe, 18", Class IV — per linear foot***

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Item 465
Junction Boxes, Manholes, and Inlets

1. DESCRIPTION

Construct junction boxes, manholes, and inlets, complete in place or to the stage detailed, including furnishing and installing frames, grates, rings, and covers.

2. MATERIALS

Furnish materials in accordance with the following:

- Item 420, "Concrete Substructures"
- Item 421, "Hydraulic Cement Concrete"
- Item 440, "Reinforcement for Concrete"
- Item 471, "Frames, Grates, Rings, and Covers"

Cast-in-place junction boxes, manholes, inlets, risers, and appurtenances are acceptable unless otherwise shown. Alternate designs for cast-in-place items must be acceptable to the Engineer and must conform to functional dimensions and design loading. Alternate designs must be designed and sealed by a licensed professional engineer.

2.1. **Concrete**. Furnish Class H concrete as referenced in Item 421 "Hydraulic Cement Concrete," except that Mix Design Options 1–8 will be allowed for formed precast junction boxes, manholes, and inlets. Furnish concrete per DMS-7310, "Reinforced Concrete Pipe and Machine-Made Precast Concrete Box Culvert Fabrication and Plant Qualification," for machine-made precast junctions boxes, manholes, and inlets. Furnish Class C concrete for cast-in-place manholes and inlets unless otherwise shown on the plans.

2.2. **Mortar**. Furnish mortar conforming to DMS-4675, "Cementitious Grouts and Mortars for Miscellaneous Applications."

2.3. **Timber**. Provide sound timber that is a minimum of 3 in. nominal thickness and reasonably free of knots and warps for temporary covers when used with Stage I construction (see Article 465.3., "Construction").

2.4. **Other Materials**. Use commercial-type hardware as approved.

3. CONSTRUCTION

~~Construct all types of junction boxes, manholes, and inlets either complete or in 2 stages, described as Stage I and Stage II.~~

~~Construct the Stage I portion of junction boxes, manholes, and inlets as shown on the plans or as specified in this Item. Furnish and install a temporary cover as approved.~~

~~Furnish and install the storm drain pipe and a temporary plug for the exposed end of the storm drain pipe from the storm drain to a point below the top of curb indicated on the plans for Stage I construction of cast iron or steel inlet units.~~

~~Construct Stage II after the pavement structure is substantially complete unless otherwise approved.~~

~~Construct the remaining wall height and top of junction box, manhole, or inlet for Stage II, and furnish~~

~~and install any frames, grates, rings and covers, curb beams, or collecting basins required.~~

Construct cast-in-place junction boxes, manholes, and inlets in accordance with Item 420, "Concrete Substructures." Forms will be required for all concrete walls. Outside wall forms for cast-in-place concrete may be omitted with approval if the surrounding material can be trimmed to a smooth vertical face.

3.1. **Precast Junction Boxes, Manholes, and Inlets**. Construct formed precast junction boxes, manholes, and inlets in accordance with Item 420, "Concrete Substructures," except as otherwise noted in this Item. Construct machine-made precast junction boxes, manholes, and inlets in accordance with ASTM C478 except as otherwise noted in this Item. Mix and place concrete for machine-made junction boxes, manholes, and inlets per the requirements of DMS-7310, "Reinforced Concrete Pipe and Machine-Made Precast Concrete Box Culvert Fabrication and Plant Qualification." Conform to the product permissible variations and rejection criteria stated in ASTM C478 for machine-made precast junction boxes, manholes, and inlets. Cure all precast units in accordance with Item 424, "Precast Concrete Structural Members (Fabrication)."

Multi-project fabrication plants (as defined in Item 424 "Precast Concrete Structural Members (Fabrication)," that produce manholes and inlets will be approved by the Construction Division in accordance with DMS-7340, "Qualification Procedure for Multi-Project Fabrication Plants of Precast Concrete Manholes and Inlets." The Department's MPL has a list of approved multi-project plants.

When approved by the engineer, the contractor can construct a cast-in-place box in lieu of a precast inlet. The contractor must submit a plan or shop drawing to the engineer for approval.

3.1.1. **Lifting Holes**. Provide no more than 4 lifting holes in each section for precast units. Lifting holes may be cast, cut into fresh concrete after form removal, or drilled. Provide lifting holes large enough for adequate lifting devices based on the size and weight of the section. The maximum hole diameter is 3 in. at the inside surface of the wall and 4 in. at the outside surface. Cut no more than 5 in. in any direction of reinforcement per layer for lifting holes. Repair spalled areas around lifting holes.

3.1.2. **Marking**. Clearly mark each precast junction box, manhole, and inlet unit with the following information:

- name or trademark of fabricator and plant location;
- product designation;
- ASTM designation (if applicable);
- date of manufacture;
- designated fabricator's approval stamp; and
- designation "SR" for product meeting sulfate-resistant concrete plan requirements (when applicable).

3.1.3. **Storage and Shipment**. Store precast units on a level surface. Do not ship units until design strength requirements have been met.

3.2. **Excavation, Shaping, Bedding, and Backfill**. Excavate, shape, bed, and backfill in accordance with Item 400, "Excavation and Backfill for Structures." Immediate backfilling is permitted for all junction box, manhole, and inlet structures where joints consist of rubber boots, rubber gaskets, or bulk or preformed joint sealant. Take precautions in placing and compacting the backfill to avoid any movement of junction boxes, manholes, and inlets. Remove and replace junction boxes, manholes, and inlets damaged by the Contractor at no expense to the Department.

3.3. **Junction Boxes, Manholes, and Inlets for Precast Concrete Pipe Storm Drains**. Construct junction boxes, manholes, and inlets for precast concrete pipe storm drains before completion of storm drain lines into or through the junction box, manhole, or inlet. Neatly cut all storm drains at the inside face of the walls of the junction box, manhole, or inlet.

3.4. **Junction Boxes, Manholes, and Inlets for Box Storm Drains**. Place bases or risers of junction boxes, manholes, and inlets for box storm drains before or in conjunction with placement of the storm drain. Backfill the junction box, manhole, or inlet and storm drain as a whole.

3.5. **Inverts**. Shape and route floor inverts passing out or through the junction box, manhole, or inlet as shown on the plans. Shape by adding and shaping mortar or concrete after the base is placed or by placing the required additional material with the base.

3.6. **Finishing Complete Junction Boxes, Manholes, and Inlets**. Complete junction boxes, manholes, and inlets in accordance with the plans. Backfill to original ground elevation in accordance with Item 400, "Excavation and Backfill for Structures."

3.7. **Finishing Stage I Construction**. Complete Stage I construction by constructing the walls to the elevations shown on the plans and backfilling to required elevations in accordance with Item 400, "Excavation and Backfill for Structures."

3.8. **Stage II Construction**. Construct subgrade and base course or concrete pavement construction over Stage I junction box, manhole, or inlet construction unless otherwise approved. Excavate to expose the top of Stage I construction and complete the junction box, manhole or inlet in accordance with the plans and these Specifications, including backfill and cleaning of all debris from the bottom of the junction box, manhole, or inlet.

3.9. **Inlet Units**. Install cast iron or steel inlet units in conjunction with the construction of concrete curb and gutter. Set the inlet units securely in position before placing concrete for curb and gutter. Form openings for the inlets and recesses in curb and gutter as shown on the plans. Place and thoroughly consolidate concrete for curb and gutter adjacent to inlets and around the inlet castings and formed openings and recesses without displacing the inlet units.

4. MEASUREMENT

All junction boxes, manholes, and inlets satisfactorily completed in accordance with the plans and specifications will be measured by each junction box, manhole, or inlet, complete, or by each junction box, manhole, or inlet completed to the stage of construction required by the plans.

5. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for as follows:

~~5.1. **Complete Manholes**. Payment for complete manholes will be made at the unit price bid for "Manhole (Complete)" of the type specified.~~

5.2. **Complete Inlets**. Payment for inlets will be made at the unit price bid for "Inlet (Complete)," of the type specified.

~~5.3. **Complete Junction Boxes**. Payment for junction boxes will be made at the unit price bid for "Junction Box (Complete)" of the type specified.~~

~~5.4. **Manholes Stage I**. Payment for Manholes, Stage I, will be made at the unit price bid for each "Manhole (Stage I)" of the type specified.~~

~~5.5. **Manholes Stage II**. Payment for Manholes, Stage II, will be made at the unit price bid for each "Manhole (Stage II)" of the type specified.~~

~~5.6. **Inlets Stage I**. Payment for Inlets, Stage I, will be made at the unit price bid for each "Inlet (Stage I)" of the type specified.~~

~~5.7. **Inlets Stage II**. Payment for Inlets, Stage II, will be made at the unit price bid for each "Inlet (Stage II)" of the type specified.~~

5.8. **Junction Boxes Stage I**. Payment for Junction Boxes, Stage I, will be made at the unit price bid for each "Junction Box (Stage I)" of the type specified.

5.9. **Junction Boxes Stage II**. Payment for Junction Boxes, Stage II, will be made at the unit price bid for each "Junction Box (Stage II)" of the type specified.

This price is full compensation for concrete, reinforcing steel, mortar, frames, grates, rings and covers, excavation, and backfill and for all other materials, tools, equipment, labor, and incidentals.

Payment will be made under:

Item TX 465-5.1 4'x4' Single Grate Pre-Fabricated Inlet (Complete) — per Each

Item 496
Removing Structures

1. DESCRIPTION

Remove and either dispose of or salvage structures.

2. CONSTRUCTION

~~2.1.~~ **Demolition Plans**. Follow the demolition sequence shown on the plans. ~~for bridge structures to be removed, or submit a demolition plan if indicated on the plans. Include in the required demolition plan the type and location of equipment to be used, the method and sequence of removal of the structural elements, and a narrative indicating the stability of the partially demolished structure is maintained throughout the demolition process. Have these plans signed and sealed by a licensed professional engineer when demolished structure intersects active roadways and as otherwise shown on the plans. Submit required demolition plans at least 14 days before starting work unless otherwise directed. Department approval of these plans is not required, but the Department reserves the right to request modifications to the plans when work could affect the safety of the traveling public and when around other transportation facilities to remain in place. Notify the Department 30 days before starting any bridge demolition work to allow for required notifications to other agencies.~~

2.2. **Removal**.

2.2.1. **Pipes**. Avoid damaging appurtenances determined by the Engineer to be salvageable.

2.2.2. **Concrete, Brick, or Stone Structures**. Portions of structures that will not interfere with the proposed construction may remain in place 2 ft. or more below the permanent ground line. Square off remaining structures and cut reinforcement flush with the surface of the concrete.

2.2.3. **Steel Structures**. Dismantle steel to be retained by the Department or re-erected by cold-cutting fastener heads and punching or drilling the remaining portion of the fastener, air-arc gouging welded connections, and flame-cutting beams along a straight line. The Engineer may approve other methods of cutting. Cut beams at the locations shown on the plans. Match-mark steel to be re-erected with paint in accordance with the erection drawings. Remove steel piles or cut off 2 ft. or more below the permanent ground line.

2.2.4. **Timber Structures**. ***(Wood posts)*** Remove all fasteners from timber determined by the engineer to be salvageable. Remove timber piles or cut off 2 ft. or more below the permanent ground line.-

2.3. **Salvage**. Avoid damage to materials shown on the plans to be salvaged. Deliver materials to be retained by the Department to the location shown on the plans. Block up salvaged steel materials off the ground.

2.4. **Disposal**. Material removed that is not deemed to be salvageable is the property of the Contractor. Dispose of removed material off the right of way in accordance with federal, state, and local regulations.

2.5. **Backfill**. Backfill excavation and voids to the original ground line if resulting from the removal of structures. Place backfill that will support any portion of the roadbed or embankment to the same requirements for placing embankment. Backfill other areas in 10 in. layers, loose measurement, and compact to the density of adjacent undisturbed material.

3. MEASUREMENT

~~This Item will be measured by each structure or by the foot.~~ ***Pipe removal shall be measured by the linear***

foot. Inlet removal shall be per each inlet removed.

4. PAYMENT

The work performed in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for ~~"Removing Structures"~~ ***Pipe Removal, Inlet Removal*** of the type of structure specified. This price is full compensation for demolition plan preparation, loading, hauling, disposal, stockpiling, removal of appurtenances, excavation and backfill, equipment, labor, tools, and incidentals.

Payment will be made under:

Item TX 496-5.1	***Pipe Removal (Less than 30" Diameter) — per linear foot***
Item TX 496-5.2	***Inlet Removal — per each***

Item 502
Barricades, Signs, and Traffic Handling

1. DESCRIPTION

Provide, install, move, replace, maintain, clean, and remove all traffic control devices shown on the plans and as directed.

2. CONSTRUCTION

Comply with the requirements of Article 7.2., "Safety". Implement the traffic control plan (TCP) ~~shown on the plans~~ ***according to the TXDOT standard details shown in the plans and available through TxDOT.***

Contractor shall submit a traffic control plan to the Engineer for approval.

Install traffic control devices straight and plumb. Make changes to the TCP only as approved. Minor adjustments to meet field conditions are allowed.

Submit Contractor-proposed TCP changes, signed and sealed by a licensed professional engineer, for approval. The Engineer may develop, sign, and seal Contractor-proposed changes. Changes must conform to guidelines established in the TMUTCD using approved products from the Department's Compliant Work Zone Traffic Control Device List.

Maintain traffic control devices by taking corrective action when notified. Corrective actions include, but are not limited to, cleaning, replacing, straightening, covering, and removing devices. Maintain the devices such that they are properly positioned and spaced, legible, and have retroreflective characteristics that meet requirements day or night and in all weather conditions.

The Engineer may authorize or direct in writing the removal or relocation of project limit advance warning signs. When project limit advance warning signs are removed before final acceptance, provide traffic control in accordance with the TMUTCD for minor operations as approved.

Remove all traffic control devices upon completion of the work as shown on the plans or as directed. ***Contractor is responsible for removing traffic control devices when work and/or site conditions requiring the devices is not being conducted. Contractor is responsible for replacing barricades when work commences.***

3. MEASUREMENT

Barricades, Signs, and Traffic Handling will be measured ~~by the month~~ *per lump sum*. Law enforcement personnel ~~with patrol vehicles will be measured by the hour for each person~~ ***are not required.***

4. PAYMENT

4.1. **Barricades, Signs, and Traffic Handling**. Except for Contracts with callout work and work orders, the work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Barricades, Signs, and Traffic Handling." This price is full compensation for installation, maintenance, adjustments, replacements, removal, materials, equipment, labor, tools, and incidentals.

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Barricades, Signs, and Traffic Handling." This price is full compensation for installation, maintenance, adjustments, replacements, removal, materials, equipment, labor, tools, and incidentals.

When the plans establish pay items for particular work in the TCP, that work will be measured and paid under pertinent Items.

4.1.1. **Initiation of Payment**. Payment for this Item will begin on the first estimate after barricades, signs, and traffic handling devices have been installed in accordance with the TCP and construction has begun.

Periodic payments will be made under this item in proportion to the amount of work accomplished, as determined by the Engineer.

~~4.1.2. **Paid Months**. Monthly payment will be made each succeeding month for this Item provided the barricades, signs, and traffic handling devices have been installed and maintained in accordance with the TCP until the Contract amount has been paid.~~

~~If, within the time frame established by the Engineer, the Contractor fails to provide or properly maintain signs and barricades in compliance with the Contract requirements, as determined by the Engineer, the Contractor will be considered in noncompliance with this Item. No payment will be made for the months in question, and the total final payment quantity will be reduced by the number of months the Contractor was in noncompliance.~~

~~4.1.3. **Maximum Total Payment Before Acceptance**. The total payment for this Item will not exceed 10% of the total Contract amount before final acceptance in accordance with Article 5.12., "Final Acceptance." The remaining balance will be paid in accordance with Section 502.4.5., "Balance Due."~~

4.1.4. **Total Payment Quantity**. The quantity paid under this Item will not exceed the total quantity shown on the plans except as modified by change order ~~and as adjusted by Section 502.4.2., "Paid Months."~~ An overrun of the plans quantity for this Item will not be allowed for approving designs; testing; material shortages; closed construction seasons; curing periods; establishment, performance, test, and maintenance periods; failure to complete the work in the number of months allotted; nor delays caused directly or indirectly by requirements of the Contract.

~~4.1.5. **Balance Due**. The remaining unpaid months of barricades less non-compliance months will be paid on final acceptance of the project, if all work is complete and accepted in accordance with Article 5.12., "Final Acceptance."~~

~~4.1.6. **Contracts with Callout Work and Work Orders**. The work performed and the materials furnished with this Item and measured as provided under "Measurement," will be considered subsidiary to pertinent Items, except for federally funded Contracts.~~

4.2. **Law ~~Enforcement~~ Personnel**. ~~The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement," will be paid by Contractor force account for "Law Enforcement Personnel." This price is full compensation for furnishing all labor, materials, supplies, equipment, patrol vehicle, fees, and incidentals necessary to complete the work as directed.~~

Payment will be made under:

Item TX 502- 4.1 Barricades, Signs, and Traffic Handling — per Lump Sum

Item 506
Temporary Erosion, Sedimentation, and Environmental Controls

1. DESCRIPTION

Install, maintain, and remove erosion, sedimentation, and environmental control measures to prevent or reduce the discharge of pollutants in accordance with the Storm Water Pollution Prevention Plan (SWP3) on the plans and the Texas Pollutant Discharge Elimination System (TPDES) General Permit TXR150000. Control measures are defined as Best Management Practices used to prevent or reduce the discharge of pollutants. Control measures include, but are not limited to, rock filter dams, temporary pipe slope drains, temporary paved flumes, construction exits, earthwork for erosion control, pipe, construction perimeter fence, sandbags, temporary sediment control fence, biodegradable erosion control logs, vertical tracking, temporary or permanent seeding, and other measures. Erosion and sediment control devices must be selected from the *Erosion Control Approved Products* or *Sediment Control Approved Products* lists. Perform work in a manner to prevent degradation of receiving waters, facilitate project construction, and comply with applicable federal, state, and local regulations. Ensure the installation and maintenance of control measures is performed in accordance with the manufacturer's or designer's specifications.

Provide the Contractor Certification of Compliance before performing SWP3 or soil disturbing activities. By signing the Contractor Certification of Compliance, the Contractor certifies they have read and understand the requirements applicable to this project pertaining to the SWP3, the plans, and the TPDES General Permit TXR150000. The Contractor is responsible for any penalties associated with non-performance of installation or maintenance activities required for compliance. Ensure the most current version of the certificate is executed for this project.

2. MATERIALS

Furnish materials in accordance with the following:

- Item 161, "Compost"
- Item 432, "Riprap"
- Item 556, "Pipe Underdrains"

2.1. **Rock Filter Dams**.

2.1.1. **Aggregate**. Furnish aggregate with approved hardness, durability, cleanliness, and resistance to crumbling, flaking, and eroding. Provide the following:

- Types 1, 2, and 4 Rock Filter Dams. Use 3 to 6 in. aggregate.
- Type 3 Rock Filter Dams. Use 4 to 8 in. aggregate.

2.1.2. **Wire**. Provide minimum 20 gauge galvanized wire for the steel wire mesh and tie wires for Types 2 and 3 rock filter dams. Type 4 dams require:

- a double-twisted, hexagonal weave with a nominal mesh opening of 2-1/2 × 3-1/4 in.;
- minimum 0.0866 in. steel wire for netting;
- minimum 0.1063 in. steel wire for selvages and corners; and
- minimum 0.0866 in. for binding or tie wire.

2.1.3. **Sandbag Material**. Furnish sandbags meeting Section 506.2.8., "Sandbags," except that any gradation of aggregate may be used to fill the sandbags.

2.2. **Temporary Pipe Slope Drains**. Provide corrugated metal pipe, polyvinyl chloride (PVC) pipe, flexible tubing, watertight connection bands, grommet materials, prefabricated fittings, and flared entrance sections that conform to the plans. Recycled and other materials meeting these requirements are allowed if approved.

Furnish concrete in accordance with Item 432, "Riprap."

2.3. **Temporary Paved Flumes**. Furnish asphalt concrete, hydraulic cement concrete, or other comparable non-erodible material that conforms to the plans. Provide rock or rubble with a minimum diameter of 6 in. and a maximum volume of 1/2 cu. ft. for the construction of energy dissipaters.

2.4. **Construction Exits**. Provide materials that meet the details shown on the plans and this Section.

2.4.1. **Rock Construction Exit**. Provide crushed aggregate for long- and short-term construction exits. Furnish aggregates that are clean, hard, durable, and free from adherent coatings such as salt, alkali, dirt, clay, loam, shale, soft or flaky materials, and organic and injurious matter. Use 4- to 8-in. aggregate for Type 1. Use 2- to 4-in. aggregate for Type 3.

2.4.2. **Timber Construction Exit**. Furnish No. 2 quality or better railroad ties and timbers for long-term construction exits, free of large and loose knots and treated to control rot. Fasten timbers with nuts and bolts or lag bolts, of at least 1/2 in. diameter, unless otherwise shown on the plans or allowed. Provide plywood or pressed wafer board at least 1/2 in. thick for short-term exits.

2.4.3. **Foundation Course**. Provide a foundation course consisting of flexible base, bituminous concrete, hydraulic cement concrete, or other materials as shown on the plans or directed.

2.5. **Embankment for Erosion Control**. Provide rock, loam, clay, topsoil, or other earth materials that will form a stable embankment to meet the intended use.

2.6. **Pipe**. Provide pipe outlet material in accordance with Item 556, "Pipe Underdrains," and details shown on the plans.

2.7. **Construction Perimeter Fence**.

2.7.1. **Posts**. Provide essentially straight wood or steel posts that are at least 60 in. long. Furnish soft wood posts with a minimum diameter of 3 in., or use nominal 2 × 4 in. boards. Furnish hardwood posts with a minimum cross-section of 1-1/2 × 1-1/5 in. Furnish T- or L-shaped steel posts with a minimum weight of 0.5 lb. per foot.

2.7.2. **Fence**. Provide orange construction fencing as approved.

2.7.3. **Fence Wire**. Provide 11 gauge or larger galvanized smooth or twisted wire. Provide 16 gauge or larger tie wire.

2.7.4. **Flagging**. Provide brightly-colored flagging that is fade-resistant and at least 3/4 in. wide to provide maximum visibility both day and night.

2.7.5. **Staples**. Provide staples with a crown at least 1/2 in. wide and legs at least 1/2 in. long.

2.7.6. **Used Materials**. Previously used materials meeting the applicable requirements may be used if approved.

2.8. **Sandbags**. Provide sandbag material of polypropylene, polyethylene, or polyamide woven fabric with a minimum unit weight of 4 oz. per square yard, a Mullen burst-strength exceeding 300 psi, and an ultraviolet stability exceeding 70%.

Use natural coarse sand or manufactured sand meeting the gradation given in Table 1 to fill sandbags. Filled sandbags must be 24 to 30 in. long, 16 to 18 in. wide, and 6 to 8 in. thick.

Table 1
Sand

Gradation

Sieve Size	Retained (% by Weight)
#4	Maximum 3%
#100	Minimum 80%
#200	Minimum 95%

Aggregate may be used instead of sand for situations where sandbags are not adjacent to traffic. The aggregate size must not exceed 3/8 in.

2.9. **Temporary Sediment Control Fence**. Provide a net-reinforced fence using woven geo-textile fabric. Logos visible to the traveling public will not be allowed.

2.9.1. **Fabric**. Provide fabric materials in accordance with DMS-6230, "Temporary Sediment Control Fence Fabric."

2.9.2. **Posts**. Provide essentially straight wood or steel posts with a minimum length of 48 in., unless otherwise shown on the plans. Furnish soft wood posts at least 3 in. in diameter, or use nominal 2 × 4 in. boards. Furnish hardwood posts with a minimum cross-section of 1-1/2 × 1-1/2 in. Furnish T- or L-shaped steel posts with a minimum weight of 1.3 lb. per foot.

2.9.3. **Net Reinforcement**. Provide net reinforcement of at least 12-1/2 gauge galvanized welded wire mesh, with a maximum opening size of 2 × 4 in., at least 24 in. wide, unless otherwise shown on the plans.

2.9.4. **Staples**. Provide staples with a crown at least 3/4 in. wide and legs 1/2 in. long.

2.9.5. **Used Materials**. Use recycled material meeting the applicable requirements if approved.

2.10. **Biodegradable Erosion Control Logs**.

2.10.1. **Core Material**. Furnish core material that is biodegradable or recyclable. Use compost, mulch, aspen excelsior wood fibers, chipped site vegetation, agricultural rice or wheat straw, coconut fiber, 100% recyclable fibers, or any other acceptable material unless specifically called out on the plans. Permit no more than 5% of the material to escape from the containment mesh. Furnish compost meeting the requirements of Item 161, "Compost."

2.10.2. **Containment Mesh**. Furnish containment mesh that is 100% biodegradable, photodegradable, or recyclable such as burlap, twine, UV photodegradable plastic, polyester, or any other acceptable material.

Furnish biodegradable or photodegradable containment mesh when log will remain in place as part of a vegetative system.

Furnish recyclable containment mesh for temporary installations.

2.10.3. **Size**. Furnish biodegradable erosion control logs with diameters shown on the plans or as directed. Stuff containment mesh densely so logs do not deform.

3. QUALIFICATIONS, TRAINING, AND EMPLOYEE REQUIREMENTS

3.1. **Contractor Responsible Person Environmental (CRPE) Qualifications and Responsibilities**. Provide and designate in writing at the preconstruction conference a CRPE and alternate CRPE who have overall responsibility for the storm water management program. The CRPE will implement storm water and erosion control practices; will oversee and observe storm water control measure monitoring and management; will monitor the project site daily and produce daily monitoring reports as long as there are BMPs in place or soil disturbing activities are evident to ensure compliance with the SWP3 and TPDES General Permit TXR150000. During time suspensions when work is not occurring or on contract non-work days, daily inspections are not required unless a rain event has occurred. The CRPE will provide recommendations on

how to improve the effectiveness of control measures. Attend the Department's preconstruction conference

for the project. Ensure training is completed as identified in Section 506.3.3., "Training," by all applicable personnel before employees work on the project. Document and submit a list, signed by the CRPE, of all applicable Contractor and subcontractor employees who have completed the training. Include the employee's name, the training course name, and date the employee completed the training. Provide the most current list at the preconstruction conference or before SWP3 or soil disturbing activities. Update the list as needed and provide the updated list when updated.

3.2. **Contractor Superintendent Qualifications and Responsibilities**. Provide a superintendent that is competent, has experience with and knowledge of storm water management, and is knowledgeable of the requirements and the conditions of the TPDES General Permit TXR150000. The superintendent will manage and oversee the day to day operations and activities at the project site; work with the CRPE to provide effective storm water management at the project site; represent and act on behalf of the Contractor; and attend the Department's preconstruction conference for the project.

3.3. **Training**. All Contractor and subcontractor employees involved in soil disturbing activities, small or large structures, storm water control measures, and seeding activities must complete training as prescribed by the Department.

4. CONSTRUCTION

4.1. **Contractor Responsibilities**. Implement the SWP3 for the project site in accordance with the plans and specifications, TPDES General Permit TXR150000, and as directed. Coordinate storm water management with all other work on the project. Develop and implement an SWP3 for project-specific material supply plants within and outside of the Department's right of way in accordance with the specific or general storm water permit requirements. Prevent water pollution from storm water associated with construction activity from entering any surface water or private property on or adjacent to the project site.

4.2. **Implementation**. The CRPE, or alternate CRPE, must be accessible by phone and able to respond to project-related storm water management or other environmental emergencies 24 hr. per day.

4.2.1. **Commencement**. Implement the SWP3 as shown and as directed. Contractor-proposed recommendations for changes will be allowed as approved. Conform to the established guidelines in the TPDES General Permit TXR150000 to make changes. Do not implement changes until approval has been received and changes have been incorporated into the plans. Minor adjustments to meet field conditions are allowed and will be recorded in the SWP3.

4.2.2. **Phasing**. Implement control measures before the commencement of activities that result in soil disturbance. Phase and minimize the soil disturbance to the areas shown on the plans. Coordinate temporary control measures with permanent control measures and all other work activities on the project to assure economical, effective, safe, and continuous water pollution prevention. Provide control measures that are appropriate to the construction means, methods, and sequencing allowed by the Contract. Exercise precaution throughout the life of the project to prevent pollution of ground waters and surface waters. Schedule and perform clearing and grubbing operations so that stabilization measures will follow immediately thereafter if project conditions permit. Bring all grading sections to final grade as soon as possible and implement temporary and permanent control measures at the earliest time possible. Implement temporary control measures when required by the TPDES General Permit TXR150000 or otherwise necessitated by project conditions.

Do not prolong final grading and shaping. Preserve vegetation where possible throughout the project, and minimize clearing, grubbing, and excavation within stream banks, bed, and approach sections.

4.3. **General**.

4.3.1. **Temporary Alterations or Control Measure Removal**. Altering or removal of control measures is allowed when control measures are restored within the same working day.

4.3.2. **Stabilization**. Initiate stabilization for disturbed areas no more than 14 days after the construction activities in

that portion of the site have temporarily or permanently ceased. Establish a uniform vegetative cover or use another stabilization practice in accordance with the TPDES General Permit TXR150000.

4.3.3. **Finished Work**. Remove and dispose of all temporary control measures upon acceptance of vegetative cover or other stabilization practice unless otherwise directed. Complete soil disturbing activities and establish a uniform perennial vegetative cover. A project will not be considered for acceptance until a vegetative cover of 70% density of existing adjacent undisturbed areas is obtained or equivalent permanent stabilization is obtained in accordance with the TPDES General Permit TXR150000. An exception will be allowed in arid areas as defined in the TPDES General Permit TXR150000.

4.3.4. **Restricted Activities and Required Precautions**. Do not discharge onto the ground or surface waters any pollutants such as chemicals, raw sewage, fuels, lubricants, coolants, hydraulic fluids, bitumens, or any other petroleum product. Operate and maintain equipment on-site to prevent actual or potential water pollution. Manage, control, and dispose of litter on-site such that no adverse impacts to water quality occur. Prevent dust from creating a potential or actual unsafe condition, public nuisance, or condition endangering the value, utility, or appearance of any property. Wash out concrete trucks only as described in the TPDES General Permit TXR150000. Use appropriate controls to minimize the offsite transport of suspended sediments and other pollutants if it is necessary to pump or channel standing water (i.e., dewatering). Prevent discharges that would contribute to a violation of Edwards Aquifer Rules, water quality standards, the impairment of a listed water body, or other state or federal law.

4.4. **Installation, Maintenance, and Removal Work**. Perform work in accordance with the SWP3, according to manufacturers' guidelines, and in accordance with the TPDES General Permit TXR150000. Install and maintain the integrity of temporary erosion and sedimentation control devices to accumulate silt and debris until soil disturbing activities are completed and permanent erosion control features are in place or the disturbed area has been adequately stabilized as approved.

The Department will inspect and document the condition of the control measures at the frequency shown on the plans and will provide the Construction SWP3 Field Inspection and Maintenance Reports to the Contractor. Make corrections as soon as possible before the next anticipated rain event or within 7 calendar days after being able to enter the worksite for each control measure. The only acceptable reason for not accomplishing the corrections with the time frame specified is when site conditions are "Too Wet to Work." Take immediate action if a correction is deemed critical as directed. When corrections are not made within the established time frame, all work will cease on the project and time charges will continue while the control measures are brought into compliance. Commence work once the Engineer reviews and documents the project is in compliance. Commencing work does not release the Contractor of the liability for noncompliance of the SWP3, plans, or TPDES General Permit TXR150000.

The Engineer may limit the disturbed area if the Contractor cannot control soil erosion and sedimentation resulting from the Contractor's operations. Implement additional controls as directed.

Remove devices upon approval or as directed. Finish-grade and dress the area upon removal. Stabilize disturbed areas in accordance with the permit, and as shown on the plans or directed. Materials removed are considered consumed by the project. Retain ownership of stockpiled material and remove it from the project when new installations or replacements are no longer required.

4.4.1. **Rock Filter Dams for Erosion Control**. Remove trees, brush, stumps, and other objectionable material that may interfere with the construction of rock filter dams. Place sandbags as a foundation when required or at the Contractor's option.

Place the aggregate to the lines, height, and slopes specified, without undue voids for Types 1, 2, 3, and 5. Place the aggregate on the mesh and then fold the mesh at the upstream side over the aggregate and secure it to itself on the downstream side with wire ties, or hog rings for Types 2 and 3, or as directed. Place rock filter dams perpendicular to the flow of the stream or channel unless otherwise directed. Construct filter dams according to the following criteria unless otherwise shown on the plans:

4.4.1.1. **Type 1 (Non-Reinforced)**.

- **Height**. At least 18 in. measured vertically from existing ground to top of filter dam.

- **Top Width**. At least 2 ft.
- **Slopes**. No steeper than 2:1.

4.4.1.2. **Type 2 (Reinforced)**.

- **Height**. At least 18 in. measured vertically from existing ground to top of filter dam.
- **Top Width**. At least 2 ft.
- **Slopes**. No steeper than 2:1.

4.4.1.3. **Type 3 (Reinforced)**.

- **Height**. At least 36 in. measured vertically from existing ground to top of filter dam.
- **Top Width**. At least 2 ft.
- **Slopes**. No steeper than 2:1.

4.4.1.4. **Type 4 (Sack Gabions)**. Unfold sack gabions and smooth out kinks and bends. Connect the sides by lacing in a single loop–double loop pattern on 4- to 5-in. spacing for vertical filling. Pull the end lacing rod at one end until tight, wrap around the end, and twist 4 times. Fill with stone at the filling end, pull the rod tight, cut the wire with approximately 6 in. remaining, and twist wires 4 times.

Place the sack flat in a filling trough, fill with stone, connect sides, and secure ends as described above for horizontal filling.

Lift and place without damaging the gabion. Shape sack gabions to existing contours.

4.4.1.5. **Type 5**. Provide rock filter dams as shown on the plans.

4.4.2. **Temporary Pipe Slope Drains**. Install pipe with a slope as shown on the plans or as directed. Construct embankment for the drainage system in 8-in. lifts to the required elevations. Hand-tamp the soil around and under the entrance section to the top of the embankment as shown on the plans or as directed. Form the top of the embankment or earth dike over the pipe slope drain at least 1 ft. higher than the top of the inlet pipe at all points. Secure the pipe with hold-downs or hold-down grommets spaced a maximum of 10 ft. on center. Construct the energy dissipaters or sediment traps as shown on the plans or as directed. Construct the sediment trap using concrete or rubble riprap in accordance with Item 432, “Riprap,” when designated on the plans.

4.4.3. **Temporary Paved Flumes**. Construct paved flumes as shown on the plans or as directed. Provide excavation and embankment (including compaction of the subgrade) of material to the dimensions shown on the plans unless otherwise indicated. Install a rock or rubble riprap energy dissipater, constructed from the materials specified above, to a minimum depth of 9 in. at the flume outlet to the limits shown on the plans or as directed.

4.4.4. **Construction Exits**. Prevent traffic from crossing or exiting the construction site or moving directly onto a public roadway, alley, sidewalk, parking area, or other right of way areas other than at the location of construction exits when tracking conditions exist. Construct exits for either long- or short-term use.

4.4.4.1. **Long-Term**. Place the exit over a foundation course as required. Grade the foundation course or compacted subgrade to direct runoff from the construction exits to a sediment trap as shown on the plans or as directed. Construct exits with a width of at least 14 ft. for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed.

4.4.4.1.1. **Type 1**. Construct to a depth of at least 8 in. using crushed aggregate as shown on the plans or as directed.

4.4.4.1.2. **Type 2**. Construct using railroad ties and timbers as shown on the plans or as directed.

4.4.4.2. **Short-Term**.

4.4.4.2.1. **Type 3**. Construct using crushed aggregate, plywood, or wafer board. This type of exit may be used for daily operations where long-term exits are not practical.

4.4.4.2.2. **Type 4**. Construct as shown on the plans or as directed.

4.4.5. **Earthwork for Erosion Control**. Perform excavation and embankment operations to minimize erosion and to remove collected sediments from other erosion control devices.

4.4.5.1. **Excavation and Embankment for Erosion Control Features**. Place earth dikes, swales, or combinations of both along the low crown of daily lift placement, or as directed, to prevent runoff spillover. Place swales and dikes at other locations as shown on the plans or as directed to prevent runoff spillover or to divert runoff. Construct cuts with the low end blocked with undisturbed earth to prevent erosion of hillsides. Construct sediment traps at drainage structures in conjunction with other erosion control measures as shown on the plans or as directed.

Create a sediment basin, where required, providing 3,600 cu. ft. of storage per acre drained, or equivalent control measures for drainage locations that serve an area with 10 or more disturbed acres at one time, not including offsite areas.

4.4.5.2. **Excavation of Sediment and Debris**. Remove sediment and debris when accumulation affects the performance of the devices, after a rain, and when directed.

4.4.6. **Construction Perimeter Fence**. Construct, align, and locate fencing as shown on the plans or as directed.

4.4.6.1. **Installation of Posts**. Embed posts 18 in. deep or adequately anchor in rock, with a spacing of 8 to 10 ft.

4.4.6.2. **Wire Attachment**. Attach the top wire to the posts at least 3 ft. from the ground. Attach the lower wire midway between the ground and the top wire.

4.4.6.3. **Flag Attachment**. Attach flagging to both wire strands midway between each post. Use flagging at least 18 in. long. Tie flagging to the wire using a square knot.

4.4.7. **Sandbags for Erosion Control**. Construct a berm or dam of sandbags that will intercept sediment-laden storm water runoff from disturbed areas, create a retention pond, detain sediment, and release water in sheet flow. Fill each bag with sand so that at least the top 6 in. of the bag is unfilled to allow for proper tying of the open end. Place the sandbags with their tied ends in the same direction. Offset subsequent rows of sandbags 1/2 the length of the preceding row. Place a single layer of sandbags downstream as a secondary debris trap. Place additional sandbags as necessary or as directed for supplementary support to berms or dams of sandbags or earth.

4.4.8. **Temporary Sediment-Control Fence**. Provide temporary sediment-control fence near the downstream perimeter of a disturbed area to intercept sediment from sheet flow. Incorporate the fence into erosion-control measures used to control sediment in areas of higher flow. Install the fence as shown on the plans, as specified in this Section, or as directed.

4.4.8.1. **Installation of Posts**. Embed posts at least 18 in. deep, or adequately anchor, if in rock, with a spacing of 6 to 8 ft. and install on a slight angle toward the runoff source.

4.4.8.2. **Fabric Anchoring**. Dig trenches along the uphill side of the fence to anchor 6 to 8 in. of fabric. Provide a minimum trench cross-section of 6 × 6 in. Place the fabric against the side of the trench and align approximately 2 in. of fabric along the bottom in the upstream direction. Backfill the trench, then hand-tamp.

4.4.8.3. **Fabric and Net Reinforcement Attachment**. Attach the reinforcement to wooden posts with staples, or to steel posts with T-clips, in at least 4 places equally spaced unless otherwise shown on the plans. Sewn vertical pockets may be used to attach reinforcement to end posts. Fasten the fabric to the top strand of reinforcement by hog rings or cord every 15 in. or less.

4.4.8.4. **Fabric and Net Splices**. Locate splices at a fence post with a minimum lap of 6 in. attached in at least 6 places equally spaced unless otherwise shown on the plans. Do not locate splices in concentrated flow areas.

Requirements for installation of used temporary sediment-control fence include the following:

- fabric with minimal or no visible signs of biodegradation (weak fibers),
- fabric without excessive patching (more than 1 patch every 15 to 20 ft.),
- posts without bends, and
- backing without holes.

4.4.9. **Biodegradable Erosion Control Logs**. Install biodegradable erosion control logs near the downstream perimeter of a disturbed area to intercept sediment from sheet flow. Incorporate the biodegradable erosion control logs into the erosion measures used to control sediment in areas of higher flow. Install, align, and locate the biodegradable erosion control logs as specified below, as shown on the plans, or as directed.

Secure biodegradable erosion control logs in a method adequate to prevent displacement as a result of normal rain events, prevent damage to the logs, and as approved, such that flow is not allowed under the logs. Temporarily removing and replacing biodegradable erosion logs as to facilitate daily work is allowed at the Contractor's expense.

4.4.10. **Vertical Tracking**. Perform vertical tracking on slopes to temporarily stabilize soil. Provide equipment with a track undercarriage capable of producing a linear soil impression measuring a minimum of 12 in. long × 2 to 4 in. wide × 1/2 to 2 in. deep. Do not exceed 12 in. between track impressions. Install continuous linear track impressions where the 12 in. length impressions are perpendicular to the slope. Vertical tracking is required on projects where soil disturbing activities have occurred unless otherwise approved.

4.5. **Monitoring and Documentation**. Monitor the control measures on a daily basis as long as there are BMPs in place and/or soil disturbing activities are evident to ensure compliance with the SWP3 and TPDES General Permit TXR150000. During time suspensions when work is not occurring or contract non-work days, daily inspections are not required unless a rain event has occurred. Monitoring will consist of, but is not limited to, observing, inspecting, and documenting site locations with control measures and discharge points to provide maintenance and inspection of controls as described in the SWP3. Keep written records of daily monitoring. Document in the daily monitoring report the control measure condition, the date of inspection, required corrective actions, responsible person for making the corrections, and the date corrective actions were completed. Maintain records of all monitoring reports at the project site or at an approved place. Provide copies within 7 days. Together, the CRPE and an Engineer's representative will complete the Construction Stage Gate Checklist on a periodic basis as directed.

5. MEASUREMENT

5.1. **Rock Filter Dams**. Installation or removal of rock filter dams will be measured by the foot or by the cubic yard. The measured volume will include sandbags, when used.

5.1.1. **Linear Measurement**. When rock filter dams are measured by the foot, measurement will be along the centerline of the top of the dam.

5.1.2. **Volume Measurement**. When rock filter dams are measured by the cubic yard, measurement will be based on the volume of rock computed by the method of average end areas.

5.1.2.1. **Installation**. Measurement will be made in final position.

5.1.2.2. **Removal**. Measurement will be made at the point of removal.

5.2. **Temporary Pipe Slope Drains**. Temporary pipe slope drains will be measured by the foot.

5.3. **Temporary Paved Flumes**. Temporary paved flumes will be measured by the square yard of surface area. The measured area will include the energy dissipater at the flume outlet.

5.4. **Construction Exits**. Construction exits will be measured by the square yard of surface area.

5.5. **Earthwork for Erosion and Sediment Control**.

5.5.1. **Equipment and Labor Measurement**. Equipment and labor used will be measured by the actual number of hours the equipment is operated and the labor is engaged in the work.

5.5.2. **Volume Measurement**.

5.5.2.1. **In Place**.

5.5.2.1.1. **Excavation**. Excavation will be measured by the cubic yard in its original position and the volume computed by the method of average end areas.

5.5.2.1.2. **Embankment**. Embankment will be measured by the cubic yard in its final position by the method of average end areas. The volume of embankment will be determined between:

- the original ground surfaces or the surface upon that the embankment is to be constructed for the feature and
- the lines, grades and slopes of the accepted embankment for the feature.

5.5.2.2. **In Vehicles**. Excavation and embankment quantities will be combined and paid for under "Earthwork (Erosion and Sediment Control, In Vehicle)." Excavation will be measured by the cubic yard in vehicles at the point of removal. Embankment will be measured by the cubic yard in vehicles measured at the point of delivery. Shrinkage or swelling factors will not be considered in determining the calculated quantities.

5.6. **Construction Perimeter Fence**. Construction perimeter fence will be measured by the foot.

5.7. **Sandbags for Erosion Control**. Sandbags will be measured as each sandbag or by the foot along the top of sandbag berms or dams.

5.8. **Temporary Sediment-Control Fence**. Installation or removal of temporary sediment-control fence will be measured by the foot.

5.9. **Biodegradable Erosion Control Logs**. Installation or removal of biodegradable erosion control logs will be measured by the foot along the centerline of the top of the control logs.

5.10. **Vertical Tracking**. Vertical tracking will not be measured or paid for directly but is considered subsidiary to this Item.

6. PAYMENT

The following will not be paid for directly but are subsidiary to pertinent Items:

- erosion-control measures for Contractor project-specific locations (PSLs) inside and outside the right of way (such as construction and haul roads, field offices, equipment and supply areas, plants, and material sources);
- removal of litter, unless a separate pay item is shown on the plans;
- repair to devices and features damaged by Contractor operations;
- added measures and maintenance needed due to negligence, carelessness, lack of maintenance, and failure to install permanent controls;
- removal and reinstallation of devices and features needed for the convenience of the Contractor;

- finish grading and dressing upon removal of the device; and
- minor adjustments including but not limited to plumbing posts, reattaching fabric, minor grading to maintain slopes on an erosion embankment feature, or moving small numbers of sandbags.

Stabilization of disturbed areas will be paid for under pertinent Items except vertical tacking which is subsidiary.

Furnishing and installing pipe for outfalls associated with sediment traps and ponds will not be paid for directly but is subsidiary to the excavation and embankment under this Item.

6.1. **Rock Filter Dams**. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid as follows:

6.1.1. **Installation**. Installation will be paid for as "Rock Filter Dams (Install)" of the type specified. This price is full compensation for furnishing and operating equipment, finish backfill and grading, lacing, proper disposal, labor, materials, tools, and incidentals.

6.1.2. **Removal**. Removal will be paid for as "Rock Filter Dams (Remove)." This price is full compensation for furnishing and operating equipment, proper disposal, labor, materials, tools, and incidentals.

When the Engineer directs that the rock filter dam installation or portions thereof be replaced, payment will be made at the unit price bid for "Rock Filter Dams (Remove)" and for "Rock Filter Dams (Install)" of the type specified. This price is full compensation for furnishing and operating equipment, finish backfill and grading, lacing, proper disposal, labor, materials, tools, and incidentals.

6.2. **Temporary Pipe Slope Drains**. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Temporary Pipe Slope Drains" of the size specified. This price is full compensation for furnishing materials, removal and disposal, furnishing and operating equipment, labor, tools, and incidentals.

Removal of temporary pipe slope drains will not be paid for directly but is subsidiary to the installation Item. When the Engineer directs that the pipe slope drain installation or portions thereof be replaced, payment will be made at the unit price bid for "Temporary Pipe Slope Drains" of the size specified, which is full compensation for the removal and reinstallation of the pipe drain.

Earthwork required for the pipe slope drain installation, including construction of the sediment trap, will be measured and paid for under "Earthwork for Erosion and Sediment Control."

Riprap concrete or stone, when used as an energy dissipater or as a stabilized sediment trap, will be measured and paid for in accordance with Item 432, "Riprap."

6.3. **Temporary Paved Flumes**. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Temporary Paved Flume (Install)" or "Temporary Paved Flume (Remove)." This price is full compensation for furnishing and placing materials, removal and disposal, equipment, labor, tools, and incidentals.

When the Engineer directs that the paved flume installation or portions thereof be replaced, payment will be made at the unit prices bid for "Temporary Paved Flume (Remove)" and "Temporary Paved Flume (Install)." These prices are full compensation for the removal and replacement of the paved flume and for equipment, labor, tools, and incidentals.

Earthwork required for the paved flume installation, including construction of a sediment trap, will be measured and paid for under "Earthwork for Erosion and Sediment Control."

6.4. **Construction Exits**. Contractor-required construction exits from off right of way locations or on-right of way PSLs will not be paid for directly but are subsidiary to pertinent Items.

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" for construction exits needed on right of way access to work areas required by the Department will be paid for at the unit price bid for "Construction Exits (Install)" of the type specified or "Construction Exits (Remove)." This price is full compensation for furnishing and placing materials, excavating, removal and disposal, cleaning vehicles, labor, tools, and incidentals.

When the Engineer directs that a construction exit or portion thereof be removed and replaced, payment will be made at the unit prices bid for "Construction Exit (Remove)" and "Construction Exit (Install)" of the type specified. These prices are full compensation for the removal and replacement of the construction exit and for equipment, labor, tools, and incidentals.

Construction of sediment traps used in conjunction with the construction exit will be measured and paid for under "Earthwork for Erosion and Sediment Control."

6.5. **Earthwork for Erosion and Sediment Control**.

6.5.1. **Initial Earthwork for Erosion and Sediment Control**. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Excavation (Erosion and Sediment Control, In Place)," "Embankment (Erosion and Sediment Control, In Place)," "Excavation (Erosion and Sediment Control, In Vehicle)," "Embankment (Erosion and Sediment Control, (In Vehicle)," or "Earthwork (Erosion and Sediment Control, In Vehicle)."

This price is full compensation for excavation and embankment including hauling, disposal of material not used elsewhere on the project; embankments including furnishing material from approved sources and construction of erosion-control features; and equipment, labor, tools, and incidentals.

Sprinkling and rolling required by this Item will not be paid for directly but will be subsidiary to this Item.

6.5.2. **Maintenance Earthwork for Erosion and Sediment Control for Cleaning and Restoring Control Measures**. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid under a Contractor Force Account Item from invoice provided to the Engineer.

This price is full compensation for excavation, embankment, and re-grading including removal of accumulated sediment in various erosion control installations as directed, hauling, and disposal of material not used elsewhere on the project; excavation for construction of erosion-control features; embankments including furnishing material from approved sources and construction of erosion-control features; and equipment, labor, tools, and incidentals.

Earthwork needed to remove and obliterate erosion-control features will not be paid for directly but is subsidiary to pertinent Items unless otherwise shown on the plans.

Sprinkling and rolling required by this Item will not be paid for directly but will be subsidiary to this Item.

6.6. **Construction Perimeter Fence**. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Construction Perimeter Fence." This price is full compensation for furnishing and placing the fence; digging, fence posts, wire, and flagging; removal and disposal; and materials, equipment, labor, tools, and incidentals.

Removal of construction perimeter fence will be not be paid for directly but is subsidiary to the installation Item. When the Engineer directs that the perimeter fence installation or portions thereof be removed and replaced, payment will be made at the unit price bid for "Construction Perimeter Fence," which is full compensation for the removal and reinstallation of the construction perimeter fence.

6.7. **Sandbags for Erosion Control**. Sandbags will be paid for at the unit price bid for "Sandbags for Erosion Control" (of the height specified when measurement is by the foot). This price is full compensation for materials, placing sandbags, removal and disposal, equipment, labor, tools, and incidentals.

Removal of sandbags will not be paid for directly but is subsidiary to the installation Item. When the Engineer directs that the sandbag installation or portions thereof be replaced, payment will be made at the unit price bid for "Sandbags for Erosion Control," which is full compensation for the reinstallation of the sandbags.

6.8. **Temporary Sediment-Control Fence**. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid as follows:

6.8.1. **Installation**. Installation will be paid for as "Temporary Sediment-Control Fence (Install)." This price is full compensation for furnishing and operating equipment finish backfill and grading, lacing, proper disposal, labor, materials, tools, and incidentals.

6.8.2. **Removal**. Removal will be paid for as "Temporary Sediment-Control Fence (Remove)." This price is full compensation for furnishing and operating equipment, proper disposal, labor, materials, tools, and incidentals.

6.9. **Biodegradable Erosion Control Logs**. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid as follows:

6.9.1. **Installation**. Installation will be paid for as "Biodegradable Erosion Control Logs (Install)" of the size specified. This price is full compensation for furnishing and operating equipment finish backfill and grading, staking, proper disposal, labor, materials, tools, and incidentals.

6.9.2. **Removal**. Removal will be paid for as "Biodegradable Erosion Control Logs (Remove)." This price is full compensation for furnishing and operating equipment, proper disposal, labor, materials, tools, and incidentals.

6.10. **Vertical Tracking**. Vertical tracking will not be measured or paid for directly but is considered subsidiary to this Item.

Temporary erosion control acceptably completed will be paid for at the contract lump sum price bid for "TEMPORARY EROSION CONTROL," which shall be full compensation for furnishing all materials, tools, equipment, labor, and incidentals necessary to complete the work. Periodic payments will be made under this item in proportion to the amount of work accomplished, as determined by the Engineer. Payment for "TEMPORARY EROSION CONTROL" will also include obtaining and compliance with the SWPPP, which shall include compensation for drainage-way inspections, report preparation, housekeeping practices, cleaning and maintenance, and other actions outlined in the SWPPP prepared by the Contractor necessary to execute the Plan. This item consists of all erosion control items not listed as a separate pay item in the Unit Price Schedule. Any fines issued to the Owner as a result of the Contractor's insufficient execution of the SWPPP will be assessed to the Contractor. Such deductions shall not be limited to the lump sum price of this item.

Payment will be made under:

Item TX-506-5.1 Temporary Erosion Control—per Lump Sum

Item 531
Sidewalks

1. DESCRIPTION

Construct hydraulic cement concrete sidewalks.

2. MATERIALS

Furnish materials conforming to the following:

- Item 360, “Concrete Pavement”
- Item 420, “Concrete Substructures”
- Item 421, “Hydraulic Cement Concrete”
- Item 440, “Reinforcement for Concrete”

Use Class A concrete unless otherwise shown on the plans. Use Grade 8 course aggregate for extruded Class A concrete. Use other grades if approved.

3. CONSTRUCTION

Shape and compact subgrade, foundation, or pavement surface to the line, grade, and cross-section shown on the plans. Lightly sprinkle subgrade or foundation material immediately before concrete placement. Hand-tamp and sprinkle foundation when placement is directly on subgrade or foundation materials. Remove and dispose of existing concrete in accordance with Item 104, “Removing Concrete.” Provide a clean surface for concrete placement directly on the surface material or pavement.

Mix and place concrete in accordance with the pertinent Items. Hand-finishing is allowed for any method of construction. Finish exposed surfaces to a uniform transverse broom finish surface. Curb ramps must include a detectable warning surface and conform to details shown on the plans. Install joints as shown on the plans. Ensure that abrupt changes in sidewalk elevation do not exceed 1/4 in., sidewalk cross slope does not exceed 2%, curb ramp grade does not exceed 8.3%, and flares adjacent to the ramp do not exceed 10% slope. Ensure that the sidewalk depth and reinforcement are not less than the driveway cross-sectional details shown on the plans where a sidewalk crosses a concrete driveway.

Provide finished work with a well-compacted mass, a surface free from voids and honeycomb, and the required true-to-line shape and grade. Cure for at least 72 hr. in accordance with Item 420, “Concrete Substructures.”

3.1. **Conventionally Formed Concrete**. Provide pre-molded or board expansion joints of the thickness shown on the plans for sidewalk section lengths greater than 8 ft. but less than 40 ft., unless otherwise directed. Terminate workday production at an expansion joint.

3.2. **Extruded or Slipformed Concrete**. Provide any additional surface finishing immediately after extrusion or slipforming as required on the plans. Construct joints at locations as shown on the plans or as directed.

4. MEASUREMENT

Sidewalks will be measured by the square yard of surface area. Curb ramps will be measured by the square yard of surface area or by each. A curb ramp consists of the ramp, landing, adjacent flares or side curb, and

detectable warning surface as shown on the plans.

5. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Concrete Sidewalks" of the depth specified and "~~Curb~~ ***Barrier Free*** Ramps" of the type specified. This price is full compensation for surface preparation of sidewalk foundation; materials; removal and disposal of existing concrete; excavation, hauling and disposal of excavated material; drilling and doweling into existing concrete curb, sidewalk, and pavement; repair of adjacent street or pavement structure damaged by these operations; and equipment, labor, materials, tools, and incidentals.

~~Sidewalks that cross and connect to concrete driveways or turnouts will be measured and paid for in accordance with Item 530, "Intersections, Driveways, and Turnouts."~~

Payment will be made under:

Item TX-531-5.1	***Concrete Sidewalk (5") — per square yard***
Item TX-531-5.2	***Barrier Free Ramp — per each***

Item 752
Tree and Brush Removal

1. DESCRIPTION

Remove and dispose of trees, brush, shrubs, and vines. Trim trees and shrubs. Remove stumps.

2. MATERIALS

Furnish commercially available pruning paint.

3. EQUIPMENT

Provide equipment necessary to complete the work.

4. WORK METHODS

Perform tree and brush removal and trimming from right of way line to right of way line or other widths and locations shown on the plans. Ensure trees, shrubs, and other landscape features that are to remain are not damaged. Dispose of debris within 48 hr. of cutting, off the right of way, in accordance with federal, state, and local regulations unless otherwise approved. When approved, chip debris and spread in a thin layer on the right of way.

4.1. **Tree Removal**. Remove trees of various diameters as shown on the plans, or as directed. Remove tree stumps to at least 12 in. below the surrounding terrain unless otherwise shown on the plans, or as directed. Backfill holes with acceptable material and compact flush with surrounding area.

4.2. **Tree Trimming**. Remove dead tree limbs. Remove tree limbs to the limits shown on the plans. Prune trees in accordance with Class IV National Arborist Association Pruning Standards for shade trees. Make cuts as close as possible to the trunk or parent limb without cutting into the branch collar or leaving a protruding stub. Remove suckers to the height of the lowest main branch.

When removing limbs 2 in. in diameter or larger:

- Undercut 1/3 way through the limb 8 to 12 in. from the main stem.
- Remove limb 4 to 6 in. outside the first cut.
- Remove stub with an even flush cut so that a trace (collar) protrudes approximately 1/2 in.
- Do not allow limb to fall free if it can damage other limbs or items.
- Treat exposed cuts on oak trees with wound dressing within 20 min. of the cut.

Disinfect tools with 70% methyl alcohol, benzalkonium chloride, chlorine solution, or other approved disinfectant when trimming oak trees and when shown on the plans before cutting, and sterilize/sanitize again before cutting another tree. Avoid pruning between February 15 and June 15, the period for maximum insect and fungal activity.

4.3. **Brush Removal**. Remove brush including, but not limited to, bushes, small trees, and vines growing within the right of way by cutting parallel to and within 1 in. of the ground and to the limits shown on the plans. Remove brush from under bridges, around culverts, and in channels to the limits shown on the plans.

4.4. **Channel Work**. Trim trees and remove brush to the limits shown on the plans, including areas under bridges.

4.5. **Stump Removal**. Remove tree stumps at least 12 in. below the surrounding terrain unless otherwise shown on the plans, or as directed. Backfill holes with acceptable material and compact flush with surrounding area.

5. MEASUREMENT

This Item will be measured as follows:

5.1. **Tree Removal**. By each tree ***regardless of size*** ~~of the diameter specified. The diameter will be measured 3 ft. above the ground.~~ Trees less than 4 in. in diameter are considered brush. Trees with multiple trunks at the point of measurement will be measured separately and paid for according to the specified diameter. Removal of the stump is subsidiary to Tree Removal.

5.2. **Tree Trimming and Brush Removal**. By the centerline mile of the dimension specified. "Centerline mile" is defined as the continuous measurement along the center of the right of way.

5.3. **Tree Trimming and Brush Removal for Channels**. By the acre.

5.4. **Stump Removal**. By each stump removed. This item is for stumps where others previously removed the tree.

6. PAYMENT

The work performed in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Tree Removal" of the diameter specified, "Tree Trimming" of the dimension specified, "Brush Removal," "Tree Trimming and Brush Removal," and "Stump Removal." This price is full compensation for removal, trimming, disposal, equipment, traffic control, labor, and incidentals.

When not shown on the plans as a separate pay item, payment for tree trimming and brush removal in channels will be included in payment by the centerline mile. When shown on the plans as a separate pay item, tree trimming and brush removal in channels will be paid for at the unit price bid for "Tree Trimming and Brush Removal (Channels)."

The limits shown on the plans are the limits for pay purposes unless otherwise modified in accordance with Article 4.4., "Changes in the Work."

Payment will be made under:

Item TX-752-5.1 Tree Removal — per Each

ITEM L-108 UNDERGROUND POWER CABLE FOR AIRPORTS

DESCRIPTION

108-1.1 This item shall consist of furnishing and installing power cables that are direct buried and furnishing and/or installing power cables within conduit or duct banks per these specifications at the locations shown on the plans. It includes excavation and backfill of trench for direct-buried cables only. Also included are the installation of counterpoise wires, ground wires, ground rods and connections, cable splicing, cable marking, cable testing, and all incidentals necessary to place the cable in operating condition as a completed unit to the satisfaction of the RPR. This item shall not include the installation of duct banks or conduit, trenching and backfilling for duct banks or conduit, or furnishing or installation of cable for FAA owned/operated facilities.

EQUIPMENT AND MATERIALS

108-2.1 General.

a. Airport lighting equipment and materials covered by advisory circulars (AC) shall be approved under the Airport Lighting Equipment Certification Program per AC 150/5345-53, current version.

b. All other equipment and materials covered by other referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification, when requested by the RPR.

c. Manufacturer's certifications shall not relieve the Contractor of the responsibility to provide materials per these specifications. Materials supplied and/or installed that do not comply with these specifications shall be removed (when directed by the RPR) and replaced with materials that comply with these specifications at the Contractor's cost.

d. All materials and equipment used to construct this item shall be submitted to the RPR for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provided they are as good a quality as the original. Clearly and boldly mark each copy to identify products or models applicable to this project. Indicate all optional equipment and delete any non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment to which they apply on each submittal sheet. Markings shall be made bold and clear with arrows or circles (highlighting is not acceptable). The Contractor is solely responsible for delays in the project that may accrue directly or indirectly from late submissions or resubmissions of submittals.

e. The data submitted shall be sufficient, in the opinion of the RPR, to determine compliance with the plans and specifications. The Contractor's submittals shall be electronically submitted in pdf format, tabbed by specification section. The RPR reserves the right to reject any and all equipment, materials, or procedures that do not meet the system design and the standards and codes, specified in this document.

f. All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for at least twelve (12) months from the date of final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner. The Contractor shall maintain a minimum insulation resistance in accordance with paragraph 108-3.10e with isolation transformers connected in new circuits and new segments of existing circuits through the end of the contract warranty period when tested in accordance with AC 150/5340-26, *Maintenance Airport Visual Aid Facilities*, paragraph 5.1.3.1, Insulation Resistance Test.

108-2.2 Cable. Underground cable for airfield lighting facilities (runway and taxiway lights and signs) shall conform to the requirements of AC 150/5345-7, Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits latest edition. Conductors for use on 6.6 ampere primary airfield lighting series circuits shall be single conductor, seven strand, #8 American wire gauge (AWG), L-824 Type C, 5,000 volts, non-shielded, with cross-linked polyethylene insulation. ~~Conductors for use on 20 ampere primary airfield~~

~~lighting series circuits shall be single conductor, seven strand, #6 AWG, L-824 [Type B][Type C], 5,000 volts, non-shielded, with [ethylene propylene insulation][cross-linked polyethylene insulation].~~ L-824 conductors for use on the L-830 secondary of airfield lighting series circuits shall be sized in accordance with the manufacturer's recommendations. All other conductors shall comply with FAA and National Electric Code (NEC) requirements. Conductor sizes noted above shall not apply to leads furnished by manufacturers on airfield lighting transformers and fixtures.

Wire for electrical circuits up to 600 volts shall comply with Specification L-824 and/or Commercial Item Description A-A-59544A and shall be type THWN-2, 75°C for installation in conduit and RHW-2, 75°C for direct burial installations. Conductors for parallel (voltage) circuits shall be type and size and installed in accordance with NFPA-70, National Electrical Code.

Unless noted otherwise, all 600-volt and less non-airfield lighting conductor sizes are based on a 75°C, THWN-2, 600-volt insulation, copper conductors, not more than three single insulated conductors, in raceway, in free air. The conduit/duct sizes are based on the use of THWN-2, 600-volt insulated conductors. The Contractor shall make the necessary increase in conduit/duct sizes for other types of wire insulation. In no case shall the conduit/duct size be reduced. The minimum power circuit wire size shall be #12 AWG.

Conductor sizes may have been adjusted due to voltage drop or other engineering considerations. Equipment provided by the Contractor shall be capable of accepting the quantity and sizes of conductors shown in the Contract Documents. All conductors, pigtails, cable step-down adapters, cable step-up adapters, terminal blocks and splicing materials necessary to complete the cable termination/splice shall be considered incidental to the respective pay items provided.

Cable type, size, number of conductors, strand and service voltage shall be as specified in the Contract Document.

108-2.3 Bare copper wire (counterpoise, bare copper wire ground and ground rods). Wire for counterpoise or ground installations for airfield lighting systems shall be No. 6 AWG bare solid copper wire for counterpoise and/or No. 6 AWG insulated stranded for grounding bond wire per ASTM B3 and ASTM B8, and shall be bare copper wire. For voltage powered circuits, the equipment grounding conductor shall comply with NEC Article 250.

Ground rods shall be copper-clad steel. The ground rods shall be of the length and diameter specified on the plans, but in no case be less than 10 feet long and 3/4 inch in diameter.

108-2.4 Cable connections. In-line connections or splices of underground primary cables shall be of the type called for on the plans, and shall be one of the types listed below. No separate payment will be made for cable connections.

a. The cast splice. A cast splice, employing a plastic mold and using epoxy resin equivalent to that manufactured by 3M™ Company, "Scotchcast" Kit No. 82-B, or an approved equivalent, used for potting the splice is acceptable.

b. The field-attached plug-in splice. Field attached plug-in splices shall be installed as shown on the plans. The Contractor shall determine the outside diameter of the cable to be spliced and furnish appropriately sized connector kits and/or adapters. Tape or heat shrink tubing with integral sealant shall be in accordance with the manufacturer's requirements. Primary Connector Kits manufactured by Amerace, "Super Kit", Integro "Complete Kit", or approved equal *are* acceptable.

c. The factory-molded plug-in splice. Specification for L-823 Connectors, Factory-Molded to Individual Conductors, is acceptable.

d. The taped or heat-shrink splice. Taped splices employing field-applied rubber, or synthetic rubber tape covered with plastic tape is acceptable. The rubber tape should meet the requirements of ASTM D4388 and the plastic tape should comply with Military Specification MIL-I-24391 or Commercial Item Description A-A-55809. Heat shrinkable tubing shall be heavy-wall, self-sealing tubing rated for the voltage of the wire being spliced and suitable for direct-buried installations. The tubing shall be factory coated with a

thermoplastic adhesive-sealant that will adhere to the insulation of the wire being spliced forming a moisture- and dirt-proof seal. Additionally, heat shrinkable tubing for multi-conductor cables, shielded cables, and armored cables shall be factory kits that are designed for the application. Heat shrinkable tubing and tubing kits shall be manufactured by Tyco Electronics/ Raychem Corporation, Energy Division, or approved equivalent.

In all the above cases, connections of cable conductors shall be made using crimp connectors using a crimping tool designed to make a complete crimp before the tool can be removed. All L-823/L-824 splices and terminations shall be made per the manufacturer's recommendations and listings.

All connections of counterpoise, grounding conductors and ground rods shall be made by the exothermic process or approved equivalent, except that a light base ground clamp connector shall be used for attachment to the light base. All exothermic connections shall be made per the manufacturer's recommendations and listings.

108-2.5 Splicer qualifications. Every airfield lighting cable splicer shall be qualified in making airport cable splices and terminations on cables rated at or above 5,000 volts AC. The Contractor shall submit to the RPR proof of the qualifications of each proposed cable splicer for the airport cable type and voltage level to be worked on. Cable splicing/terminating personnel shall have a minimum of three (3) years continuous experience in terminating/splicing medium voltage cable.

108-2.6 Concrete. Concrete shall be proportioned, placed, and cured per Item Tx-421, Hydraulic Cement Concrete

108-2.7 Flowable backfill. Flowable material used to backfill trenches for power cable trenches shall conform to the requirements of Item P-153, Controlled Low Strength Material.

108-2.8 Cable identification tags. Cable identification tags shall be made from a non-corrosive material with the circuit identification stamped or etched onto the tag. The tags shall be of the type as detailed on the plans.

108-2.9 Tape. Electrical tapes shall be Scotch™ Electrical Tapes –Scotch™ 88 (1-1/2 inch wide) and Scotch™ 130C® linerless rubber splicing tape (2-inch (50 mm) wide), as manufactured by the Minnesota Mining and Manufacturing Company (3M™), or an approved equivalent.

108-2.10 Electrical coating. Electrical coating shall be Scotchkote™ as manufactured by 3M™, or an approved equivalent.

108-2.11 Existing circuits. Whenever the scope of work requires connection to an existing circuit, the existing circuit's insulation resistance shall be tested, in the presence of the RPR. The test shall be performed per this item and prior to any activity that will affect the respective circuit. The Contractor shall record the results on forms acceptable to the RPR. When the work affecting the circuit is complete, the circuit's insulation resistance shall be checked again, in the presence of the RPR. The Contractor shall record the results on forms acceptable to the RPR. The second reading shall be equal to or greater than the first reading or the Contractor shall make the necessary repairs to the existing circuit to bring the second reading above the first reading. All repair costs including a complete replacement of the L-823 connectors, L-830 transformers and L-824 cable, if necessary, shall be borne by the Contractor. All test results shall be submitted in the Operation and Maintenance (O&M) Manual. Refer to specification SS-300 for additional megger testing requirements.

108-2.12 Detectable warning tape. Plastic, detectable, American Public Works Association (APWA) Red (electrical power lines, cables, conduit and lighting cable) with continuous legend tape shall be polyethylene film with a metalized foil core and shall be 3-6 inches wide. Detectable tape is incidental to the respective bid item. Detectable warning tape for communication cables shall be orange. Detectable warning tape color code shall comply with the APWA Uniform Color Code.

CONSTRUCTION METHODS

108-3.1 General. The Contractor shall install the specified cable at the approximate locations indicated on the plans. Unless otherwise shown on the plans, all cable required to cross under pavements expected to

carry aircraft loads shall be installed in concrete encased duct banks. Cable shall be run without splices, from fixture to fixture.

Cable connections between lights will be permitted only at the light locations for connecting the underground cable to the primary leads of the individual isolation transformers. The Contractor shall be responsible for providing cable in continuous lengths for home runs or other long cable runs without connections unless otherwise authorized in writing by the RPR or shown on the plans.

In addition to connectors being installed at individual isolation transformers, L-823 cable connectors for maintenance and test points shall be installed at locations shown on the plans. Cable circuit identification markers shall be installed on both sides of the L-823 connectors installed and on both sides of slack loops where a future connector would be installed.

Provide not less than 3 feet of cable slack on each side of all connections, isolation transformers, light units, and at points where cable is connected to field equipment. Where provisions must be made for testing or for future above grade connections, provide enough slack to allow the cable to be extended at least one foot vertically above the top of the access structure. This requirement also applies where primary cable passes through empty light bases, junction boxes, and access structures to allow for future connections, or as designated by the RPR.

Primary airfield lighting cables installed shall have cable circuit identification markers attached on both sides of each L-823 connector and on each airport lighting cable entering or leaving cable access points, such as manholes, hand holes, pull boxes, junction boxes, etc. Markers shall be of sufficient length for imprinting the cable circuit identification legend on one line, using letters not less than 1/4 inch in size. The cable circuit identification shall match the circuits noted on the construction plans.

108-3.2 Installation in duct banks or conduits. This item includes the installation of the cable in duct banks or conduit per the following paragraphs. The maximum number and voltage ratings of cables installed in each single duct or conduit, and the current-carrying capacity of each cable shall be per the latest version of the National Electric Code, or the code of the local agency or authority having jurisdiction.

The Contractor shall make no connections or splices of any kind in cables installed in conduits or duct banks.

Unless otherwise designated in the plans, where ducts are in tiers, use the lowest ducts to receive the cable first, with spare ducts left in the upper levels. Check duct routes prior to construction to obtain assurance that the shortest routes are selected and that any potential interference is avoided.

Duct banks or conduits shall be installed as a separate item per Item L-110, Airport Underground Electrical Duct Banks and Conduit. The Contractor shall run a mandrel through duct banks or conduit prior to installation of cable to ensure that the duct bank or conduit is open, continuous and clear of debris. The mandrel size shall be compatible with the conduit size. The Contractor shall swab out all conduits/ducts and clean light bases, manholes, etc., interiors immediately prior to pulling cable. Once cleaned and swabbed, the light bases and all accessible points of entry to the duct/conduit system shall be kept closed except when installing cables. Cleaning of ducts, light bases, manholes, etc., is incidental to the pay item of the item being cleaned. All raceway systems left open, after initial cleaning, for any reason shall be re-cleaned at the Contractor's expense. The Contractor shall verify existing ducts proposed for use in this project as clear and open. The Contractor shall notify the RPR of any blockage in the existing ducts.

The cable shall be installed in a manner that prevents harmful stretching of the conductor, damage to the insulation, or damage to the outer protective covering. The ends of all cables shall be sealed with moisture-seal tape providing moisture-tight mechanical protection with minimum bulk, or alternately, heat shrinkable tubing before pulling into the conduit and it shall be left sealed until connections are made. Where more than one cable is to be installed in a conduit, all cable shall be pulled in the conduit at the same time. The pulling of a cable through duct banks or conduits may be accomplished by hand winch or power winch with the use of cable grips or pulling eyes. Maximum pulling tensions shall not exceed the cable manufacturer's recommendations. A non-hardening cable-pulling lubricant recommended for the type of cable being installed shall be used where required.

The Contractor shall submit the recommended pulling tension values to the RPR prior to any cable installation. If required by the RPR, pulling tension values for cable pulls shall be monitored by a dynamometer in the presence of the RPR. Cable pull tensions shall be recorded by the Contractor and reviewed by the RPR. Cables exceeding the maximum allowable pulling tension values shall be removed and replaced by the Contractor at the Contractor's expense.

The manufacturer's minimum bend radius or NEC requirements (whichever is more restrictive) shall apply. Cable installation, handling and storage shall be per manufacturer's recommendations. During cold weather, particular attention shall be paid to the manufacturer's minimum installation temperature. Cable shall not be installed when the temperature is at or below the manufacturer's minimum installation temperature. At the Contractor's option, the Contractor may submit a plan, for review by the RPR, for heated storage of the cable and maintenance of an acceptable cable temperature during installation when temperatures are below the manufacturer's minimum cable installation temperature.

Cable shall not be dragged across base can or manhole edges, pavement or earth. When cable must be coiled, lay cable out on a canvas tarp or use other appropriate means to prevent abrasion to the cable jacket.

108-3.3 Installation of direct-buried cable in trenches. Unless otherwise specified, the Contractor shall not use a cable plow for installing the cable. Cable shall be unreeled uniformly in place alongside or in the trench and shall be carefully placed along the bottom of the trench. The cable shall not be unreeled and pulled into the trench from one end. Slack cable sufficient to provide strain relief shall be placed in the trench in a series of S curves. Sharp bends or kinks in the cable shall not be permitted.

Where cables must cross over each other, a minimum of 3 inches vertical displacement shall be provided with the topmost cable depth at or below the minimum required depth below finished grade.

a. Trenching. Where turf is well established and the sod can be removed, it shall be carefully stripped and properly stored. Trenches for cables may be excavated manually or with mechanical trenching equipment. Walls of trenches shall be essentially vertical so that a minimum of surface is disturbed. Graders shall not be used to excavate the trench with their blades. The bottom surface of trenches shall be essentially smooth and free from coarse aggregate. Unless otherwise specified, cable trenches shall be excavated to a minimum depth of 18 inches below finished grade per NEC Table 300.5, except as follows:

- When off the airport or crossing under a roadway or driveway, the minimum depth shall be 36 inches unless otherwise specified.
- Minimum cable depth when crossing under a railroad track, shall be 42 inches unless otherwise specified.

The Contractor shall excavate all cable trenches to a width not less than 6 inches. Unless otherwise specified on the plans, all cables in the same location and running in the same general direction shall be installed in the same trench.

When rock is encountered, the rock shall be removed to a depth of at least 3 below the required cable depth and it shall be replaced with bedding material of earth or sand containing no mineral aggregate particles that would be retained on a 1/4-inch sieve. Flowable backfill material may alternatively be used. *The Contractor shall ascertain the type of soil or rock to be excavated before bidding*. *All such rock removal shall be performed and paid for under subsidiary to the respective trenching or conduit or duct bank pay item.*

Duct bank or conduit markers temporarily removed for trench excavations shall be replaced as required.

It is the Contractor's responsibility to locate existing utilities within the work area prior to excavation. Where existing active cables cross proposed installations, the Contractor shall ensure that these cables are adequately protected. Where crossings are unavoidable, no splices will be allowed in the existing cables, except as specified on the plans. Installation of new cable where such crossings must occur shall proceed as follows:

(1) Existing cables shall be located manually. Unearthed cables shall be inspected to assure absolutely no damage has occurred.

(2) Trenching, etc., in cable areas shall then proceed, with approval of the RPR, with care taken to minimize possible damage or disruption of existing cable, including careful backfilling in area of cable.

In the event that any previously identified cable is damaged during the course of construction, the Contractor shall be responsible for the complete repair or replacement.

b. Backfilling. After the cable has been installed, the trench shall be backfilled. The first layer of backfill in the trench shall encompass all cables; be 3 deep, loose measurement; and shall be either earth or sand containing no mineral aggregate particles that would be retained on a 1/4-inch sieve. This layer shall not be compacted. The second layer shall be 5 inches deep, loose measurement, and shall contain no particles that would be retained on a one inch (25.0 mm) sieve. The remaining third and subsequent layers of backfill shall not exceed 8 inches of loose measurement and be excavated or imported material and shall not contain stone or aggregate larger than 4 inches maximum diameter.

The second and subsequent layers shall be thoroughly tamped and compacted to at least the density of the adjacent material. If the cable is to be installed in locations or areas where other compaction requirements are specified (under pavements, embankments, etc.) the backfill compaction shall be to a minimum of 100 percent of ASTM D1557.

Trenches shall not contain pools of water during backfilling operations. The trench shall be completely backfilled and tamped level with the adjacent surface, except that when turf is to be established over the trench, the backfilling shall be stopped at an appropriate depth consistent with the type of turfing operation to be accommodated. A proper allowance for settlement shall also be provided. Any excess excavated material shall be removed and disposed of per the plans and specifications.

Underground electrical warning (caution) tape shall be installed in the trench above all direct-buried cable. Contractor shall submit a sample of the proposed warning tape for acceptance by the RPR. If not shown on the plans, the warning tape shall be located 6 inches) above the direct-buried cable or the counterpoise wire if present. A 3-6 inch wide polyethylene film detectable tape, with a metalized foil core, shall be installed above all direct buried cable or counterpoise. The tape shall be of the color and have a continuous legend as indicated on the plans. The tape shall be installed 8 inches minimum below finished grade.

c. Restoration. Following restoration of all trenching near airport movement surfaces, the Contractor shall visually inspect the area for foreign object debris (FOD) and remove any that is found. Where soil and sod has been removed, it shall be replaced as soon as possible after the backfilling is completed. All areas disturbed by work shall be restored to its original condition. The restoration shall include the sodding **[**liming**]** as shown on the plans. The Contractor shall be held responsible for maintaining all disturbed surfaces and replacements until final acceptance. When trenching is through paved areas, restoration shall be equal to existing conditions. If the cable is to be installed in locations or areas where other compaction requirements are specified (under pavements, embankments, etc.) the backfill compaction shall be to a minimum of 100 percent of ASTM D1557. Restoration shall be considered incidental to the pay item of which it is a component part.

108-3.4 Cable markers for direct-buried cable. The location of direct buried circuits shall be marked by a concrete slab marker, 2 feet square and 4-6 inch thick, extending approximately one inch above the surface. Each cable run from a line of lights and signs to the equipment vault shall be marked at approximately every 200 feet along the cable run, with an additional marker at each change of direction of cable run. All other direct-buried cable shall be marked in the same manner. Cable markers shall be installed directly above the cable. The Contractor shall impress the word “CABLE” and directional arrows on each cable marking slab. The letters shall be approximately 4 inches high and 3 inches wide, with width of stroke 1/2 inch and 1/4 inch deep. Stencils shall be used for cable marker lettering; no hand lettering shall be permitted.

At the location of each underground cable connection/splice, except at lighting units, or isolation transformers, a concrete marker slab shall be installed to mark the location of the connection/splice. The

Contractor shall impress the word “SPLICE” on each slab. The Contractor also shall impress additional circuit identification symbols on each slab as directed by the RPR. All cable markers and splice markers shall be painted international orange. Paint shall be specifically manufactured for uncured exterior concrete. After placement, all cable or splice markers shall be given one coat of high-visibility aviation orange paint as approved by the RPR. Furnishing and installation of cable markers is incidental to the respective cable pay item.

108-3.5 Splicing. Connections of the type shown on the plans shall be made by experienced personnel regularly engaged in this type of work and shall be made as follows:

a. Cast splices. These shall be made by using crimp connectors for jointing conductors. Molds shall be assembled, and the compound shall be mixed and poured per the manufacturer’s instructions and to the satisfaction of the RPR.

b. Field-attached plug-in splices. These shall be assembled per the manufacturer’s instructions. These splices shall be made by plugging directly into mating connectors. The joint where the connectors come together shall be finished by one of the following methods: (1) wrapped with at least one layer of rubber or synthetic rubber tape and one layer of plastic tape, one-half lapped, extending at least 1-1/2 inches on each side of the joint (2) Covered with heat shrinkable tubing with integral sealant extending at least 1-1/2 inches on each side of the joint or (3) On connector kits equipped with water seal flap; roll-over water seal flap to sealing position on mating connector.

c. Factory-molded plug-in splices. These shall be made by plugging directly into mating connectors. The joint where the connectors come together shall be finished by one of the following methods: (1) Wrapped with at least one layer of rubber or synthetic rubber tape and one layer of plastic tape, one-half lapped, extending at least 1-1/2 inches on each side of the joint. (2) Covered with heat shrinkable tubing with integral sealant extending at least 1-1/2 inches on each side of the joint. or (3) On connector kits so equipped with water seal flap; roll-over water seal flap to sealing position on mating connector.

d. Taped or heat-shrink splices. A taped splice shall be made in the following manner:

Bring the cables to their final position and cut so that the conductors will butt. Remove insulation and jacket allowing for bare conductor of proper length to fit compression sleeve connector with 1/4 inch of bare conductor on each side of the connector. Prior to splicing, the two ends of the cable insulation shall be penciled using a tool designed specifically for this purpose and for cable size and type. Do not use emery paper on splicing operation since it contains metallic particles. The copper conductors shall be thoroughly cleaned. Join the conductors by inserting them equidistant into the compression connection sleeve. Crimp conductors firmly in place with crimping tool that requires a complete crimp before tool can be removed. Test the crimped connection by pulling on the cable. Scrape the insulation to assure that the entire surface over which the tape will be applied (plus 3 inches on each end) is clean. After scraping, wipe the entire area with a clean lint-free cloth. Do not use solvents.

Apply high-voltage rubber tape one-half lapped over bare conductor. This tape should be tensioned as recommended by the manufacturer. Voids in the connector area may be eliminated by highly elongating the tape, stretching it just short of its breaking point. The manufacturer's recommendation for stretching tape during splicing shall be followed. Always attempt to exactly half-lap to produce a uniform buildup. Continue buildup to 1-1/2 times cable diameter over the body of the splice with ends tapered a distance of approximately one inch over the original jacket. Cover rubber tape with two layers of vinyl pressure-sensitive tape one-half lapped. Do not use glyptol or lacquer over vinyl tape as they react as solvents to the tape. No further cable covering or splice boxes are required.

Heat shrinkable tubing shall be installed following manufacturer’s instructions. Direct flame heating shall not be permitted unless recommended by the manufacturer. Cable surfaces within the limits of the heat-shrink application shall be clean and free of contaminates prior to application.

e. Assembly. Surfaces of equipment or conductors being terminated or connected shall be prepared in accordance with industry standard practice and manufacturer’s recommendations. All surfaces to be connected shall be thoroughly cleaned to remove all dirt, grease, oxides, nonconductive films, or other foreign material. Paints and other nonconductive coatings shall be removed to expose base metal. Clean

all surfaces at least 1/4 inch beyond all sides of the larger bonded area on all mating surfaces. Use a joint compound suitable for the materials used in the connection. Repair painted/coated surface to original condition after completing the connection.

108-3.6 Bare counterpoise wire installation for lightning protection and grounding. If shown on the plans or included in the job specifications, bare solid No. 6 AWG copper counterpoise wire shall be installed for lightning protection of the underground cables. The RPR shall select one of two methods of lightning protection for the airfield lighting circuit based upon sound engineering practice and lightning strike density.

a. Equipotential. – may be used by the RPR for areas that have high rates of lightning strikes. The counterpoise size is determined by the RPR. The equipotential method is applicable to all airfield lighting systems; i.e. runway, taxiway, apron – touchdown zone, centerline, edge, threshold and approach lighting systems. The equipotential method is also successfully applied to provide lightning protection for power, signal and communication systems. The light bases, counterpoise, etc – all components - are bonded together and bonded to the vault power system ground loop/electrode.

Counterpoise wire shall be installed in the same trench for the entire length of buried cable, conduits and duct banks that are installed to contain airfield cables. The counterpoise is centered over the cable/conduit/duct to be protected.

The counterpoise conductor shall be installed no less than 8 inches minimum or 12 inches maximum above the raceway or cable to be protected, except as permitted below:

(1) The minimum counterpoise conductor height above the raceway or cable to be protected shall be permitted to be adjusted subject to coordination with the airfield lighting and pavement designs.

(2) The counterpoise conductor height above the protected raceway(s) or cable(s) shall be calculated to ensure that the raceway or cable is within a 45-degree area of protection, (45 degrees on each side of vertical creating a 90 degree angle).

The counterpoise conductor shall be bonded to each metallic light base, mounting stake, and metallic airfield lighting component.

All metallic airfield lighting components in the field circuit on the output side of the constant current regulator (CCR) or other power source shall be bonded to the airfield lighting counterpoise system.

All components rise and fall at the same potential; with no potential difference, no damaging arcing and no damaging current flow.

See AC 150/5340-30, Design and Installation Details for Airport Visual Aids and NFPA 780, Standard for the Installation of Lightning Protection Systems, Chapter 11, for a detailed description of the Equipotential Method of lightning protection.

Reference FAA STD-019E, Lightning and Surge Protection, Grounding Bonding and Shielding Requirements for Facilities and Electronic Equipment, Part 4.1.1.7.

b. Isolation – used in areas where lightning strikes are not common. Counterpoise size is selected by the RPR. The isolation method is an alternate method for use only with edge lights installed in turf and stabilized soils and raceways installed parallel to and adjacent to the edge of the pavement. NFPA 780 uses 15 feet to define “adjacent to”.

The counterpoise conductor shall be installed halfway between the pavement edge and the light base, mounting stake, raceway, or cable being protected.

The counterpoise conductor shall be installed 8 inches minimum below grade. The counterpoise is not connected to the light base or mounting stake. An additional grounding electrode is required at each light base or mounting stake. The grounding electrode is bonded to the light base or mounting stake with a 6 AWG solid copper conductor.

See AC 150/5340-30, Design and Installation Details for Airport Visual Aids and NFPA 780, Standard for the Installation of Lightning Protection Systems, Chapter 11, for a detailed description of the Isolation Method of lightning protection.

c. Common Installation requirements. When a metallic light base is used, the grounding electrode shall be bonded to the metallic light base or mounting stake with a No. 6 AWG bare, annealed or soft drawn, solid copper conductor.

Grounding electrodes may be rods, ground dissipation plates, radials, or other electrodes listed in the NFPA 70 (NEC) or NFPA 780.

Where raceway is installed by the directional bore, jack and bore, or other drilling method, the counterpoise conductor shall be permitted to be installed concurrently with the directional bore, jack and bore, or other drilling method raceway, external to the raceway or sleeve.

The counterpoise wire shall also be exothermically welded to ground rods installed as shown on the plans but not more than 500 apart around the entire circuit. The counterpoise system shall be continuous and terminate at the transformer vault or at the power source. It shall be securely attached to the vault or equipment external ground ring or other made electrode-grounding system. The connections shall be made as shown on the plans and in the specifications.

Where an existing airfield lighting system is being extended or modified, the new counterpoise conductors shall be interconnected to existing counterpoise conductors at each intersection of the new and existing airfield lighting counterpoise systems.

d. Parallel Voltage Systems. Provide grounding and bonding in accordance with NFPA 70, National Electrical Code.

108-3.7 Counterpoise installation above multiple conduits and duct banks. Counterpoise wires shall be installed above multiple conduits/duct banks for airfield lighting cables, with the intent being to provide a complete area of protection over the airfield lighting cables. When multiple conduits and/or duct banks for airfield cable are installed in the same trench, the number and location of counterpoise wires above the conduits shall be adequate to provide a complete area of protection measured 45 degrees each side of vertical.

Where duct banks pass under pavement to be constructed in the project, the counterpoise shall be placed above the duct bank. Reference details on the construction plans.

108-3.8 Counterpoise installation at existing duct banks. When airfield lighting cables are indicated on the plans to be routed through existing duct banks, the new counterpoise wiring shall be terminated at ground rods at each end of the existing duct bank where the cables being protected enter and exit the duct bank. The new counterpoise conductor shall be bonded to the existing counterpoise system.

108-3.9 Exothermic bonding. Bonding of counterpoise wire shall be by the exothermic welding process or equivalent method accepted by the RPR. Only personnel experienced in and regularly engaged in this type of work shall make these connections.

Contractor shall demonstrate to the satisfaction of the RPR, the welding kits, materials and procedures to be used for welded connections prior to any installations in the field. The installations shall comply with the manufacturer's recommendations and the following:

a. All slag shall be removed from welds.

b. Using an exothermic weld to bond the counterpoise to a lug on a galvanized light base is not recommended unless the base has been specially modified. Consult the manufacturer's installation directions for proper methods of bonding copper wire to the light base. See AC 150/5340-30 for galvanized light base exception.

c. If called for in the plans, all buried copper and weld material at weld connections shall be thoroughly coated with 6 mm of 3M™ Scotchkote™, or approved equivalent, or coated with coal tar Bitumastic® material to prevent surface exposure to corrosive soil or moisture.

108-3.10 Testing. The Contractor shall furnish all necessary equipment and appliances for testing the airport electrical systems and underground cable circuits before and after installation. The Contractor shall perform all tests in the presence of the RPR. The Contractor shall demonstrate the electrical characteristics to the satisfaction of the RPR. All costs for testing are incidental to the respective item being tested. For phased projects, the tests must be completed by phase. The Contractor must maintain the test results throughout the entire project as well as during the warranty period that meet the following:

a. Earth resistance testing methods shall be submitted to the RPR for approval. Earth resistance testing results shall be recorded on an approved form and testing shall be performed in the presence of the RPR. All such testing shall be at the sole expense of the Contractor.

b. Should the counterpoise or ground grid conductors be damaged or suspected of being damaged by construction activities the Contractor shall test the conductors for continuity with a low resistance ohmmeter. The conductors shall be isolated such that no parallel path exists and tested for continuity. The RPR shall approve of the test method selected. All such testing shall be at the sole expense of the Contractor.

After installation, the Contractor shall test and demonstrate to the satisfaction of the RPR the following:

c. That all affected lighting power and control circuits (existing and new) are continuous and free from short circuits.

d. That all affected circuits (existing and new) are free from unspecified grounds.

e. That the insulation resistance to ground of all new non-grounded high voltage series circuits or cable segments is not less than **500** megohms. Verify continuity of all series airfield lighting circuits prior to energization.

f. That the insulation resistance to ground of all new non-grounded conductors of new multiple circuits or circuit segments is not less than 100 megohms.

g. That all affected circuits (existing and new) are properly connected per applicable wiring diagrams.

h. That all affected circuits (existing and new) are operable. Tests shall be conducted that include operating each control not less than 10 times and the continuous operation of each lighting and power circuit for not less than 1/2 hour.

i. That the impedance to ground of each ground rod does not exceed **25** ohms prior to establishing connections to other ground electrodes. The fall-of-potential ground impedance test shall be used, as described by American National Standards Institute/Institute of Electrical and Electronic Engineers (ANSI/IEEE) Standard 81, to verify this requirement. As an alternate, clamp-on style ground impedance test meters may be used to satisfy the impedance testing requirement. Test equipment and its calibration sheets

Two copies of tabulated results of all cable tests performed shall be supplied by the Contractor to the RPR. Where connecting new cable to existing cable, insulation resistance tests shall be performed on the new cable prior to connection to the existing circuit.

There are no approved “repair” procedures for items that have failed testing other than complete replacement.

METHOD OF MEASUREMENT

108-4.1 Trenching shall be measured by the linear feet of trench, including the excavation, backfill, and restoration, completed, measured as excavated, and accepted as satisfactory. When specified, separate measurement shall be made for trenches of various specified widths.

The cost of all excavation, backfill, dewatering and restoration regardless of the type of material encountered shall be included in the unit price bid for the work.

108-4.2 Cable or counterpoise wire installed in trench, duct bank or conduit shall be measured by the number of linear feet installed and grounding connectors, and trench marking tape ready for operation, and accepted as satisfactory. Separate measurement shall be made for each cable or counterpoise wire installed in trench, duct bank or conduit. The measurement for this item shall include additional

108-4.3 No separate payment will be made for ground rods.

BASIS OF PAYMENT

108-5.1 Payment will be made at the contract unit price for trenching, cable and bare counterpoise wire installed in trench (direct-buried), or cable and equipment ground installed in duct bank or conduit, in place by the Contractor and accepted by the RPR. This price shall be full compensation for furnishing all materials and for all preparation and installation of these materials, and for all labor, equipment, tools, and incidentals, including ground rods and ground connectors and trench marking tape, necessary to complete this item.

Payment will be made under:

Item L-108-5.1	Trenching for Direct-Buried Bare Counterpoise Wire, 8-inch Minimum Depth - per Linear Foot
Item L-108-5.2	No. 8 AWG**,** 5 kV, L-824, Type C Cable, Installed in Trench, Duct Bank or Conduit - per Linear Foot
Item L-108-5.3	No. 6 AWG, Solid, Bare Copper Counterpoise Wire, Installed in Trench, Above the Duct Bank or Conduit, Including Connections/Terminations - per Linear Foot

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circulars (AC)

AC 150/5340-26	Maintenance of Airport Visual Aid Facilities
AC 150/5340-30	Design and Installation Details for Airport Visual Aids
AC 150/5345-7	Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits
AC 150/5345-26	Specification for L-823 Plug and Receptacle, Cable Connectors
AC 150/5345-53	Airport Lighting Equipment Certification Program

Commercial Item Description

A-A-59544A	Cable and Wire, Electrical (Power, Fixed Installation)
A-A-55809	Insulation Tape, Electrical, Pressure-Sensitive Adhesive, Plastic

ASTM International (ASTM)

ASTM B3	Standard Specification for Soft or Annealed Copper Wire
ASTM B8	Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft
ASTM B33	Standard Specification for Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes

ASTM D33	*Tinned Soft of Annealed Copper Wire for Electrical Purposes*
ASTM D4388	Standard Specification for Nonmetallic Semi-Conducting and Electrically Insulating Rubber Tapes

Mil Spec

MIL-PRF-23586F	Performance Specification: Sealing Compound (with Accelerator), Silicone Rubber, Electrical
MIL-I-24391	Insulation Tape, Electrical, Plastic, Pressure Sensitive
MIL-P-21035	*Paint High Zinc Duct Content, Galvanizing Repair*

National Fire Protection Association (NFPA)

NFPA-70	National Electrical Code (NEC)
NFPA-780	Standard for the Installation of Lightning Protection Systems

American National Standards Institute (ANSI)/Institute of Electrical and Electronics Engineers (IEEE)

ANSI/IEEE STD 81	IEEE Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System

Federal Aviation Administration Standard

FAA STD-019E	Lightning and Surge Protection, Grounding Bonding and Shielding Requirements for Facilities and Electronic Equipment

END OF ITEM L-108

ITEM L-110 AIRPORT UNDERGROUND ELECTRICAL DUCT BANKS AND CONDUITS

DESCRIPTION

110-1.1 This item shall consist of underground electrical conduits and duct banks (single or multiple conduits encased in concrete or buried in sand) installed per this specification at the locations and per the dimensions, designs, and details shown on the plans. This item shall include furnishing and installing of all underground electrical duct banks and individual and multiple underground conduits**]**. It shall also include all turfing trenching, backfilling, removal, and restoration of any paved or turfed areas; concrete encasement, mandrelling, pulling lines, duct markers, plugging of conduits, and the testing of the installation as a completed system ready for installation of cables per the plans and specifications. This item shall also include furnishing and installing conduits and all incidentals for providing positive drainage of the system. Verification of existing ducts is incidental to the pay items provided in this specification. *Refer to Item SS-301 for additional electrical demolition work requirements.*

EQUIPMENT AND MATERIALS

110-2.1 General.

a. All equipment and materials covered by referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification when requested by the RPR.

b. Manufacturer's certifications shall not relieve the Contractor of the responsibility to provide materials per these specifications and acceptable to the RPR. Materials supplied and/or installed that do not comply with these specifications shall be removed, when directed by the RPR and replaced with materials, that comply with these specifications, at the Contractor's cost.

c. All materials and equipment used to construct this item shall be submitted to the RPR for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provided they are as good a quality as the original. Clearly and boldly mark each copy to identify products or models applicable to this project. Indicate all optional equipment and delete non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment for which they apply on each submittal sheet. Markings shall be made bold and clear with arrows or circles (highlighting is not acceptable). The Contractor is solely responsible for delays in project that accrue directly or indirectly from late submissions or resubmissions of submittals.

d. The data submitted shall be sufficient, in the opinion of the RPR, to determine compliance with the plans and specifications. The Contractor's submittals shall be electronically submitted in pdf format, tabbed by specification section. The RPR reserves the right to reject any and all equipment, materials or procedures that do not meet the system design and the standards and codes specified in this document.

e. All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for a period of at least twelve (12) months from final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner.

110-2.2 Steel conduit. Rigid galvanized steel (RGS) conduit and fittings shall be hot dipped galvanized inside and out and conform to the requirements of Underwriters Laboratories Standards 6, 514B, and 1242. All RGS conduits or RGS elbows installed below grade, in concrete, permanently wet locations or other similar environments shall be painted with a 10-mil thick coat of asphaltum sealer or shall have a factory-bonded polyvinyl chloride (PVC) cover. Any exposed galvanizing or steel shall be coated with 10 mils of asphaltum sealer. When using PVC coated RGS conduit, care shall be exercised not to damage the factory PVC coating. Damaged PVC coating shall be repaired per the manufacturer's written instructions. In lieu of PVC coated RGS, corrosion wrap tape shall be permitted to be used where RGS is in contact with direct earth."

110-2.3 Plastic conduit. Plastic conduit and fittings-shall conform to the following requirements:

- UL 514B covers W-C-1094-Conduit fittings all types, classes 1 thru 3 and 6 thru 10.
- UL 514C covers W-C-1094- all types, Class 5 junction box and cover in plastic (PVC).
- UL 651 covers W-C-1094-Rigid PVC Conduit, types I and II, Class 4.
- UL 651A covers W-C-1094-Rigid PVC Conduit and high-density polyethylene (HDPE) Conduit type III and Class 4.

Underwriters Laboratories Standards UL-651 and Article 352 of the current National Electrical Code shall be one of the following, as shown on the plans:

a. Type I–Schedule 40 and Schedule 80 PVC suitable for underground use either direct-buried or encased in concrete.

b. Type II–Schedule 40 PVC suitable for either above ground or underground use.

c. Type III – Schedule 80 PVC suitable for either above ground or underground use either direct-buried or encased in concrete.

d. Type III –HDPE pipe, minimum standard dimensional ratio (SDR) 11, suitable for placement with directional boring under pavement.

The type of solvent cement shall be as recommended by the conduit/fitting manufacturer.

110-2.4 Split conduit. Split conduit shall be pre-manufactured for the intended purpose and shall be made of steel or plastic.

110-2.5 Conduit spacers. Conduit spacers shall be prefabricated interlocking units manufactured for the intended purpose. They shall be of double wall construction made of high grade, high density polyethylene complete with interlocking cap and base pads. They shall be designed to accept No. 4 reinforcing bars installed vertically.

110-2.6 Concrete. Concrete shall be proportioned, placed, and cured per Item Tx-421, Hydraulic Cement Concrete

110-2.7 Precast concrete structures. Precast concrete structures shall be furnished by a plant meeting National Precast Concrete Association Plant Certification Program or another RPR approved third party certification program. Precast concrete structures shall conform to ASTM C478.

~~**110-2.8 Flowable backfill.** Flowable material used to back fill conduit and duct bank trenches shall conform to the requirements of Item P-153, Controlled Low Strength Material.~~

110-2.9 Detectable warning tape. Plastic, detectable, American Public Works Association (APWA) red (electrical power lines, cables, conduit and lighting cable), orange (telephone/fiber optic cabling) with continuous legend magnetic tape shall be polyethylene film with a metallized foil core and shall be 3-6 inches wide. Detectable tape is incidental to the respective bid item.

CONSTRUCTION METHODS

110-3.1 General. The Contractor shall install underground duct banks and conduits at the approximate locations indicated on the plans. The RPR shall indicate specific locations as the work progresses, if required to differ from the plans. Duct banks and conduits shall be of the size, material, and type indicated on the plans or specifications. Where no size is indicated on the plans or in the specifications, conduits shall be not less than 2 inches inside diameter or comply with the National Electrical Code based on cable to be installed, whichever is larger. All duct bank and conduit lines shall be laid so as to grade toward access points and duct or conduit ends for drainage. Unless shown otherwise on the plans, grades shall be at least 3 inches per 100 feet. On runs where it is not practicable to maintain the grade all one way, the duct bank and conduit lines shall be graded from the center in both directions toward access points or

conduit ends, with a drain into the storm drainage system. Pockets or traps where moisture may accumulate shall be avoided. Under pavement, the top of the duct bank shall not be less than 18 inches below the subgrade; in other locations, the top of the duct bank or underground conduit shall be not less than 18 inches below finished grade.

The Contractor shall mandrel each individual conduit whether the conduit is direct-buried or part of a duct bank. An iron-shod mandrel, not more than 1/4 inch smaller than the bore of the conduit shall be pulled or pushed through each conduit. The mandrel shall have a leather or rubber gasket slightly larger than the conduit hole.

The Contractor shall swab out all conduits/ducts and clean base can, manhole, pull boxes, etc., interiors immediately prior to pulling cable. Once cleaned and swabbed the light bases, manholes, pull boxes, etc., and all accessible points of entry to the duct/conduit system shall be kept closed except when installing cables. Cleaning of ducts, base cans, manholes, etc., is incidental to the pay item of the item being cleaned. All raceway systems left open, after initial cleaning, for any reason shall be recleaned at the Contractor's expense. All accessible points shall be kept closed when not installing cable. The Contractor shall verify existing ducts proposed for use in this project as clear and open. The Contractor shall notify the RPR of any blockage in the existing ducts.

For pulling the permanent wiring, each individual conduit, whether the conduit is direct-buried or part of a duct bank, shall be provided with a 200-pound test polypropylene pull rope. The ends shall be secured and sufficient length shall be left in access points to prevent it from slipping back into the conduit. Where spare conduits are installed, as indicated on the plans, the open ends shall be plugged with removable tapered plugs, designed for this purpose.

All conduits shall be securely fastened in place during construction and shall be plugged to prevent contaminants from entering the conduits. Any conduit section having a defective joint shall not be installed. Ducts shall be supported and spaced apart using approved spacers at intervals not to exceed 5 feet.

Unless otherwise shown on the plans, concrete encased duct banks shall be used when crossing under pavements expected to carry aircraft loads, such as runways, taxiways, taxilanes, ramps and aprons. When under paved shoulders and other paved areas, conduit and duct banks shall be encased using flowable fill for protection.

All conduits within concrete encasement of the duct banks shall terminate with female ends for ease in current and future use. Install factory plugs in all unused ends. Do not cover the ends or plugs with concrete.

Where turf is well established and the sod can be removed, it shall be carefully stripped and properly stored.

Trenches for conduits and duct banks may be excavated manually or with mechanical trenching equipment unless in pavement, in which case they shall be excavated with mechanical trenching equipment. Walls of trenches shall be essentially vertical so that a minimum of shoulder surface is disturbed. Blades of graders shall not be used to excavate the trench.

When rock is encountered, the rock shall be removed to a depth of at least 3 inches below the required conduit or duct bank depth and it shall be replaced with bedding material of earth or sand containing no mineral aggregate particles that would be retained on a 1/4-inch sieve. Flowable backfill may alternatively be used. *The Contractor shall ascertain the type of soil or rock to be excavated before bidding. All such rock removal shall be performed and paid for under subsidiary to the respective trenching or conduit or duct bank pay item.*

Underground electrical warning (Caution) tape shall be installed in the trench above all underground duct banks and conduits in unpaved areas. Contractor shall submit a sample of the proposed warning tape for approval by the RPR. If not shown on the plans, the warning tape shall be located 6 inches above the duct/conduit or the counterpoise wire if present.

Joints in plastic conduit shall be prepared per the manufacturer's recommendations for the particular type of conduit. Plastic conduit shall be prepared by application of a plastic cleaner and brushing a plastic solvent on the outside of the conduit ends and on the inside of the couplings. The conduit fitting shall then be

slipped together with a quick one-quarter turn twist to set the joint tightly. Where more than one conduit is placed in a single trench, or in duct banks, joints in the conduit shall be staggered a minimum of 2 feet.

Changes in direction of runs exceeding 10 degrees, either vertical or horizontal, shall be accomplished using manufactured sweep bends.

Whether or not specifically indicated on the drawings, where the soil encountered at established duct bank grade is an unsuitable material, as determined by the RPR, the unsuitable material shall be removed per Item Tx-132 and replaced with suitable material. Additional duct bank supports shall be installed, as approved by the RPR.

All excavation shall be unclassified and shall be considered incidental to Item L-110. Dewatering necessary for duct installation, and erosion per federal, state, and local requirements is incidental to Item L-110.

Unless otherwise specified, excavated materials that are deemed by the RPR to be unsuitable for use in backfill or embankments shall be removed and disposed of offsite.

Any excess excavation shall be filled with suitable material approved by the RPR and compacted per Item Tx-132.

It is the Contractor's responsibility to locate existing utilities within the work area prior to excavation. Where existing active cables) cross proposed installations, the Contractor shall ensure that these cables are adequately protected. Where crossings are unavoidable, no splices will be allowed in the existing cables, except as specified on the plans. Installation of new cable where such crossings must occur shall proceed as follows:

a. Existing cables shall be located manually. Unearthed cables shall be inspected to assure absolutely no damage has occurred

b. Trenching, etc., in cable areas shall then proceed with approval of the RPR, with care taken to minimize possible damage or disruption of existing cable, including careful backfilling in area of cable.

In the event that any previously identified cable is damaged during the course of construction, the Contractor shall be responsible for the complete repair.

110-3.2 Duct banks. Unless otherwise shown in the plans, duct banks shall be installed so that the top of the concrete envelope is not less than 18 inches below the bottom of the base or stabilized base course layers where installed under runways, taxiways, aprons, or other paved areas, and not less than 18 inches below finished grade where installed in unpaved areas.

Unless otherwise shown on the plans, duct banks under paved areas shall extend at least 3 feet beyond the edges of the pavement or 3 feet beyond any under drains that may be installed alongside the paved area. Trenches for duct banks shall be opened the complete length before concrete is placed so that if any obstructions are encountered, provisions can be made to avoid them. Unless otherwise shown on the plans, all duct banks shall be placed on a layer of concrete not less than 3 inches thick prior to its initial set. The Contractor shall space the conduits not less than 3 inches apart measured from outside wall to outside wall). All such multiple conduits shall be placed using conduit spacers applicable to the type of conduit. As the conduit laying progresses, concrete shall be placed around and on top of the conduits not less than 3 inches thick unless otherwise shown on the plans. All conduits shall terminate with female ends for ease of access in current and future use. Install factory plugs in all unused ends. Do not cover the ends or plugs with concrete.

Conduits forming the duct bank shall be installed using conduit spacers. No. 4 reinforcing bars shall be driven vertically into the soil a minimum of 6 inches to anchor the assembly into the earth prior to placing the concrete encasement. For this purpose, the spacers shall be fastened down with locking collars attached to the vertical bars. Spacers shall be installed at 5-foot intervals. Spacers shall be in the proper sizes and configurations to fit the conduits. Locking collars and spacers shall be submitted to the RPR for review prior to use.

When specified, the Contractor shall reinforce the bottom side and top of encasements with steel reinforcing mesh or fabric or other approved metal reinforcement. When directed, the Contractor shall supply additional supports where the ground is soft and boggy, where ducts cross under roadways, or where shown on the plans. Under such conditions, the complete duct structure shall be supported on reinforced concrete footings, piers, or piles located at approximately 5-foot intervals.

All pavement surfaces that are to have ducts installed therein shall be neatly saw cut to form a vertical face. All excavation shall be included in the contract with price for the duct.

Install a plastic, detectable, color as noted, 3 to 6 inches wide tape, 8 inches minimum below grade above all underground conduit or duct lines not installed under pavement. Utilize the 3-inch wide tape only for single conduit runs. Utilize the 6-inch wide tape for multiple conduits and duct banks. For duct banks equal to or greater than 24 inches in width, utilize more than one tape for sufficient coverage and identification of the duct bank as required.

When existing cables are to be placed in split duct, encased in concrete, the cable shall be carefully located and exposed by hand tools. Prior to being placed in duct, the RPR shall be notified so that he may inspect the cable and determine that it is in good condition. Where required, split duct shall be installed as shown on the drawings or as required by the RPR.

110-3.3 Conduits without concrete encasement. Trenches for single-conduit lines shall be not less than 6 inches nor more than 12 inches wide. The trench for 2 or more conduits installed at the same level shall be proportionately wider. Trench bottoms for conduits without concrete encasement shall be made to conform accurately to grade so as to provide uniform support for the conduit along its entire length.

Unless otherwise shown on the plans, a layer of fine earth material, at least 4 inches thick (loose measurement) shall be placed in the bottom of the trench as bedding for the conduit. The bedding material shall consist of soft dirt, sand or other fine fill, and it shall contain no particles that would be retained on a 1/4-inch sieve. The bedding material shall be tamped until firm. Flowable backfill may alternatively be used.

Unless otherwise shown on plans, conduits shall be installed so that the tops of all conduits within the Airport's secured area where trespassing is prohibited are at least 18 inches below the finished grade. Conduits outside the Airport's secured area shall be installed so that the tops of the conduits are at least 24 inches below the finished grade per National Electric Code (NEC), Table 300.5.

When two or more individual conduits intended to carry conductors of equivalent voltage insulation rating are installed in the same trench without concrete encasement, they shall be spaced not less than 3 inches apart (measured from outside wall to outside wall) in a horizontal direction and not less than 6 inches apart in a vertical direction. Where two or more individual conduits intended to carry conductors of differing voltage insulation rating are installed in the same trench without concrete encasement, they shall be placed not less than 3 inches apart (measured from outside wall to outside wall) in a horizontal direction and lot less than 6 inches apart in a vertical direction.

Trenches shall be opened the complete length between normal termination points before conduit is installed so that if any unforeseen obstructions are encountered, proper provisions can be made to avoid them.

Conduits shall be installed using conduit spacers. No. 4 reinforcing bars shall be driven vertically into the soil a minimum of 6 inches to anchor the assembly into the earth while backfilling. For this purpose, the spacers shall be fastened down with locking collars attached to the vertical bars. Spacers shall be installed at 5-foot intervals. Spacers shall be in the proper sizes and configurations to fit the conduits. Locking collars and spacers shall be submitted to the RPR for review prior to use.

110-3.4 Markers. The location of each end and of each change of direction of conduits and duct banks shall be marked by a concrete slab marker 2 feet square and 4 - 6 inches thick extending approximately one inch above the surface. The markers shall also be located directly above the ends of all conduits or duct banks, except where they terminate in a junction/access structure or building. Each cable or duct run from a line of lights and signs to the equipment vault must be marked at approximately every 200 feet along the cable or duct run, with an additional marker at each change of direction of cable or duct run.

The Contractor shall impress the word “DUCT” or “CONDUIT” on each marker slab. Impression of letters shall be done in a manner, approved by the RPR, for a neat, professional appearance. All letters and words must be neatly stenciled. After placement, all markers shall be given one coat of high-visibility orange paint, as approved by the RPR. The Contractor shall also impress on the slab the number and size of conduits beneath the marker along with all other necessary information as determined by the RPR. The letters shall be 4 inches high and 3 inches wide with width of stroke 1/2 inch and 1/4 inch deep or as large as the available space permits. Furnishing and installation of duct markers is incidental to the respective duct pay item.

110-3.5 Backfilling for conduits. For conduits, 8 inches of sand, soft earth, or other fine fill (loose measurement) shall be placed around the conduits ducts and carefully tamped around and over them with hand tampers. The remaining trench shall then be backfilled and compacted per Item Tx-132 except that material used for back fill shall be select material not larger than 4 inches in diameter.

Flowable backfill may alternatively be used.

Trenches shall not contain pools of water during back filling operations.

The trench shall be completely backfilled and tamped level with the adjacent surface; except that, where sod is to be placed over the trench, the backfilling shall be stopped at a depth equal to the thickness of the sod to be used, with proper allowance for settlement.

Any excess excavated material shall be removed and disposed of per instructions issued by the RPR.

110-3.6 Backfilling for duct banks. After the concrete has cured, the remaining trench shall be backfilled and compacted per Item Tx-132 “Embankment” except that the material used for backfill shall be select material not larger than 4 inches in diameter. In addition to the requirements of Item Tx-132, where duct banks are installed under pavement, one moisture/density test per lift shall be made for each 250 linear feet of duct bank or one work period’s construction, whichever is less.

Flowable backfill may alternatively be used.

Trenches shall not contain pools of water during backfilling operations.

The trench shall be completely backfilled and tamped level with the adjacent surface; except that, where sod is to be placed over the trench, the backfilling shall be stopped at a depth equal to the thickness of the sod to be used, with proper allowance for settlement.

Any excess excavated material shall be removed and disposed of per instructions issued by the RPR.

110-3.7 Restoration. Where sod has been removed, it shall be replaced as soon as possible after the backfilling is completed. All areas disturbed by the work shall be restored to its original condition. The restoration shall include sodding shown on the plans. The Contractor shall be held responsible for maintaining all disturbed surfaces and replacements until final acceptance. All restoration shall be considered incidental to the respective L-110 pay item. Following restoration of all trenching near airport movement surfaces, the Contractor shall thoroughly visually inspect the area for foreign object debris (FOD), and remove any such FOD that is found. This FOD inspection and removal shall be considered incidental to the pay item of which it is a component part.

110-3.8 Ownership of removed cable. Addison Airport shall have the first right of refusal for any cable removed during the course of this project.

METHOD OF MEASUREMENT

110-4.1 Underground conduits and duct banks shall be measured by the linear feet of conduits and duct banks installed, including encasement, locator tape, trenching and backfill with designated material, and restoration, and for drain lines, the termination at the drainage structure, all measured in place, completed, and accepted. Separate measurement shall be made for the various types and sizes.

BASIS OF PAYMENT

110-5.1 Payment will be made at the contract unit price per linear foot for each type and size of conduit and duct bank completed and accepted, including trench and backfill with the designated material, and, for drain lines, the termination at the drainage structure. This price shall be full compensation for removal and disposal of existing duct banks and conduits as shown on the plans, furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete this item per the provisions and intent of the plans and specifications.

Payment will be made under:

Item L-110-5.1	Non-Encased Electrical Conduit, 1-Way 2”C - per Linear Foot
Item L-110-5.2	Non-Encased Electrical Conduit, 1-Way 4”C - per Linear Foot
Item L-110-5.3	Concrete Encased Electrical Conduit, 1-Way 4”C – per Linear Foot

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circular (AC)

AC 150/5340-30	Design and Installation Details for Airport Visual Aids
AC 150/5345-53	Airport Lighting Equipment Certification Program

ASTM International (ASTM)

ASTM A615	Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement

National Fire Protection Association (NFPA)

NFPA-70	National Electrical Code (NEC)

Underwriters Laboratories (UL)

UL Standard 6	Electrical Rigid Metal Conduit - Steel
UL Standard 514B	Conduit, Tubing, and Cable Fittings
UL Standard 514C	Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers
UL Standard 1242	Electrical Intermediate Metal Conduit Steel
UL Standard 651	Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings
UL Standard 651A	Type EB and A Rigid PVC Conduit and HDPE Conduit

END OF ITEM L-110

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ITEM L-125 INSTALLATION OF AIRPORT LIGHTING SYSTEMS

DESCRIPTION

125-1.1 This item shall consist of airport lighting systems furnished and installed in accordance with this specification, the referenced specifications, and the applicable advisory circulars (ACs). The systems shall be installed at the locations and in accordance with the dimensions, design, and details shown in the plans. This item shall include the furnishing of all equipment, materials, services, and incidentals necessary to place the systems in operation as completed units to the satisfaction of the RPR.

EQUIPMENT AND MATERIALS

125-2.1 General.

a. Airport lighting equipment and materials covered by Federal Aviation Administration (FAA) specifications shall be certified under the Airport Lighting Equipment Certification Program in accordance with AC 150/5345-53, current version. FAA certified airfield lighting shall be compatible with each other to perform in compliance with FAA criteria and the intended operation. If the Contractor provides equipment that does not performs as intended because of incompatibility with the system, the Contractor assumes all costs to correct the system for to operate properly.

b. Manufacturer's certifications shall not relieve the Contractor of their responsibility to provide materials in accordance with these specifications and acceptable to the RPR. Materials supplied and/or installed that do not comply with these specifications shall be removed, when directed by the RPR and replaced with materials, which do comply with these specifications, at the sole cost of the Contractor.

c. All materials and equipment used shall be submitted to the RPR for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Clearly mark each copy to identify pertinent products or models applicable to this project. Indicate all optional equipment and delete non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment for which they apply on each submittal sheet. Markings shall be clearly made with arrows or circles (highlighting is not acceptable). The Contractor shall be responsible for delays in the project accruing directly or indirectly from late submissions or resubmissions of submittals.

d. The data submitted shall be sufficient, in the opinion of the RPR, to determine compliance with the plans and specifications. The Contractor's submittals shall be submitted in electronic PDF format, tabbed by specification section. The RPR reserves the right to reject any or all equipment, materials or procedures, which, in the RPR’s opinion, does not meet the system design and the standards and codes, specified herein.

e. All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for a period of at least twelve (12) months from final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner.

EQUIPMENT AND MATERIALS

125-2.2 Conduit/Duct. Conduit shall conform to Specification Item L-110 Airport Underground Electrical Duct Banks and Conduits.

125-2.3 Cable and Counterpoise. Cable and Counterpoise shall conform to Item L-108 Underground Power Cable for Airports.

125-2.4 Tape. Rubber and plastic electrical tapes shall be Scotch Electrical Tape Numbers 23 and 88 respectively, as manufactured by 3M Company or an approved equal.

125-2.5 Cable Connections. Cable Connections shall conform to Item L-108 Installation of Underground Cable for Airports.

125-2.6 Retroreflective Markers. Not required.

125-2.7 Runway and Taxiway Lights. *Not Required.*

125-2.8 Runway and Taxiway Signs. Runway and Taxiway Guidance Signs should conform to the requirements of AC 150/5345-44.

Signs

Type	Size	Style	Class	Mode	Notes
L-858Y	2	2	2	2	Provide sign with flat surfaces.

125-2.9 Runway End Identifier Light (REIL). Not required.

125-2.10 Precision Approach Path Indicator (PAPI). Not required.

125-2.11 Circuit Selector Cabinet. *Not required.*

125-2.12 Light Base and Transformer Housings. Light Base and Transformer Housings should conform to the requirements of AC 150/5345-42. Light bases shall be Type L-867, Class 1A, Size B shall be provided as indicated or as required to accommodate the fixture or device installed thereon. Base plates, cover plates, and adapter plates shall be provided to accommodate various sizes of fixtures.

125-2.13 Isolation Transformers. Isolation Transformers shall be Type L-830, size as required for each installation. Transformer shall conform to AC 150/5345-47.

INSTALLATION

125-3.1 Installation. The Contractor shall furnish, install, connect and test all equipment, accessories, conduit, cables, wires, buses, grounds and support items necessary to ensure a complete and operable airport lighting system as specified here and shown in the plans.

The equipment installation and mounting shall comply with the requirements of the National Electrical Code and state and local code agencies having jurisdiction.

The Contractor shall install the specified equipment in accordance with the applicable advisory circulars and the details shown on the plans.

See the Supplemental Specifications for additional equipment installation, mounting, and testing requirements.

125-3.2 Testing. All lights shall be fully tested by continuous operation for not less than 24 hours as a completed system prior to acceptance. The test shall include operating the constant current regulator in each step not less than 10 times at the beginning and end of the 24-hour test. The fixtures shall illuminate properly during each portion of the test.

125-3.3 Shipping and Storage. Equipment shall be shipped in suitable packing material to prevent damage during shipping. Store and maintain equipment and materials in areas protected from weather and physical damage. Any equipment and materials, in the opinion of the RPR, damaged during construction or storage shall be replaced by the Contractor at no additional cost to the owner. Painted or galvanized surfaces that are damaged shall be repaired in accordance with the manufacturer's recommendations.

125-3.4 Elevated and In-pavement Lights. Water, debris, and other foreign substances shall be removed prior to installing fixture base and light.

A jig or holding device shall be used when installing each light fixture to ensure positioning to the proper elevation, alignment, level control, and azimuth control. Light fixtures shall be oriented with the light beams parallel to the runway or taxiway centerline and facing in the required direction. The outermost edge of fixture shall be level with the surrounding pavement. Surplus sealant or flexible embedding material shall be removed. The holding device shall remain in place until sealant has reached its initial set.

METHOD OF MEASUREMENT

125-4.1 Reflective markers will be measured by the number installed as completed units in place, ready for operation, and accepted by the RPR. Runway and taxiway lights will be measured by the number of each type installed as completed units in place, ready for operation, and accepted by the RPR. Guidance signs will be measured by the number of each type and size installed as completed units, in place, ready for operation, and accepted by the RPR. Runway End Identifier Lights shall be measured by each system *lump sum* installed as a completed unit in place, ready for operation, and accepted by the RPR.

Precision Approach Path Indicator shall be measured by each system *lump sum* installed as a completed unit, in place, ready for operation, and accepted by the RPR. Abbreviated Precision Approach Path Indicator shall be measured by each system installed as a completed unit, in place, ready for operation, and accepted by the RPR.

BASIS OF PAYMENT

125-5.1 Payment will be made at the Contract unit price for each complete runway or taxiway light, guidance sign, reflective marker, runway end identification light, precision approach path indicator, or abbreviated precision approach path indicator installed by the Contractor and accepted by the RPR. This payment will be full compensation for furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools and incidentals necessary to complete this item.

Payment will be made under:

Item L-125-5.1	L-858(L) Base Mounted, Size 2, 4-Module Guidance Sign, Installed -- per Each

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circulars (AC)

AC 150/5340-18	Standards for Airport Sign Systems
AC 150/5340-26	Maintenance of Airport Visual Aid Facilities
AC 150/5340-30	Design and Installation Details for Airport Visual Aids
AC 150/5345-5	Circuit Selector Switch
AC 150/5345-7	Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits
AC 150/5345-26	Specification for L-823 Plug and Receptacle, Cable Connectors
AC 150/5345-28	Precision Approach Path Indicator (PAPI) Systems
AC 150/5345-39	Specification for L-853, Runway and Taxiway Retroreflective Markers
AC 150/5345-42	Specification for Airport Light Bases, Transformer Housings, Junction Boxes, and Accessories
AC 150/5345-44	Specification for Runway and Taxiway Signs

AC 150/5345-46	Specification for Runway and Taxiway Light Fixtures
AC 150/5345-47	Specification for Series to Series Isolation Transformers for Airport Lighting Systems
AC 150/5345-51	Specification for Discharge-Type Flashing Light Equipment
AC 150/5345-53	Airport Lighting Equipment Certification Program

Engineering Brief (EB)

EB No. 67	Light Sources Other than Incandescent and Xenon for Airport and Obstruction Lighting Fixtures

END OF ITEM L-125

SPECIFICATIONS AND CONTRACT DOCUMENTS

FOR THE CONSTRUCTION OF

ADDISON AIRPORT

FUEL FARM EXIT RELOCATION AND PERIMETER ROAD REPAIRS

TOWN OF ADDISON, TEXAS
INFRASTRUCTURE AND DEVELOPMENT SERVICES
BID NUMBER 19-223

JUNE 2019

PREPARED BY

3010 Gaylord Parkway, Suite 190
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TOWN OF ADDISON, TEXAS

MAYOR

Joe Chow

COUNCIL MEMBERS

Paul Walden

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Guillermo Quintanilla

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Marlin Willesen

CITY MANAGER

Wesley Pierson

DIRECTOR OF INFRASTRUCTURE AND DEVELOPMENT SERVICES

Lisa Pyles

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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 Airport Fuel Farm Exit Relocation and Perimeter Road Repairs project. **Bids will be accepted until 2:00 p.m., Thursday, July 25, 2019** 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 19-223.**

   PAPER BIDS SHALL BE REQUIRED.

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. 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.

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, July 16, 2019 at 10:00am in the Addison Airport Conference Room located at 16051 Addison Rd. Suite #220 Addison, TX 75001. A site visit on the Airport 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 5:00pm on Friday, July 19, 2019. All questions received by this deadline will be answered by 5:00pm on Tuesday, July 23, 2019.**

11. The project consists of the three main project types. Base Bid A consists of the relocation of the existing fuel tanker transport truck exit for the fuel farm off George Haddow Drive and Addison Road. Base Bid B consists of the realignment of 800 linear feet of the airport perimeter road at the south end of the airfield starting at Taxiway Q. Base Bid C and additive alternates are for various concrete pavement repairs on airport perimeter road, aprons and taxiways.

SECTION IB

INSTRUCTIONS TO BIDDERS

INSTRUCTIONS TO BIDDERS

A. PROJECT: ADDISON AIRPORT FUEL FARM EXIT RELOCATION AND PERIMETER ROAD REPAIRS, 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 three main project types. Base Bid A consists of the relocation of the existing fuel tanker transport truck exit for the fuel farm off George Haddow Drive and Addison Road. Base Bid B consists of the realignment of 800 linear feet of the airport perimeter road at the south end of the airfield starting at Taxiway Q. Base Bid C and additive alternates are for various concrete pavement repairs on airport perimeter road, aprons and taxiways.

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, he may submit questions to the Town of Addison, no later than **5:00pm on Friday, July 19, 2019**. All questions received by this deadline will be answered by **5:00pm on Tuesday, July 23, 2019**. 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 **90 calendar days** to construct the project and achieve substantial completion. **See plans for work restrictions.** 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 19-223.XLS". 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:

INFRASTRUCTURE AND DEVELOPMENT SERVICES BID NUMBER 19-223

ADDISON AIRPORT FUEL FARM EXIT RELOCATION AND PERIMERTER ROAD REPAIRS

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 19-223** 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) 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 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 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.

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. Benchmarks and Horizontal Control are shown on the plans. There is no separate bid item for staking, therefore, the contractor must include value for staking in the various bid items as subsidiary to the contract. Any staking or re-staking that is required shall be the responsibility of the Contractor and shall be at no cost to the Owner.

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 Construction and Maintenance of Highways, Streets, and Bridges* adopted by the Texas Department of Transportation 2014; Standard Specifications for Public Works Construction (NCTCOG, 2017); 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

_____ , 2019

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 _____

Addendum No. 4 _____

The following pages contain all bid items for:

BID SCHEDULE – FUEL FARM EXIT RELOCATION AND PERIMETER ROAD REPAIRS
BID NUMBER 19-223

ADDISON AIRPORT
FUEL FARM EXIT RELOCATION AND PERIMETER ROAD REPAIRS
ENGINEER'S ESTIMATE OF PROBABLE COST
FUEL FARM EXIT RELOCATION - BASE BID A

ITEM NO.	SPEC. NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	BID AMOUNT
1	SS-120-3.1	SITE PREPARATION	L.S.	1		
Unit Price in Words:						
2	SS-350-5.1	30' AUTOMATIC SLIDING CANTILEVER GATE AND OPERATOR SYSTEM, INSTALLED	L.S.	1		
Unit Price in Words:						
3	F-162-5.1	8-FOOT BLACK PVC COATED CHAIN-LINK FENCE	L.F.	72		
Unit Price in Words:						
4	F-162-5.2	TEMPORARY CHAIN-LINK FENCE	L.F.	154		
Unit Price in Words:						
5	F-162-5.3	FENCE REMOVAL	L.F.	97		
Unit Price in Words:						
6	F-162-5.4	CONCRETE EROSION CONTROL STRIP	L.F.	72		
Unit Price in Words:						
7	P-152-4.1	UNCLASSIFIED EXCAVATION	C.Y.	51		
Unit Price in Words:						
8	TX-104-5.1	CONCRETE PAVEMENT REMOVAL	S.Y.	15		
Unit Price in Words:						
9	TX-104-5.2	SIDEWALK REMOVAL	S.Y.	38		
Unit Price in Words:						
10	TX-105-5.1	ASPHALT PAVEMENT REMOVAL	S.Y.	109		
Unit Price in Words:						
11	TX-162-5.1	BLOCK SODDING	S.Y.	352		
Unit Price in Words:						
12	TX-170-5.1	IRRIGATION RECONNECTION	L.S.	1		
Unit Price in Words:						
13	TX-260-6.1	LIME	TON	11		
Unit Price in Words:						
14	TX-260-6.2	LIME-TREATED SUBGRADE (6" THICKNESS)	S.Y.	331		
Unit Price in Words:						
15	TX-360-5.1	CONCRETE PAVEMENT (10" THICKNESS)	S.Y.	306		
Unit Price in Words:						

ITEM NO.	SPEC. NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	BID AMOUNT
16	TX-464-5.1	REINFORCED CONCRETE PIPE, 18", CLASS IV	L.F.	79		
Unit Price in Words:						
17	TX-465-5.1	4'X4' SINGLE GRATE PRE-FABRICATED INLET (COMPLETE)	EACH	2		
Unit Price in Words:						
18	TX-502-4.1	BARRICADES, SIGNS, AND TRAFFIC HANDLING	L.S.	1		
Unit Price in Words:						
19	TX-506-5.1	TEMPORARY EROSION CONTROL	L.S.	1		
Unit Price in Words:						
20	TX-531-5.1	CONCRETE SIDEWALK (5")	S.Y.	5		
Unit Price in Words:						
21	TX-531-5.2	BARRIER FREE RAMP	EACH	2		
Unit Price in Words:						
22	TX-752-5.1	TREE REMOVAL	EACH	2		
Unit Price in Words:						
				SUBTOTAL BASE BID A =		
Subtotal in Words:						

ADDISON AIRPORT
FUEL FARM EXIT RELOCATION AND PERIMETER ROAD REPAIRS
ENGINEER'S ESTIMATE OF PROBABLE COST
PERIMETER ROAD RELOCATION - BASE BID B

ITEM NO.	SPEC. NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	BID AMOUNT
1	SS-120-3.1	SITE PREPARATION	L.S.	1		
Unit Price in Words:						
2	F-162-5.2	TEMPORARY CHAIN-LINK FENCE	L.F.	287		
Unit Price in Words:						
3	F-162-5.3	FENCE REMOVAL	L.F.	320		
Unit Price in Words:						
4	P-152-4.2	EMBANKMENT	C.Y.	843		
Unit Price in Words:						
5	P-152-4.3	UNSUITABLE EXCAVATION	C.Y.	150		
Unit Price in Words:						
6	TX-104-5.1	CONCRETE PAVEMENT REMOVAL	S.Y.	373		
Unit Price in Words:						
7	TX-105-5.1	ASPHALT PAVEMENT REMOVAL	S.Y.	2,054		
Unit Price in Words:						
8	TX-162-5.1	BLOCK SODDING	S.Y.	3,268		
Unit Price in Words:						
9	TX-247-6.1	FLEXIBLE BASE (DENSITY CONTROL) (COMPLETE IN PLACE) (TYPE D GRADE 1) (8”)	S.Y.	404		
Unit Price in Words:						
10	TX-260-6.1	LIME	TON	72		
Unit Price in Words:						
11	TX-260-6.2	LIME-TREATED SUBGRADE (6" THICKNESS)	S.Y.	2,532		
Unit Price in Words:						
12	TX-360-5.1	CONCRETE PAVEMENT (10" THICKNESS)	S.Y.	2,170		
Unit Price in Words:						
13	TX-496-5.1	PIPE REMOVAL (LESS THAN 30" DIAMETER)	L.F.	40		
Unit Price in Words:						
14	TX-496-5.2	INLET REMOVAL	EACH	1		
Unit Price in Words:						
15	TX-506-5.1	TEMPORARY EROSION CONTROL	L.S.	1		
Unit Price in Words:						

ITEM NO.	SPEC. NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	BID AMOUNT
16	SS-300-5.1	LOCKOUT/TAGOUT AND CONSTANT CURRENT REGULATOR CALIBRATION PROCEDURES	L.S.	1		
Unit Price in Words:						
17	SS-301-5.1	EXISTING ELECTRICAL HANDHOLE, RELOCATED	EACH	2		
Unit Price in Words:						
18	SS-301-5.2	EXISTING CONCRETE ENCASED, ELECTRICAL JUNCTION STRUCTURE, REMOVED	EACH	2		
Unit Price in Words:						
19	SS-301-5.3	EXISTING BASE MOUNTED GUIDANCE SIGN, REMOVED	EACH	2		
Unit Price in Words:						
20	SS-301-5.4	EXISTING BASE MOUNTED EDGE LIGHT, REMOVED	EACH	4		
Unit Price in Words:						
21	SS-301-5.5	EXISTING L-861T BASE MOUNTED TAXIWAY EDGE LIGHT, RELOCATED	EACH	2		
Unit Price in Words:						
22	SS-310-5.1	TEMPORARY AIRFIELD LIGHTING	L.S.	1		
Unit Price in Words:						
23	L-108-5.1	TRENCHING FOR DIRECT-BURIED BARE COUNTERPOISE WIRE, 8-INCH MINIMUM DEPTH	L.F.	200		
Unit Price in Words:						
24	L-108-5.2	No. 8 AWG, 5kV, L-824, TYPE C CABLE, INSTALLED IN TRENCH, DUCT BANK OR CONDUIT	L.F.	250		
Unit Price in Words:						
25	L-108-5.3	No. 6 AWG, SOLID, BARE COUNTERPOISE WIRE, INSTALLED IN TRENCH, ABOVE THE DUCT BANK OR CONDUIT, INCLUDING CONNECTIONS/TERMINATIONS	L.F.	200		
Unit Price in Words:						
26	L-110-5.1	NON-ENCASED ELECTRICAL CONDUIT, 1-WAY 2"C	L.F.	200		
Unit Price in Words:						
27	L-110-5.2	NON-ENCASED ELECTRICAL CONDUIT, 1-WAY 4"C	L.F.	825		
Unit Price in Words:						
28	L-110-5.3	CONCRETE ENCASED ELECTRICAL CONDUIT, 1-WAY 4"C	L.F.	100		
Unit Price in Words:						
29	L-125-5.1	L-858(L) BASE MOUNTED, SIZE 2, 4-MODULE GUIDANCE SIGN, INSTALLED	EACH	1		
Unit Price in Words:						
				SUBTOTAL BASE BID B =		
Subtotal in Words:						

ADDISON AIRPORT
FUEL FARM EXIT RELOCATION AND PERIMETER ROAD REPAIRS
ENGINEER'S ESTIMATE OF PROBABLE COST
PAVEMENT REPAIRS AT AMERICAN FLYERS ROAD (NORTHBOUND) & AMERICAN FLYERS APRON TANGO - BASE BID C

PAVEMENT REPAIRS AT AMERICAN FLYERS ROAD (NORTHBOUND)

ITEM NO.	SPEC. NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	BID AMOUNT
1	SS-120-3.1	SITE PREPARATION	L.S.	1		
Unit Price in Words:						
2	SS-212-5.1	BIAXIAL GEOGRID	S.Y.	500		
Unit Price in Words:						
3	M-174-5.1	PCC PAVEMENT REPAIR (10") (CLASS P) - FULL SLAB	S.Y.	500		
Unit Price in Words:						
4	P-620-5.1	PAVEMENT MARKINGS, WHITE (TYPE I REFLECTIVE MEDIA)	S.F.	300		
Unit Price in Words:						
5	TX-275-6.1	CEMENT TREATED (NEW BASE) (6")	S.Y.	500		
Unit Price in Words:						
SUBTOTAL (AMERICAN FLYERS ROAD (NORTHBOUND)) =					**$0.00**	

PAVEMENT REPAIRS AT AMERICAN FLYERS APRON TANGO

ITEM NO.	SPEC. NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	BID AMOUNT
1	SS-120-3.1	SITE PREPARATION	L.S.	1		
Unit Price in Words:						
2	M-174-5.1	PCC PAVEMENT REPAIR (10") (CLASS P) - FULL SLAB	S.Y.	48		
Unit Price in Words:						
SUBTOTAL (AMERICAN FLYERS APRON TANGO) =						
Subtotal in Words:						

SUBTOTAL BASE BID C =	
Subtotal in Words:	
TOTAL BID - BASE BID A + BASE BID B + BASE BID C =	
Total Price in Words:	

ADDISON AIRPORT
FUEL FARM EXIT RELOCATION AND PERIMETER ROAD REPAIRS
ENGINEER'S ESTIMATE OF PROBABLE COST
PAVEMENT REPAIRS AT AMERICAN FLYERS APRON ALPHA - ADDITIVE ALTERNATE 1

ITEM NO.	SPEC. NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	BID AMOUNT
1	SS-120-3.1	SITE PREPARATION	L.S.	1		
Unit Price in Words:						
2	SS-212-5.1	BIAXIAL GEOGRID	S.Y.	500		
Unit Price in Words:						
3	M-174-5.1	PCC PAVEMENT REPAIR (10") (CLASS P) - FULL SLAB	S.Y.	500		
Unit Price in Words:						
4	P-620-5.1	PAVEMENT MARKINGS, WHITE (TYPE I REFLECTIVE MEDIA)	S.F.	12		
Unit Price in Words:						
5	TX-275-6.1	CEMENT TREATED (NEW BASE) (6")	S.Y.	500		
Unit Price in Words:						
				TOTAL ADDITIVE ALTERNATE 1 =		
Total in Words:						

ADDISON AIRPORT
FUEL FARM EXIT RELOCATION AND PERIMETER ROAD REPAIRS
ENGINEER'S ESTIMATE OF PROBABLE COST
PAVEMENT REPAIRS AT TURBINE AIRCRAFT SERVICE ROAD & FLIGHTLINE APRON ENTRANCE - ADDITIVE ALTERNATE 2

PAVEMENT REPAIRS AT TURBINE AIRCRAFT SERVICE ROAD

ITEM NO.	SPEC. NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	BID AMOUNT
1	SS-120-3.1	SITE PREPARATION	L.S.	1		
Unit Price in Words:						
2	M-174-5.1	PCC PAVEMENT REPAIR (10") (CLASS P) - FULL SLAB	S.Y.	32		
Unit Price in Words:						
		SUBTOTAL (TURBINE AIRCRAFT SERVICE ROAD) =				
Subtotal in Words:						

PAVEMENT REPAIRS AT FLIGHTLINE APRON ENTRANCE

ITEM NO.	SPEC. NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	BID AMOUNT
1	SS-120-3.1	SITE PREPARATION	L.S.	1		
Unit Price in Words:						
2	SS-212-5.1	BIAXIAL GEOGRID	S.Y.	767		
Unit Price in Words:						
3	M-174-5.2	PCC PAVEMENT REPAIR (12") (CLASS P) - FULL SLAB	S.Y.	767		
Unit Price in Words:						
4	P-620-5.1	PAVEMENT MARKINGS, WHITE (TYPE I REFLECTIVE MEDIA)	S.F.	160		
Unit Price in Words:						
5	TX-275-6.1	CEMENT TREATED (NEW BASE) (6")	S.Y.	767		
Unit Price in Words:						
		SUBTOTAL (FLIGHTLINE APRON ENTRANCE) =				
Subtotal in Words:						

TOTAL ADDITIVE ALTERNATE 2 =	
Total in Words:	

ADDISON AIRPORT
FUEL FARM EXIT RELOCATION AND PERIMETER ROAD REPAIRS
ENGINEER'S ESTIMATE OF PROBABLE COST
PERIMETER ROAD AND APRON REPAIR AT FLEXJET - ADDITIVE ALTERNATE 3

PERIMETER ROAD REPAIR AT FLEXJET

ITEM NO.	SPEC. NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	BID AMOUNT
1	SS-120-3.1	SITE PREPARATION	L.S.	1		
Unit Price in Words:						
2	M-174-5.1	PCC PAVEMENT REPAIR (10") (CLASS P) - FULL SLAB	S.Y.	96		
Unit Price in Words:						
		SUBTOTAL (PERIMETER ROAD REPAIR AT FLEXJET) =				
Subtotal in Words:						

APRON REPAIR AT FLEXJET

ITEM NO.	SPEC. NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	BID AMOUNT
1	SS-120-3.1	SITE PREPARATION	L.S.	1		
Unit Price in Words:						
2	M-174-5.2	PCC PAVEMENT REPAIR (12") (CLASS P) - FULL SLAB	S.Y.	48		
Unit Price in Words:						
		SUBTOTAL (APRON REPAIR AT FLEXJET) =				
Subtotal in Words:						

TOTAL ADDITIVE ALTERNATE 3 =	
Total in Words:	

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, sanitary sewer, and storm sewer construction and/or relocation projects working in confined areas 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 19-223, FUEL FARM EXIT RELOCATION AND PERIMETER ROAD REPAIRS

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 _____, 2019, 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 Dallas**,** County of Dallas, State of Texas, Party of the Second Part, hereinafter termed CONTRACTOR.

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

INFRASTRUCTURE AND DEVELOPMENT SERVICES BID NUMBER 19-223, FUEL FARM EXIT RELOCATION AND PERIMETER ROAD REPAIRS

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 sixty **(90)** 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 _____ in current funds for the performance of the Contract in accordance with the Proposal submitted thereof for the **all Base Bids and Additive Alternates,** 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 _____, 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

INFRASTRUCTURE AND DEVELOPMENT SERVICES
BID NUMBER 19-223, FUEL FARM EXIT RELOCATION AND PERIMETER ROAD REPAIRS

_____

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 _____, 20__.

_____
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," 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: FUEL FARM EXIT RELOCATION AND PERIMETER ROAD REPAIRS ("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);

Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges – Texas Department of Transportation, 2014;

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 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** 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, July 19, 2019**. 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 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 A, Base Bid B, and Base Bid C. Additive Alternate 1, Additive Alternate 2, and Additive Alternate 3 will be awarded based on funding availability.

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 **the base bid** 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 the **90 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 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.**

23. **COPIES OF PLANS FURNISHED:** One (1) copy of ~~24" x 36"~~ **11" x 17"**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.

FUEL FARM EXIT RELOCATION AND PERIMETER ROAD REPAIRS

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 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:

□ Paving Mix Designs	□ Traffic Control Plan	□ Water Main Pipe
□ Storm Sewer Pipe	□ Sanitary Sewer Pipe/Fittings	□ Valves & Boxes
□ Fire Hydrants	□ Manholes & Vaults	□ Backfill Materials
□ Finishes		

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 adjacent hangars shall be maintained at all times unless otherwise directed by the Engineer and/or Town of Addison. Contractor shall also maintain sufficient access throughout the Project limits to the existing apartment buildings and businesses during construction operations.

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. <u>MODIFICATIONS TO THE LANGUAGE OF THE GENERAL PROVISIONS</u>: 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 100-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, 2017 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. **CONTRACTOR REPRESENTATIONS:** 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. TX190025:

General Decision Number: TX190025 01/04/2019 TX25

Superseded General Decision Number: TX20180035

State: Texas

Construction Type: Highway

Counties: Archer, Callahan, Clay, Collin, Dallas, Delta, Denton, Ellis, Grayson, Hunt, Johnson, Jones, Kaufman, Parker, Rockwall, Tarrant and Wise Counties in Texas.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of $10.60 for calendar year 2019 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 $10.60 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 2019. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). 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	01/04/2019

* SUTX2011-007 08/03/2011

	Rates	Fringes
CONCRETE FINISHER (Paving and Structures)	$14.12	
ELECTRICIAN	$19.80	
FORM BUILDER/FORM SETTER		
Paving & Curb	$13.16	
Structures	$13.84	
LABORER		
Asphalt Raker	$12.69	
Flagger	$10.06	
Laborer, Common	$10.72	
Laborer, Utility	$12.32	
Pipelayer	$13.24	
Work Zone Barricade Servicer	$11.68	
POWER EQUIPMENT OPERATOR:		
Asphalt Distributor	$15.32	
Asphalt Paving Machine	$13.99	
Broom or Sweeper Concrete Pavement	$11.74	
Finishing Machine	$16.05	
Concrete Saw	$14.48	
Crane Operator, Lattice Boom 80 Tons or Less	$17.27	
Crane Operator, Lattice Boom over 80 Tons	$20.52	
Crane, Hydraulic 80 Tons or Less	$18.12	
Crawler Tractor	$14.07	
Excavator, 50,000 pounds or Less	$17.19	
Excavator, over 50,000 pounds	$16.99	
Foundation Drill , Truck Mounted	$21.07	
Foundation Drill, Crawler Mounted	$17.99	
Front End Loader 3 CY or Less	$13.69	
Front End Loader, over 3 CY	$14.72	
Loader/Backhoe	$15.18	
Mechanic	$17.68	
Milling Machine	$14.32	
Motor Grader, Fine Grade	$17.19	
Motor Grader, Rough	$16.02	
Pavement Marking Machine	$13.63	
Reclaimer/Pulverizer	$11.01	

Roller, Asphalt	$13.08
Roller, Other	$11.51
Scraper	$12.96
Small Slipform Machine	$15.96
Spreader Box	$14.73
Servicer	$14.58
Steel Worker (Reinforcing)	$16.18
TRUCK DRIVER	
Lowboy-Float	$16.24
Off Road Hauler	$12.25
Single Axle	$12.31
Single or Tandem Axle Dump Trunk	$12.62
Tandem Axle Tractor with Semi Trailer	$12.86
Transit-Mix	$14.14
WELDER	$14.84

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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. 0198 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 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.

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END OF GENERAL DECISION

90. **BID ITEMS/REFERENCE SPECIFICATIONS:** The requirements of NCTCOG standard specifications for Public Works construction 4th Edition dated 2017, and TxDOT standard specifications for construction and maintenance of highways, streets and bridges, dated 2004, shall apply as described.

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 (2014), the North Central Texas Council of Governments (NCTCOG) Standard Specifications for Public Works Construction, Fifth Edition (2017), 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.~~

The specifications included with this document govern if there are any discrepancies between them and the listed specifications.

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 TS

TECHNICAL SPECIFICATIONS

SS-110	Standard Specifications
SS-120	Site Preparation
SS-212	Geogrid
SS-300	Basic Electrical Requirements
SS-301	Electrical Demolition and Relocation Work
SS-310	Airport Lighting Systems
SS-350	Automatic Gate Operators
F-162	Chain-Link Fence
M-170	Crack and Joint Repair
M-174	Repair of Pavement Distresses in Rigid Pavements
P-152	Excavation, Subgrade, and Embankment
P-620	Runway and Taxiway Painting
TX-104	Removing Concrete
TX-105	Removing Treated and Untreated Base and Asphalt Pavement
TX-162	Sodding for Erosion Control
TX-170	Irrigation System
TX-216	Proof Rolling
TX-247	Flexible Base
TX-260	Lime Treatment (Road-Mixed)
TX-275	Cement Treated (Road-Mixed)
TX-360	Concrete Pavement
TX-421	Hydraulic Cement Concrete
TX-464	Reinforced Concrete Pipes
TX-465	Junction Boxes, Manholes, and Inlets
TX-496	Removing Structures
TX-502	Barricades, Signs, and Traffic Handling
TX-506	Temporary Erosion Controls
TX-531	Sidewalk
TX-752	Tree and Brush Removal
L-108	Underground Power Cable for Airports
L-110	Airport Underground Electrical Duct Banks and Conduits
L-125	Installation of Airport Lighting Systems

SECTION IS

ADDITIONAL INSURANCE REQUIREMENTS

TOWN OF ADDISON, TEXAS
ADDISON AIRPORT FUEL FARM EXIT RELOCATION AND PERIMETER ROAD REPAIRS

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:** _____

Work Session and Regular Meeting **10.**

Meeting Date: 08/27/2019

Department: Parks & Recreation

Pillars: Optimize the Addison Brand

AGENDA CAPTION:

Consider Action to Approve the **Location of a Stainless Steel Sculpture in Front of the Addison Conference & Theatre Center.**

BACKGROUND:

The Addison Arbor Foundation presented the proposed location for a stainless steel sculpture to Council during work session. This agenda item is to take action on placing the sculpture in the half circle drive located in front of the Addison Conference & Theatre Center.

RECOMMENDATION:

Administration recommends approval.

Attachments

Proposed Location of Sculpture at the Addison Theatre and Conference Center

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ADDISON ARBOR FOUNDATION

Public Art Location Request ‘Tango Fantasia’

Artist: Art Fairchild

Materials: Stainless Steel

Size: 15’ x 10’ x 5’



Work Session and Regular Meeting **11.**

Meeting Date: 08/27/2019

Department: City Manager

Milestones: Define and promote Addison Identity

AGENDA CAPTION:

Consider Action to Approve the **Location for the Powder-Coated Steel and Cable Sculpture Within the Public Art Easement in the AMLI Development and Authorize the City Manager to Execute the Agreement.**

BACKGROUND:

The Addison Arbor Foundation presented a proposed sculpture to Council during the work session. This agenda item is to take action to approve placing the art in the public art easement in the AMLI Development. The sculpture and installation are funded by a donation from AMLI Development.

RECOMMENDATION:

Administration recommends approval.

Attachments

Public Art Easement Agreement - Spectra

NOTICE OF CONFIDENTIALITY RIGHTS: IF YOU ARE A NATURAL PERSON, YOU MAY REMOVE OR STRIKE ANY OR ALL OF THE FOLLOWING INFORMATION FROM THIS INSTRUMENT BEFORE IT IS FILED FOR RECORD IN THE PUBLIC RECORDS: YOUR SOCIAL SECURITY NUMBER OR YOUR DRIVER'S LICENSE NUMBER.

STATE OF TEXAS §
§
COUNTY OF DALLAS §

PERMANENT PUBLIC ART EASEMENT

DATE: August 9, 2019

GRANTOR: PPF AMLI Quorum Dr LLC
5057 Keller Springs Rd, Suite 250
Dallas, Texas 75001
(Dallas County, Texas)

GRANTEE: Town of Addison, Texas
5300 Belt Line Road
Dallas, Texas 75254
(Dallas County, Texas)

GRANTOR'S LIENHOLDER(S): None.

CONSIDERATION: Ten Dollars ($10.00) and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged.

EASEMENT PROPERTY: See **Exhibit A** attached hereto and incorporated herein by reference.

EXCEPTIONS TO CONVEYANCE AND WARRANTY: All validly existing and recorded easements, rights-of-way, prescriptive rights, restrictions, reservations, covenants, conditions, rights of parties in possession, leases, ground leases, oil and gas leases, mineral severances and other instruments that affect or relate in any way to the Easement Property; rights of adjoining owners in any walls and fences situated on a common boundary; any discrepancies, conflicts or shortages in area or boundary lines; and any encroachments or overlapping of improvements (collectively, the "Permitted Exceptions").

GRANTOR, for the CONSIDERATION paid to GRANTOR, hereby GRANTS, SELLS, AND CONVEYS to GRANTEE, its successors and assigns, a non-exclusive, perpetual easement (the "Easement") for the public use for public art exhibits ("Art") upon that portion of the Easement Property more fully described in **Exhibit A** attached hereto and incorporated herein for all pertinent purposes, such access to be used for public access and art installation; together with the right and privilege of GRANTEE to at any and all times to enter the Easement Property, or any part thereof, for the purpose of maintaining, replacing, and repairing the Easement Property, for use by the public for Art.

TO HAVE AND TO HOLD the above-described Easement, together with all and singular the rights and appurtenances thereto in anywise belonging unto GRANTEE, and GRANTEE's successors and assigns forever, subject to the Permitted Exceptions; and GRANTOR does hereby bind itself and its successor and assigns to WARRANT AND FOREVER DEFEND all and singular the easement unto GRANTEE, its successor and assigns, against every person whomsoever lawfully claiming or to claim the same, or any part thereof, subject to the Permitted Exceptions.

In the event GRANTOR fails to maintain, replace or repair the Easement Property, and GRANTEE elects to enter the Easement Property, or any part thereof, for the purpose of maintaining, replacing and repairing the Easement Property, as provided above, GRANTEE agrees to use reasonable efforts to permit free and unobstructed vehicular and pedestrian ingress to, and egress from, the real property, buildings and other and related structures, fixtures and improvements located adjacent to the Easement Property and owned by GRANTOR, GRANTOR'S tenants and/or others (the "Adjacent Property") on, over and across any driveways, or the paving or curbing within or associated with any driveways, located on the Easement Property (collectively, the "Driveway Areas"). GRANTEE agrees to use reasonable efforts to conduct any such maintenance, replacement, and repair activities by or on behalf of GRANTEE within the Easement Property in such manner as will avoid any unnecessary interruption or loss of use of the Driveway Areas or the Adjacent Property by, or inconvenience to, GRANTOR or any other persons or entities having the right to use such Driveway Areas and/or the Adjacent Property.

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

EXECUTED effective as of the date first written above.

[SIGNATURES APPEAR ON THE FOLLOWING PAGES]

GRANTEE:

TOWN OF ADDISON, TEXAS

By:_____
Wesley S. Pierson, City Manager

STATE OF TEXAS §
§
COUNTY OF DALLAS §

Before me, the undersigned Notary Public, on this day personally appeared Wesley S. Pierson, City Manager of the TOWN OF ADDISON, TEXAS, 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 purposes and consideration therein expressed and as the act and deed of said town.

Given under my hand and seal of office this _____ day of August, 2019.

_____
Notary Public, State of Texas

[SEAL]

GRANTOR:

PPF AMLI Quorum Dr LLC
a Delaware Limited Liability company

By: _____
Name: Taylor Bowen
Title: Executive Vice President & COO

STATE OF TEXAS §
§
COUNTY OF DALLAS §

Before me, the undersigned Notary Public, on this day personally appeared Taylor Bowen, V.P of, AMLI Quorum LLC, a Texas _____, 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 purposes and consideration therein expressed and as the act and deed of said corporation and limited liability company.

Given under my hand and seal of office this 8th day of August, 2019.

DENISE LYNETTE JACKSON EALY
Notary Public State of Texas
Comm. Expires 12-03-2021
Notary ID# 12405953-4

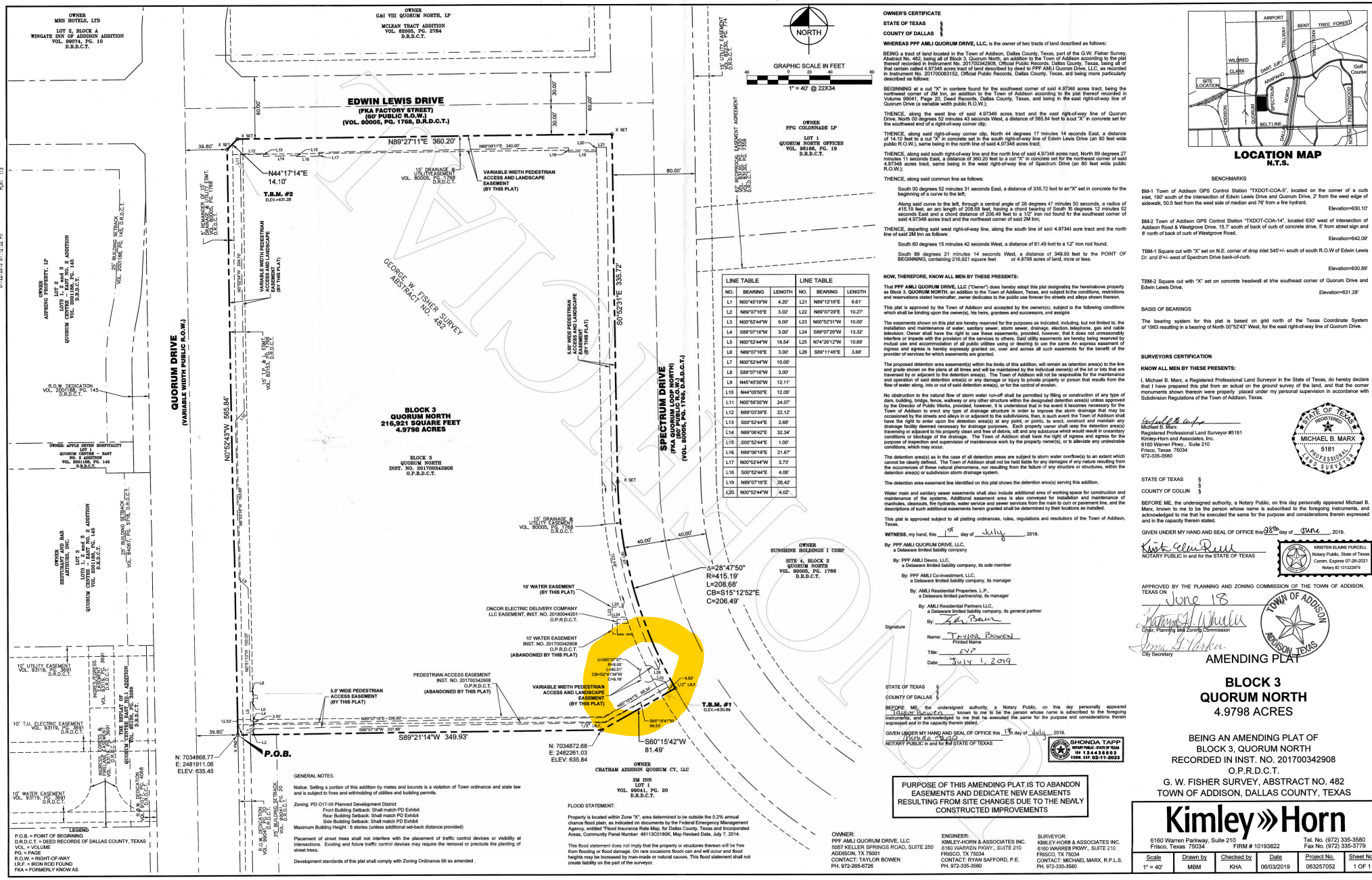
_____
Notary Public, State of Texas

[SEAL]

[SIGNATURES CONTINUE ON THE FOLLOWING PAGE]

EXHIBIT A to Public Art Easement

[Description of the Easement Property Attached]



LINE TABLE			LINE TABLE		
NO.	BEARING	LENGTH	NO.	BEARING	LENGTH
L1	N00°45'19"W	4.20'	L21	N89°12'18"E	9.61'
L2	N89°07'16"E	3.02'	L22	N89°07'29"E	10.27'
L3	N00°52'44"W	9.00'	L23	N00°52'31"W	10.00'
L4	S89°07'16"W	3.00'	L24	S89°07'29"W	13.32'
L5	N00°52'44"W	18.54'	L25	N74°26'12"W	10.69'
L6	N89°07'16"E	3.00'	L26	S89°11'46"E	3.68'
L7	N00°52'44"W	10.00'			
L8	S89°07'16"W	3.00'			
L9	N45°45'30"W	12.11'			
L10	N44°05'52"E	12.05'			
L11	N00°56'30"W	24.07'			
L12	N89°03'39"E	22.12'			
L13	S00°52'44"E	2.68'			
L14	N89°06'42"E	32.34'			
L15	S00°52'44"E	1.00'			
L16	N89°06'18"E	21.67'			
L17	N00°52'44"W	3.73'			
L18	S00°52'44"E	4.06'			
L19	N89°07'16"E	26.42'			
L20	N00°52'44"W	4.02'			

LEGEND
P.O.B. = POINT OF BEGINNING
D.R.D.C.T. = DEED RECORDS OF DALLAS COUNTY, TEXAS
VOL. = VOLUME
PG. = PAGE
R.O.W. = RIGHT-OF-WAY
I.R.F. = IRON ROD FOUND
FKA = FORMERLY KNOW AS

GENERAL NOTES:

Notice: Selling a portion of this addition by metes and bounds is a violation of Town ordinance and state law and is subject to fines and withholding of utilities and building permits.

Zoning: PD O17-05 Planned Development District
Front Building Setback: Shall match PD Exhibit
Rear Building Setback: Shall match PD Exhibit
Side Building Setback: Shall match PD Exhibit
Maximum Building Height : 6 stories (unless additional set-back distance provided)

Placement of street trees shall not interfere with the placement of traffic control devices or visibility at intersections. Existing and future traffic control devices may require the removal or preclude the planting of street trees.

Development standards of this plat shall comply with Zoning Ordinance 66 as amended .

FLOOD STATEMENT:

Property is located within Zone "X", area determined to be outside the 0.2% annual chance flood plain, as indicated on documents by the Federal Emergency Management Agency, entitled "Flood Insurance Rate Map, for Dallas County, Texas and Incorporated Areas, Community Panel Number 48113C0180K, Map Revised Date, July 7, 2014.

This flood statement does not imply that the property or structures thereon will be free from flooding or flood damage. On rare occasions floods can and will occur and flood heights may be increased by man-made or natural causes. This flood statement shall not create liability on the part of the surveyor.

OWNER'S CERTIFICATE

STATE OF TEXAS §
COUNTY OF DALLAS §

WHEREAS PPF AMLI QUORUM DRIVE, LLC, is the owner of two tracts of land described as follows:

BEING a tract of land located in the Town of Addison, Dallas County, Texas, part of the G.W. Fisher Survey, Abstract No. 482, being all of Block 3, Quorum North, an addition to the Town of Addison according to the plat thereof recorded in Instrument No. 201700342908, Official Public Records, Dallas County, Texas, being all of that certain called 4.97348 acres tract of land described by deed to PPF AMLI Quorum Drive, LLC, as recorded in Instrument No. 201700063152, Official Public Records, Dallas County, Texas, and being more particularly described as follows:

BEGINNING at a cut "X" in contere found for the southwest corner of said 4.97348 acres tract, being the northwest corner of 2M Inn, an addition to the Town of Addison according to the plat thereof recorded in Volume 99041, Page 20, Deed Records, Dallas County, Texas, and being in the east right-of-way line of Quorum Drive (a variable width public R.O.W.);

THENCE, along the west line of said 4.97348 acres tract and the east right-of-way line of Quorum Drive, North 00 degrees 52 minutes 43 seconds West, a distance of 565.84 feet to a cut "X" in concrete set for the southwest end of a right-of-way corner clip;

THENCE, along said right-of-way corner clip, North 44 degrees 17 minutes 14 seconds East, a distance of 14.10 feet to a cut "X" in concrete set in the south right-of-way line of Edwin Lewis Drive (an 80 feet wide public R.O.W.), same being in the north line of said 4.97348 acres tract;

THENCE, along said south right-of-way line and the north line of said 4.97348 acres tract, North 89 degrees 27 minutes 11 seconds East, a distance of 360.20 feet to a cut "X" in concrete set for the northeast corner of said 4.97348 acres tract, same being in the west right-of-way line of Spectrum Drive (an 80 feet wide public R.O.W.);

THENCE, along said common line as follows:

South 00 degrees 52 minutes 31 seconds East, a distance of 335.72 feet to an "X" set in concrete for the beginning of a curve to the left;

Along said curve to the left, through a central angle of 28 degrees 47 minutes 50 seconds, a radius of 415.19 feet, an arc length of 208.68 feet, having a chord bearing of South 15 degrees 12 minutes 52 seconds East and a chord distance of 206.49 feet to a 1/2" iron rod found for the southeast corner of said 4.97348 acres tract and the northeast corner of said 2M Inn;

THENCE, departing said west right-of-way line, along the south line of said 4.97343 acre tract and the north line of said 2M Inn as follows:

South 60 degrees 15 minutes 42 seconds West, a distance of 81.49 feet to a 1/2" iron rod found;

South 89 degrees 21 minutes 14 seconds West, a distance of 349.93 feet to the POINT OF BEGINNING, containing 216,921 square feet or 4.9798 acres of land, more or less.

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS:

That **PPF AMLI QUORUM DRIVE, LLC** ("Owner") does hereby adopt this plat designating the hereinabove property as Block 3, **QUORUM NORTH**, an addition to the Town of Addison, Texas, and subject to the conditions, restrictions and reservations stated hereinafter, owner dedicates to the public use forever the streets and alleys shown thereon.

This plat is approved by the Town of Addison and accepted by the owners(s), subject to the following conditions which shall be binding upon the owner(s), his heirs, grantees and successors, and assigns

The easements shown on this plat are hereby reserved for the purposes as indicated, including, but not limited to, the installation and maintenance of water, sanitary sewer, storm sewer, drainage, election, telephone, gas and cable television. Owner shall have the right to use these easements, provided, however, that it does not unreasonably interfere or impede with the provision of the services to others. Said utility easements are hereby being reserved by mutual use and accommodation of all public utilities using or desiring to use the same An express easement of ingress and egress is hereby expressly granted on, over and across all such easements for the benefit of the provider of services for which easements are granted.

The proposed detention area easement(s) within the limits of this addition, will remain as detention area(s) to the line and grade shown on the plans at all times and will be maintained by the individual owner(s) of the lot or lots that are traversed by or adjacent to the detention area(s). The Town of Addison will not be responsible for the maintenance and operation of said detention area(s) or any damage or injury to private property or person that results from the flow of water along, into or out of said detention area(s), or for the control of erosion.

No obstruction to the natural flow of storm water run-off shall be permitted by filling or construction of any type of dam, building, bridge, fence, walkway or any other structure within the designated detention area(s) unless approved by the Director of Public Works, provided, however, it is understood that in the event it becomes necessary for the Town of Addison to erect any type of drainage structure in order to improve the storm drainage that may be occasioned by the streets and alleys in or adjacent to the subdivisions, then, in such event the Town of Addison shall have the right to enter upon the detention area(s) at any point, or points, to erect, construct and maintain any drainage facility deemed necessary for drainage purposes. Each property owner shall keep the detention area(s) traversing or adjacent to his property clean and free of debris, silt and any substance which would result in unsanitary conditions or blockage of the drainage. The Town of Addison shall have the right of ingress and egress for the purpose of inspection and supervision of maintenance work by the property owner(s), or to alleviate any undesirable conditions, which may occur.

The detention area(s) as in the case of all detention areas are subject to storm water overflow(s) to an extent which cannot be clearly defined. The Town of Addison shall not be held liable for any damages of any nature resulting from the occurrences of these natural phenomena, nor resulting from the failure of any structure or structures, within the detention area(s) or subdivision storm drainage system.

The detention area easement line identified on this plat shows the detention area(s) serving this addition.

Water main and sanitary sewer easements shall also include additional area of working space for construction and maintenance of the systems. Additional easement area is also conveyed for installation and maintenance of manholes, cleanouts, fire hydrants, water service and sewer services from the main to curb or pavement line, and the descriptions of such additional easements herein granted shall be determined by their locations as installed.

This plat is approved subject to all platting ordinances, rules, regulations and resolutions of the Town of Addison, Texas.

WITNESS, my hand, this 1st day of July, 2019.

By: PPF AMLI QUORUM DRIVE, LLC,
a Delaware limited liability company

By: PPF AMLI Devco, LLC,
a Delaware limited liability company, its sole member

By: PPF AMLI Co-Investment, LLC,
a Delaware limited liability company, its manager

By: AMLI Residential Properties, L.P.,
a Delaware limited partnership, its manager

By: AMLI Residential Partners LLC,
a Delaware limited liability company, its general partner

Signature By: [signature]

Name: Taylor Bowen
Printed Name

Title: EVP

Date: July 1, 2019

STATE OF TEXAS §
COUNTY OF DALLAS §

BEFORE ME, the undersigned authority, a Notary Public, on this day personally appeared Taylor Bowen known to me to be the person whose name is subscribed to the foregoing instruments, and acknowledged to me that he executed the same for the purpose and considerations therein expressed and in the capacity therein stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this 1st day of July, 2019.

Notary Public in and for the State of Texas

SHONDA TAPP
NOTARY PUBLIC - STATE OF TEXAS
ID# 12443650-2
COMM. EXP. 02-11-2023

PURPOSE OF THIS AMENDING PLAT IS TO ABANDON EASEMENTS AND DEDICATE NEW EASEMENTS RESULTING FROM SITE CHANGES DUE TO THE NEWLY CONSTRUCTED IMPROVEMENTS

LOCATION MAP
N.T.S.

BENCHMARKS

BM-1 Town of Addison GPS Control Station "TXDOT-COA-5", located on the corner of a curb inlet, 190' south of the intersection of Edwin Lewis Drive and Quorum Drive, 2' from the west edge of sidewalk, 50.5 feet from the west side of median and 76' from a fire hydrant.

Elevation=630.10'

BM-2 Town of Addison GPS Control Station "TXDOT-COA-14", located 630' west of intersection of Addison Road & Westgrove Drive, 15.7' south of back of curb of concrete drive, 5' from street sign and 8' north of back of curb of Westgrove Road.

Elevation=642.09'

TBM-1 Square cut with "X" set on N.E. corner of drop inlet 545'+/- south of south R.O.W of Edwin Lewis Dr. and 8'+/- west of Spectrum Drive back-of-curb.

Elevation=630.89'

TBM-2 Square cut with "X" set on concrete headwall at trhe southeast corner of Quorum Drive and Edwin Lewis Drive.

Elevation=631.28'

BASIS OF BEARINGS

The bearing system for this plat is based on grid north of the Texas Coordinate System of 1983 resulting in a bearing of North 00°52'43" West, for the east right-of-way line of Quorum Drive.

SURVEYORS CERTIFICATION

KNOW ALL MEN BY THESE PRESENTS:

I, Michael B. Marx, a Registered Professional Land Surveyor in the State of Texas, do hereby declare that I have prepared this plat from an actual on the ground survey of the land, and that the corner monuments shown thereon were properly placed under my personal supervision in accordance with Subdivision Regulations of the Town of Addison, Texas.

Michael B. Marx
Registered Professional Land Surveyor #5181
Kimley-Horn and Associates, Inc.
6160 Warren Pkwy., Suite 210
Frisco, Texas 75034
972-335-3580

STATE OF TEXAS
REGISTERED
MICHAEL B. MARX
5181
PROFESSIONAL
LAND SURVEYOR

STATE OF TEXAS §
COUNTY OF COLLIN §

BEFORE ME, the undersigned authority, a Notary Public, on this day personally appeared Michael B. Marx, known to me to be the person whose name is subscribed to the foregoing instruments, and acknowledged to me that he executed the same for the purpose and considerations therein expressed and in the capacity therein stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this 28th day of June, 2019.

NOTARY PUBLIC in and for the STATE OF TEXAS

KRISTEN ELAINE PURCELL
Notary Public, State of Texas
Comm. Expires 07-26-2021
Notary ID 131222979

APPROVED BY THE PLANNING AND ZONING COMMISSION OF THE TOWN OF ADDISON, TEXAS ON June 18, 2019.

Chair, Planning and Zoning Commission

City Secretary

TOWN OF ADDISON
ADDISON, TEXAS

AMENDING PLAT

BLOCK 3
QUORUM NORTH
4.9798 ACRES

BEING AN AMENDING PLAT OF
BLOCK 3, QUORUM NORTH
RECORDED IN INST. NO. 201700342908
O.P.R.D.C.T.
G. W. FISHER SURVEY, ABSTRACT NO. 482
TOWN OF ADDISON, DALLAS COUNTY, TEXAS

OWNER:
PPF AMLI QUORUM DRIVE, LLC
5057 KELLER SPRINGS ROAD, SUITE 250
ADDISON, TX 75001
CONTACT: TAYLOR BOWEN
PH. 972-265-6726

ENGINEER:
KIMLEY-HORN & ASSOCIATES INC.
6160 WARREN PKWY., SUITE 210
FRISCO, TX 75034
CONTACT: RYAN SAFFORD, P.E.
PH. 972-335-3580

SURVEYOR:
KIMLEY-HORN & ASSOCIATES INC.
6160 WARREN PKWY., SUITE 210
FRISCO, TX 75034
CONTACT: MICHAEL MARX, R.P.L.S.
PH. 972-335-3580

Kimley»Horn
6160 Warren Parkway, Suite 210
Frisco, Texas 75034
Tel. No. (972) 335-3580
Fax No. (972) 335-3779
FIRM # 10193822

Scale	Drawn by	Checked by	Date	Project No.	Sheet No.
1" = 40'	MBM	KHA	06/03/2019	063257052	1 OF 1

DWG NAME: K:\FRI_SURVEY\063257052\AMLI ADDISON\DWG\063257052 AMENDING PLAT.DWG PLOTTED BY: MARX, MICHAEL 6/4/2019 8:24 AM LAST SAVED 6/4/2019 8:23 AM

UNOFFICIAL

Filed and Recorded
Official Public Records
John F. Warren, County Clerk
Dallas County, TEXAS
07/22/2019 01:12:52 PM
$64.00

20190018851

TAX CERTIFICATE

JOHN R. AMES, CTA
DALLAS COUNTY TAX ASSESSOR/COLLECTOR
1201 Elm Street, Suite 2600
Dallas, Texas 75270

Issued To:
PPF AMLI QUORUM DR LLC
5057 KELLER SPRINGS RD STE 250
ADDISON , TX 75001-6912

Legal Description
QUORUM NORTH
BLK 3 ACS 4.9798
INT201700063152 DD03022017 CO-DC
0009299368000 31000092993

Parcel Address: 5015 SPECTRUM DR, CA
Legal Acres: .0000

Account Number: **100-052-400-30000000**

Certificate No: 93764
Certificate Fee: $10.00 CREDIT

Print Date: 05/09/2019 02:18:16 PM
Paid Date: 05/09/2019
Issue Date: 05/09/2019
Operator ID: TARSHA_LESUEUR

TAX CERTIFICATES ARE ISSUED WITH THE MOST CURRENT INFORMATION AVAILABLE. ALL ACCOUNTS ARE SUBJECT TO CHANGE PER SECTION 26.15 AND 11.43(i) OF THE TEXAS PROPERTY TAX CODE. THIS IS TO CERTIFY THAT ALL TAXES DUE ON THE ABOVE DESCRIBED PROPERTY HAVE BEEN EXAMINED, UP TO AND INCLUDING THE YEAR 2018. ALL TAXES ARE PAID IN FULL

Exemptions:

Certified Owner:
PPF AMLI QUORUM DR LLC
5057 KELLER SPRINGS RD STE 250
ADDISON , TX 75001-6912

2018 Value:	3,536,820
2018 Levy:	$92,612.88
2018 Levy Balance:	$0.00
Prior Year Levy Balance:	$0.00
Total Levy Due:	$0.00
P&I + Attorney Fee:	$0.00
Total Amount Due:	$0.00

Certified Tax Unit(s):
1002 DALLAS COUNTY
1021 PARKLAND HOSPITAL
1031 DALLAS COUNTY COMMUNITY COLL
1041 SCHOOL EQUALIZATION
1102 DALLAS ISD
1201 TOWN OF ADDISON

Reference (GF) No: N/A
Issued By:
JOHN R. AMES, CTA
DALLAS COUNTY TAX ASSESSOR/COLLECTOR
Tarsha LeSueur

53.1.88

UNOFFICIAL

Work Session and Regular Meeting **12.**

Meeting Date: 08/27/2019

Department: Infrastructure- Development Services

AGENDA CAPTION:

Consider Action to Approve a **Resolution Authorizing the City Manager to Execute Easement and Property Acquisition Documents Necessary to Construct Public Improvements Associated with the Rerouting of the Basin I Sanitary Sewer Line Project.**

BACKGROUND:

On April 24, 2018 Council authorized the rerouting of Addison's sanitary sewer flow through easements along Beltway Drive to Midway Road into Addison's sanitary sewer system to no longer send that sewer flow into the Farmers Branch sanitary sewer system. The design for the rerouting of the sewer line is 100% complete. The rerouting project will necessitate the acquisition of easements and property interests through negotiations.

This item asks that the Council authorize the City Manager to acquire easements and other real property interests that are necessary to allow completion of the sewer line reroute project.

RECOMMENDATION:

Administration recommends approval.

Attachments

Resolution - Purchase Agreements

TOWN OF ADDISON, TEXAS

RESOLUTION NO. _____

A RESOLUTION OF THE CITY COUNCIL OF THE TOWN OF ADDISON, TEXAS AUTHORIZING THE CITY MANAGER TO EXECUTE EASEMENT AND PROPERTY ACQUISITION DOCUMENTS NECESSARY TO CONSTRUCT PUBLIC IMPROVEMENTS ASSOCIATED WITH THE REROUTING OF THE BASIN I SANITARY SEWER LINE PROJECT; PROVIDING AN EFFECTIVE DATE.

WHEREAS, the Town of Addison, Texas (the "City") desires to reroute the sanitary sewer flows from Addison in Basin I from the Farmers Branch sanitary sewer line to its own line in the Midway Road right-of-way (the "Project"), and the process to do so has been initiated and is underway; and

WHEREAS, the rerouting activities will require the City to obtain, from the owner of real property along the route, the right to use a portion of that property for this public use; and

WHEREAS, the acquisition of any such portions may require, in some instances, the expenditure of public funds, the amount of which may be determined by a written appraisal prepared in accordance with law, and if any such acquisition is mutually agreeable to the property owner and the City, the City Council desire to authorize the City Manager to expend the public funds necessary to complete such acquisition.

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

Section 1. The City Manager is authorized to acquire easements and other real property interests necessary to allow completion of the Project on terms which the City Manager determines, in his discretion, are advantageous to the Town, which agreements may include the payment by the City for the portion acquired and amounts related thereto. The City Manager is hereby authorized to execute, on behalf of the City, such instruments as may be necessary or required to document and to consummate the agreement and to cause the expenditure of City funds for such acquisition and related costs.

Section 2. The above and foregoing recitals are true and correct and are incorporated into and made a part of this Resolution.

Section 3. This Resolution shall take effect from and after its passage and approval.

PASSED AND APPROVED by the City Council of the Town of Addison, Texas this the 27th day of August, 2019.

_____
Joe Chow, Mayor

ATTEST:

By:_____
Irma Parker, City Secretary

APPROVED AS TO FORM:

By:_____
Brenda N. McDonald, City Attorney

Work Session and Regular Meeting **13.**

Meeting Date: 08/27/2019

Department: Infrastructure- Development Services

AGENDA CAPTION:

Consider Action to Approve a **Resolution Authorizing the Use of Eminent Domain to Reroute the Town of Addison's Sanitary Sewer Flow, Along Beltway Drive and to Midway Road, into Addison's Sanitary Sewer System, Through the Acquisition of Permanent Utility Easements and Temporary Construction Easements.**

BACKGROUND:

On April 24, 2018 Council authorized the rerouting of a portion of Addison's sanitary sewer flow through easements along Beltway Drive to Midway Road into Addison's sanitary sewer system. This reroute will cease the current sewer flow in to the Farmers Branch sanitary sewer system. The design for the rerouting of the line is 100% complete. It is necessary to obtain easements and other real property interests to complete the project.

It may be necessary to use eminent domain to obtain the easements and real property interests needed to complete the reroute project. Therefore, this item asks for the authorization to use eminent domain, if needed.

RECOMMENDATION:

Administration recommends approval.

Attachments

Resolution - Basin I Sewer Project Eminent Domain

TOWN OF ADDISON, TEXAS

RESOLUTION NO. _____

A RESOLUTION OF THE CITY COUNCIL OF THE TOWN OF ADDISON, TEXAS, AUTHORIZING THE USE OF EMINENT DOMAIN TO REROUTE THE TOWN OF ADDISON'S SANITARY SEWER FLOW, ALONG BELTWAY DRIVE AND TO MIDWAY ROAD, INTO ADDISON'S SANITARY SEWER SYSTEM, THROUGH THE ACQUISITION OF PERMANENT UTILITY EASEMENTS AND TEMPORARY CONSTRUCTION EASEMENTS

WHEREAS, due to the growth of the population of the Town of Addison and the increased traffic loads in the Town of Addison along Beltway Drive to Midway Road, it is necessary to widen and improve Midway Road to provide for the public health, safety and welfare; and

WHEREAS, due to the Town of Addison's goals of providing a safe and efficient road and street system as a part of its master thoroughfare plan, it is necessary to widen and improve Midway Road; and

WHEREAS, in order to accomplish the above public purpose, it is necessary to acquire permanent and temporary construction easements on, over and across those certain properties described in Exhibit "A" attached hereto, to reroute the sanitary sewer flow along Beltway Drive and to Midway Road, into the Town of Addison's sanitary sewer system; and

WHEREAS, as a part of providing safe and reliable utility services to the residents of Addison, Texas, it is necessary to acquire rights within those permanent and temporary construction easements for the construction, operation and maintenance of public utilities along Beltway Drive to Midway Road; and

WHEREAS, permanent and temporary easements from three (3) properties are needed for the rerouting of the sanitary sewer line project, described in Exhibit "A" attached hereto; and

WHEREAS, it is necessary for the Town of Addison to acquire the permanent and temporary construction easements over and across the three (3) tracts of land to construct, operate, reroute, and maintain the sewer system along Beltway Drive and to Midway Road, and public utilities to be installed within that easement area:

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

Section 1. There is a public need for and the public welfare, safety and convenience will be served by the acquisition of permanent and temporary construction easements for the reroute of Addison's sanitary sewer flow into Addison's sanitary sewer system on, over and across the properties described in Exhibit "A" attached hereto; and.

Section 2. It is in the best interest, and is necessary to acquire permanent and temporary construction easements through eminent domain on, over, and across three (3) properties for the construction, operation and maintenance of the public street and public utilities.

Section 3. The use of eminent domain is hereby authorized to acquire a permanent Easement for Right-of-Way and Utilities on, over and across three properties described in Exhibit "A".

Section 4. Funding for the acquisition of the acquisition of easements is available from current funds and use of these funds for acquisition of the above permanent and temporary easements is hereby authorized.

Section 5. That if any portion of this Resolution shall, for any reason, be declared invalid by any court of competent jurisdiction, such invalidity shall not affect the remaining provisions hereof and the City Council hereby determines that it would have adopted this Resolution without the invalid provision.

Section 6. This Resolution shall take effect from and after its passage and it is accordingly resolved.

PASSED AND APPROVED on this_____day of August 2019.

APPROVED:

_____
Joe Chow, Mayor

ATTEST:

_____
Irma Parker, City Secretary

EXHIBIT A

Legal Description of Permanent Utility Easements and Temporary Construction Easements

Parcel 1: Addison Park, Ltd/John F. & Mabel K. Gibby

15000 Beltway Drive

Permanent Utility Easement: 25 ft.

Temporary Construction Easement: 10 ft.

Parcel 2: Simi Partners, LLC

15001 Beltwood Parkway

Permanent Utility Easement: 25 Ft.

Temporary Construction Easement: 10 Ft.

Parcel 3: KNC Capital I, LLC

15000 Beltwood Parkway

Permanent Utility Easement: 20 Ft.

Two Temporary Construction Easements: 10 Ft.

Work Session and Regular Meeting **14.**

Meeting Date: 08/27/2019

Department: City Manager

AGENDA CAPTION:

Consider Action to Approve a **Resolution Selecting Frost Bank as the Primary Depository Bank for the Town of Addison; Directing the City Manager to Negotiate a Treasury Management Services Agreement and a Security Agreement with the Bank; and, Authorizing the City Manager to Execute the Agreements.**

BACKGROUND:

The Town's contract with Frost Bank as the primary depository bank expires on September 30, 2019, with no options for extension. The Town issued a request for application (RFA) on March 15, 2019 detailing the requirements to serve as the Town's primary depository bank for the two-year period of October 1, 2019 through September 30, 2021 with the provision for three optional one-year extensions under the same terms and conditions. Notice of the RFA was advertised in in the *Dallas Morning News* on March 15, 2019 and March 22, 2019 in accordance with Chapter 105 of the Texas Local Government Code and application packets were mailed to twenty-one financial institutions within 5 miles of Addison Town Hall.

A pre-application conference was held on March 28, 2019 and attended by five financial institutions. Applications were received from Compass, Frost, Guaranty, LegacyTexas, and PlainsCapital. Valley View Consulting, LLC, assisted with the process of developing the RFA and evaluating the applications.

After careful consideration of criteria such as potential interest earnings throughout the life of the agreement, bank fees, bank service capabilities and responsiveness, online banking technology, and reference checks, it is the recommendation of Staff that Frost Bank be selected as the Town's primary depository bank. The attached report contains a detailed analysis of the five applications received.

A representative of Valley View Consulting will be available to answer questions regarding the solicitation and evaluation process.

RECOMMENDATION:

Administration recommends approval.

Attachments

Resolution - Depository Bank Services

Report - Primary Depository Bank Services Request for Applications Project

RESOLUTION NO. R_____

A RESOLUTION OF THE CITY COUNCIL OF THE TOWN OF ADDISON, TEXAS SELECTING FROST BANK AS THE PRIMARY DEPOSITORY BANK FOR THE TOWN OF ADDISION AND DIRECTING THE CITY MANAGER TO NEGOTIATE A TREASURY MANAGEMENT SERVICES AGREEMENT AND A SECURITY AGREEMENT WITH THE BANK; AUTHORIZING THE CITY MANAGER TO EXECUTE THE AGREEMENTS; PROVIDING AN EFECTIVE DATE.

WHEREAS, Chapter 105 of the Texas Local Government Code requires every municipality to receive applications for the performance of depository services; and

WHEREAS, the Town received applications for the performance of depository services and now desires to negotiate and execute the necessary agreements with Frost Bank, a Texas State Financial Institution.

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

1. That the City Council does hereby select Frost Bank, a Texas State Financial Institution, as the primary depository bank for the Town, and further finds that Frost Bank is able to perform all of the necessary services and to provide the statutory security required for the Town's deposits.

2. That the City Manager is directed to negotiate and execute a Treasury Management Services Agreement, a Security Agreement and ancillary documents with Frost Bank to serve as the Town's primary depository bank for a term commencing October 1, 2019 and ending September 30, 2021, with three, one-year renewal options, all in a final form to be approved by the City Attorney. The City Manager is hereby authorized to execute the agreements.

3. That this Resolution shall be effective from and after its date of passage

DULY PASSED BY THE CITY COUNCIL OF THE TOWN OF ADDISON, TEXAS, this the 27th day of August, 2019.

TOWN OF ADDISON, TEXAS

_____
Joe Chow, Mayor

ATTEST:

_____
Irma Parker, City Secretary

APPROVED AS TO FORM:

_____
Brenda N. McDonald, City Attorney

Valley View Consulting, L.L.C.

June 14, 2019

Ms. Olivia Riley
Chief Financial Officer
Town of Addison
5350 Belt Line Road
Dallas, Texas 75254

Dear Ms. Riley:

We sincerely appreciated and welcomed the opportunity to assist the Town of Addison (the "Town") with this Primary Depository Bank Services Request for Applications (the "RFA") project.

The objective of this engagement was to select a primary depository bank following the expiration of the current contract which ends September 30, 2019. This agreement, when approved, will commence on October 1, 2019 and terminate on September 30, 2021. Upon the option of the Town, the contract may be extended for three additional one-year periods under the same terms and conditions.

Procedure

The project began with the establishment of a calendar of events to ensure that the required project steps were performed in a timely and sequential manner.

The process for selecting a Primary Depository Bank is governed by the State of Texas Local Government Codes: Chapter 105 Municipal Depository Act; Chapter 176 Conflict of Interest Act; Chapter 2256 Public Funds Investment Act; and Chapter 2257 Public Funds Collateral Act.

In addition to complying with these State statutory requirements, it was necessary to understand and comply with the Town's financial and purchasing policies and Investment Policy.

The RFA project was conducted as follows:

1. Analyzed historical bank service usage and balance records.
2. Reviewed the minimum banking services and potential additional services.
3. Developed a list of eligible financial institutions within five miles of Town Hall:

    a. Amegy Bank a division of ZB, N.A.
    b. American Bank of Commerce
    c. Bank 7
    d. Bank of America, N.A.
    e. Branch Banking and Trust Company
    f. Capital One, N.A.

2428 Carters Mill Road, Huddleston, VA 24104-4003
540.297.3419

g. Comerica Bank
h. Compass Bank
i. Frost Bank (incumbent)
j. Guaranty Bank & Trust, N.A.
k. Happy State Bank
l. JPMorgan Chase Bank, N.A.
m. LegacyTexas Bank
n. Liberty Capital Bank
o. North Dallas Bank & Trust Company
p. PlainsCapital Bank
q. Regions Bank
r. Stockmans Bank
s. T Bank
t. Veritex Community Bank
u. Wells Fargo Bank, N.A.

4. Contacted the financial institutions to confirm distribution information, describe the process, and identify the designated recipient.
5. Drafted the RFA for Town review and approval.
6. Posted the notice and advertised the RFA.
7. Distributed RFAs to the identified and receptive financial institutions.
8. Held a non-mandatory pre-application conference that was attended by representatives of:

    a. Compass Bank
    b. Dallas Capital Bank
    c. Guaranty Bank & Trust, N.A.
    d. Happy State Bank
    e. PlainsCapital Bank

9. By the closing deadline, applications were received from:

    a. Compass Bank
    b. Frost Bank
    c. Guaranty Bank & Trust, N.A.
    d. LegacyTexas Bank
    e. PlainsCapital Bank

10. No additional RFA responses were received as a result of the advertisement.

The evaluation of the applications was based on, but not limited to, the following criteria, in no particular order of priority:

1. Ability to perform and provide the required and requested services;
2. References provided and quality of services;
3. Cost of services;
4. Transition cost, retention and transition offers and incentives;

5. Funds availability;
6. Interest paid on interest bearing accounts and deposits;
7. Earnings credit calculation on compensating balances;
8. Completeness of application and agreement to points outlined in the RFA;
9. Physical location within specified boundaries;
10. Convenience of location(s);
11. Previous service relationship with the Town; and
12. Financial strength and stability of the institution.

Application Analysis

The Application Analysis began with an overall review of each financial institution's general financial strength and ability to provide the services necessary to meet the Town's current and future service needs. Each of the qualified responding financial institutions exhibited acceptable financial strength and the ability to provide services the Town requested.

For added convenience, Compass Bank, Frost Bank and Guaranty Bank & Trust were willing to offer the Town safekeeping services for Town-owned securities. LegacyTexas Bank and PlainsCapital Bank offered this service using a third-party provider. This service can be contracted through a provider other than the primary depository, however there may be transactional costs avoided by having the same institution provide both services.

The analysis of proposed fees, earnings credit, and investment income potential is summarized below.

Net Income/(Cost)

Each financial institution's fee schedule was analyzed based on the Town's banking service needs and estimated activity levels. Where quantifiable and appropriate, the estimated service fees were adjusted for any incentives (including waived fees and transition allowances).

Each of the financial institutions proposed monthly fee assessments for services utilized, an earnings credit rate or an interest bearing checking option to offset monthly fee charges, and investment income options for any excess balances available. Historical average annual deposit balances of $5,600,000 have been maintained by the Town, therefore the analysis was completed assuming the same historic average balance.

The analysis below is for both the two (2) year initial contract term, and the full five (5) year term allowing for the three (3) possible one-year extensions at the option of the Town.

Two-Year Term	Compass Bank	Frost Bank	Guaranty Bank	LegacyTexas	PlainsCapital
Proposed Fees	($56,897)	($58,679)	($89,825)	($80,884)	($58,204)
Incentives offered	$7,112	$7,335	$10,000	$0	$7,275
Earnings Credit and Hard Interest	$168,001	$211,545	$179,887	$224,280	$152,401
Estimated Safekeeping Fees	($4,042)	($3,625)	($3,000)	($9,994)	($4,272)
Net Income / (Cost)	$114,174	$156,576	$97,062	$133,402	$97,200

Five-Year Term	Compass Bank	Frost Bank	Guaranty Bank	LegacyTexas	PlainsCapital
Proposed Fees	($142,241)	($146,696)	($224,562)	($202,210)	($145,509)
Incentives offered	$7,112	$7,335	$10,000	$0	$7,275
Earnings Credit and Hard Interest	$420,000	$528,862	$449,717	$560,700	$381,000
Estimated Safekeeping Fees	($10,104)	($9,064)	($7,500)	($24,984)	($10,680)
Net Income / (Cost)	$274,767	$380,437	$227,655	$333,506	$232,086

Recommendation

Frost Bank has provided the Town with stable and reliable depository services during the current depository contract.

The Town will continue to benefit from the terms offered by Frost Bank, with the competitive pricing of monthly service terms, competitive earnings credit rate allowing for lower compensating balance requirements to offset fees, and the ability to continue placement of excess funds in higher earning investments.

LegacyTexas Bank offered a competitive interest income rate and service capabilities necessary to meet most of the Town's needs, however the overall higher pricing of monthly service terms and lower earnings credit rate made it difficult to merit the Town's consideration to change depositories.

Based on the analysis results, evaluation criteria and discussion with staff, it was determined that the terms offered by Frost Bank provide the "best value" to the Town. We concur with the staff recommendation that the Council award the Primary Depository Bank Services contract to Frost Bank and authorize the City Manager to execute the agreements necessary to implement the banking relationship.

Upon approval, the new contract will commence on Tuesday, October 1, 2019.

Please contact Bill Koch, Dick Long, Tom Ross, or me to discuss any questions or additional information needs.

Thank you for this opportunity to serve the Town of Addison once again.

Sincerely,

E. K. Hufstedler, III
Valley View Consulting, L.L.C.

Attachment

Work Session and Regular Meeting **15.**

Meeting Date: 08/27/2019

Department: Finance

Pillars: Gold Standard for Financial Health

Milestones: Review town ordinances and regulations with a focus on modernizatio in order to facilitate redevelopment

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AGENDA CAPTION:

Consider Action to Approve a **Resolution of the City Council of the Town of Addison, Texas Approving the North Dallas County Water Supply Corporation Operating Fund Budget for the Fiscal Year Beginning October 1, 2019 and Ending September 30, 2020 and Providing an Effective Date.**

BACKGROUND:

The North Dallas County Water Supply Corporation (NDCWSC) is a Texas non-profit corporation established in 1991 with the approval of the City Council of the City of Farmers Branch and the City Council of the Town of Addison. The purpose of the corporation, as set forth in Article Four of the Articles of Incorporation, is to furnish and provide sewer services to the cities of Farmers Branch and Addison, as well as to other towns and cities. This resolution approves the North Dallas County Water Supply Corporation Operating Fund Budget for Fiscal Year 2020.

RECOMMENDATION:

Administration recommends approval.

Attachments

Resolution - Fiscal Year 2020 Budget

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TOWN OF ADDISON, TEXAS
RESOLUTION NO.

A RESOLUTION OF THE CITY COUNCIL OF THE TOWN OF ADDISON, TEXAS APPROVING THE NORTH DALLAS COUNTY WATER SUPPLY CORPORATION OPERATING FUND BUDGET FOR THE FISCAL YEAR BEGINNING OCTOBER 1, 2019 AND ENDING SEPTEMBER 30, 2020 AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the North Dallas County Water Supply Corporation was created by the City of Farmers Branch and the Town of Addison (collectively, the "Cities") for the purpose of joint construction, financing, and administration of certain sewer system improvements; and,

WHEREAS, the Bylaws of the Corporation require the Board of Directors to adopt a budget of expected revenues and proposed expenditures for the ensuing fiscal year; and,

WHEREAS, the Bylaws of the Corporation state that the budget is not effective until the same has been approved by the Cities.

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

Section 1. The Operating Fund Budget for the North Dallas County Water Supply Corporation for the year beginning October 1, 2019 and ending September 30, 2020, attached hereto as **Exhibit A**, is hereby approved.

Section 2. This resolution shall be effective from and after its date of passage.

PASSED AND APPROVED by the City Council of the Town of Addison, Texas this 27th day of August 2019.

_____
Joe Chow, Mayor

ATTEST:

By:_____
Irma Parker, City Secretary

APPROVED AS TO FORM:

By:_____
Brenda N. McDonald, City Attorney

EXHIBIT A

NORTH DALLAS COUNTY WATER SUPPLY CORPORATION
OPERATING FUND
2019-2020 Proposed BUDGET

EXHIBIT A

	YEAR TO DATE ACTUAL AT 09/30/18	ADOPTED BUDGET 2018-2019	YEAR TO DATE ACTUAL AT 03/30/18	PROPOSED BUDGET 2019-2020
EST. BEGINNING FUND BALANCE	$35,226	$32,500	$32,585	$26,505
REVENUES:				
Charges to participant cities				
Addison	$0	$0	$0	$0
Farmers Branch	0	0	0	0
Interest and miscellaneous	0	0	0	0
Transfer from Capital Projects fund	0	0	0	0
TOTAL REVENUES	$0	$0	$0	$0
TOTAL AVAILABLE RESOURCES	$35,226	$32,500	$32,585	$26,505
EXPENDITURES:				
General Maintenance	$0	$5,000	$0	$5,000
Total Maintenance	$0	$5,000	$0	$5,000
General Overhead				
Project Administration	$0	$0	$0	$0
Supplies	0	0	0	0
Legal Fees	0	520	0	520
Insurance	0	0	0	0
Audit Fees	2,500	0	0	2,500
Bank Fees	142	200	0	200
Miscellaneous	0	275	0	275
Total Overhead	$2,642	$995	$0	$3,495
Transfer to Capital Projects Fund	$0	$0	$0	$0
TOTAL EXPENDITURES	$2,642	$5,995	$0	$8,495
ENDING FUND BALANCE	$32,585	$26,505	$32,585	$18,010

Work Session and Regular Meeting **16.**

Meeting Date: 08/27/2019

Department: Finance

Pillars: Gold Standard for Financial Health

Milestones: Review town ordinances and regulations with a focus on modernizatio in order to facilitate redevelopment

---

AGENDA CAPTION:

Hold a Public Hearing, Present, and Discuss the **Town of Addison's Proposed Property Tax Rate for the Fiscal Year Commencing October 1, 2019 and Ending September 30, 2020.**

BACKGROUND:

This is the first of two public hearings regarding the proposed tax rate for the Town of Addison. The second public hearing will be held on September 3, 2019 at a meeting that commences at 5:00 pm in the Council Chambers.

The proposed property tax rate for the Fiscal Year (FY) 2020 is $0.591133 per $100 of valuation. The proposed rate is made of the following components:

Tax Rate Component	**Amount (per $100 of valuation)**
Maintenance & Operations: General Fund	$0.411833
Maintenance & Operations: Economic Development	$0.023716
Maintenance & Operations: Infrastructure Investment	$0.006201
Interest & Sinking (Debt)	$0.149383
Total Proposed Rate for the FY 2020	**$0.591133**

The State's Truth-in-Taxation law also requires calculation and publication of each taxing entity's effective tax and rollback tax rate:

Tax Rate	**Definition**	**Amount (per $100 of valuation)**

Effective Tax Rate	Rate needed to raise the same amount of property tax revenue for the Town from the same properties in 2018.	$0.552371
Rollback Tax Rate	Highest tax rate that the Town may adopt before voters are entitled to petition for an election to limit the rate to the rollback rate.	$0.591133

These rates were published in the August 16, 2019 edition of the Dallas Morning News. Included with this agenda item is a copy of the publication notice.

The City Manager's proposed budget recommends a property tax rate of $0.591133 per $100 valuation, which exceeds the effective tax rate. This proposed rate is higher than last year's adopted rate of $0.550000 per $100 of valuation.

The average home value for the Town of Addison is $331,280, which generates a tax bill of $1,958.30. Last year, the average home value was $319,582 which generated a tax bill of $1,757.70. The average tax payer would pay about $200.60 more in property taxes than last year. Individual taxes may increase or decrease depending on the change in the taxable value of your property.

Two public hearings will be held on the proposed budget. The first public hearing will take place at a meeting that commences at 5 pm on September 3, 2019 in the Council Chambers. The second public hearing will take place at a meeting that commences at 7:30 pm on September 10, 2019 in the Council Chambers. The City Council is scheduled to consider adoption of the proposed tax rate and budget on September 10, 2019 during a meeting of the Council to be held in Council Chambers at 7:30 pm.

RECOMMENDATION:

Information only, no action required.

Attachments

Presentation - 1st Public Hearing Tax Rate Fiscal Year 2020

Notice - 2019 Tax Year Proposed Property Tax Rate

1st Public Hearing
Tax Rate
FY2020

Property Tax Rate Approval Process

Key Dates	Council Action
Tuesday, July 25th	Receipt of Certified Value from DCAD.
Tuesday, Aug. 13th	Proposal to set date and time of public hearings.
Friday, Aug. 16th	Publication of Notice of Proposed Tax Rate.
Tuesday, Aug. 27th	First public hearing on tax rate.
Tuesday, Sept. 3rd	Second public hearing on tax rate; first public hearing on budget.
Tuesday, Sept. 10th	Adoption of FY2020 Budget and Tax Rate.
Monday, Oct. 1st	Begin Fiscal Year.

Property Tax Values and Tax Rate

Certified Assessed Value FY2020	~$4.82B
Current Certified Assessed Value FY2019	~$4.73B
Current Property Tax Rate FY2019	$.550000/100
Proposed Property Tax Rate FY2020	$.591133/100

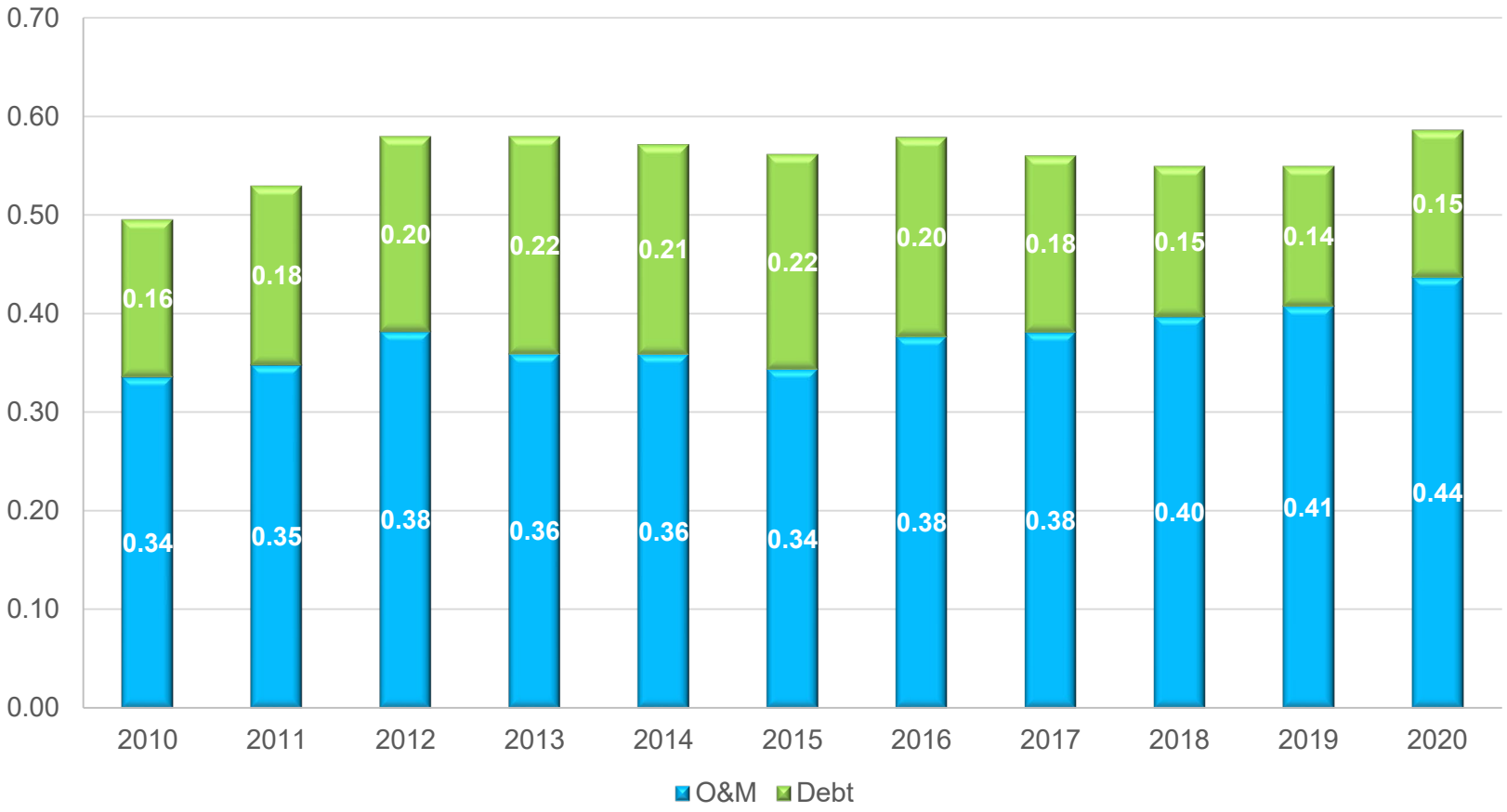
Property Tax Rates

	FY2018	FY2019	FY2020
Effective (No-New-Revenue)	$0.542963/100	$0.527064/100	$0.552371/100
Rollback (Voter-approval)	$0.551854/100	$0.553323/100	$0.591133/100
Proposed	$0.550000/100	$0.550000/100	$0.591133/100

Property Tax Revenues

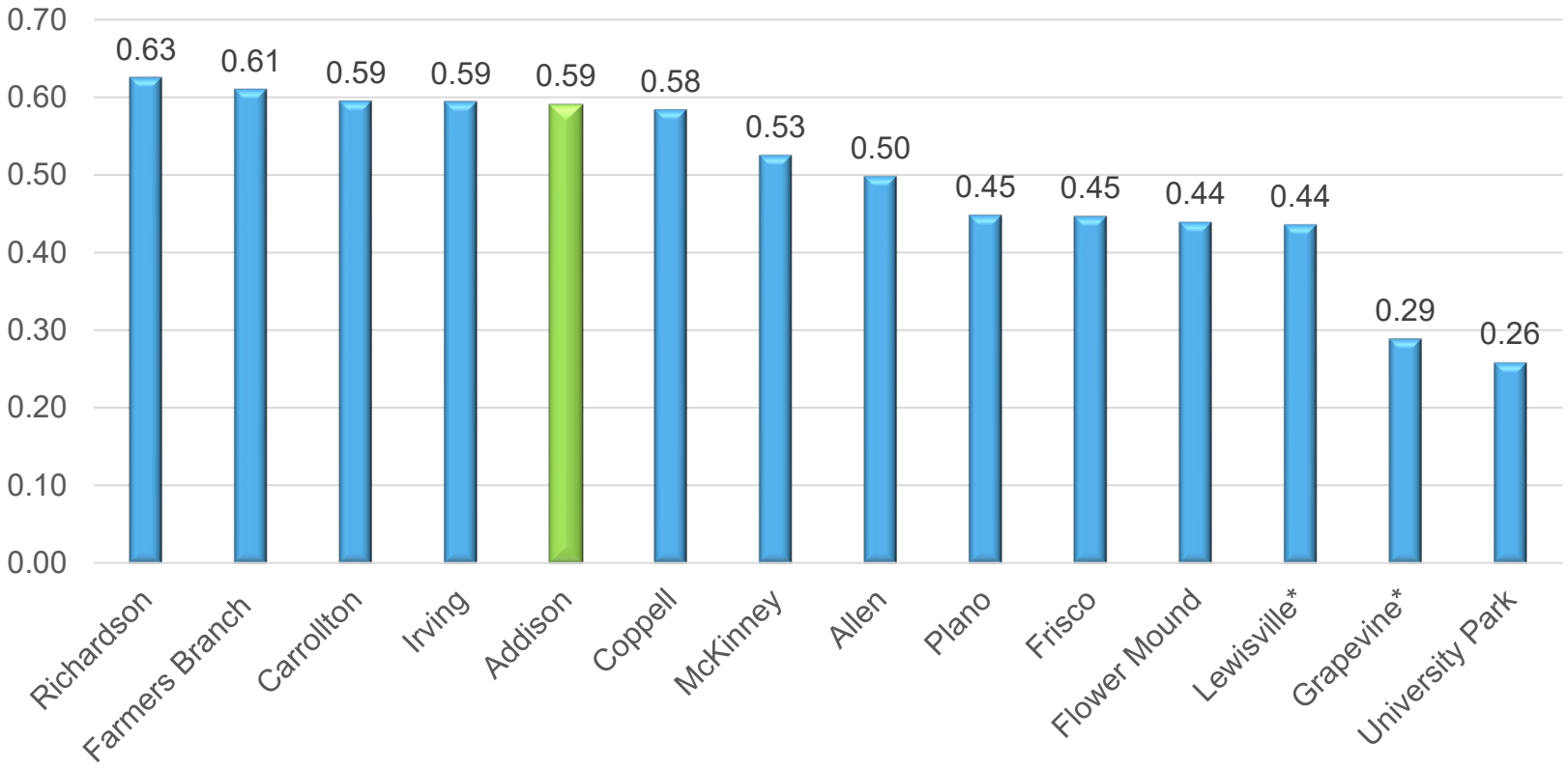
	FY2018 Actual	FY2019 Budget	FY2020 Proposed	% Change FY19 to FY20
General Fund (O&M)	$15,904,272	$16,965,737	$19,136,678	12.8%
Economic Development Fund (O&M)	1,026,898	1,081,534	1,103,081	2.0%
Infrastructure Investment Fund (O&M)	268,640	282,788	288,421	2.0%
Debt Service Fund (I&S)	6,632,005	6,751,908	6,966,638	3.2%
Total Tax Revenue	$23,831,815	$25,081,967	$27,494,818	9.6%

Property Tax Rates



* Rates are rounded to the nearest penny.

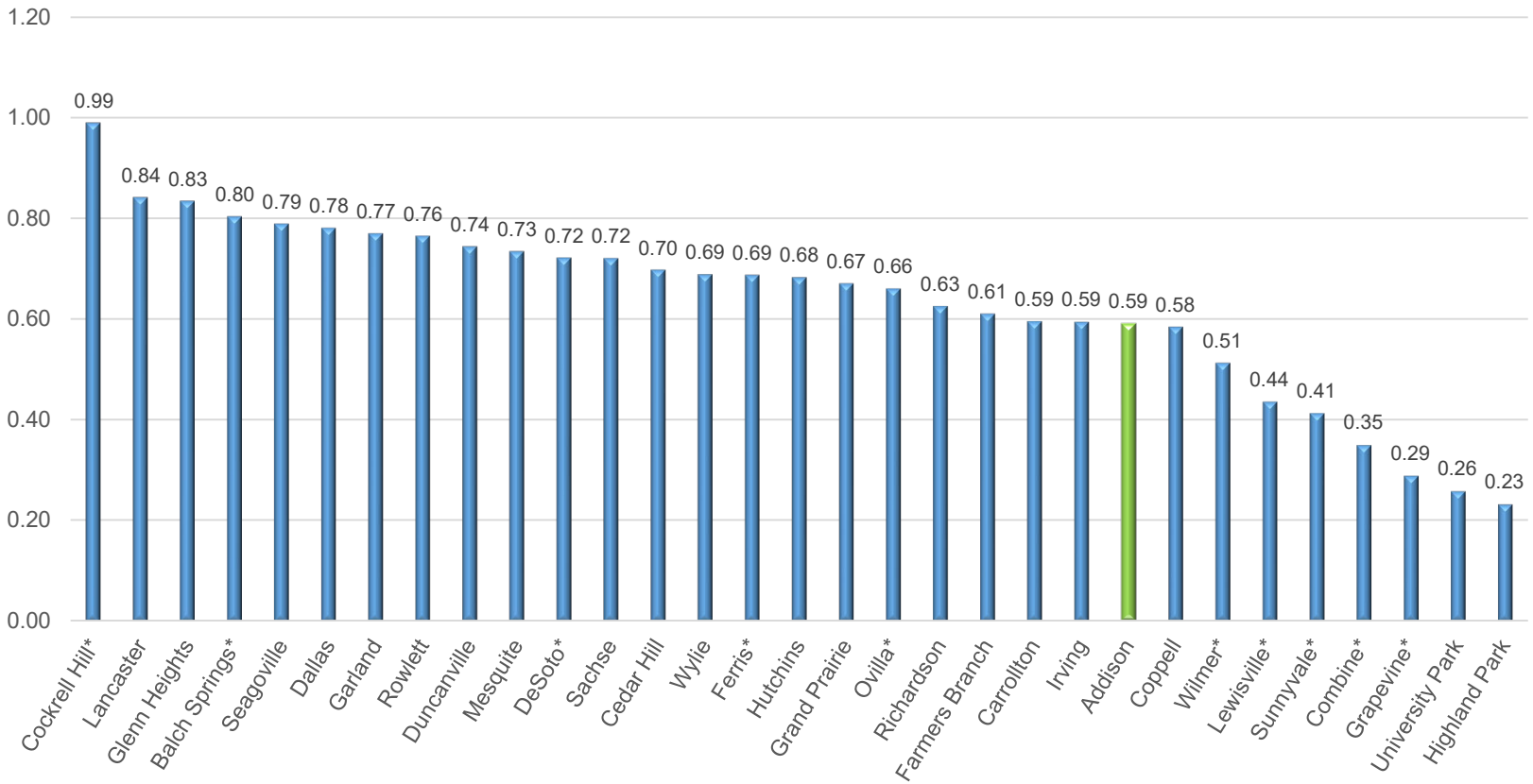
FY2020 Tax Rates - Comparison Cities



*FY2020 Tax rates unavailable; FY2019 Tax rate presented.

Median: 0.511585
Mean: 0.495737

FY2020 Tax Rates – Dallas County



*FY2020 Tax rates unavailable;
FY2019 Tax rate presented.

Median: 0.682459
Mean: 0.634345

Impact on Average Homeowner

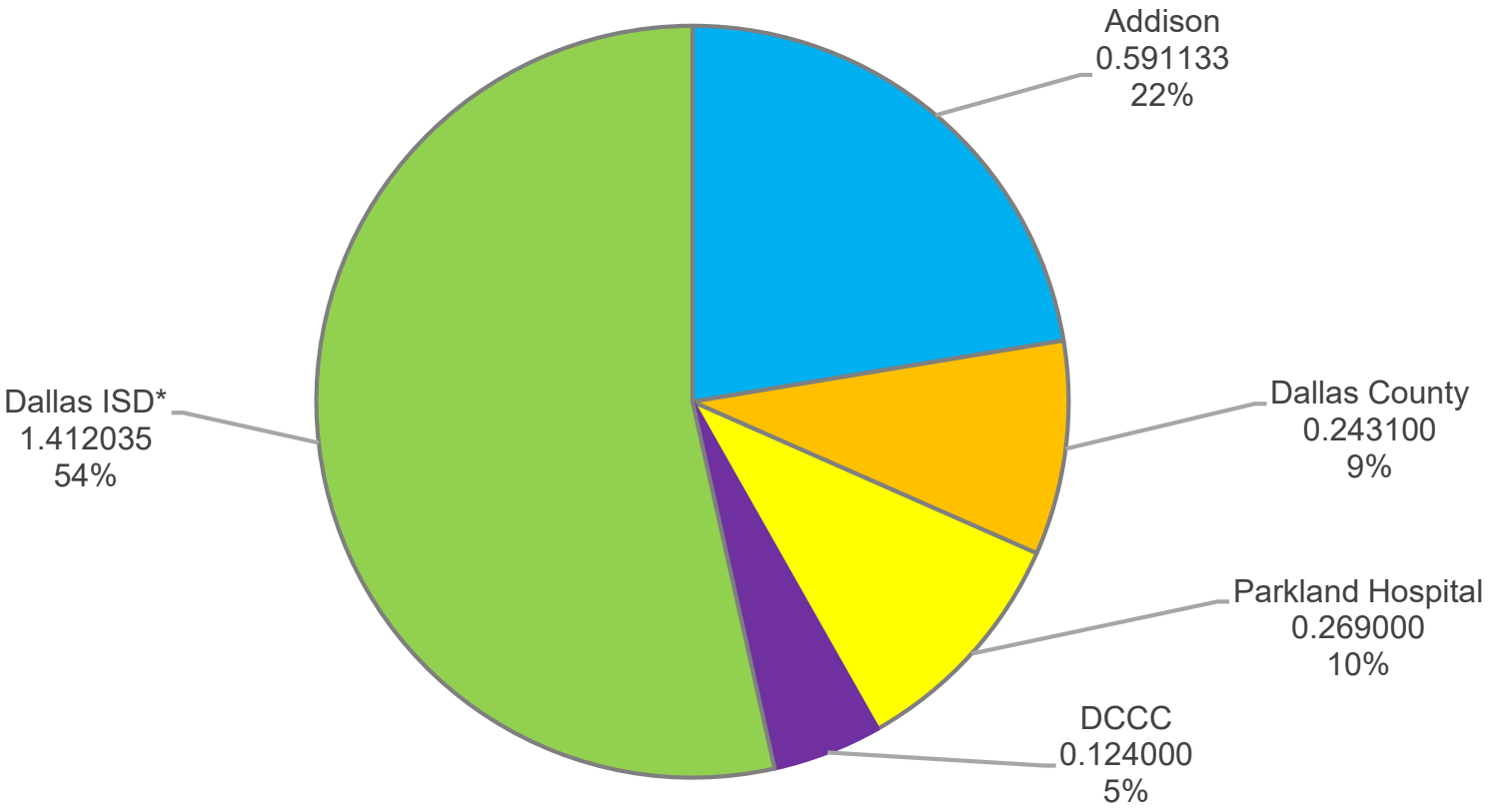
	FY2019	FY2020
Average Home Value	$319,582	$331,280
Tax Rate	55.0000	59.1133
Annual Tax Bill	$1,757.70	$1,958.30

Based on the average home value of $331,280, the average residential taxpayer would pay $200.60 (≈$16.71 per month) more than last year.



ADDISON®

FY2020 Property Tax Rates Combined



*FY2020 Tax rates unavailable; FY2019 Tax rate presented.

Combined Tax Rate $2.639268

NOTICE OF 2019 TAX YEAR PROPOSED PROPERTY TAX RATE FOR TOWN OF ADDISON

A tax rate of $0.591133 per $100 valuation has been proposed for adoption by the governing body of Town of Addison. This rate exceeds the lower of the effective or rollback tax rate, and state law requires that two public hearings be held by the governing body before adopting the proposed tax rate.

The governing body of Town of Addison proposes to use revenue attributable to the tax rate increase for the purpose of funding merit pay increases and cash-funded capital projects.

PROPOSED TAX RATE	$0.591133 per $100
PRECEDING YEAR'S TAX RATE	$0.550000 per $100
EFFECTIVE TAX RATE	$0.552371 per $100
ROLLBACK TAX RATE	$0.591133 per $100

The effective tax rate is the total tax rate needed to raise the same amount of property tax revenue for Town of Addison from the same properties in both the 2018 tax year and the 2019 tax year.

The rollback tax rate is the highest tax rate that Town of Addison may adopt before voters are entitled to petition for an election to limit the rate that may be approved to the rollback rate.

YOUR TAXES OWED UNDER ANY OF THE ABOVE RATES CAN BE CALCULATED AS FOLLOWS:

property tax amount= (rate) x (taxable value of your property)/100

For assistance or detailed information about tax calculations, please contact:

John R. Ames, PCC, CTA
Dallas County Tax Assessor/Collector
1201 Elm Street, Suite 2600, Dallas TX
214.653.7811
TNTHELP@dallascounty.org

You are urged to attend and express your views at the following public hearings on the proposed tax rate:

First Hearing: August 27, 2019 at 7:30 pm at 5300 Belt Line Rd., Dallas TX 75254.

Second Hearing: September 3, 2019 at 5:00 pm at 5300 Belt Line Rd., Dallas TX 75254.

Work Session and Regular Meeting **17.**

Meeting Date: 08/27/2019

Department: Infrastructure- Development Services

Pillars: Excellence in Transportation Systems

AGENDA CAPTION:

Present, Discuss, and Consider Action on a **Resolution Approving a Contract Agreement with JC Commercial Inc., for the Construction of a U.S. Customs and Border Protection Facility Combined with the Addison Airport Administration Offices to be Located on Addison Airport at 4545 Jimmy Doolittle Drive, and Authorizing the City Manager to Execute the Contract** in an Amount Not to Exceed $6,223,949.

BACKGROUND:

The purpose of this item is the consideration of the award of a contract to JC Commercial for the construction of the U.S. Customs and Border Protection facility combined with the Addison Airport Administration offices at 4545 Jimmy Doolittle Road at Addison Airport. On December 11, 2018, Council approved the issuance of $7 million in Certificates of Obligation for the construction of the combined Customs and Airport offices facility.

Bids for the construction of the facility were initially posted on December 3, 2018 and opened on January 10, 2019. On February 7, 2019 the Town rejected the bids because they far exceeded the architect's cost estimate for the items that were included in this bid. The project was then rebid in February and bids were opened on May 2, 2019. After the bidding process was initiated the second time, the architectural design consultant firm, Page Southerland Page, Inc., notified the Town staff that they had made a significant error in the cost estimate for the facility. This mistake, combined with current conditions in the construction market, resulted in bids that exceeded both the project estimate and budget.

The 6 bids that were received on May 2, 2019 were:

Bid Form	Azteca	FHP	Hasen	JC Commercial	JE Dunn	Phillips May
Base Bid	$9,103,963	$8,740,000	-$6,576,807	$6,647,777	$7,400,000	$6,998,333
Alternative 1	-$20,891	-$75,000	-$89,000	-$62,000	-$92,828	-$90,000
Alternative 2	-$11,077	-$15,000	-$20,000	-$20,000	$28,750	-$20,000
Alternative 3	-$56,349	-$75,000	-$28,276	-$104,000	-$107,045	-$100,000
Alternative 4	-$13,503	$7,500	-$14,475	-$8,000	-$5,492	-$10,000
Alternative 5	-$80,615	-$60,000	-$20,000	-$30,000	$21,033	-$35,000
Alternative 6	-$15,654	-$10,000	-$5,000	-$1,700	$3,855	-$8,000
Total Bid	$8,905,874	$8,512,500	$6,400,056	$6,422,077	$7,259,257	$6,735,333

Evaluation Points	79.79	82.55	93.00	97.46	93.74	95.80

The final contractor selection was based not only on lowest price but also most qualified bidder. The selection committee awarded points based on the bidder's proposed project manager's experience, their relevant work experience, and their project approach. JC Commercial scored the highest number of points and was chosen as the most qualified bidder due to their experience in building high security facilities and the qualifications of their project team and key personnel.

Because the bid was over the available budget, since the bid opening, staff and the consultant have met with JC Commercial in an attempt to reduce the cost of the construction. After extensive discussion related to the consideration of items that could be reduced through value engineering, the contractor's price has been reduced from the original base bid to $6,223,949. This amount is $13,320 more than what was presented to Council on August 13, 2019 because JC Commercial identified a $13,320 mistake in the calculation of the electrical lighting metal clad cable value engineering amount. This resulted in a $13,320 increase to their proposed price. The final proposed price is $6,223,949.

At the Council meeting on August 13, 2019, Council was provided information on the potential value engineering options as well as several potential additional funding sources.

After subtracting the cost reductions and adding the additional funding, there is still a project deficit of $110,939. Sunland Group, who provided cost estimating services under contract with Page will refund the fee of $51,260 for their work on this project. This reimbursement will be used to help close the gap, leaving a final deficit of $59,679 that will be closed by shifting funds from the Fiscal Year 2020 operating budget.

Funds for the construction of the U.S. Customs and Border Protection facility combined with the Addison Airport Administration offices are available in the Airport bond funds.

While the $6,223,949 for the proposed construction contract with JC Commercial is the largest component of the US Customs and Airport Administration Office project, it does not represent the total cost of the project. The original project cost was $9,691,033. Through value engineering of $508,528, the total project cost has been reduced to $9,182,505. Additional funding for the balance of the total project costs have been identified in the Airport Operating fund and will be brought before Council for consideration at a future meeting.

RECOMMENDATION:

Administration recommends approval.

Attachments

Resolution - JC Commercial Agreement

Proposal - JC Commercial

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 JC COMMERCIAL INCORPORATED, FOR CONSTRUCTION SERVICES RELATED TO THE CONSTRUCTION OF A U.S. CUSTOMS AND BORDER PROTECTION FACILITY WITH THE ADDISON AIRPORT ADMINISTRATION OFFICES TO BE LOCATED ON ADDISON AIRPORT AT 4545 JIMMY DOOLITTLE DRIVE IN AN AMOUNT NOT TO EXCEED $6,223,949, AUTHORIZING THE CITY MANAGER TO EXECUTE THE CONTRACT, AND PROVIDING AN EFFECTIVE DATE.

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

Section 1. The Agreement between the Town of Addison and JC Commercial Incorporated for construction of a U.S. Customs and Border Protection facility combined with Addison Airport Administration offices in an amount not to exceed $_____.

Section 2. The Contract Agreement between the Town of Addison and JC Commercial Incorporated for the US Customs and Border Protection Facility combined with the Addison Airport Administration offices in the amount of $6,223,949, 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, Instructions 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 3. This Resolution shall take effect from and after its date of adoption.

PASSED AND APPROVED by the City Council of the Town of Addison, Texas this the 27th day of August, 2019.

_____
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

CONTRACT AGREEMENT

STATE OF TEXAS

COUNTY OF DALLAS

THIS AGREEMENT is made and entered into this Sixteenth day of August, 2019, 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 J.C. Commercial, Inc., of the City of Lewisville, 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:

INFRASTRUCTURE AND DEVELOPMENT SERVICES BID NUMER 19-97

RE-BID ADDISON AIRPORT CUSTOMS AND BORDER PROTECTION FACILITY

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 **four hundred and fifty (450)** 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 Six Million Two Hundred Twenty Three Thousand Nine Hundred Forty Nine Dollars **($6,223,949)** 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: Larry Wagner, pres. By: Shannon Capezzuto

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

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

Signed: Shannon Capezzuto

Corporate Seal

No Boycott – Israel: Pursuant to Texas Government Code Chapter 2271, Flow-Line Construction Inc., execution of this Agreement shall serve as verification that Flow-Line Construction Inc., does not boycott Israel and will not boycott Israel during the term of this Agreement.

thickness of 10 mils WFT. The products specified in the Bid Documents are applied to 40 mils DFT. The 40 mils is required because that is what it takes for it to be reliably self-healing. This air barrier is significantly thinner than those specified. Also, the IBC requires that the insulation-air barrier combination behind metal panels meet NFPA 285 testing. Blue Board is XPS insulation, and the XPS insulation must have documentation to confirm it has passed NFPA 285 testing behind metal panels, which is why specified mineral wool was included in the Bid Documents. The Contractor needs to show that this particular insulation, when installed with this particular air barrier, has passed NFPA 285 testing.

The Bid Documents referenced herein constitute a portion of the 'Contract Documents'. The scope of revisions to the 'Contract Documents' associated with the Alternate Deducts and VE Deducts included herein will be formalized in an 'Architect's Supplemental Instructions'. The 'Architect's Supplemental Instructions' related to the scope described herein shall have no impact on the contract sum or contract schedule.

End of Exhibit.

JC COMMERCIAL INCORPORATED



TOWN OF ADDISON

Infrastructure and Development Services Bid Number 19-97

ADDISON AIRPORT CUSTOMS & BORDER PROTECTION FACILITY

REBID

Town of Addison, Texas

May 1, 2019 at 2:00 PM

1801 Lakepointe Drive, Suite 129

Lewisville, Texas 75057

P 972.436.4622 · F 972.436.4822

www.jccom.com

J.C. COMMERCIAL INCORPORATED

May 2, 2019

Town of Addison
5350 Belt Line Road
Dallas, TX 75254

Re: Infrastructure and Development Services Bid Number 19-97
Addison Airport Customs and Border Protection Facility REBID
Town of Addison, Texas

To Whom It May Concern,

We would like to thank you for your consideration of our proposal for the Addison Airport Customs and Border Protection Facility project. As a company whose main ambition is to help build up the surrounding communities while establishing a foundation in construction integrity, projects such as the one you are about to undertake hold great value according to our standards.

Our company and its staff have excelled in the field of contracting for many years due to our diligence in efficiency, accuracy, and care we give to each project. Upon review of our project experience, you will see that J.C. Commercial has extensive experience working with aviation facilities and new construction projects similar to that which you are about to embark upon.

Over the years, J.C. Commercial has completed over $260 million construction projects within Texas and without Owner litigation. ***This includes airport projects for various neighboring facilities totaling over $35 million and $150 million in new construction.***

Our proposed project personnel are extremely knowledgeable with projects of this type, accelerated schedules, stringent safety requirements and are available from start to finish.

Once again, thank you for accepting the following proposal for review. The attached documentation is a mere sampling of the exceptional work J.C. Commercial, Inc. desires to complete for you. We look forward to working with the Town of Addison on this endeavor.

Sincerely,

Larry Wagnor, President
J.C. Commercial, Inc.

1801 Lakepointe Drive, Suite 129 · Lewisville, Texas 75057
P 972.436.4622 · F 972.436.4822
www.jccom.com

TABLE OF CONTENTS

Infrastructure and Development Services Bid Number 19-97

TOWN OF ADDISON

ADDISON AIRPORT
CUSTOMS AND BORDER PROTECTION FACILITY REBID

Town of Addison, Texas
May 2, 2019



Terminal D Jetbridge Modifications



Aviation Administration Building



Air Hangar #2

1. PRICE PROPOSAL

Proposal Form *-PF-3 through PF-14 to be submitted post bid per Addendum No. 4*

Bid Bond

Insurance Waiver with Evidence of Current Insurance

Information Instruction Form

2. QUALIFICATIONS

BQS – Bidders Qualification Statement

Project Team and Key Personnel
- Organizational Chart with Supporting Resumes
- Proposed Subcontractors *-to be submitted post bid per Question & Answer No. 42*

RWE – Relevant Work Experience Statement
- RWE – Relevant Work Experience Statement
- Current & Completed Projects List
- Relevant Projects Data Sheets
- Safety Experience /Assurance
- Letters of Reference
- HUB Experience

2. PROJECT DELIVERY APPROACH

- Approach Description
- Proposed Schedule

JC COMMERCIAL INCORPORATED

SECTION PF-1

PROPOSAL FORM

PROPOSAL FORM

May 2 , 2019

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 with:

Signed by: Larry Wagnor, pres.
Larry Wagnor, President

ACKNOWLEDGMENT OF ADDENDA:

The Bidder acknowledges receipt of the following addenda:

Addendum No. 1 ✓

Addendum No. 2 ✓

Addendum No. 3 ✓

Addendum No. 4 ✓

Addendum No. 5 ✓

Addendum No. 6 ✓

Addendum No. 7 ✓

Addendum No. 8 ✓

The following Lump Sum Price contains all bid items for:

INFRASTRUCTURE AND DEVELOPMENT SERVICES BID NUMBER 19-97

RE-BID ADDISON AIRPORT CUSTOMS AND BORDER PROTECTION FACILITY

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.

4. 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.

I. CONTRACT SUM

Bidders must fill bid proposal for base bid 1, ~~base bid 2~~, and base bid 3 for a Total Bid price. The lowest total bid price will received the maximum points for the Price Proposal section of the Contract Award of the lowest qualified bidder.

Provide the sum of the Total Bid for Base Bid 1 + ~~Base Bid 2~~ + Base Bid 3 for completion of the entire Work.

Total Price in Words: _____ DOLLARS ($_____).

II. BID PROPOSAL ALTERNATES

The following alternates shall be included with the Bid Proposal. It is understood that if no figure is listed for the Alternate, that the Alternate may be accepted and there shall be no change in the Bid Proposal Contract Sum amount indicated above. Strike out (add) or (deduct) as required. Refer to Division 1 Section "Alternates" in the Project Manual for a complete description of all alternates.

ALTERNATE 1 – Remove the folding panels partition from the Project scope.

If the Owner selects Alternate 1, (add) (deduct) the sum of:

_____ *DOLLARS $*_____)

ALTERNATE 2 – Replace all perforated panel exterior wall cladding systems with non-perforated formed metal wall panel system.

If the Owner selects Alternate 1, (add) (deduct) the sum of:

_____ *DOLLARS $*_____)

ALTERNATE 3 – Remove the Regulated Garbage Utility Building form the Project scope.

If the Owner selects Alternate 1, (add) (deduct) the sum of:

_____ *DOLLARS $*_____)

ALTERNATE 4 – Replace selected interior glass partition wall systems with framed gypsum board wall partitions and interior glazed doors.

If the Owner selects Alternate 1, (add) (deduct) the sum of:

_____ *DOLLARS $*_____*)*

ALTERNATE 5 – Reduce the roof and soffit overhang above the level 2 Airfield Operations Observation Platform (Area 217).

If the Owner selects Alternate 1, (add) (deduct) the sum of:

_____ *DOLLARS $*_____*)*

ALTERNATE 6 – Replace the tiled floor system on the level 2 Airfield Operations Observation Platform (Area 217) with an exposed waterproofing pedestrian traffic coating.

If the Owner selects Alternate 1, (add) (deduct) the sum of:

_____ *DOLLARS $*_____*)*

III. SCHEDULE

From the date of commencement of the Work, provide the maximum duration in calendar days to reach Substantial Completion of the entire Work.

No later than _____ CALENDAR DAYS (_____).

IV. DEFINITIONS

As defined by the American Institute of Architects (AIA) Document A201-2017 General Conditions of the Contract for Construction:

- The term **"Work"** means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

- The term **"Substantial Completion"** is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

Larry Wagnor, President

Name of Person Signing Bid

Larry Wagnor, pres

Signature of Person Signing Bid

1801 Lakepointe Drive, Suite 129, Lewisville, TX 75057
Address

972.436.4622 972.436.4822
Telephone No. Fax No.

75-2914681
T.I.N. (Tax Identification or Employer's Number)

If BIDDER is:

AN INDIVIDUAL N/A

By _____ (Seal)
(Individual's Name)

doing business as _____

Business address: _____

_____

_____

Phone No. _____

A PARTNERSHIP N/A

By _____ (Seal)
(Firm Name)

_____
(General Partner)

doing business as _____

_____

Business address: _____

_____

_____

Phone No. _____

A CORPORATION

By J.C. Commercial, Inc.
(Corporation Name)

Texas
(State of Incorporation)

By Larry Wagnor
(Name of Person Authorized to Sign)

President
(Title)

(Corporate Seal)

Attest Shannon Capuzzitto, Secretary
(Secretary)

Business address: 1801 Lakepointe Drive, Suite 129, Lewisville, TX 75057

_____

_____

Phone No. 972.436.4622

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.)

AIA® Document A310™ – 2010

Bid Bond

CONTRACTOR:
(Name, legal status and address)
J.C. COMMERCIAL, INC.
1801 Lakepointe Drive, Suite 129
Lewisville, TX 75057

SURETY:
(Name, legal status and principal place of business)
BERKLEY INSURANCE COMPANY
475 Steamboat Road
Greenwich, CT 06830

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

OWNER:
(Name, legal status and address)
TOWN OF ADDISON

5350 Belt Line Road, Dallas, TX 75254

BOND AMOUNT: Five percent of amount bid.
(5% of Amount Bid)

PROJECT:
(Name, location or address, and Project number, if any)
Customs and Border Protection Facility
Addison, TX

Project Number, if any:

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this 19th day of April, 2019

Shannon Capozzoto
(Witness)

J.C. COMMERCIAL, INC.
(Principal) *(Seal)*
Terry Wagner, pres.
(Title)

Rosie Morales
(Witness)

BERKLEY INSURANCE COMPANY
(Surety) *(Seal)*
Sophinie Hunter
(Title) Sophinie Hunter, Attorney in Fact

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No. BI-7280j

POWER OF ATTORNEY
BERKLEY INSURANCE COMPANY
WILMINGTON, DELAWARE

NOTICE: The warning found elsewhere in this Power of Attorney affects the validity thereof. Please review carefully.

KNOW ALL MEN BY THESE PRESENTS, that BERKLEY INSURANCE COMPANY (the "Company"), a corporation duly organized and existing under the laws of the State of Delaware, having its principal office in Greenwich, CT, has made, constituted and appointed, and does by these presents make, constitute and appoint: ***Ricardo J. Reyna; Don E. Cornell; Sophinie Hunter; Robbi Morales; Kelly A. Westbrook; Tina McEwan; Joshua A. Saunders; or Tonie Petranek of Aon Risk Services Southwest, Inc. of Dallas, TX*** its true and lawful Attorney-in-Fact, to sign its name as surety only as delineated below and to execute, seal, acknowledge and deliver any and all bonds and undertakings, with the exception of Financial Guaranty Insurance, providing that no single obligation shall exceed **Fifty Million and 00/100 U.S. Dollars (U.S.$50,000,000.00),** to the same extent as if such bonds had been duly executed and acknowledged by the regularly elected officers of the Company at its principal office in their own proper persons.

This Power of Attorney shall be construed and enforced in accordance with, and governed by, the laws of the State of Delaware, without giving effect to the principles of conflicts of laws thereof. This Power of Attorney is granted pursuant to the following resolutions which were duly and validly adopted at a meeting of the Board of Directors of the Company held on January 25, 2010:

RESOLVED, that, with respect to the Surety business written by Berkley Surety, the Chairman of the Board, Chief Executive Officer, President or any Vice President of the Company, in conjunction with the Secretary or any Assistant Secretary are hereby authorized to execute powers of attorney authorizing and qualifying the attorney-in-fact named therein to execute bonds, undertakings, recognizances, or other suretyship obligations on behalf of the Company, and to affix the corporate seal of the Company to powers of attorney executed pursuant hereto; and said officers may remove any such attorney-in-fact and revoke any power of attorney previously granted; and further

RESOLVED, that such power of attorney limits the acts of those named therein to the bonds, undertakings, recognizances, or other suretyship obligations specifically named therein, and they have no authority to bind the Company except in the manner and to the extent therein stated; and further

RESOLVED, that such power of attorney revokes all previous powers issued on behalf of the attorney-in-fact named; and further

RESOLVED, that the signature of any authorized officer and the seal of the Company may be affixed by facsimile to any power of attorney or certification thereof authorizing the execution and delivery of any bond, undertaking, recognizance, or other suretyship obligation of the Company; and such signature and seal when so used shall have the same force and effect as though manually affixed. The Company may continue to use for the purposes herein stated the facsimile signature of any person or persons who shall have been such officer or officers of the Company, notwithstanding the fact that they may have ceased to be such at the time when such instruments shall be issued.

IN WITNESS WHEREOF, the Company has caused these presents to be signed and attested by its appropriate officers and its corporate seal hereunto affixed this 25th day of MARCH, 2019.

Attest: Berkley Insurance Company

(Seal)

By _____ By _____
Ira S. Lederman
Executive Vice President & Secretary

Jeffrey M. Hafter
Senior Vice President

WARNING: THIS POWER INVALID IF NOT PRINTED ON BLUE "BERKLEY" SECURITY PAPER.

STATE OF CONNECTICUT)
) ss:
COUNTY OF FAIRFIELD)

Sworn to before me, a Notary Public in the State of Connecticut, this 25th day of MARCH, 2019, by Ira S. Lederman and Jeffrey M. Hafter who are sworn to me to be the Executive Vice President and Secretary, and the Senior Vice President, respectively, of Berkley Insurance Company.

MARIA C. RUNDBAKEN
NOTARY PUBLIC
MY COMMISSION EXPIRES
APRIL 30, 2019

_____
Notary Public, State of Connecticut

CERTIFICATE

I, the undersigned, Assistant Secretary of BERKLEY INSURANCE COMPANY, DO HEREBY CERTIFY that the foregoing is a true, correct and complete copy of the original Power of Attorney; that said Power of Attorney has not been revoked or rescinded and that the authority of the Attorney-in-Fact set forth therein, who executed the bond or undertaking to which this Power of Attorney is attached, is in full force and effect as of this date.

Given under my hand and seal of the Company, this 19th day of April, 2019.

(Seal)

_____
Vincent P. Forte

WARNING – Any unauthorized reproduction or alteration of this document is prohibited. This power of attorney is void unless seals are readable and the certification seal at the bottom is embossed. The background imprint, warning and **verification instructions** (on reverse) must be in blue ink.

Please **verify the authenticity** of the instrument attached to this Power by:

Toll-Free Telephone: (800) 456-5486; or

Electronic Mail: BSGInquiry@berkleysurety.com

Any written notices, inquiries, claims or demands to the Surety on the bond attached to this Power should be directed to:

Berkley Surety
412 Mount Kemble Ave.
Suite 310N
Morristown, NJ 07960
Attention: Surety Claims Department

Or

Email: BSGClaim@berkleysurety.com

Please include with all communications the bond number and the name of the principal on the bond. Where a claim is being asserted, please set forth generally the basis of the claim. In the case of a payment or performance bond, please also identify the project to which the bond pertains.

Berkley Surety is a member company of W. R. Berkley Corporation that underwrites surety business on behalf of Berkley Insurance Company, Berkley Regional Insurance Company and Carolina Casualty Insurance Company.

IMPORTANT NOTICE

To obtain information or make a complaint:

You may call Berkley Surety Group, LLC and its affiliates by telephone for information or to make a complaint:

BERKLEY SURETY GROUP, LLC

Please send all notices of claim on this bond to:

Berkley Surety Group, LLC
(866) 768-3534

412 Mount Kemble Avenue, Suite 310N
Morristown, NJ 07960
Attn: Surety Claims Department

You may contact the Texas Department of Insurance to obtain information on companies, coverages, rights or complaints at:

1-800-252-3439

You may write the Texas Department of Insurance:

P. O. Box 149104
Austin, TX 78714-9104
Fax: (512) 475-1771
Web: http://www.tdi.state.tx.us
E-mail: ConsumerProtection@tdi.state.tx.us

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

ATTACH THIS NOTICE TO YOUR BOND:
This notice is for information only and does not become a part or condition of the attached document and is given to comply with Texas legal and regulatory requirements.

SECTION IS

ADDITIONAL INSURANCE REQUIREMENTS

TOWN OF ADDISON, TEXAS
ADDISON AIRPORT CUSTOMS AND BORDER PROTECTION FACILITY

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# Re-Bid Addison Airport Customs and Border Protection Facility / 19-97

Company: J.C. Commercial, Inc.

Printed Name: Larry Wagnor, President

Signature: Larry Wagnor pres **Date:** 5/2/2019

JC COMMERCIAL INCORPORATED

EVIDENCE OF INSURANCE

The following Certificate contains our current policies and limits.

ACORD®

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 2/11/2019

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: Stephanie Anguiano
ANBTX Insurance Services, Inc. 12400 Coit Road, Suite 1100 Dallas TX 75251-2039	PHONE (A/C, No, Ext): (972) 419-7500 FAX (A/C, No): (972) 419-7555 E-MAIL ADDRESS: stephanie.anguiano@anbtxinsurance.com
INSURED	**INSURER(S) AFFORDING COVERAGE** / **NAIC #**
JC Commercial, Inc. 1801 Lakepointe Drive, Suite 129 Lewisville, TX 75057	INSURER A: Employers Mutual Casualty Company 21415 INSURER B: Texas Mutual Insurance Company 22945 INSURER C: Travelers Lloyds Insurance Company 41262 INSURER D: Travelers Property Casualty Co Amer 25674 INSURER E: INSURER F:

COVERAGES **CERTIFICATE NUMBER:** 19/20 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN. THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	[X] COMMERCIAL GENERAL LIABILITY [ ] CLAIMS-MADE [x] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: [ ] POLICY [X] PRO-JECT [ ] LOC [ ] OTHER:			5D60157	02/12/2019	02/12/2020	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 1,000,000 $ 100,000 $ 5,000 $ 1,000,000 $ 2,000,000 $ 2,000,000
A	AUTOMOBILE LIABILITY [ ] ANY AUTO [ ] ALL OWNED AUTOS [X] SCHEDULED AUTOS [X] HIRED AUTOS [X] NON-OWNED AUTOS			5E60157	02/12/2019	02/12/2020	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 1,000,000 $ $ $
A	[X] UMBRELLA LIAB [X] OCCUR			5J60157	02/12/2019	02/12/2020	EACH OCCURRENCE	$ 10,000,000
D	[ ] EXCESS LIAB [ ] CLAIMS-MADE			ZUE-71M74617-19-NE	02/12/2019	02/12/2020	AGGREGATE	$ 10,000,000
	[ ] DED [X] RETENTION $ 10,000							$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N [ ] (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N/A		0001319871	02/12/2019	02/12/2020	[X] PER STATUTE [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ 1,000,000 $ 1,000,000 $ 1,000,000
C	Builders Risk Inland Marine Form			QT 660 2F257437	02/12/2019	02/12/2020	Any One Project - Frame/JM Any One Project - All Other	1,000,000 6,500,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

The General Liability and Automobile policies include a blanket automatic additional insured endorsement that provides additional insured status to the certificate holder only when there is a written contract between the named insured and the certificate holder that requires such status. The General Liability, Automobile Liability and Workers Compensation policies include a blanket automatic waiver of subrogation endorsement that provides this feature only when there is a written contract between the named insured and the certificate holder that requires it. Coverage is Primary & Non-Contributory as required by written contract. Umbrella coverage is follow form.

CERTIFICATE HOLDER

**FOR INFORMATION &/OR BID PURPOSES ONLY*

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Von Breaux/STSANG

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ACORD 25 (2014/01)
INS025 (201401)

The ACORD name and logo are registered marks of ACORD

J.C. Commercial, Inc. is committed to obtaining and maintaining your required insurance limits as specified throughout the project.

Information and Instruction Form

RESPONSES THAT DO NOT CONTAIN THIS COMPLETED FORM MAY NOT BE COMPLIANT

Section I Company Profile

Name of Business:	J.C. Commercial, Inc.
Business Address:	1801 Lakepointe Drive, Suite 129 Lewisville, TX 75057
Contact Name:	Larry Wagnor, President
Phone#:	972.436.4622
Fax#:	972.436.4822
Email:	Larryw@jccom.com

Name(s) Title of Authorized Company Officers: Larry Wagnor, President
Holyn Bradford, Treasurer
Shannon Capezzuto, Secretary

Federal ID #: W-9 Form: A W-9 form will be required from the successful bidder. 75-2914681

DUN #: 017738795

Remit Address: If different than your physical address:

Section II Instructions to Bidders

Electronic Bids: The Town of Addison uses BidSync to distribute and receive bids and proposals. There will be **NO COST** to the Contractor/Supplier for Standard bids or proposals. 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.

Contractor/Supplier Responsibility: It is the contractor/suppliers responsibility to check for any addenda or questions and answers that might have been issued before bid closing date and time. Contractors/Suppliers will be

notified of any addenda and Q&A if they are on the invited list, they view the bid, or add themselves to the watch list.

Acknowledgement of Addenda: #1 #2 #3 #4 #5, #6, #7, #8

Delivery of Bids: For delivery of paper bids our physical address is:

Town of Addison

5350 Beltline Road

Dallas, TX 75254

Attn: Purchasing Department

Contractor/Supplier Employees: No Contractor/Supplier employee shall have a direct or indirect financial interest in any contract with the town, or be directly or indirectly financially interested in the sale of land, materials, supplies or services to the town.

Deliveries: All deliveries will be F.O.B. Town of Addison. All Transportation Charges paid by the contractor/supplier to Destination.

Payment Terms: A Prompt Payment Discount of % is offered for Payment Made Within Days of Acceptance of Goods or Services. If Prompt Payments are not offered or accepted, payments shall be made 30 days after receipt and acceptance of goods or services or after the date of receipt of the invoice whichever is later.

Delivery Dates: Delivery Dates are to be specified in Calendar Days from the Date of Order.

Bid Prices: Pre-Award bid prices shall remain Firm and Irrevocable for a Period of _____ Days.

☒ Exceptions: Contractor/Supplier does not take Exception to Bid Specifications or Other Requirements of this Solicitation. If neither exceptions box is checked, default shall be "No Exceptions"

☐ Contractor/Supplier take the following Exception(s) to the Bid Specifications or Other Requirements of this Solicitation (Explain in Detail). If box checked but no exceptions are listed, default shall be "No Exceptions"

Historically Underutilized Business (HUB): It is the policy of the Town of Addison to involve HUBs in the procurement of goods, equipment, services and construction projects. Prime Contractors/Suppliers are encouraged to provide HUBs the opportunity to compete for sub-contracting and other procurement opportunities. A listing of HUBs in this area may be accessed at the following State of Texas Website.
http://www.window.state.tx.us/procurement/cmbl/cmblhub.html.

HUB Owned Business Yes (No) Include a current copy of your HUB certification with your response or insert Certification number _____ and expire date _____.

Other Government Entities: Would bidder be willing to allow other local governmental entities to participate in this

contract, if awarded under the same Terms and Conditions? Yes ☒ No ☐

Bid Bond: Is Bid Bond attached if applicable? ☒ Yes ☐ No

Termination: The town at any time after issuance of this agreement, by 30 days written notice, has the absolute right to terminate this agreement for cause or convenience. Cause shall be the contractor/supplier's refusal or failure to satisfactorily perform or complete the work within the time specified, or failure to meet the specifications, quantities, quality and/or other requirements specified in the contract/purchase order. In such case the supplier shall be liable for any damages suffered by the town. If the agreement is terminated for convenience, the supplier has no further obligation under the agreement. Payment shall be made to cover the cost of material and work in process or "consigned" to the town as of the effective date of the termination.

Bidder Compliance: Bidder agrees to comply with all conditions contained in this Information and Instruction Form and the additional terms and conditions and specifications included in this request. The undersigned hereby agrees to furnish and deliver the articles or services as specified at the prices and terms herein stated and in strict accordance with the specifications and conditions, all of which are made a part of your offer. Your offer is not subject to withdrawal after the award is made.

The Town of Addison reserves the right to reject all or part of the offer and to accept the offer considered most advantageous to the town by item or total bid.

The Town of Addison will award to the lowest responsible bidder or to the bidder who provides goods or services at the best value for the Town.

I hereby certify that all of the information provided in sections I and II are true and accurate to the best of my knowledge.

Signature: Date: 5/2/2019

Title: Larry Wagnor, President

Signature certifies no changes have been made to the content of this solicitation as provided by the Town of Addison.

10/17/17

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 submit a complete list of ALL Department of Homeland Security and similar federal agency or other high security facilities, Department of Homeland Security facilities ~~on an airfield~~, and new vertical construction projects in excess of $5 Million ~~on airfields~~ current and completed within the past ten (10) years in Section RWE – Relevant Work Experience. In this section, the Contactor shall include the list of names of supervisors and type of equipment used to perform this work. Projects shall also include working on water, sanitary sewer, and storm sewer construction and/or relocation projects working in confined areas 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.

BIDDERS QUALIFICATION STATEMENT

INFRASTRUCTURE AND DEVELOPMENT SERVICES BID NUMBER 19-97, RE-BID ADDISON AIRPORT CUSTOMS AND BORDER PROTECTION FACILITY

Contractor: J.C. Commercial, Inc.

Indicate One: _____Sole Proprietor _____Partnership _____Other

__X__Corporation _____Joint Venture

Name: Larry Wagnor Partner: _____

Title: President Title: _____

Address: 1801 Lakepointe Drive, Suite 129 Address: _____

City: Lewisville City: _____

State & Zip: TX 75057 State & Zip: _____

Phone: 972.436.4622 Phone: _____

State and Date of Incorporation, Partnership, Ownership, Etc. Texas 1/5/2001

Location of Principal Office: 1801 Lakepointe Drive, Suite 129, Lewisville, TX 75057

Contact and Phone at Principal Office: 972.436.4622

Liability Insurance Provider and Limits of Coverage: Employers Mutual Casualty Company Occurrence $1,000,000, Injury $1,000,000, Med Exp 5,000, Rented $100,000, Aggregate and Products $2,000,000

Workers Compensation Insurance Provider: Texas Mutual Insurance Company - $1,000,000

Surety (Performance and Payment): Berley Insurance Group

Address: 2711 N. Haskell Avenue, Dallas, TX 75204

Contact and Phone: Don Cornell, AON Risk Services 214.989.0000

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: Dennis Johnson

Backup Superintendent Name: Clyde Jones

Safety Record – List ALL Verified Violations for Superintendent and Backup Superintendent with explanation, date and action taken to correct future safety violations:

Superintendent

No Violations

Backup Superintendent

No Violations

Total Number of Employees to be Associated with this Job: 7

Managerial 1 Administrative 3 Professional 1

Skilled 1 Semi-Skilled 1 Other ____

Percentage of work to be done by Bidder's Employees (Based on Dollars Bid): 20%

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.)
Management, Supervision, Minor Dirt Work, Carpentry and some Concrete

Access to Tools and Equipment: Percent Owned 20 Percent Rented 80

Number of Years in Business as a Contractor on Above Types of Works: 18

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
Per BidSync, Question and Answer No. 42 the Proposed Subcontractor list can be provided post bid.	
The complete list will be provided with Proposal Form sheets PF-3 though PF-14 by 2:00 pm Monday 5/6/19.	

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)
Skid Loader	Caterpillar	246C	2012
Sweeper	SkidPro #113276		2016

Trade references (List Company, Address, Contact Person, and Phone):

KD Electric, 4025 Cresthill Road, Dallas, TX 75227 Gary Pettus 214.381.9492

Redi-Mix / US Concrete Co., 331 N Main St., Euless, TX 76039 Sandie Allen 817.835.4045

Kahn Mechanical Contractors, 2787 Irving Blvd., Dallas, TX 75207 David Monsour 972.630.3438

Bank References (List Institution, Address, Contact Person, and Phone)

Bank of the West, 5011 Long Prairie Road, Flower Mound, TX 75028 Gary Lewis 469.312.5088

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? No

2. Are there any judgments, claims, arbitration proceedings, or suits pending or outstanding against your organization or officers? No

3. Has your organization filed any lawsuits or requested arbitration with regard to construction contracts within the last five years? 4/10/17 - Subcontractor contract and ruling was in favor of J.C. Commercial, Inc.

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? No

I, Larry Wagnor, being duly sworn deposes and says that the information provided herein is true and sufficiently complete so as not to be misleading.

Date this 2nd day of May, 20 19.

Name of Organization: J.C. Commercial, Inc.

By: Larry Wagnor, pres.

Title: President

STATE OF TEXAS

COUNTY OF ~~DALLAS~~ DENTON

BEFORE ME the undersigned authority, on this day personally appeared _____ Larry Wagnor, President, 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 2 day of May 20 19 .



Shannon Capezzuto

Notary Public in and for Denton County, Texas

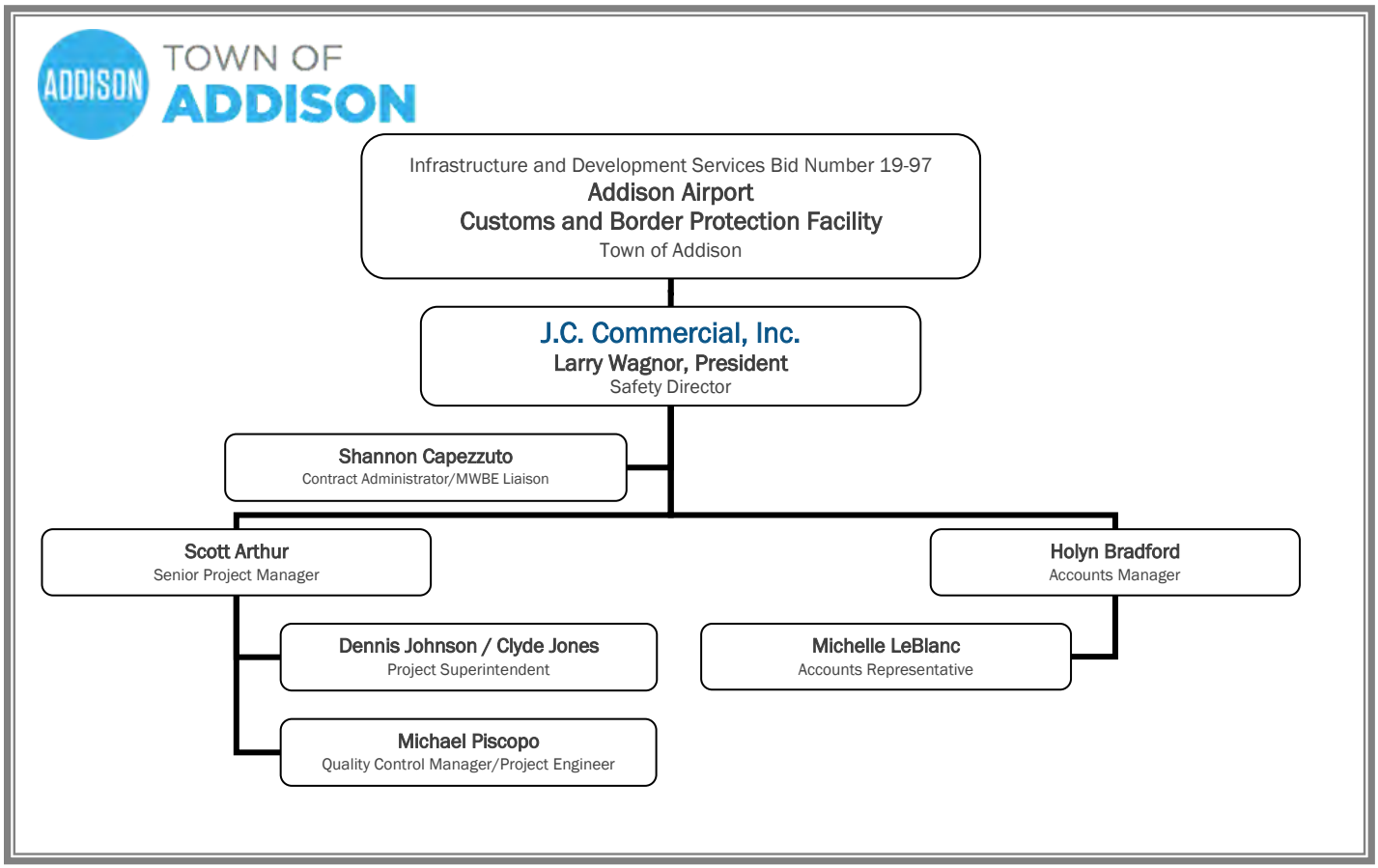
KEY PROJECT PERSONNEL

J.C. Commercial strives to take the necessary steps to ensure that all projects are completed on time and that no quality is lost under any circumstances. Our staffing approach has been developed to ensure timely flow of information between the owner, architect and the subcontractors. On our projects, each subcontractor acts as a representative on behalf of J.C. Commercial while on the jobsite, and therefore, is handpicked with great caution by Larry Wagnor, President of J.C. Commercial.

- Both the President and Project Manager will handle all contract issues, both owner and subcontractor.
- The Project Manager in conjunction with the Project Superintendent will conduct onsite weekly production meetings with the Town of Addison's representatives, Addison Airport representatives, Architect, Engineers and the Subcontractors.
- The on-site Field Superintendent will oversee the daily construction of the project and will be ***100% devoted*** to this project only.
- The Quality Control Manager is to oversee and coordinate the planning, implementation, and supervision of the project quality control plan. This includes working with employees as well as outside agencies or consultants involved in inspections and testing.
- The Safety Director and/or Safety Manager will conduct regular site visits to provide additional quality control and safety checks. Weekly safety meetings will be conducted with the appropriate trades.
- The Project Engineer will be responsible for submittals, submittal logs, RFI's, RFI logs and Change Order logs.

Each proposed team member will be readily available at the beginning of this project and will be committed to its completion. Having an experienced and knowledgeable construction team will provide the end product that the Town of Addison and the community will be most proud of.

Proposed Personnel



** Resumes for the proposed key project personnel are included within this section.*



LARRY WAGNOR

President / Safety Director

EDUCATION

Kansas State University
SMU Cox School of Business
OSHA Certification

YEARS OF EXPERIENCE

40 years

YEARS WITH FIRM

18 years

Over forty+ years of experience in the construction industry, where I have gained extensive knowledge and experience in every facet, including but not limited to, sales, marketing, and construction management. Skilled in leading as many as 100 employees and directing the construction and completion of multi-million dollar projects on-time and within budgets.

Prior to forming J.C. Commercial, my experience includes:

- Vice President for a national design-build firm with annual construction sales figures of over fifty million dollars.
- Divisional Manager/Vice President for a recognized construction firm which consistently exceeded one hundred million dollar annual sales volume.

It is this knowledge and these previous experiences that led to the establishment of J.C. Commercial in January 2001. The foundation of my company is built on the highest standards of ethics, hard work, and customer care. It is my mission as President and Owner, to provide value to our customers while maintaining integrity in the process. We use leading edge technology and old fashion customer focus and care. We do everything in our power to deliver projects on-time and within budget, while focusing on quality and safety at all times.

As President, and Owner of J.C. Commercial, I perform as chief-estimator bidding all projects, large and small as well as project managing the more challenging projects. Furthermore, I serve as Safety Director on all projects.

Synopsis of J.C. Commercial's Project Experience

- Airport Projects: $35,332,052.06
- Education: $53,680,908.07
- Fire Stations: $29,758,478.97
- Libraries: $11,960,674
- Park, Recreation and Aquatic Facilities: $92,674,083
- Additional Municipal Projects: $67,134,918.04
- Tilt Wall Construction: $25,980,351

Recent Notable Accomplishments

Completed four LEED Silver Certified projects and two LEED Gold projects.

References

The following references can attest to the construction services as well as experience of J.C. Commercial.

City of Irving, Terry Read ..... (972) 721-2501
Plano ISD, Doug Guynes ..... (469) 752-1488
City of Plano, Jim Razinah ..... (972) 941-7152
City of Dallas, Robert Durham, AIA ..... (214) 948-4522

JC COMMERCIAL INCORPORATED



SCOTT ARTHUR

Senior Project Manager

PROVEN ABILITY

- Competently fulfills roles as: Construction Manager; Project Executive; Business Developer; Overseer of pre-construction work activities.
- Developed budgets for owners and architects, approved budgets and contracts, evaluated bids and selected vendors. Estimated costs, and developed and approved procedures for subcontractor hiring and evaluation.
- Establishes strong standards for all areas of construction and for developing technology. Partners with owners on design and regulatory requirements for proposed projects and worked with owners to meet budgetary requirements using value engineering processes.
- Effectively collaborates with architects and engineers to address cost savings efforts and to ensure total project satisfaction for the project portfolio outlined on the following pages.

YEARS OF EXPERIENCE

34 years

YEARS WITH FIRM

4 years

PROFILE

Mr. Arthur joined JC Commercial with over 30+ years of construction experience with him. His diverse portfolio of consists of ground up new construction, interior finish out, remodel and renovation.

EXPERIENCE

Schools

Eagle Mountain-Saginaw ISD Bistro Additions at Saginaw High School & Boswell High School $1,607,777
Dallas ISD Bid Package #509 Renovations at 3 separate schools $6,598,369
Region IX-Technology Center and Parking
Wichita Christian School
Classroom Additions – Hardin High, Junior High and IC Evans
Dining Hall – IC Evans Elementary and Hardin Elementary
Head Start School Burkburnett Texas
High School and Junior High School Additions Burkburnett Texas
Iowa Park ISD High School Auditorium and Remodel
Iowa Park ISD Kidwell Elementary
Wichita ISD Alamo Elementary
Seymour ISD Elementary Addition and Vocational AG Building
Olney ISD – Concrete Foundation
Seymour ISD – Concrete Foundation

Municipal

DFW Airport's United States Post Office, DFW Airport, TX $2,177,777
Ditto Golf Course Club House, Arlington, TX $8,365,277
Luna Vista Golf Course Maintenance Facility, Dallas, TX $1,147,477
Midlothian Senior Center Addition, Midlothian, TX $1,097,777
Water System Maintenance Facilities South Regions, Phase I, Forney, TX $1,244,431
Canyon Family Aquatic Center $6,037,777
NRH2O Slide Tower Renovation $2,577,777
Briscoe Carpenter Livestock Center Site Improvements - ***–LEED Silver –*** $2,687,777
Friendship Community Park
Cypress Water Treatment Plant
Wichita Falls Museum and Fine Arts Center
Wichita Falls City Softball Complex
Burkburnett Waste Water Treatment Plant

Healthcare

Nocona General Hospital, Nocona, TX $3,054,277
CMAR - United Regional Healthcare – South Tower Addition, Wichita Falls, TX (JV with McCarthy) $45,000,000
CMAR - Lake Highland Nursing & Rehabilitation Center Dallas, TX ***–LEED Certified –*** $17,305,881
CMAR - Stonegate Senior Living Center Tulsa, OK $13,000,000
CMAR - Garland Assisted Living & Memory Care Garland, TX $7,791,000
CMAR - Stonegate Skilled Nursing Center Lawton, OK $6,000,000
CMAR - Brentwood Terrace Healthcare and Rehabilitation Paris, TX $5,900,000
CMAR - United Regional Health Care –Trauma Center & Facility Expansion $5,400,000
CMAR - Cleburne Nursing and Rehabilitation Center $4,043,024
Childress Regional Medical – Physical therapy $2,741,403
CMAR - Doctors Healthcare Remodel Dallas, TX $2,694,000
W.F. Community Healthcare Center $2,507,836
CMAR - Holiday Hill Nursing Home Coleman, TX $2,000,000
Design-Build - United Regional Healthcare Labor and Delivery $2,000,000
Childress Regional Medical – MRI $2,000,000
CMAR - Oakmont Humble Nursing Home Humble, TX $1,500,000
CMAR - United Regional Health Care – Urgent Care
CMAR - United Regional Health Care – Data Processing $1,030,393
Design-Build - United Regional Health Care – Hospital Administration Facility

JC COMMERCIAL INCORPORATED

CMAR - United Regional Health – Skilled Nursing Facility
Design-Build - United Regional Health Care – ADA Entrance and Parking
CMAR - United Regional Health Care – Step-down Unit Number One
Design-Build - United Regional Health Care – Warehouse Facilities
Design-Build - United Regional Health Care – Surgery Operating Room Remodel
Design-Build - United Regional Health Care – West Tower Renovation
Design-Build - United Regional Health Care – East Entry
Brownwood Memorial Hospital Addition Brownwood, TX
Bowie Assisted Living Facility, Bowie, TX
Wichita Community Healthcare Center Addition
Childress Regional Medical Center Addition Childress, TX
Grace Medical Center
Design-Build - Rathgaber Hospitality House United Regional Healthcare
North Texas State Hospital
CMAR - United Regional Health Care – Isolation Units
Electra Memorial Hospital Addition Electra, TX

Criminal Justice

Wichita County Criminal Justice Center 5 Story Super Structure
Young County Jail Addition Expansion
Archer County Court House Annex
Wichita County Jail Expansion Sprague Unit

Churches

Grace Church New Gym/Fellowship Hall and Educational Building
Design-Build - Faith Baptist Church – Family Life Center
Wichita Christian School
Design-Build - Chaparral Worship Center
Trinity Lutheran Church
CMAR - Faith Baptist Church 1800 Seat Sanctuary
CMAR - Chaparral Baptist Motel
Westside Baptist Church Remodel

Office, Retail and Private Facilities

CMAR - Catrina Court Strip Mall
New Office for Merrill Lynch
CMAR - Hudson Blueprint Addition
CMAR - Texoma AG Products Office
CMAR - Blacksox Baseball Facility
Wichita Falls Country Club Maintenance Facility

Military

Sheppard AFB – PMEL Facility
Sheppard AFB – Gym and Fitness Center
Sheppard AFB – 1000 Man Dormitory Latrine Remodel
Sheppard AFB – Wing Headquarters
Sheppard AFB – Daycare Center
Sheppard AFB – Multiple Playgrounds and Parks

Banks

CMAR - Burkburnett Bank
CMAR - Fidelity Bank

Childcare

Renovations / Addition to YMCA Childcare
CMAR - Miracle League Handicapped Softball Complex
CMAR - Southside Youth Center Renovation
Boys & Girls Club Main Club Renovation

Boy Scouts

Design-Build - Boy Scouts of America CMAR projects - Swimming Pool, Dining Hall, ADA Restroom, Rustic Dining, Pavilion, Lodge, First Aid, Ranger House

REFERENCES

Adam Mergener, City of Midlothian ..... (972) 921-6690
Clete Welch, Eagle Mountain-Saginaw ISD ..... (817) 232-0880
Raul De La Rosa, City of Dallas..... (214) 671-9846
Eric Peck, T. Howard + Associates..... (214) 522-1100

DENNIS JOHNSON

Project Superintendent

PROVEN ABILITY

- Excellent customer relations
- Project Scheduling and Budgeting
- Subcontractor management
- Interpret and explain plans and contract terms
- Construction safety
- Strong background in regulatory compliance and design collaboration.

Education/Training

- OSHA 30HR - 2016
- Walmart "Superintendent and Project Manger Training Course" – Bentonville, AR
- Walmart "Stormwater Compliance Training Course" (SWPPP Certification) – Bentonville, AR

YEARS OF EXPERIENCE

30 years

YEARS WITH FIRM

5 years

PROFILE

With over 30 years in the construction industry, Mr. Johnson is a client-centered, detail oriented Construction Superintendent skilled in managing quality control, costs, scheduling, and safety. Possesses proven management and organizational skills in directing, coordinating and integrating subcontractors in the understanding and execution of their specific scopes of work from conception to completion.

RELEVANT EXPERIENCE

Challenger School, Plano, TX
Ground up Life Skills Building Addition, HEB ISD, Euless, TX
Clark Stadium Sports Complex, Plano ISD, Plano, TX
Peak Academy, Uplift Education, Dallas, TX
North Texas Municipal Water District, Forney, TX
Plano City Hall Irrigation & Landscape, Plano, TX
Trader Joe's Food Store, Addition/Remodel Dallas, TX
Neighborhood Walmart, New Construction, San Antonio, TX
Neighborhood Walmart, New Construction, Weslaco, TX
Walmart remodel, Decatur, TX
Walmart remodel, Dallas, TX
Walmart National Central Distribution Center, Plainview, TX
Walmart/Sam's Club, Addition/Remodel, City of Industry, CA
Walmart and Sam's Club Service Stations (3), Dallas and Fort Worth, TX
Kiosk Service Stations" for Albertsons, and Tom Thumbs, Dallas and Garland, TX
CVS Pharmacy, McKinney, TX
Exxon Service Station / Tiger Mart Convenience Stores (4), Fort Worth and Dallas, TX
Two ground up Quiktrip Convenience Stores, Dallas, TX
Valero Service Station /Convenience Store (4), New Construction, Katy and Houston, TX
Stripes Service Station /Convenience Store (2), New Construction, Houston, TX
Chase Bank Renovations (3), Dallas, TX
Bank of America New Construction (5), Southlake, Dallas, Flower Mound, Colleyville and Katy, TX
Bank of America Remodels (4), Dallas, McKinney, and Houston, TX
North Star Bank, Grapevine, TX
Multiple bank remodels, Dallas, TX
Ground up bank buildings in TX, NM, and OK
Otero Savings and Loan Corporate Office Building, Alamogordo, NM
Teachers Credit Union, Sweetwater, TX
First State Bank, Seminole, OK
Hidalgo State Bank, Santa Fe, NM
El Paso Savings and Loan Building, El Paso, TX
Remodels and handy-cap compliance for banks in Texas and New Mexico
Three story office building and tilt wall warehouse/office, Grapevine, TX
Million Air Renovation, Addison Airport, Addison, TX
Samsung CEO's Office, Samsung Headquarters Building, Richardson, TX
College Street Aquatic Center, City of Lewisville, TX
Old Settler's Recreation Center, City of McKinney, TX
A nationwide fuel system upgrade, MCI / Worldcom Telecommunications
MCI / Worldcom Telecommunications Outside Plant Building and Site Expansion

JC COMMERCIAL INCORPORATED

CLYDE JONES

Project Superintendent

EDUCATION/TRAINING

Casper Junior College
North Lake Community College
United States Navy

YEARS OF EXPERIENCE

20 years

YEARS WITH FIRM

1 year

PROFILE

With over 20 years in the construction, Mr. Jones is responsible for onsite supervision for ground up projects, renovations and remodels of all types and sizes.

PROVEN ABILITY

- Proven management skills
- Expertise in planning, organizing, and managing offsite and onsite projects and crews
- Successfully meet budget and deadline targets
- Self starter
- Capable of arbitrating job site problems toward successful solutions
- Focused on 100% client satisfaction

RELEVANT EXPERIENCE

Ditto Golf Course Club House, City of Arlington

Discount Tire Stores

Shopping Strips

Commercial Office buildings

State Farm Insurance, Weatherford, TX

Decatur Church of Christ, Decatur, TX

Wise County Hospital, Decatur, TX

Grapevine Church of Christ, Grapevine, TX

Parkland Hospital OBG Addition, Dallas, TX

Baylor Hospital, Dallas, TX

Martin Crest Assisted Living Center, Weatherford, TX

Midland Airport, Midland, TX

CVS Pharmacy Stores

Country Lane Senior Center, Temple, TX

Grand Reserve Senior Center, Temple, TX

Reserve At Jefferson Crossing, Baton Rouge, LA

Federal Government projects

JC COMMERCIAL INCORPORATED

MICHAEL PISCOPO

Project Manager

PROVEN ABILITY

- Experienced in construction budgets, scheduling, safety and insurance.
- Excellent client relations, interpersonal skills, computer skills.
- Proficient with: Microsoft and Blue Beam
- Exceptional management skills, lead by example, effective team builder.
- Environmental Sampling
- Phase I ESA
- Environmental Compliance
- Safety
- High Vacuum Remediation

EDUCATION/TRAINING

- LPST Project Manager - Texas
- Hazardous Waste Operations and Emergency Response 40-Hour (OSHA HAZWOPER)
- OSHA 10-Hour
- OSHA 30 Hour
- Permit Required Confined Space
- Transportation Worker Identification Card (TWIC)
- Bachelor of Business Administration, Marketing - Texas State University
- McCoy College of Business Administration, San Marcos, TX

YEARS OF EXPERIENCE

10 years

YEARS WITH FIRM

4 years

PROFILE

Mr. Piscopo has proven to be a reliable, dependable, professional with a strong work ethic and high integrity. Mr. Piscopo's proactive attitude lends to a catalyst for instilling a sense of urgency to overcome obstacles, resolve problems and move initiatives forward while pursuing excellence in his performance and projects at all times. Experienced in implementing training and safety programs ensuring compliance with all OSHA standards as well as additional company safety policies and guidelines.

His diverse portfolio of consists of ground up new construction, interior finish out, and renovation. He finishes projects on-time and within budget.

EXPERIENCE

- DFW Terminal B Lower Gates Electrification , DFW Airport, TX -$3.4 million
  Modifications to jetbridges at DFW Airport's Terminal B
- Denton County Courts Building Courtroom Addition, Denton, TX -$1,137,777
  Renovation
- Denton County Law Building Renovation, Denton, TX -$717,277
- Sherrod Elementary School – Site Improvements, Arlington, TX -$538,777
- REC Stair Remodel, Grapevine, TX -$297,777
  Stair and Lobby renovation
- Denton Regional Fire Training Facility, Denton, TX -$2.5 million
  Construction of new safety training facility
- Water System Maintenance Facilities South Regions, Phase I, Forney, TX -$1.2 million
  Construction of new maintenance facility
- Canyon Family Aquatic Center, Canyon, TX -$6 million
  New family aquatic park
- Buckhorn Park Renovation, Plano, TX -$1.3 million
- Eagle Mountain-Saginaw ISD Bistro Additions, Saginaw and Fort Worth, TX -$1.6 million
  Bistro additions at Saginaw High School and Boswell High School
- Briscoe Carpenter Livestock Center Site Improvements, Dallas, TX -$2.7 million
  –LEED Silver – Site Improvements for the Briscoe Carpenter Livestock Center at Fair Park
- NRH2O Slide Tower Renovation, North Richland Hills, TX -$2.6 million
  New Slide Tower to accommodate 4 water slides
- Dallas ISD Bid Package #509, Dallas, TX -$6.5 million
  Renovation of the existing steam heating system to Hydronic heating system on 3 Dallas ISD schools.

<u>Additional Notable Experience</u>

- GEI Consultants, Inc., Keller, Texas - Environmental Technician
- EE&G Environmental Services, Inc., Dallas, Texas - Environmental Specialist

REFERENCES

Chris Smith, City of Grapevine .....(817) 410-3473

Clete Welch, Eagle Mountain-Saginaw ISD .....(817) 232-0880

Raul De La Rosa, City of Dallas.....(214) 671-9846

JC COMMERCIAL INCORPORATED

SECTION RWE

RELEVANT WORK EXPERIENCE STATEMENT

SECTION RWE

ALL BIDDERS ARE NOTIFIED THAT THE FOLLOWING RELEVANT WORK EXPERIENCE STATEMENT MUST BE COMPLETED AND SUBMITTED WITH THE BID PROPOSAL

CONTRACTOR'S RELEVANT WORK EXPERIENCE

The Contractor shall submit a complete list of ALL Department of Homeland Security and similar federal agency or other high security facilities, facilities ~~on an airfield and airfield pavement work~~ current and completed projects for the past ten (10) years for review in this section. Section BQS – Bidder Qualification Statement shall include the list of names of supervisors and type of equipment used to perform this work. Please include the size of the project; dollar value of the project; whether the project was on time and on budget; and if not, why not. Projects shall also include working on water, sanitary sewer, and storm sewer construction and/or relocation projects working in confined areas 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.

RELEVANT WORK EXPERIENCE STATEMENT

INFRASTRUCTURE AND DEVELOPMENT SERVICES BID NUMBER 19-97, RE-BID ADDISON AIRPORT CUSTOMS AND BORDER PROTECTION FACILITY

List of ALL Department of Homeland Security and Similar Federal Inspection Stations current and completed projects for the past ten (10) years. (Use additional sheets if necessary.)

J.C. Commercial has not completed Homeland Security or Federal Inspection Stations to date, however, we have the personal and project experience with neighboring Aviation Facilities to complete this project on time and within budget.

1. Project: DFW Terminal High Gates Electrification

Current Status: 7/2015 completed

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: Renovation

Owner/Agency: DFW International Airport Board

Project Size: $2,598,770.80

Owner/Agency: DFW International Airport Board

Year Built: 7/2015 Contract Price: $2,598,770.80

Project Remain at or Under Contract Price: Yes or (No) (Circle One) If no, explain: _____

$2,577,777 and final $2,598,770.80

Project Complete on Time: (Yes) or No (Circle One) If no, explain: _____

Contact Person: Ron Wesolak formerly with DFW Phone: 817.629.9141

2. Project: Midlothian Senior Center Expansion

Current Status: completed 11/2017

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: Addition/Renovation

Owner/Agency: City of Midlothian

Project Size: $1,148,910

Owner/Agency:

Year Built: 11/2018 Contract Price: $1,148,910

Project Remain at or Under Contract Price: Yes or (No) (Circle One) If no, explain:

Project Complete on Time: (Yes) or No (Circle One) If no, explain:

Contact Person: Adam Mergener Phone: 972.775.1083

3. Project: DFW Airport Terminal B Lower Gate Electrification

Current Status: completed 10/2017

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: Renovation

Owner/Agency: DFW International Airport

Project Size: $3,437,777

Owner/Agency: DFW International Airport

Year Built: 10/2017 Contract Price: $3,437,777

Project Remain at or Under Contract Price: Yes or No (Circle One) If no, explain: _____

Project Complete on Time: Yes or No (Circle One) If no, explain: _____

Contact Person: Steven Real Phone: 972.973.2150

4. Project: Irving Fire Training Facility

Current Status: 5/2017 completed

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: New Construction

Owner/Agency: City of Irving

Project Size: $2,495,639

Owner/Agency: City of Irving

Year Built: 5/2017 Contract Price: $2,495,639

Project Remain at or Under Contract Price: Yes or No (Circle One) If no, explain: _____

$2,641,777 final $2,495,639

Project Complete on Time: Yes or No (Circle One) If no, explain: _____

Contact Person: Pat Lamers Phone: 972.721.2700

5. Project: Hunter Ferrell Landfill Scalehouse and Office Complex

Current Status: 6/2016 completed

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: New Construction

Owner/Agency: City of Irving

Project Size: $1,893,739

Owner/Agency: City of Irving

Year Built: 6/2016 Contract Price: $1,893,739

Project Remain at or Under Contract Price: Yes or No (Circle One) If no, explain: _____

Project Complete on Time: Yes or No (Circle One) If no, explain: _____

Contact Person: Brad Hughes Phone: 972.721.2785

6. Project: Brisco Carpenter Livestock Center at Fair Park

Current Status: 1/2016 completed

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: New construction - site work

Owner/Agency: City of Dallas

Project Size: $2,416,573.99

Owner/Agency: City of Dallas

Year Built: 1/2016 Contract Price: $2,416,573.99

Project Remain at or Under Contract Price: (Yes) or No (Circle One) If no, explain: _____

Project Complete on Time: (Yes) or No (Circle One) If no, explain: _____

Contact Person: Raul De La Rosa Phone: 214.671.9846

7. Project: DFW Airport Terminal D Jetbridge Modification

Current Status: 10/2014 completed

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: Renovation

Owner/Agency: DFW International Airport Board

Project Size: $3,237,767.09

Owner/Agency: DFW International Airport Board

Year Built: 10/2014 Contract Price: $3,237,767.09

Project Remain at or Under Contract Price: Yes or No (Circle One) If no, explain: _____

Project Complete on Time: Yes or No (Circle One) If no, explain: _____

Contact Person: Bobby Stone (formerly with DFW) Phone: 817.709.7384

8. Project: DFW Airport 1W Parking North Express Expansion

Current Status: completed 5/2013

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: New Construction

Owner/Agency: DFW International Airport Board

Project Size: $8,326,532.93

Owner/Agency: DFW International Airport Board

Year Built: 5/2013 Contract Price: $8,326,532.93

Project Remain at or Under Contract Price: Yes or (No) (Circle One) If no, explain:

7,977,777 and final 8,326,532.93

Project Complete on Time: (Yes) or No (Circle One) If no, explain:

Contact Person: Jacqueline Cato Carter Phone: 972.973.1888

9. Project: Love Field Snow & Ice Removal Equipment Facility - LEED Silver

Current Status: completed 8/2012

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: New Construction

Owner/Agency: City of Dallas

Project Size: $4,205,975.32

Owner/Agency: City of Dallas

Year Built: 8/2012 Contract Price: $4,205,975.32

Project Remain at or Under Contract Price: Yes or No (Circle One) If no, explain: _____

Project Complete on Time: (Yes) or No (Circle One) If no, explain: _____

Contact Person: Kim Cotten Phone: 214.336.0137
formerly with URS Corp. Project Manager

10. Project: DCTA Operations and Maintenance Facility

Current Status: completed 1/2012

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: New Construction

Owner/Agency: DCTA

Project Size: $14,807,810.00

Owner/Agency: DCTA

Year Built: 1/2012 Contract Price: $14,807,810.00

Project Remain at or Under Contract Price: (Yes) or No (Circle One) If no, explain: _____

Project Complete on Time: (Yes) or No (Circle One) If no, explain: _____

Contact Person: Kevin Heidrich Phone: 214.794.3290

STATE OF TEXAS

COUNTY OF ~~DALLAS~~ DENTON

BEFORE ME the undersigned authority, on this day personally appeared _____ Larry Wagnor, President, 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 2 day of May 20 19.

Shannon Capezzuto

Notary Public in and for Denton County, Texas

SHANNON CAPEZZUTO
Notary Public, State of Texas
Comm. Expires 01-04-2023
Notary ID 10318676

CURRENT PROJECTS SUMMARY

Name & Location of Project	*Contract Amount*	*Projected Completion Date*	*Owner Contact and Phone*
Senter Park Recreation Center Renovation, Irving, TX	$ 1,194,777.00	7/2019	City of Irving Robert Lawhorn 972.721.3686
HEB ISD Parking, Euless, TX	$ 563,777.00	5/2019	HEB ISD Josh Minor 817.399.2400
Mary Lib Saleh Euless Public Library, Euless, TX	$ 6,360,000.00	12/2019	City of Euless Kyle McAdams 817.685.1590
DeSoto Fire Station No. 2, DeSoto, TX	$5,177,777.00	9/2019	City of DeSoto c/o CRE Management Wayne Brown 901.569.4402
Nocona General Hospital Renovation, Nocona, TX	$ 3,212,505.00	Closeout process	Nocona Hospital Lance Meekins 940.825.3235

COMPLETED AIRPORT PROJECTS

Recent years

Project	*Owner*	*Contract Amount*	*Completion Date*
McKinney Air Center Hangar No. 2	City of McKinney	$ 1,255,698.54	November 2017
Terminal B Lower Gates Electrification	DFW Airport	$ 3,908,346.68	October 2017
Terminal B High Gates Electrification	DFW Airport	$ 2,598,770.80	July 2015
Terminal D Jetbridge Modifications	DFW Airport	$ 3,237,767.09	October 2014
Dallas Fire Station No. 37 ***--LEED Gold Certification--***	City of Dallas	$ 4,169,911.60	October 2013
1W Parking North Express Expansion	DFW Airport	$ 8,326,531.93	May 2013
DFW TRIP Subcontractor Construction Area	DFW Airport	$ 6,127,685.41	March 2013
Love Field Snow & Ice Removal Equipment Facility ***--LEED Silver Certification--***	City of Dallas	$ 4,205,975.32	August 2012
DFW Terminal B Regating	DFW Airport	$ 1,259,371.95	April 2012
Aviation Administration Building at Grand Prairie Municipal Airport	Texas DOT	$1,705,780.10	August 2011
RAC Carwash Improvements	DFW Airport	$1,028,761.44	July 2011

ADDITIONAL RELEVANT PROJECTS

Recent years

Project	*Owner*	*Contract Amount*	*Completion Date*
REC Stair Remodel	City of Grapevine	$ 309,089.14	January 2018
Midlothian Senior Center Expansion	City of Midlothian	$ 1,148,910.55	November 2017
Water System Maintenance Facilities	North Texas Municipal Water District	$ 1,289,933.08	November 2017
Irving Fire Training Facility	City of Irving	$ 2,495,639.27	May 2017
Hunter Ferrell Landfill Scalehouse and Office Complex	City of Irving	$ 1,893,739.60	June 2016
Briscoe Carpenter Livestock Center at Fair Park	City of Dallas	$ 2,416,573.99	January 2016
Dallas Fire Station No. 37 ***--LEED Gold Certification--***	City of Dallas	$ 4,169,911.60	October 2013
Sun Valley Industrial Park	Sun Valley Industrial Park, LP	$ 1,618,472.61	September 2013
The Jeanie Laube Early Headstart School at Jubilee Park	Jubilee Park & Community Center	$ 1,806,684.35	August 2013
Samuell Grand Recreation Center Renovation & Expansion	City of Dallas	$ 2,582,643.06	July 2013
White Rock Hills Library ***--LEED Gold Certification--***	City of Dallas	$ 4,418,732.77	April 2012
DCTA Operations & Maintenance Facility	DCTA	$14,807,810.00	December 2011
Center for the Creative Arts	City of Lewisville	$9,172,541.00	December 2010
Kleberg/Rylie Recreation Center Renovation & Expansion	City of Dallas	$1,116,463.00	December 2010
Police Station Remodel & Renovation	City of Lewisville	$1,318,346.00	December 2010
Parker Public Safety Building	City of Parker	$1,745,471.00	October 2009
Dallas Public Library Lochwood Branch Renovation & Addition ***--LEED Silver Certification--***	City of Dallas	$4,423,014.00	August 2009
Fire Station No. 2***--LEED Silver Certification--***	City of Richardson	$2,398,294.00	March 2009
Fire Station No. 3	City of Wylie	$2,819,938.00	February 2009
Lively Pointe Youth Center Renovation & Expansion	City of Irving	$1,969,077.00	July 2008
New Central Fire Station	City of Highland Village	$2,989,256.00	April 2008
Steven Everett Copeland Government Center	Denton County	$3,097,166.00	December 2007
Euless Public Works Building	City of Euless	$1,687,664.00	April 2007
Lewisville ISD Bus Maintenance Facility	Lewisville ISD	$1,559,428.00	June 2006
Old Settlers Recreation Center Expansion	City of McKinney	$1,541,908.00	January 2006

Terminal D

Jetbridge Modification

DFW Airport, TX



Client

D/FW International Airport

Prime Consultant

Jacobs Engineering Group

Contract

$ 3,237,767.09

Type of Construction

Renovations

Scope

Selective demolition and construction for gate modifications to accommodate additional boarding bridges, fixed walkways, new PCA (preconditioned air) air handling units, the extension of centralized ground power home run supply cabling from motor generator room and addition of new point of use ground power unit.

This project was a fast paced project to accommodate the arrival the new airbus aircrafts to service the D/FW International Airport.

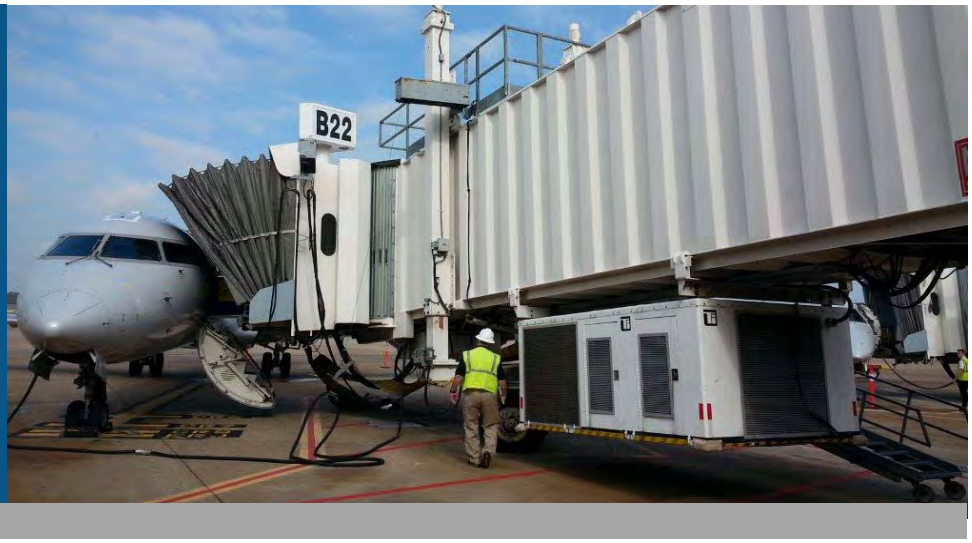






JC COMMERCIAL INCORPORATED

Terminal B
High Gates Electrification
DFW Airport, TX



Client
D/FW International Airport

Prime Consultant
Parsons

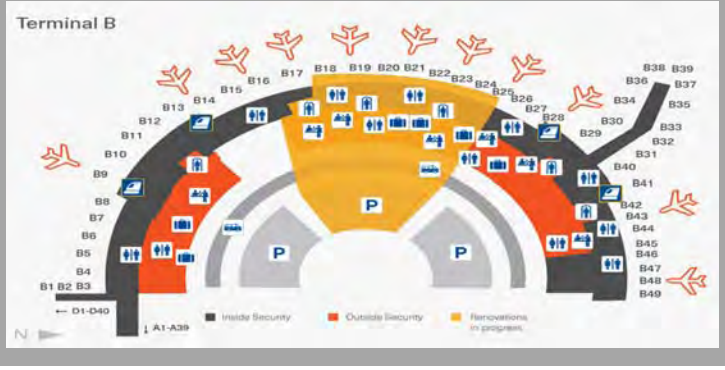
Contract
$ 2,598,770.80

Type of Construction
Renovations

Scope

Demolition of existing equipment making way for the installation of all new equipment including:

- new electrical service to jet bridges,
- new 90Kva ground power units,
- preconditioned air handlers,
- condensate lines,
- sump pumps,
- heat trace and
- controls.



Love Field

Snow & Ice Equipment Removal Facility

Dallas, TX



Client

City of Dallas

Architect

PGAL

Contract

$ 4,205,975.32

Type of Construction

New Construction

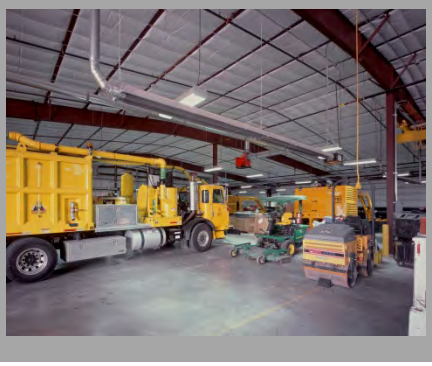
Scope

Developed to house the necessary snow and ice removal equipment required by the Airport. The overall facility is approximately 53,836 square feet and consisted of the construction a two pre-engineered metal buildings with standing seam roof.

The maintenance facility for the equipment occupied 29,103 square feet and the remaining 7,733 square feet incorporated administrative offices, conference room, training rooms, copy/file area with break room, lockers and restrooms.

A secondary structure was built for parking and storage of additional equipment. This is a 17,000 square foot open air facility with a standing seam metal roof. The buildings are surrounded by 30,000 square feet of 5” concrete paving.

All buildings are equipped with fire sprinkler, fire alarm and meet the current energy codes and handicap requirements. This project was LEED Silver.







JC COMMERCIAL INCORPORATED

1W Parking North Express Expansion

DFW Airport, TX



Client

D/FW International Airport

Prime Consultant

Parsons

Contract

$ 8,326,532.93

Type of Construction

New Construction

Scope

This 600,000 sf expansion project spread over a 5 acre site and included: concrete paving, asphalt paving, fire-line construction, storm drain, grading, signage, demolition, erosion control, utility adjustments, pre-engineered canopies and foundations. Coordination was imperative during this project.

Prior to demolition, we were responsible for relocating the existing vehicles in the parking lot, recording the relocation process and all owner notifications. Both pedestrian and vehicle traffic was controlled throughout the duration of the project. DFW's recycle and resale facility was utilized for all applicable materials. Also included were the sprinkler system redesign and the striping and numbering of all parking spaces.

This particular project was a high profile project for DFW Airport due to the short time line and the holiday revenue they stood to gain from a successful on-time completion. The 90 day time line which was subsequently shorted by a 15 day delay while awaiting the abatement completion and the airport permit process was not a problem for J.C. Commercial.

The owner further requested additional work which included a motorcycle parking area modification at a separate location and the addition of a new bus entrance/exiting area to parking. The expansion was completed on-time and allowed for the day to day operation of the airport's facilities to continue uninterrupted.







JC COMMERCIAL INCORPORATED

DFW TRIP Subcontractor Construction Area

DFW Airport, TX



Client

D/FW International Airport

Prime Contractor

MBJ3 a Joint Venture

Contract

$ 6,127,685.41

Type of Construction

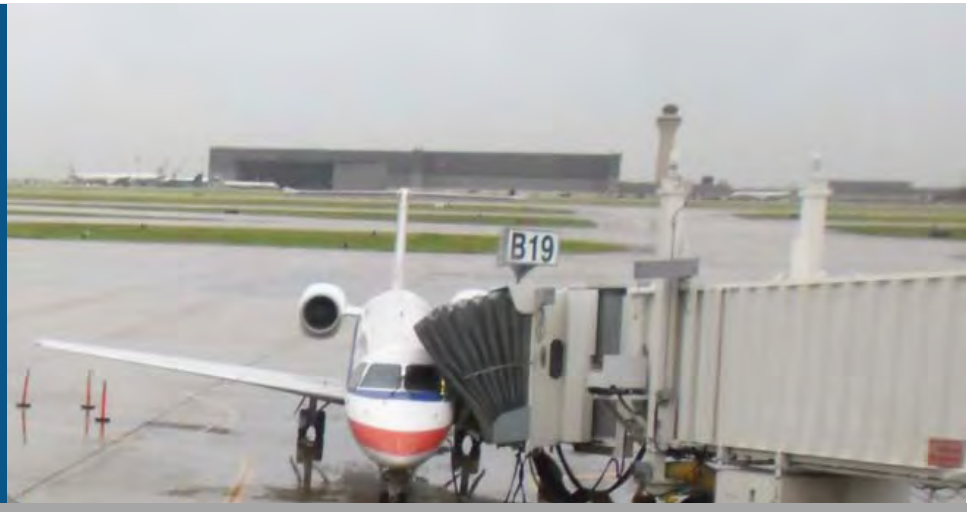
New Construction

Scope

New construction of a trailer complex, North parking lot, offsite subcontractor parking and ROCIP medical center. The owner later requested the inclusion of 7 bus stations to be added onto the project.

JC COMMERCIAL INCORPORATED

Terminal B
Re-gating
DFW Airport, TX



Client
D/FW International Airport

Architect
MBJ3 a Joint Venture

Contract
$ 1,259,371.95

Type of Construction
Renovation

Scope
Demolition of existing Terminal jetbridges. Sawcut existing runway, installed piers for new jetbridges, relocated original existing jetbridges to new foundations and installed all new jet walkways. A new canopy was built and extended existing fire protection. All work completed while airport continued to use neighboring Terminals B17, B20, and 23.



JC COMMERCIAL INCORPORATED

Aviation Administration Building

Grand Prairie, TX



Client

TX DOT and City of Grand Prairie

Architect

GRW, Inc.

Contract

$ 1,705,780.00

Type of Construction

New Construction

Scope

This newly constructed 6,500 square-foot Aviation Administration Building incorporates a steel structure with a curved metal deck roof with a stone and stucco finish.

The exterior features a crown core insulated panel system. Interior features include polished concrete floors, built-in millwork cabinets and counters.

Beautiful interior, exterior lighting and landscaping. The glass curtain wall systems on the east and west sides complete the sleek, elegant appearance.







JC COMMERCIAL INCORPORATED

RAC Carwash Improvements

DFW Airport, TX



Client

D/FW International Airport

Architect

URS

Contract

$ 1,028,761.44

Type of Construction

Renovations

Scope

Renovation of 12 different rental carwash locations and 1 bus wash all located within the D/FW Airport. Scope included installing new carwash equipment, utilities, concrete, plumbing, and electrical while complying with the stringent environmental policies of D/FW Airport.

Hertz®

Budget®

AVIS

JC COMMERCIAL INCORPORATED

DCTA

Operations & Maintenance Facility
Lewisville, TX



Client

Denton County Transportation Authority

Architect

Lockwood, Andrews & Newman, Inc.

Contract

$ 14,807,810.00

Type of Construction

New Construction

Scope

The DCTA Operation & Maintenance Facility was the site development of 17 acres with a new 40,000 sf building, 6,000 sf fueling canopy and 1,600 sf storage building. The construction consisted of clearing the 17 acres of trees and debris left from a previous dump site, installing 1' of select fill to cap the whole site, haul off of material from excavating down 10' below the finish floor elevation, installing 10' of engineered fill material below the slab, installing 36" x 40' deep cased piers, 1' thick slab on grade with 33' tall tilt walls, around a 33' tall clear span metal build with a standing seam roof. The building is located ½ mile from the main entrance. We engineered and constructed a concrete entrance road 24' wide x 1' thick and a TXDOT approved turn lane in order to withstand the heavy truck traffic. Special detail was paid to the installation of:

- computerized train wash and air blowers with their state of the art technology;
- administrative and maintenance offices;
- multiple train track installation;
- 3 overhead cranes;
- 6,000 sf train fueling canopy with 40,000 gal in-ground storage tanks;
- and a 1,700' long concrete drainage channel (26' wide x 12' deep).

This vast facility was constructed to serve the DCTA staff and surrounding rail lines for years to come.







JC COMMERCIAL INCORPORATED

Creative Arts Center

Lewisville, TX



Client

City of Lewisville

Architect

Page Southerland Page

Contract

$ 9,172,541.00

Type of Construction

New Construction

Scope

This newly constructed 38,887 sf Grand Theater is designed with tilt-wall concrete, CMU and metal stud walls, finished with brick veneer and polished concrete floors. Standing 3-stories this facility was strategically placed on a 2.257 acre tract in the heart of downtown Lewisville.

The Arts Center incorporates:

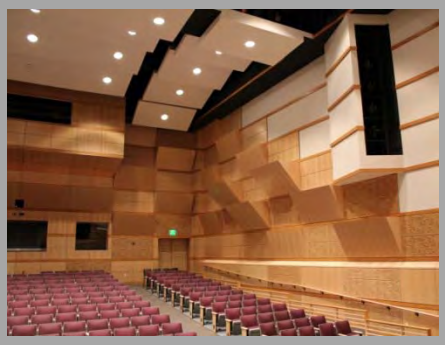
- 2,200 sf Proscenium theater,
- 2,733 sf black box theater,
- dressing rooms,
- 1,796 sf administrative suite,
- 2,399 sf multi-purpose room
- 2,343 sf art gallery,
- 2,016 sf for five studios,
- craft wing and more.

A water chiller HVAC system ensures a comfortable atmosphere.

Seating 296 people, this beautifully designed auditorium and stage incorporates an innovative sound system theatrical lighting and rigging.







JC COMMERCIAL INCORPORATED

Hunter Ferrell

Landfill Scalehouse & Office Complex
Irving, TX



Client

City of Irving

Architect

CP&Y, Inc.

Contract

$ 1,893,739.60

Type of Construction

New Construction

Scope

The new construction of an administration building including offices, training room, locker rooms, restrooms, break room, and a reception/lobby area.

Additionally, a new scale house was constructed utilizing transaction windows on two sides along with new roadways to accommodate the two state of the art scale systems for coming and going traffic.

Site amenities for this project included an employee parking lot, a large format retaining wall system that supports the pad for the administration building, extensive fencing, and site lighting.







JC COMMERCIAL INCORPORATED

Fire Station No. 37

Dallas, TX



Client

City of Dallas

Architect

Dewberry Architects, Inc.

Contract

$ 4,169,911.60

Type of Construction

New Construction

Scope

Sitting on a 14,000 square foot structural slab, Dallas Fire Station 37 stands strong with fully reinforced CMU walls and large structural steel members. It houses four apparatus bays with heavy-duty bi-folding doors, a state of the art fitness room, a full access kitchen, and the City's first training room to accommodate multiple stations.

A 12-man team can rest comfortably in the three spacious bunk rooms, while the Lieutenant, Captain, Battalion Chief, and Driver each have rooms of their own.

The exterior of the building is comprised of architectural block, metal panels, a TPO roofing system, and a vibrant fire-engine red canopy. DFS 37 has been rated LEED Gold, with 30 geothermal wells acting as heat pumps as deep as 325 feet into the ground. The building is also equipped with a fully-functional solar hot water heating system. With tile flooring, stainless steel finishes, and LED lighting, Dallas Fire Station 37 has a classic modern look that is one of a kind.







JC COMMERCIAL INCORPORATED

Sun Valley Industrial Park

Fort Worth, TX



Client

Sun Valley Industrial Park, LP

Architect

Dewberry Architects, Inc.

Contract

$ 1,618,472.61

Type of Construction

New Construction

Scope

This project consisted of the new construction of 4 separate pre-engineered metal buildings to be utilized for office and warehouse space. Included were two 5,000 sf buildings and two 7,500 sf buildings. Each included its own 1,500-2,000 sf office space.

The four (4) buildings are the first of a total of twenty-seven (27) total buildings to be built within this development.

The project was partially funded with an Economic Development Grant contingent on the stringent completion date and associated M/WBE participation compliance. Being part of a master plan development, a rigorous schedule was necessary for state funding to be awarded.

J.C. Commercial successfully completed the project on time and under budget allowing the owner to receive the designated funding through the Economic Development Grant.







JC COMMERCIAL INCORPORATED

White Rock Hills Branch Library

Dallas, TX



Client

City of Dallas

Architect

HOK

Contract

$ 4,418,732.77

Type of Construction

New Construction

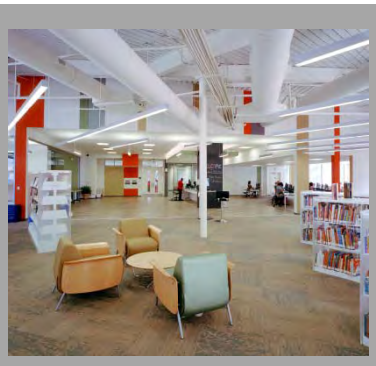
Scope

The White Rock Hill's Branch Library 18,160 sf. open concept design that takes advantage of the site's topography and natural features, with library stacks and reading areas overlooking a tree-lined creek that forms the southern edge of the site.

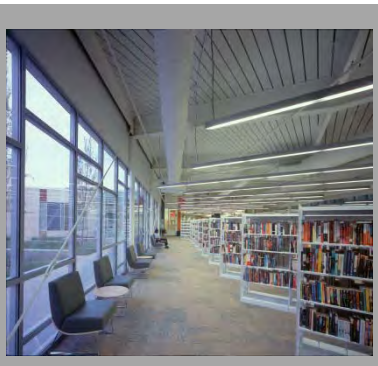
The building's design concept was based on the form of an open book binder as a natural folded roof structure. The building creates an open configuration with its tectonic structural and mechanical parts exposed as architectural language. A few the unique features of being a LEED Gold Certified Building include energy efficient lighting with daylight harvesting, air conditioning and heating, organic landscape materials, excellent indoor air quality and the use of local building materials.

Other key features include: over 100 parking spaces, public meeting space seating 100 with kitchenette and restrooms that can be closed from the building for after-hours use, classroom space that can be divided into two meeting areas seating 24. This area can also be closed from the library and accessed after-hours, houses 45,000 to 50,000 volume collection of books and media, public computer workstations and laptops for public use, drive-up access for book and media return.









JC COMMERCIAL INCORPORATED

Police Station

Lewisville, TX



Client

City of Lewisville

Architect

Page Southerland Page

Contract

$ 1,318,346.82

Type of Construction

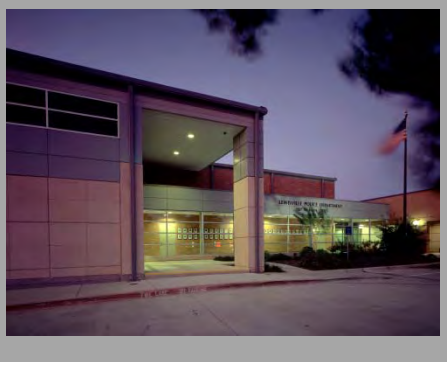
Renovation

Scope

Renovation of 25,400 square feet of existing office and former jail space. The 11 phases of construction allowed for uninterrupted day to day use of the facility. The construction consisted of the demolition and relocation of the holding cells, evidence storage, evidence processing, drug storage, locker rooms, interrogation rooms, dispatch offices and police official offices.

The special challenges that this project presented was the detailed phasing plan that would allow for the continued use of the building while the remodel took place. This required the relocation of some of the office staff in temporary trailers located on site. The new holding cells had to be built before the existing ones could be demolished. The phasing plan was designed by J.C. Commercial with input from the Police Department. It was adjusted throughout the project to fit the ongoing use of the building and the construction schedule.







JC COMMERCIAL INCORPORATED

SAFETY ASSURANCE

Safety demands commitment!

As a General Contractor, we have an obligation to ensure that all our employees and subcontractors are afforded the protection of an appropriate safety program.

J.C. Commercial has adopted a comprehensive safety program that has been distributed and implemented by all Project Managers, Field Superintendents, Project Engineers and Subcontractors. It addresses our specific safety concerns and provides guidance for the performance of individual job tasks within the framework of appropriate OSHA standards.

Additionally, our diligence in obtaining quality subcontractors and employees, in conjunction with our thorough training, lays the foundation for a safe work setting at all of our jobsites.

As a result, we at J.C Commercial are proud to have a proven safety record which reflects how serious our company is about a safe work environment.

J.C. Commercial takes great pride in that our due diligence in the intricacies of safety to report that ***we have had no occupational deaths, explosions, fires, or collapse of any temporary or permanent structure***.

Workers Compensation Experience Modification Rate (EMR)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Experience Modification Rate (EMR)	.91	.92	.85	.87	.85	.86	.85	.87	.89	.90

OSHA Log

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Number of injuries & illnesses	0	0	0	0	0	0	0	0	0
Number of lost time accidents	0	0	0	0	0	0	0	0	0
Number of recordable cases	0	0	0	0	0	0	0	0	0
Number of fatalities	0	0	0	0	0	0	0	0	0
Number of employee direct hire fixed hours worked	38,000	36,000	43,000	39,520	36,900	35,360	42,111	48,728	52,644

Larry Wagnor is and has been the **Safety Director** for J.C. Commercial since the formation of the company. As the above clearly shows, he has the years of experience and the continued education of OSHA standards which he and our Safety Manager pass on to every Project Manager, Project Engineer, Superintendent and job site.

This thorough training of all employees in the safety policies/ guidelines has maintained our assurance of OSHA compliance on all projects.

Additional safety measures include:

- All Project Managers, Project Engineers and Superintendents are OSHA certified.
- Resources provided for bi-annual OSHA recertification classes, as required by J.C. Commercial, Inc.
- Weekly safety meetings and site visits are conducted on all jobsites.
- Weekly safety meetings incorporate Toolbox Topics addressing current phase of project.
- Project Managers/Safety Managers and Superintendents ensure safety and compliance with OSHA standards as well as adhering to the J.C. Commercial Safety Program.
- OSHA posters posted at each job site along with Safety Program and First Aid/Emergency Supplies. Furthermore, directions to nearest emergency facility are posted at this same location at each job site.
- Employee and Subcontractor handbooks are signed by each certifying agreement to all safety measures.
- Mandatory requirement that all visitors to the job site must be checked in and issued an ID badge.

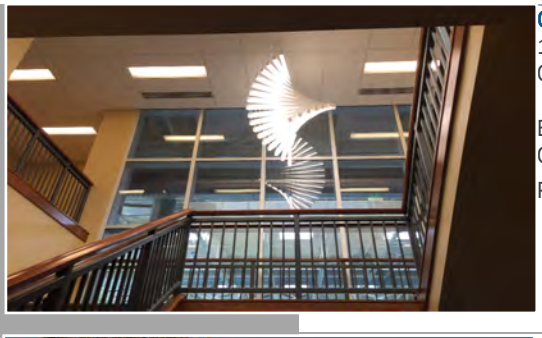
SAFETY IS IMPERATIVE AT ALL TIMES!

JC COMMERCIAL INCORPORATED

From beginning to completion our goal is to produce an end product that all will be most proud of for years to come. This doesn't just include J.C. Commercial but also our Owners, Architects, and community as a whole. We measure success by the positive relationships that we will form with your representatives and the possibility of future opportunities that could unfold.

We like for all of our clients to be repeat customers. Nothing but quality and owner satisfaction is acceptable!

PROJECT REFERENCES



City of Grapevine
1175 Municipal Way, Grapevine, TX 76051
Chris Smith, Deputy Director (817) 410-3473 / chriss@grapevintexas.gov

Barker Rinker Seacat Architecture
Christine Harwood (303) 465-1366 / christineharwood@bsarch.com

Project: REC Stair Remodel -2018



City of Midlothian
104 W. Avenue E., Midlothian, TX
Adam Mergener (972)775-6401 / adam.mergener@midlothian.tx.us

Alexandra Lowers & Guide Architecture
Alexandra Lowers (214) 803-4303 / Alexandra.lowers@gmail.com

Project: Midlothian Senior Center Renovation -2017



D/FW International Airport
Airport Development & Engineering
Steven Real (972) 973-2150 / SReal@DFWairport.com
Ron Wesolak (817) 629-9141 *(formerly with DFW)*

Projects: Terminal B Lower Gates Electrifications - 2017
Terminal B High Gates Electrifications -2015
Terminal D Jetbridge Modifications -2013
1WParking North Express Expansion -2013
TRIP Subcontractor Construction Area -2013
Terminal B Re-gating -2012
RAC Carwash Improvements -2011





Dallas Housing Authority
Pat Uhl, (214) 951-1990
PUhl@dhadal.com

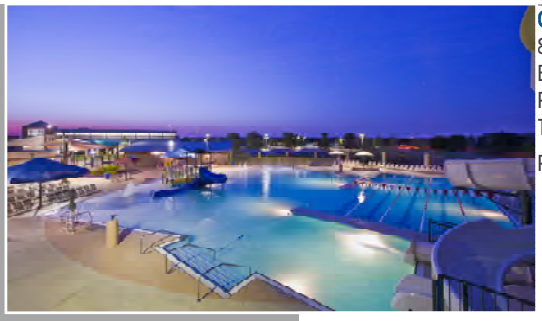
Project: Lakewest Retail Renovation –2014



City of Plano
1520 Avenue K, Plano, TX 75054
Jim Razinha, P.E. Facilities Manager (972) 941-7152 / JimRaz@plano.gov
Michael Vaughan (214) 435-9357 MichaelVa@plano.gov

Projects: Buckhorn Park Renovation - 2017
Plano City Hall Landscape & Irrigation -2016
Aquatic Center Renovation -2012
Oak Point Park -2003
Plano Park Maintenance Facility -2002

PROJECT REFERENCES



City of Irving
825 Irving Blvd., Irving, TX 75060
Brad Hughes (972) 721-2785 / BHughes@cityofirving.org
Pat Lamers (972) 721-2700 / PLamers@cityofirving.org
Terry Read (972) 721-2717 / TRead@cityofirving.org

Projects: Senter Park Recreation Center Renovation – in progress
Fire Training Facility -2017
Hunter Ferrell Landfill Scalehouse/Offices -2016
Cimarron Park Family Aquatic Center -2008
Lively Pointe Youth Center -2008



Jubliee Park
Ben J. Leal, Chief Executive Officer (214) 887-1364 ext. 242
BLeal@jubileecenter.org

Project: Early Head Start at Jubilee Park -2013

INSURANCE

ANBTX Insurance Services, Inc.
12400 Coit Road, Suite 1100, Dallas, TX 75251
Molly Fortenberry (972) 419-7500

BANKING

Bank of the West
108 West Northwest Hwy, Grapevine, TX 76051
Gary Lewis (817) 310-1904

Independent Bank
2100 FM 407, Highland Village, TX 75077
Vique Morrison (972) 317-9935

SURETY

Berkley Insurance Company

BONDING

AON Risk Services
2711 N. Haskell Avenue, Dallas, TX 75204
Don Cornell (214) 989-0000

LETTERS OF REFERENCE

Our Owner's testimony can attest to our ability to avoid excessive change orders and past history of on-time completions.

From: Chris Smith [mailto:chriss@grapevinetexas.gov]
Sent: Wednesday, January 24, 2018 9:01 AM
To: larryw@jccom.com
Subject: The REC-Stairwell Project in Grapevine

Larry,
As I am sure you are aware the stairwell project at The REC of Grapevine is complete. I wanted to pass on my appreciation to JC Commercial directly to you regarding the professionalism, work ethic, and follow through demonstrated by the 2 JC Commercial employees that were on site at various times throughout the project. I want to commend John Thorp and Michael Piscopo for the effort they put in to complete the project.
Both demonstrated a high level of communication, dedication and support to The City of Grapevine and especially myself during the construction process. The work was taking place in the middle of a recreation center with 18,000 members coming and going all day long. John was on site daily to make certain no shut downs were necessary and that the area remained safe to our patrons the entire time. John managed the contractors effectively and was able to get a beautifully finished project in the end. Michael stayed on top of RFIs, the schedule, pay apps, etc.

This project was a tough one to complete due to the location of the stairs, the type of facility we operate, our operating hours, etc but a want to make sure you know I appreciate the work your team put in during the entire process.

Please do not hesitate to call me if you have any questions or need anything from me. I look forward to working with JC Commercial in the future if our paths have a chance to cross again.

GRAPEVINE PARKS & REC

GoGrapevine.com

Chris Smith
Deputy Director

Phone 817.410.3473
Email chriss@grapevinetexas.gov

1175 Municipal Way
Grapevine, TX 76051

1

Midlothian
DFW's Southern Star

December 21, 2017

To Whom It May Concern:

Please accept this letter of my highest recommendation of the construction firm, JC Commercial, Inc. I have had the opportunity to work with JC Commercial, Inc. over the last 9 months through a building expansion project for the City of Midlothian's Senior Citizen Activity Center.

JC Commercial, Inc. has demonstrated a professional and ethical caliber during this time. Utilizing quality sub-contractors has proved to be a definite strength of JC Commercial, Inc. Schedules have been maintained and the project was completed on time.

Understanding that it takes highly qualified personnel to maintain good, relationships, JC Commercial, Inc. has provided exceptional staff that stay involved and accessible throughout the project.

If you need further information, please call me at 972-775-7152.

Sincerely,

Adam Mergener
Director of Public Works
City of Midlothian

104 West Avenue E. Midlothian, Texas 76065

Jubilee
PARK

July 7, 2014

Re: Letter of Recommendation
J.C. Commercial, Inc.
1865 McGee Lane, Suite O
Lewisville, TX 75077

To Whom It May Concern:

As the Chief Executive Officer at Jubilee Park and Community Center Corp., I had the great opportunity to work with J.C. Commercial, Inc.

J.C. Commercial, Inc. has demonstrated the skill and ability to construct an Early Head Start building on our campus. Their ability to meet schedules, cost, quality, and professionalism made them a construction company I would be willing to work with again. The completed work met all our expectations.

Jubilee Park and Community Center Corp. would welcome the opportunity to work with J.C. Commercial, Inc. on future projects. If you have any further questions or in need of additional information please do not hesitate to contact me at 214-887-1364 ext. 242 or via email at BLeal@JubileeCenter.org.

Regards,

Ben J. Leal
Chief Executive Officer
Jubilee Park

J.C. Commercial completed 2 more contracts: the Plano City Hall Irrigation & Landscaping project which was completed ahead of schedule and the Buckhorn Park Renovations. ***Both of these projects received early completion bonuses!***

Plano
City of Excellence

City of Plano
1520 K Avenue
Plano, TX 75074

P.O. Box 860358
Plano, TX 75086-0358
Tel: 972.941.7000
plano.gov

2/9/2017

David,

Thank you for all your hard work, from planning through construction, for the City Hall Landscape and Irrigation Renovation. The site looks fantastic and staff is very pleased. There were issues along the way, but you and your staff were able regroup and problem solve, which contributed to making this project a success.

Please pass along our thanks to your staff and I look forward to working with you again in the future.

Thanks,
Michael Vaughan

Harry LaRosiliere | Lissa Smith | Ben Harris | Angela Miner
Mayor | Mayor Pro Tem | Deputy Mayor Pro Tem | Place 1

It's been a pleasure working with you. I appreciate the great work that you and your team have done for us and we have a beautiful park to show for it. I am impressed with your ability to be flexible and provide good options for us as changes to the plans and in the field dictated. Thankfully, we worked through them all.
Buckhorn Park is a special and unique place for our residents thanks to you and JC Commercial.

Angela Kralik

plano

P.O. Box 860358 Plano, Texas 75086-0358
972-941-7000 www.plano.gov

March 1, 2013

Mr. Larry Wagnor
J. C. Commercial
1865 McGee Lane, Suite O
Lewisville, TX 75077

Re: Plano Aquatic Center Renovation

Mr. Wagnor,

Please accept my commendation for your part in the tremendous success of the renovation of the Plano Aquatic Center.

As with all renovations in which there are many obstacles to overcome, this project was made even more complicated with the decision to completely replace the indoor pool. Despite the numerous challenges presented, the J.C. Commercial team did an outstanding job pushing an aggressive schedule, anticipating and overcoming problems and, most importantly, communicating superbly throughout the entire project.

The citizens of Plano will surely enjoy their "new" Aquatic Center for a great many years, a reflection in no small part of the dedicated professionalism of J.C. Commercial. On behalf of City of Plano staff, I thank you for the excellent work on this project.

I would absolutely recommend J.C. Commercial for future projects.

Sincerely,

Jim Razinha, P. E.
Facilities Manager
City of Plano

Phil Dyer | Lissa Smith | Ben Harris | Pat Miner | André Davidson | Jim Duggan | Patrick Gallagher | Lee Dunlop | Bruce D. Glasscock
Mayor | Mayor Pro Tem | Deputy Mayor Pro Tem | Place 1 | Place 3 | Place 5 | Place 7 | Place 9 | City Manager

JC COMMERCIAL INCORPORATED

Facility
Planning and Construction
Department
6600 Alma Drive
Plano, Texas 75023
(469) 752-1488

Plano Independent School District

Doug Guynes
Construction Manager

Teamwork for Excellence
PLANO
Independent School District

April 25, 2011

Mr. Larry Wagnor
JC Commercial Construction
720 Valley Ridge Circle, Suite 22
Lewisville, Texas 75057

Re: Plano ISD Projects

Mr. Wagnor:

On behalf of Plano ISD, I would like to take this opportunity to personally say thanks to you and the JC Commercial team for your successful completion of Clark Athletic Fields including bleachers, press box and pedestrian bridge in 2006, completion of Williams Field House in 2007, and your most recent completion of the Concession and Storage addition at Clark Stadium in 2010.

Thanks for your continued dedication and commitment to Plano ISD.

I look forward to working with JC Commercial on future projects. Please feel free to use my name and Plano ISD as a future reference.

Sincerely,

Doug Guynes, Construction Manager, Plano Independent School District

HISTORICAL UTILIZATION

COMMITTED TO M/WBE INCLUSION!

JC Commercial has extensive experience when it comes to M/WBE Participation Plans and the requirements there of. Our company has in the past and will continue to build quality projects with M/WBE requirements. On our projects, each subcontractor acts as a representative on behalf of J.C. Commercial while on the jobsite, and therefore, is handpicked with great caution.

Our company continually searches for and obtains many qualified M/WBE certified contractors to bid all of our projects. We utilize sources such as:

- Texas Unified Certification Program's (TUCP) Directory
- Dallas/Fort Worth Airport's D/S/M/WBE database
- Centralized Master Bidders List –HUB Directory

It is our policy to always maintain a minimum of 3 HUB and 3 NCTRCA certified subcontractors per every trade within each division of construction on our bid list for every project.

Furthermore, J.C. Commercial has in the past and continues to participate in public events to allow us to meet local MWBE subcontractors. We have participated in the Business Coaching (Mentor / Protégé) Program. Most recently, our company took part in the City of Dallas' Vendor Symposium and the annual Blue Book Building & Construction Showcases.

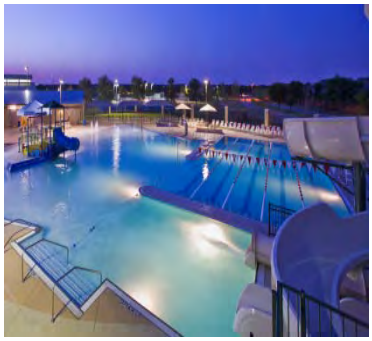
These opportunities provide us the forum to have one on one meetings with M/WBE subcontractors.

Although, our company is not a minority owned company we have a history of utilizing such firms at noted below:

Name of the Entity	Project Name/ Contract Type	Contract Amount	Goal	Actual
DFW International Airport	Terminal B Lower Gates Electrification – CSP	$3,908,346.68	22%	23%
DFW International Airport	Terminal B High Gates Modification -CSP	$2,598,770.80	20%	20.25%
DFW International Airport	1W North Parking Express Expansion -CSP	$8,640,075.66	22%	27%
DFW International Airport	Subcontractor Construction Area SA09 -CSP	$6,127,801.97	30%	70%
DFW International Airport	Terminal B Change Order #2 Re-Gating Package SA 07 -CSP	$1,259,371.95	30%	42%
DFW International Airport	Terminal D Jetbridge Modifications -CSP	$3,237,767.09	10%	10.25%
DFW International Airport	RAC Carwash Improvements -CSP	$1,028,761.44	12%	14.77%
City of Dallas	Briscoe Carpenter Livestock Center at Fair Park - CSP	$2,416,573.99	25%	42%
City of Dallas	The Bridge Entry Relocation -CSP	$2,158,806.23	25%	33 %
City of Dallas	Anita Martinez Recreation Center Renovation –CSP	$1,329,616.01	25%	28%
City of Dallas	Beckley Saner Recreation Center Renovations & Addition -CSP	$2,472,785.69	25%	39%
City of Dallas	Samuell Grand Recreation Center Interior Renovation & Expansion -CSP	$2,582,643.06	25%	39%
City of Dallas	Dallas Fire Station No. 37 -CSP	$4,169,985.97	25%	25.21%
City of Dallas	Dallas Love Field Snow -CSP	$4,205,975.32	25%	34%
City of Dallas	White Rock Hills Library -CSP	$4,418,732.77	25%	31%
City of Dallas	Kleberg/Rylie Recreation Center Renovation & Addition -CSP	$1,118,072.10	25%	31%
City of Dallas	Dallas Public Library Lochwood Branch Renovation & Addition -CSP	$4,423,014.00	25%	23%
City of Dallas	Bachman Lake Therapeutic Center -Pool Renovations & Improvements -CSP	$1,162,065.00	25%	19%
Dallas ISD	BP#521 - CSP Thomas Marsh Middle School	$1,913,522.36	30%	71%
Dallas ISD	BP#514 – CSP Paul Dunbar & Edna Rowe Elementary	$2,468,775.44	30%	63%
Dallas ISD	BP#509 – CSP Zumwalt Middle, S.Oak Cliff High, & Stonewall Jackson Elementary	$6,385,846.32	30%	43%
Dallas ISD	Multiple Career Magnet School Remodel -CSP	$1,139,840.00	25%	22%
Sun Valley Industrial Park, LP c/o Empire TX Equities	Sun Valley Industrial Park	$1,618,472.61	25%	34%
Dallas County Community College District	Student Life Center at North Lake College - CSP	$1,466,070.00	30%	30%
Dallas County Community College District	El Centro College Adaptive Remodel of Building A -CSP	$2,786,122.00	30%	33%

J.C. Commercial is dedicated to meeting all Owner's M/WBE goals.

JC COMMERCIAL INCORPORATED



Since the formation of JC Commercial our primary focus of construction has been municipal work within the state of Texas. Over the years we have successfully completed a diverse portfolio of various types of construction whether it is renovation or new construction. This includes Parks, Aquatic Centers, Libraries, Fire Stations, Educational Institutions and more. We take great pride in the delivery of every project. Quality and schedules are taken very serious. From the beginning to completion our goal is to produce an end product that all will admire.

JC Commercial measures success by the positive relationships that we will form with the Town of Addison and the possibility of future opportunities that could unfold. With that being said, our projects and their owner's can attest to our change order history, quality control and schedule adherence. Furthermore, our record of on-time completions, numerous early completion bonuses and repeat customers speaks loudly to our commitment to quality, cost control and scheduling.

Our company has completed over $260 million construction projects within Texas and without any Owner litigation. ***This includes numerous new construction projects for aviation facilities.*** Our most recent projects have been for the following:



- City of Irving
- Rockwall ISD
- City of Dallas
- Grand Prairie Municipal Airport
- Love Field Airport
- City of Irving
- DFW International Airport
- City of McKinney

The Addison Airport Customs and Border Protection Facility project will require a contractor that has an extensive knowledge of differing construction practices and a work history that shows that they have the ability complete the job safely and on time. J.C. Commercial possesses the knowledge, experience and ability to achieve these goals.

CHALLENGES

Your project presents logistical and construction challenges that will require careful planning and attention to detail. The ability to be flexible, to schedule and coordinate the construction work is the most important aspect of this job.



We will develop for this site a detailed safety plan and site access plan that will allow for the staging's that will be required in order to take advantage of every available work day. We will develop a plan that will allow for materials to be delivered and stored so that it will not interfere with the construction progress or nearby operations.

- Safety is crucial and our Safety Record shows how serious we are!
- Communication will be key.
- Timely turnaround on Submittals, RFI and Change Order/Proposal Requests will be imperative.
- Airport access.

In order to control the quality of all trades, we will have meetings with each one before they start work. In these meetings we will review their safety procedures and the construction work plans. These will be approved before they start work and reviewed weekly in their weekly sub meetings.



EXPERIENCE OVERCOMING THESE CHALLENGES

As you can see this project cannot be taken lightly.

Upon review of our project experience, you will see, J.C. Commercial has the ability to complete projects of varying sizes and complexity safely, on time and within budget. Our safety record and workers compensation modifier is one of the lowest in the industry. We accomplish this by planning, scheduling and paying attention to detail.

Our company has proven our exceptional ability to provide both construction services and construction management services with our proposed project team. Furthermore, we have the financial and insurance capability as well as the bonding capacity to make this project something Town of Addison will be most proud of.

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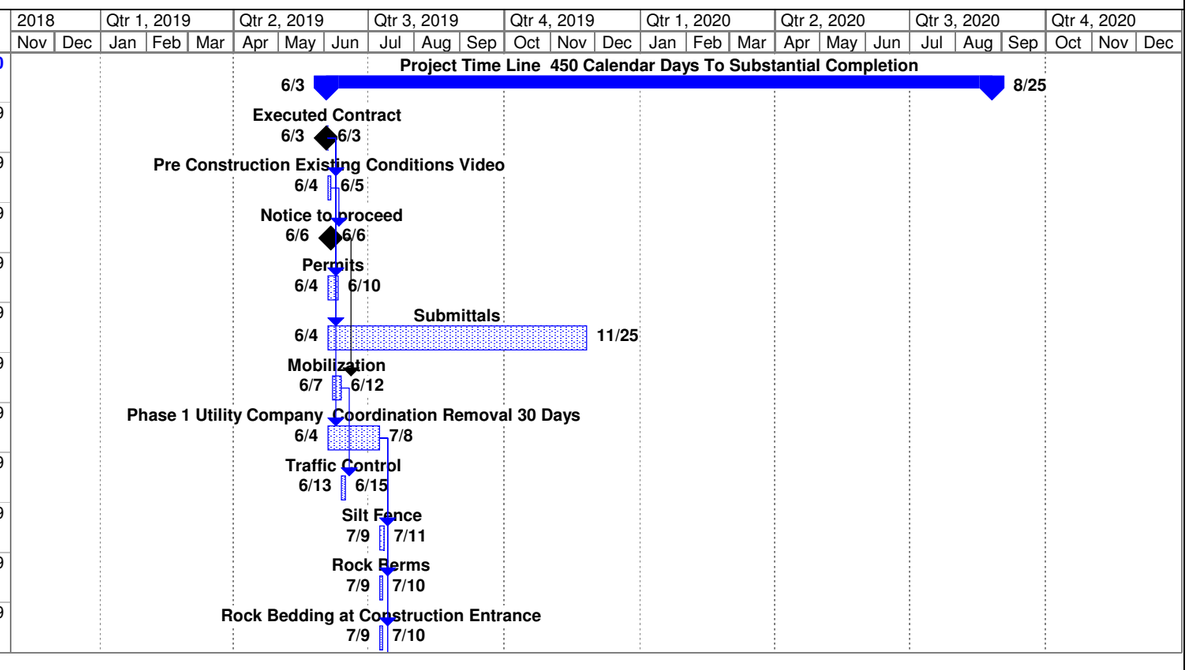
Customs and Border Protection Facility

4545 Jimmy Doolittle Drive
Addison, TX 75001

JC COMMERCIAL INCORPORATED

1801 LakepointeDrive, Suite129
Lewisville, TX 75057
972-436-4622 (O)
972-436-4822 (F)

ID	Task Name	Start	Finish
1	**Project Time Line 450 Calendar Days To Substantial Completion**	Mon 6/3/19	Tue 8/25/20
2	Executed Contract	Mon 6/3/19	Mon 6/3/19
3	Pre Construction Existing Conditions Video	Tue 6/4/19	Wed 6/5/19
4	Notice to proceed	Thu 6/6/19	Thu 6/6/19
5	Permits	Tue 6/4/19	Mon 6/10/19
6	Submittals	Tue 6/4/19	Mon 11/25/19
7	Mobilization	Fri 6/7/19	Wed 6/12/19
8	Phase 1 Utility Company Coordination Removal 30 Days	Tue 6/4/19	Mon 7/8/19
9	Traffic Control	Thu 6/13/19	Sat 6/15/19
10	Silt Fence	Tue 7/9/19	Thu 7/11/19
11	Rock Berms	Tue 7/9/19	Wed 7/10/19
12	Rock Bedding at Construction Entrance	Tue 7/9/19	Wed 7/10/19



Date: Wed 5/1/19

Task **Milestone** **Substantial Completion**
Task Progress **Summary** **Final Completion**

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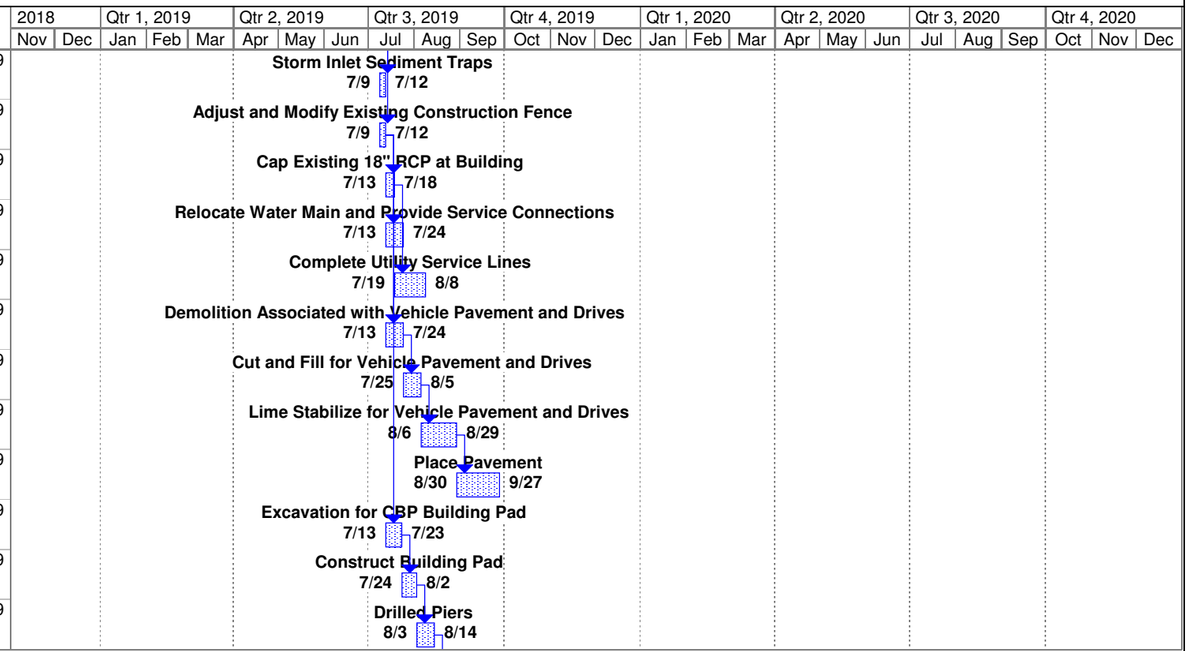
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ID	Task Name	Start	Finish
13	Storm Inlet Sediment Traps	Tue 7/9/19	Fri 7/12/19
14	Adjust and Modify Existing Construction Fence	Tue 7/9/19	Fri 7/12/19
15	Cap Existing 18" RCP at Building	Sat 7/13/19	Thu 7/18/19
16	Relocate Water Main and Provide Service Connections	Sat 7/13/19	Wed 7/24/19
17	Complete Utility Service Lines	Fri 7/19/19	Thu 8/8/19
18	Demolition Associated with Vehicle Pavement and Drives	Sat 7/13/19	Wed 7/24/19
19	Cut and Fill for Vehicle Pavement and Drives	Thu 7/25/19	Mon 8/5/19
20	Lime Stabilize for Vehicle Pavement and Drives	Tue 8/6/19	Thu 8/29/19
21	Place Pavement	Fri 8/30/19	Fri 9/27/19
22	Excavation for CBP Building Pad	Sat 7/13/19	Tue 7/23/19
23	Construct Building Pad	Wed 7/24/19	Fri 8/2/19
24	Drilled Piers	Sat 8/3/19	Wed 8/14/19



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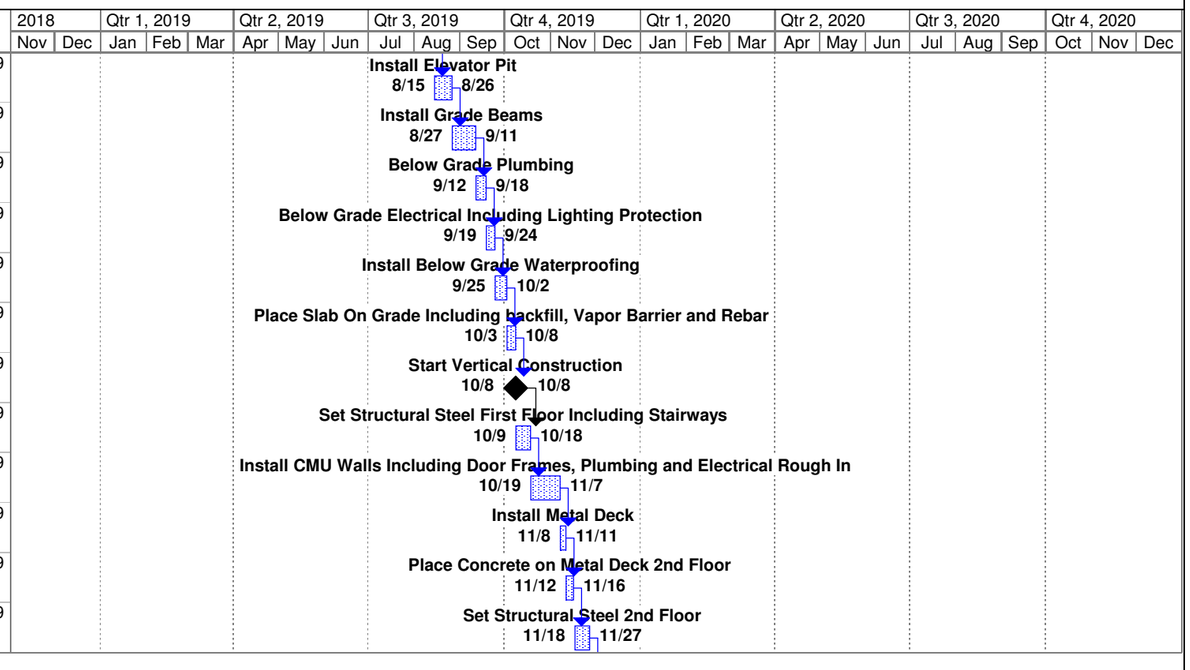
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ID	Task Name	Start	Finish
25	Install Elevator Pit	Thu 8/15/19	Mon 8/26/19
26	Install Grade Beams	Tue 8/27/19	Wed 9/11/19
27	Below Grade Plumbing	Thu 9/12/19	Wed 9/18/19
28	Below Grade Electrical Including Lighting Protection	Thu 9/19/19	Tue 9/24/19
29	Install Below Grade Waterproofing	Wed 9/25/19	Wed 10/2/19
30	Place Slab On Grade Including backfill, Vapor Barrier and Rebar	Thu 10/3/19	Tue 10/8/19
31	Start Vertical Construction	Tue 10/8/19	Tue 10/8/19
32	Set Structural Steel First Floor Including Stairways	Wed 10/9/19	Fri 10/18/19
33	Install CMU Walls Including Door Frames, Plumbing and Electrical Rough In	Sat 10/19/19	Thu 11/7/19
34	Install Metal Deck	Fri 11/8/19	Mon 11/11/19
35	Place Concrete on Metal Deck 2nd Floor	Tue 11/12/19	Sat 11/16/19
36	Set Structural Steel 2nd Floor	Mon 11/18/19	Wed 11/27/19



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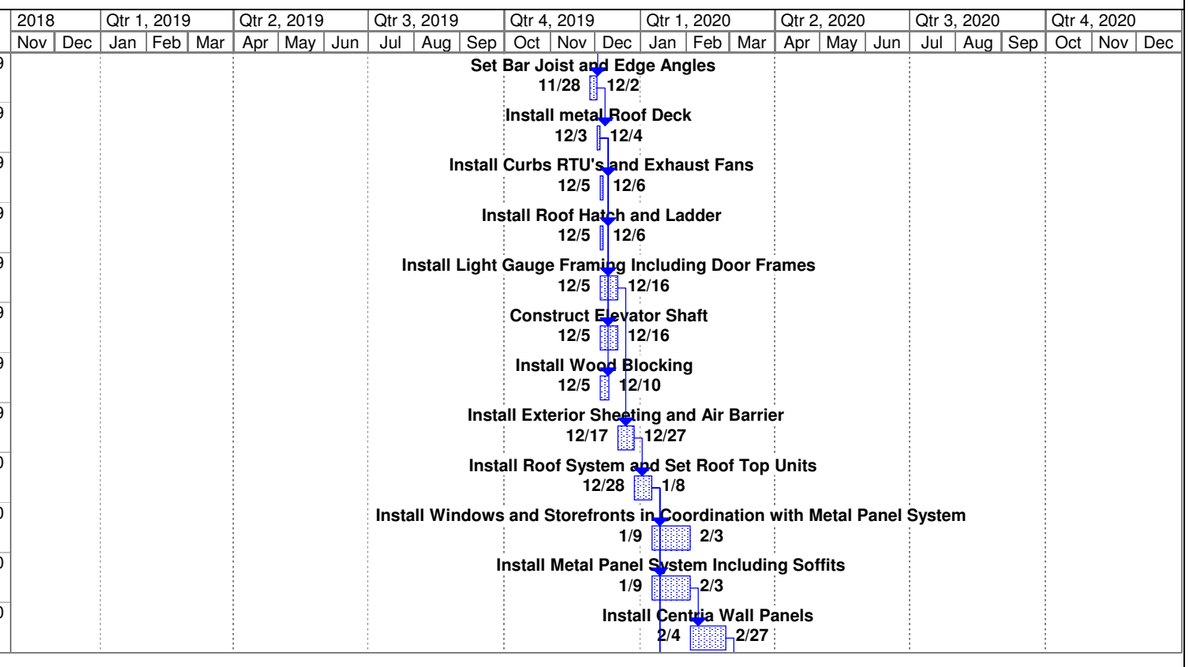
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ID	Task Name	Start	Finish
37	Set Bar Joist and Edge Angles	Thu 11/28/19	Mon 12/2/19
38	Install metal Roof Deck	Tue 12/3/19	Wed 12/4/19
39	Install Curbs RTU's and Exhaust Fans	Thu 12/5/19	Fri 12/6/19
40	Install Roof Hatch and Ladder	Thu 12/5/19	Fri 12/6/19
41	Install Light Gauge Framing Including Door Frames	Thu 12/5/19	Mon 12/16/19
42	Construct Elevator Shaft	Thu 12/5/19	Mon 12/16/19
43	Install Wood Blocking	Thu 12/5/19	Tue 12/10/19
44	Install Exterior Sheeting and Air Barrier	Tue 12/17/19	Fri 12/27/19
45	Install Roof System and Set Roof Top Units	Sat 12/28/19	Wed 1/8/20
46	Install Windows and Storefronts in Coordination with Metal Panel System	Thu 1/9/20	Mon 2/3/20
47	Install Metal Panel System Including Soffits	Thu 1/9/20	Mon 2/3/20
48	Install Centria Wall Panels	Tue 2/4/20	Thu 2/27/20



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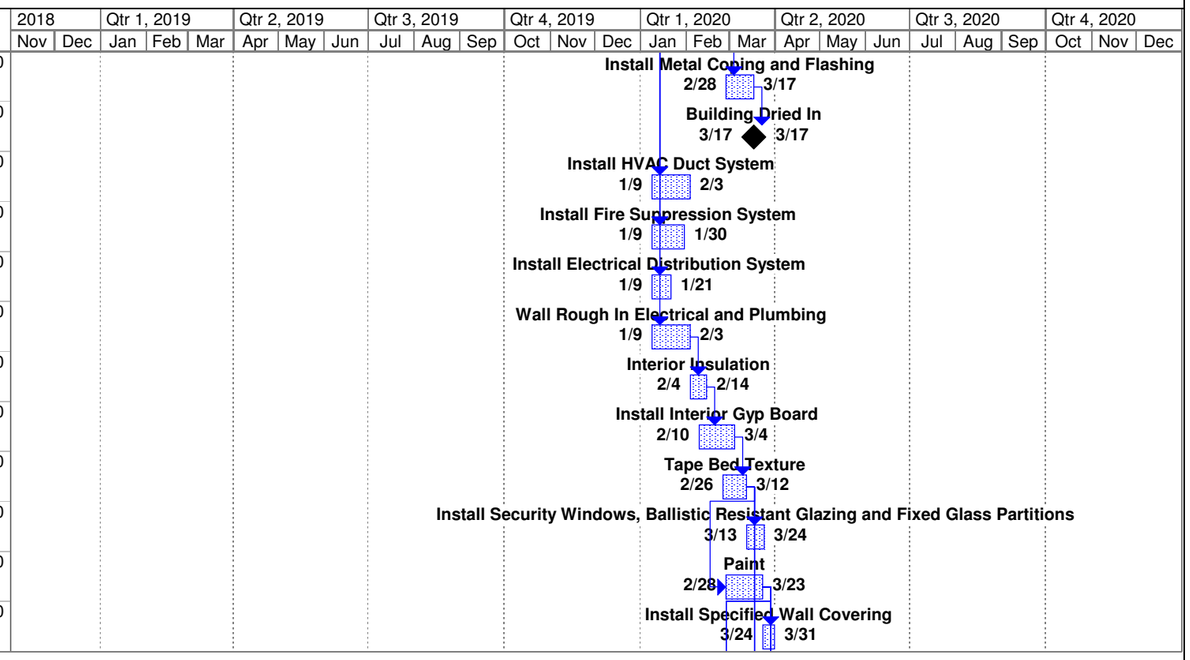
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ID	Task Name	Start	Finish
49	Install Metal Coping and Flashing	Fri 2/28/20	Tue 3/17/20
50	Building Dried In	Tue 3/17/20	Tue 3/17/20
51	Install HVAC Duct System	Thu 1/9/20	Mon 2/3/20
52	Install Fire Suppression System	Thu 1/9/20	Thu 1/30/20
53	Install Electrical Distribution System	Thu 1/9/20	Tue 1/21/20
54	Wall Rough In Electrical and Plumbing	Thu 1/9/20	Mon 2/3/20
55	Interior Insulation	Tue 2/4/20	Fri 2/14/20
56	Install Interior Gyp Board	Mon 2/10/20	Wed 3/4/20
57	Tape Bed Texture	Wed 2/26/20	Thu 3/12/20
58	Install Security Windows, Ballistic Resistant Glazing and Fixed Glass Partitions	Fri 3/13/20	Tue 3/24/20
59	Paint	Fri 2/28/20	Mon 3/23/20
60	Install Specified Wall Covering	Tue 3/24/20	Tue 3/31/20



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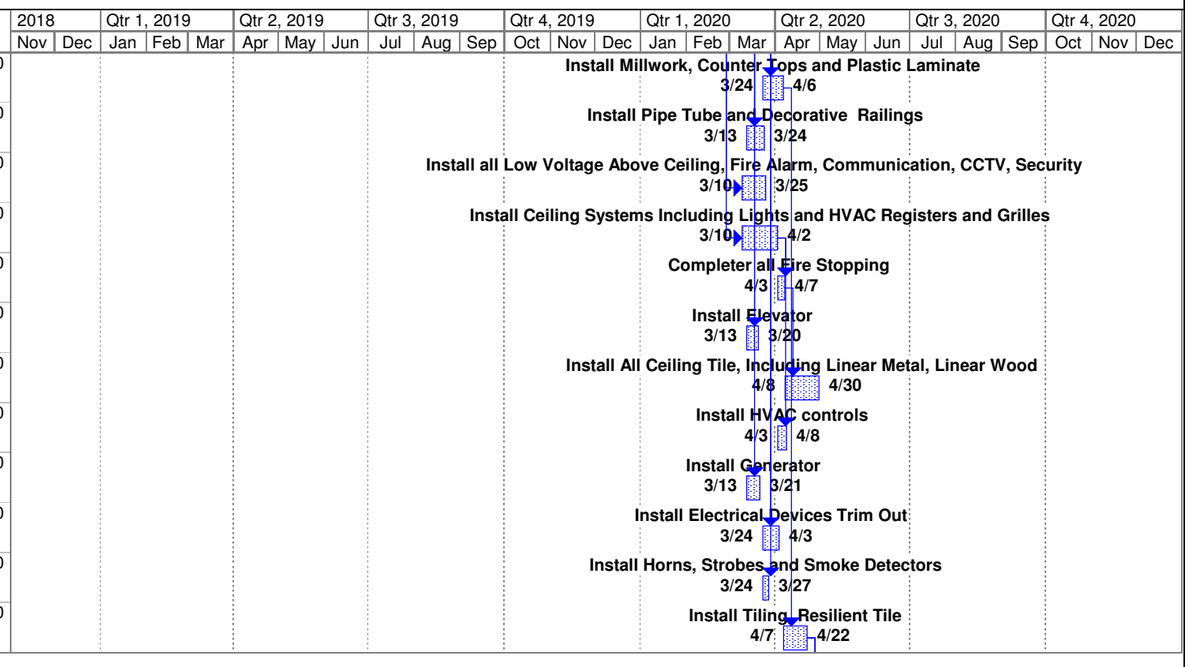
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ID	Task Name	Start	Finish
61	Install Millwork, Counter Tops and Plastic Laminate	Tue 3/24/20	Mon 4/6/20
62	Install Pipe Tube and Decorative Railings	Fri 3/13/20	Tue 3/24/20
63	Install all Low Voltage Above Ceiling, Fire Alarm, Communication, CCTV, Security	Tue 3/10/20	Wed 3/25/20
64	Install Ceiling Systems Including Lights and HVAC Registers and Grilles	Tue 3/10/20	Thu 4/2/20
65	Completer all Fire Stopping	Fri 4/3/20	Tue 4/7/20
66	Install Elevator	Fri 3/13/20	Fri 3/20/20
67	Install All Ceiling Tile, Including Linear Metal, Linear Wood	Wed 4/8/20	Thu 4/30/20
68	Install HVAC controls	Fri 4/3/20	Wed 4/8/20
69	Install Generator	Fri 3/13/20	Sat 3/21/20
70	Install Electrical Devices Trim Out	Tue 3/24/20	Fri 4/3/20
71	Install Horns, Strobes and Smoke Detectors	Tue 3/24/20	Fri 3/27/20
72	Install Tiling, Resilient Tile	Tue 4/7/20	Wed 4/22/20



Date: Wed 5/1/19

Task **Milestone** **Substantial Completion**
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14 FEBRUARY 2019

TDLR NUMBER
EABPRJB9803171



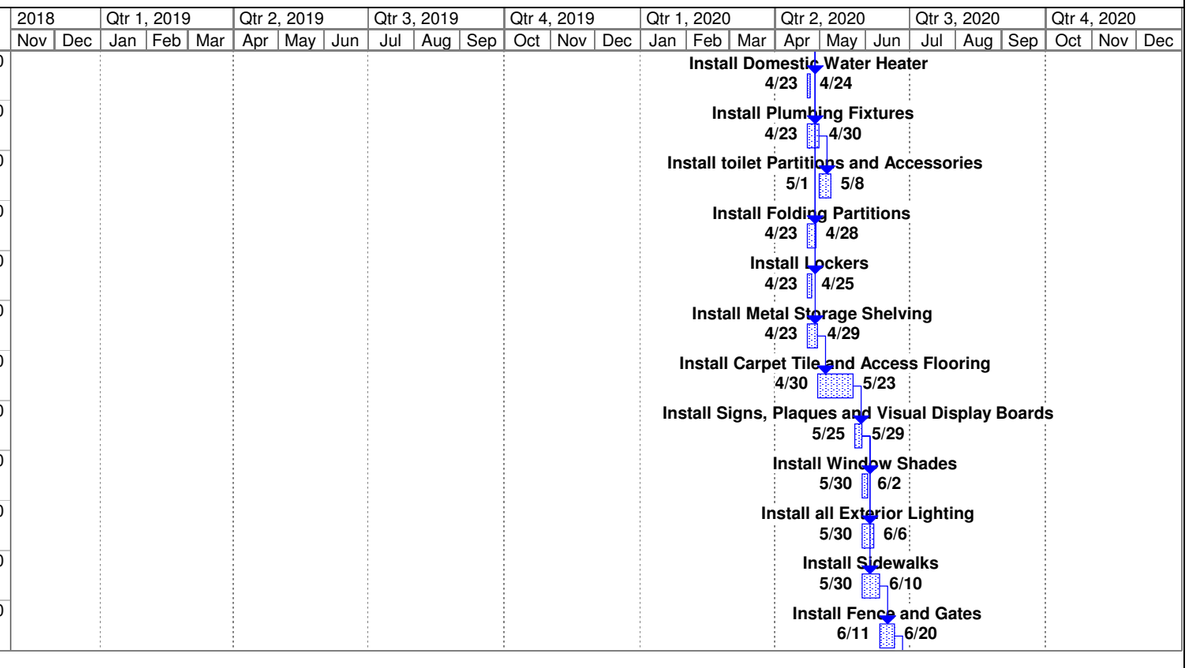
Customs and Border Protection Facility

4545 Jimmy Doolittle Drive
Addison, TX 75001

JC COMMERCIAL INCORPORATED

1801 LakepointeDrive, Suite129
Lewisville, TX 75057
972-436-4622 (O)
972-436-4822 (F)

ID	Task Name	Start	Finish
73	Install Domestic Water Heater	Thu 4/23/20	Fri 4/24/20
74	Install Plumbing Fixtures	Thu 4/23/20	Thu 4/30/20
75	Install toilet Partitions and Accessories	Fri 5/1/20	Fri 5/8/20
76	Install Folding Partitions	Thu 4/23/20	Tue 4/28/20
77	Install Lockers	Thu 4/23/20	Sat 4/25/20
78	Install Metal Storage Shelving	Thu 4/23/20	Wed 4/29/20
79	Install Carpet Tile and Access Flooring	Thu 4/30/20	Sat 5/23/20
80	Install Signs, Plaques and Visual Display Boards	Mon 5/25/20	Fri 5/29/20
81	Install Window Shades	Sat 5/30/20	Tue 6/2/20
82	Install all Exterior Lighting	Sat 5/30/20	Sat 6/6/20
83	Install Sidewalks	Sat 5/30/20	Wed 6/10/20
84	Install Fence and Gates	Thu 6/11/20	Sat 6/20/20



Date: Wed 5/1/19

Task **Milestone** **Substantial Completion**
Task Progress **Summary** **Final Completion**

Town of Addison Airport
Page Project No. 417151

ISSUE FOR BID

14 FEBRUARY 2019

TDLR NUMBER
EABPRJB9803171



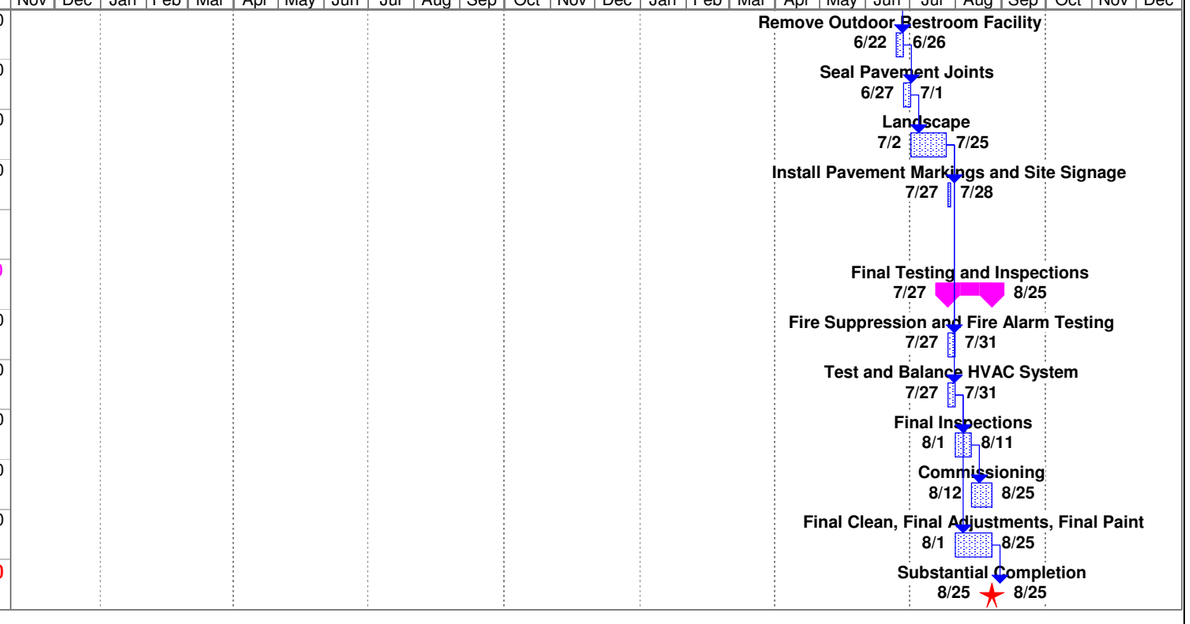
Customs and Border Protection Facility

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Addison, TX 75001

JC COMMERCIAL INCORPORATED

1801 LakepointeDrive, Suite129
Lewisville, TX 75057
972-436-4622 (O)
972-436-4822 (F)

ID	Task Name	Start	Finish
85	Remove Outdoor Restroom Facility	Mon 6/22/20	Fri 6/26/20
86	Seal Pavement Joints	Sat 6/27/20	Wed 7/1/20
87	Landscape	Thu 7/2/20	Sat 7/25/20
88	Install Pavement Markings and Site Signage	Mon 7/27/20	Tue 7/28/20
89			
90	**Final Testing and Inspections**	**Mon 7/27/20**	**Tue 8/25/20**
91	Fire Suppression and Fire Alarm Testing	Mon 7/27/20	Fri 7/31/20
92	Test and Balance HVAC System	Mon 7/27/20	Fri 7/31/20
93	Final Inspections	Sat 8/1/20	Tue 8/11/20
94	Commissioning	Wed 8/12/20	Tue 8/25/20
95	Final Clean, Final Adjustments, Final Paint	Sat 8/1/20	Tue 8/25/20
96	**Substantial Completion**	**Tue 8/25/20**	**Tue 8/25/20**



Date: Wed 5/1/19

Task **Milestone** **Substantial Completion**
Task Progress **Summary** **Final Completion**

Town of Addison Airport
Page Project No. 417151

ISSUE FOR BID

14 FEBRUARY 2019

TDLR NUMBER
EABPRJB9803171



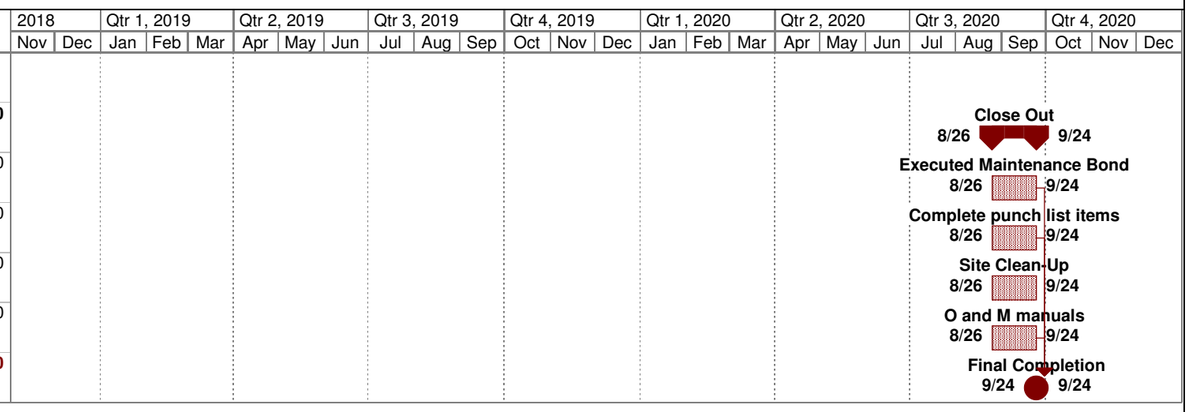
Customs and Border Protection Facility

4545 Jimmy Doolittle Drive
Addison, TX 75001

JC COMMERCIAL INCORPORATED

1801 LakepointeDrive, Suite129
Lewisville, TX 75057
972-436-4622 (O)
972-436-4822 (F)

ID	Task Name	Start	Finish
97			
98	**Close Out**	**Wed 8/26/20**	**Thu 9/24/20**
99	Executed Maintenance Bond	Wed 8/26/20	Thu 9/24/20
100	Complete punch list items	Wed 8/26/20	Thu 9/24/20
101	Site Clean-Up	Wed 8/26/20	Thu 9/24/20
102	O and M manuals	Wed 8/26/20	Thu 9/24/20
103	**Final Completion**	**Thu 9/24/20**	**Thu 9/24/20**



Date: Wed 5/1/19

Task **Milestone** **Substantial Completion**
Task Progress **Summary** **Final Completion**

DEDICATED TO BUILDING EXCELLENCE

JC COMMERCIAL INCORPORATED

1801 Lakepointe Drive, Suite 129
Lewisville, Texas 75057
P 972.436.4622 · F 972.436.4822
www.jccom.com

Work Session and Regular Meeting **18.**

Meeting Date: 08/27/2019

Department: Development Services

AGENDA CAPTION:

Present, Discuss, and Consider Action on an **Ordinance Directing Staff to Process Plats in Accordance with the Procedures Established in House Bill 3167.**

BACKGROUND:

In 2019, the Texas Legislature enacted House Bill 3167. The Bill was subsequently signed by the Governor and has an effective date of September 1, 2019. The Bill prescribes the process by which municipalities and counties must review and act on plats. Under the provisions of the Bill, cities must act to either approve, approve with conditions or deny a plat within 30 days of receiving a complete submittal. If approved conditionally or if denied, the Town must provide either the conditions or specific reasons for denial in writing. This is already the Town's current process and should not have any effect on the Town's review.

The Bill also states that the applicant requesting the plat has an unlimited amount of time to respond to the conditions or reasons for denial. They may resubmit a plat that addresses any outstanding issues. The Town must act on such a resubmittal within 15 days. Since the Planning and Zoning Commission reviews plats and only meets once a month, this means that the Town may need to call special P&Z meetings to consider plats in order to comply with this new timeline.

The attached ordinance directs Staff to process plats in accordance with the timelines and processes established in House Bill 3167. As Staff continues the Unified Development Code update, Staff will amend the Town's subdivision regulations to mirror the Bill's requirements as well.

RECOMMENDATION:

Administration recommends approval.

Attachments

Ordinance - Implementation of House Bill 3167

ORDINANCE NO. O19-_____

AN ORDINANCE OF THE TOWN OF ADDISON, TEXAS SUSPENDING APPLICATION OF ORDINANCE PROVISIONS CONTAINED IN THE TOWN'S SUBDIVISION ORDINANCE, AS IT NOW EXISTS OR AS IT MAY BE AMENDED, THAT CONFLICT WITH THE PROVISIONS OF HB 3167 PASSED BY THE 86TH LEGISLATURE OF THE STATE OF TEXAS AND SIGNED BY GOVERNOR GREG ABBOTT ON JUNE 14, 2019; DIRECTING TOWN STAFF TO PROCESS ALL PLANS AND PLATS AS DEFINED IN HB 3167 IN ACCORDANCE WITH THE PROVISIONS OF HB 3167; PROVIDING FOR A CONFLICT/SAVINGS CLAUSE; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the 86th Legislature of the State of Texas passed HB 3167 which was signed by Governor Abbott on June 14, 2019, with an effective date of September 1, 2019 (the "Act"); and

WHEREAS, the Act requires extensive revisions to the Subdivision Ordinance and to the way in which the plats and plans, as defined in the Act, are processed by the staff and the Planning & Zoning Commission; and

WHEREAS, the City Council of the Town of Addison, urges the Texas Legislature to reconsider the provisions of the Act at its earliest opportunity.

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

SECTION 1. The recitals set forth above are incorporated as if fully set forth herein.

SECTION 2. The City Council hereby acknowledges the provisions of the Act and suspends the application of any ordinance or process contained in the Subdivision Ordinance, as it now exists or as it may be amended, that conflict with the provisions and requirements of the Act.

SECTION 3. The City Council further directs the Town's Planning & Zoning Commission, staff and outside consultants to process, approve, approve with conditions or deny all plats and plans, as defined in the Act, in accordance with the provisions and requirements of the Act.

SECTION 4. Conflict/Savings Clause. In the event of a conflict between the provisions of this Ordinance and any other regulation or rule prescribed by charter, another ordinance, resolution or authorization of the Town, the provisions of this ordinance shall control. Notwithstanding the foregoing, all rights and remedies of the Town are expressly saved as to any and all complaints, actions, claims, or lawsuits, which have been initiated or have arisen under or pursuant to such conflicting Ordinance, or portion thereof, on the date of adoption of this Ordinance shall continue to be governed by the provisions of that Ordinance and for that purpose the conflicting Ordinance shall remain in full force and effect.

SECTION 5. Effective Date. This Ordinance shall take effect immediately from and

after its date of passage.

PASSED AND APPROVED BY THE CITY COUNCIL OF THE TOWN OF ADDISON, TEXAS, on this the *27th* day of *AUGUST* 2019.

TOWN OF ADDISON, TEXAS

Joe Chow, Mayor

ATTEST:

Irma Parker, City Secretary

APPROVED AS TO FORM:

Brenda N. McDonald, City Attorney

Work Session and Regular Meeting **19.**

Meeting Date: 08/27/2019

Department: Special Events

Pillars: Gold Standard for Financial Health
Optimize the Addison Brand

Milestones: Define and promote Addison Identity

AGENDA CAPTION:

Present and Discuss the **Operations and Financial Reconciliation for Taste Addison 2019.**

BACKGROUND:

Taste Addison is a major festival produced by the Town annually to support Addison restaurants and promote tourism. This three-day event features food, music, and entertainment. It was held May 31-June 2, 2019 at Addison Circle Park.

The Special Events and Finance Departments have prepared a report on the marketing, operational and financial outcomes of Taste Addison 2019. This was the first Addison festival to utilize point-of-sale software in place of the previous Tasty Bucks ticket system. The new software provided detailed information on the sales of food and beverage throughout the event, allowing the Finance team to quickly and accurately compile the necessary information at the end of each day and the end of the event.

RECOMMENDATION:

Information only, no action required.

Attachments

Presentation - Taste Addison 2019 Operations and Financial Reconciliation

---

TASTE ADDISON 2019

Council Presentation
August 27, 2019

TASTE ADDISON 2019



AN EVENT TO PROMOTE ADDISON RESTAURANTS AND BRING TOURISM TO THE TOWN

NEW FOR 2019

- New dates, times and admission fees – Moved to the weekend after Memorial Day, adjusted times to hit the lunch crowd, reduced adult admission and added child ticket.
- Transition from Tasty Bucks to point of sale purchase, reducing lines and providing restaurants with quicker access to funds.
- Expanded and enhanced entertainment lineup on 3 stages.
- Enhanced specialty areas for children and 21+ adults.



ADVERTISING (PAID MEDIA)

Outlet	Cost	Impressions
Digital	$40,000	1,268,750
Outdoor	$10,000	3,399,004
Radio	$10,000	2,754,900
Television	$11,794	2,441,000
CAMPAIGN TOTAL	**$71,794**	**9,863,654**



ADVERTISING (IN-KIND SPONSOR MEDIA)

Outlet	Value	Impressions
Dallas Morning News	$13,000	1,037,239
DART	$19,466	1,220,475
DO 214	$4,333	66,907
iHeart Radio	$167,225	1,949,400
Spectrum Reach TV	$30,000	2,363,851
CBS DFW	$49,170	5,490,000
IN-KIND TOTAL	**$283,194**	**12,127,872**



PUBLIC RELATIONS (EARNED MEDIA)

Media	Outlets	Viewers/ Readers	Run Time	Ad Value	PR Value
Broadcast	29	1,870,457	48:38	$64,947	$194,842
Print	9	2,197,112	N/A	$22,575	$67,726
Online	124	2,694,825,673	N/A	$72,350	$197,550
Total	**162**	**2,698,893,242**	**48:38**	**$159,873**	**$460,118**

HOTEL ROOM NIGHTS



- 13 Addison hotels offered special rates. Packages included:
  - 2 adult and 2 child admission tickets
  - 4 Taste Bite vouchers
  - 1 branded canvas bag

- Total Packages Sold: 111 (10% increase)

- Total Room Nights Booked: 155 (5% increase)



INCLEMENT WEATHER IMPACT

- Unexpected Storms
  - Rain, lightning and high winds cause a temporary pause in event operations Saturday, June 1, from approximately 5:30pm to 8pm. All attendees and vendors were asked to shelter onsite.
- Event Impact
  - Flooding under the Main Stage cut power, however the headlining band played a short acoustic set. The Bowl Stage closed due to flooding; most other areas resumed operations.
  - Regular communications were sent out via social media.
  - Saturday attendance and sales were impacted by the storms.

REVENUE

Taste Addison 2019

PRESALES REVENUE : ONLINE



Total

$69,410

Packages

VIP

$24,450

Tickets

Adult

$44,550

Child

$410

EVENT SALES REVENUE



Admissions

$79,101



Online Admissions

$32,925

Merch. Booth

$3,142



Carnival

$7,039

Total $122,207

ADDITIONAL REVENUE



Sponsorships
$136,650

Booth Rentals
$14,000

Miscellaneous
$1,996

INVOICE REVENUE

20% of Net Sales

Cash & Credit Card Sales
$262,403
- Tips
($9,066)
= Net Sales
$253,337
x 20%
$50,667

Tasty Buck Refunds



Tasty Bucks Count
2,227
x 80%
($1,782)

Voucher Refunds



Taste Bites Count
2,902
x $3.00
($8,706)
VIP Beverage Count
1,965
x $3.75
($7,369)

Additional

POS Units
$1,200
Electricity
$3,175
Rentals
$140
Misc. Credits
($197)
$4,318

Total $37,128

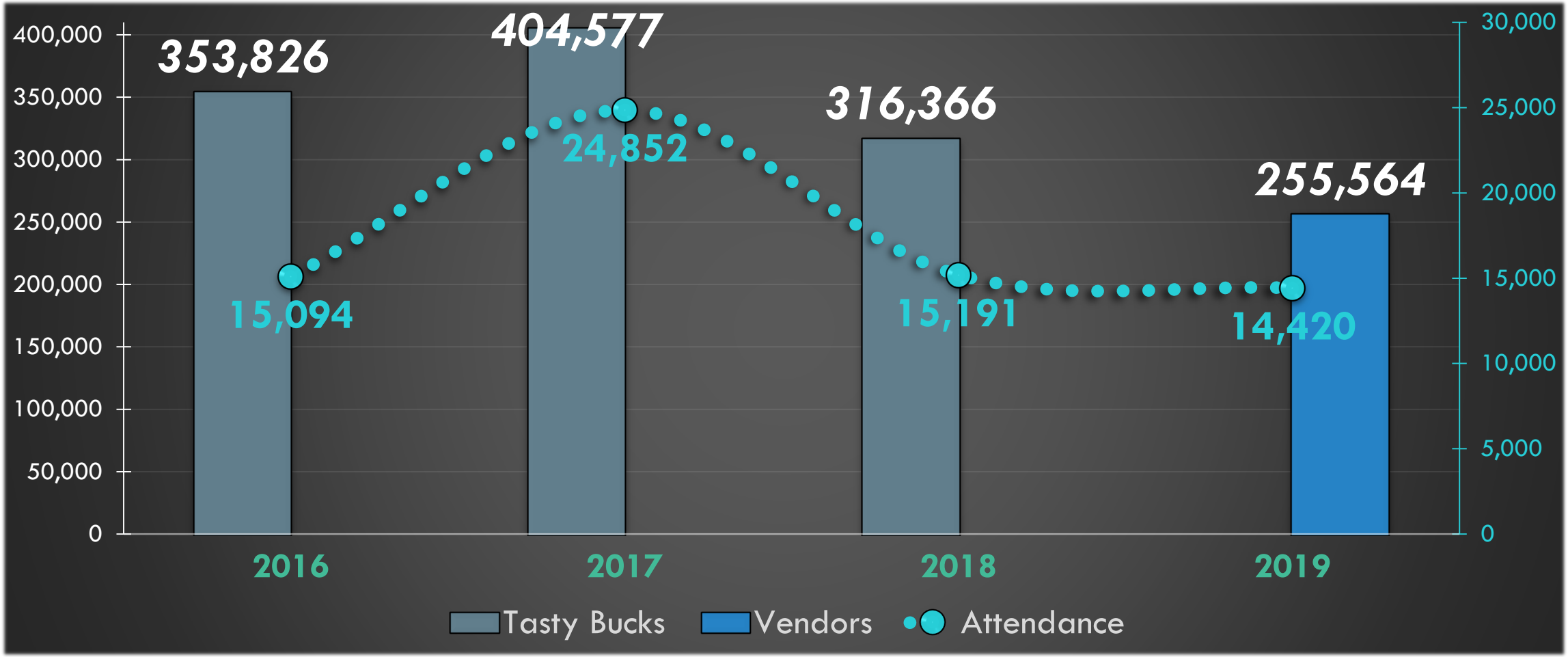
TOTAL REVENUE
TASTE ADDISON 2019



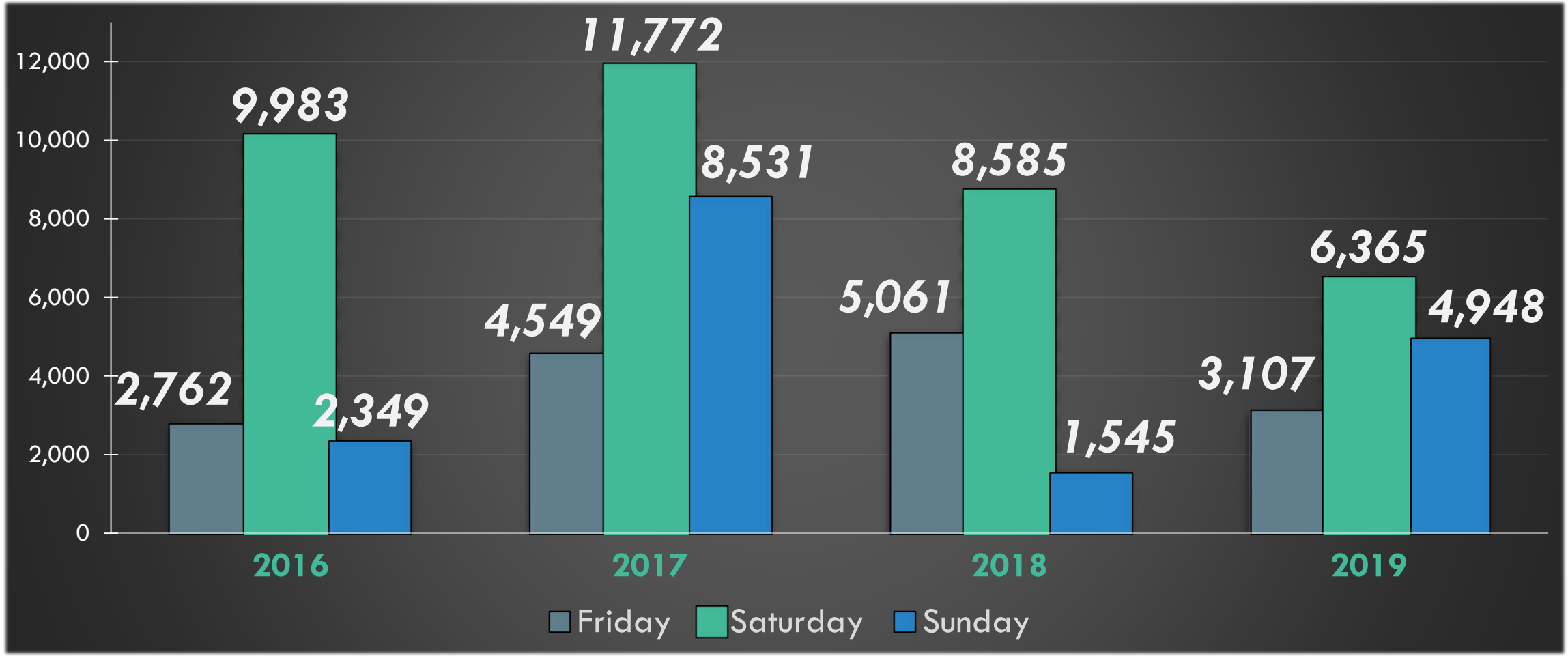
$381,391

- **$191,617** Event Sales & Presales
- **$136,650** Sponsorships
- **$14,000** Booth Rentals
- **$1,996** Misc. Revenue
- **$37,128** Invoice Revenue

FOOD/BEVERAGE SALES : 4-YEAR COMPARISON



ATTENDANCE-BY-DAY : 4-YEAR COMPARISON



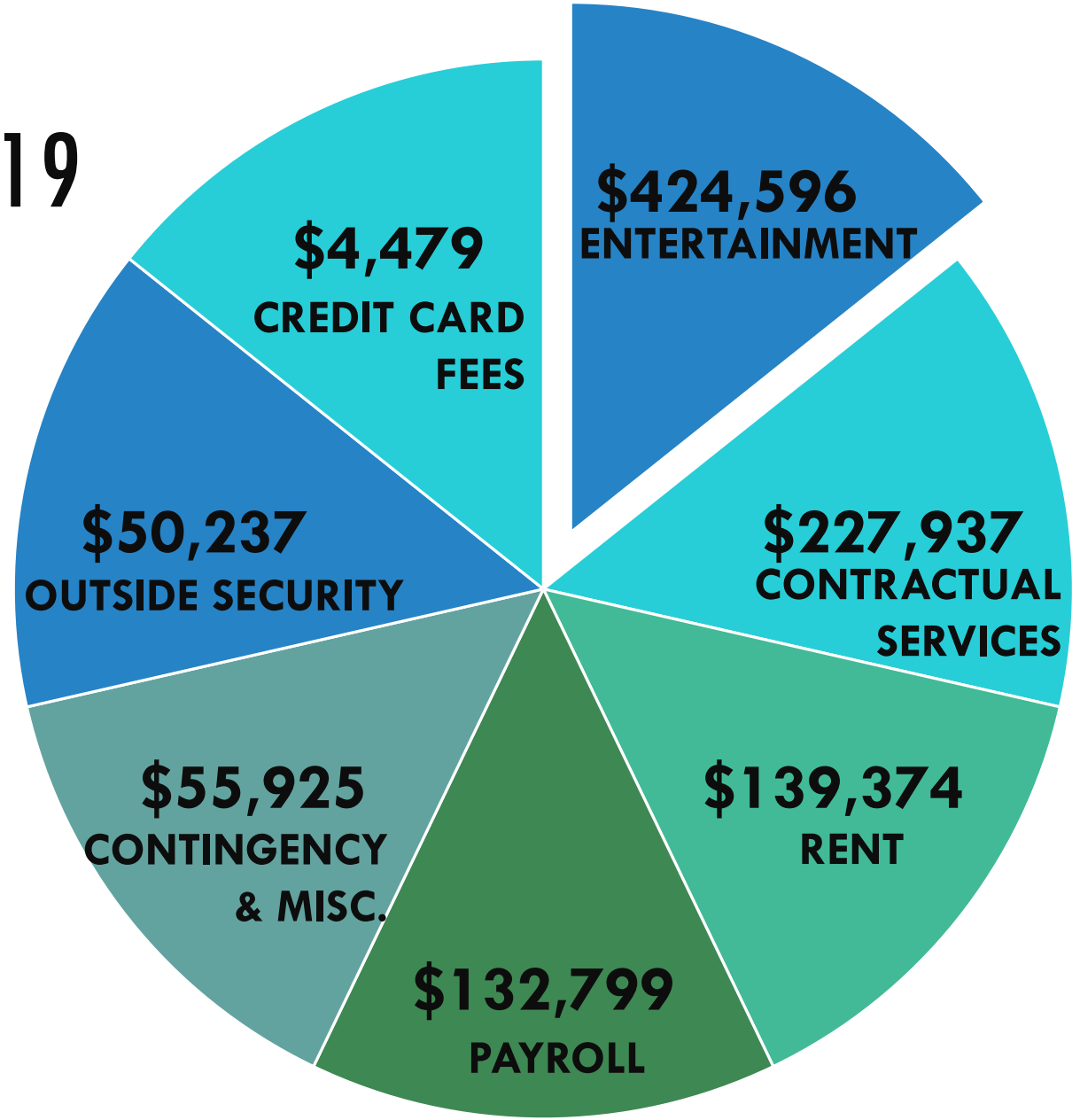


EXPENSES

Taste Addison 2019

TOTAL EXPENSES
TASTE ADDISON 2019

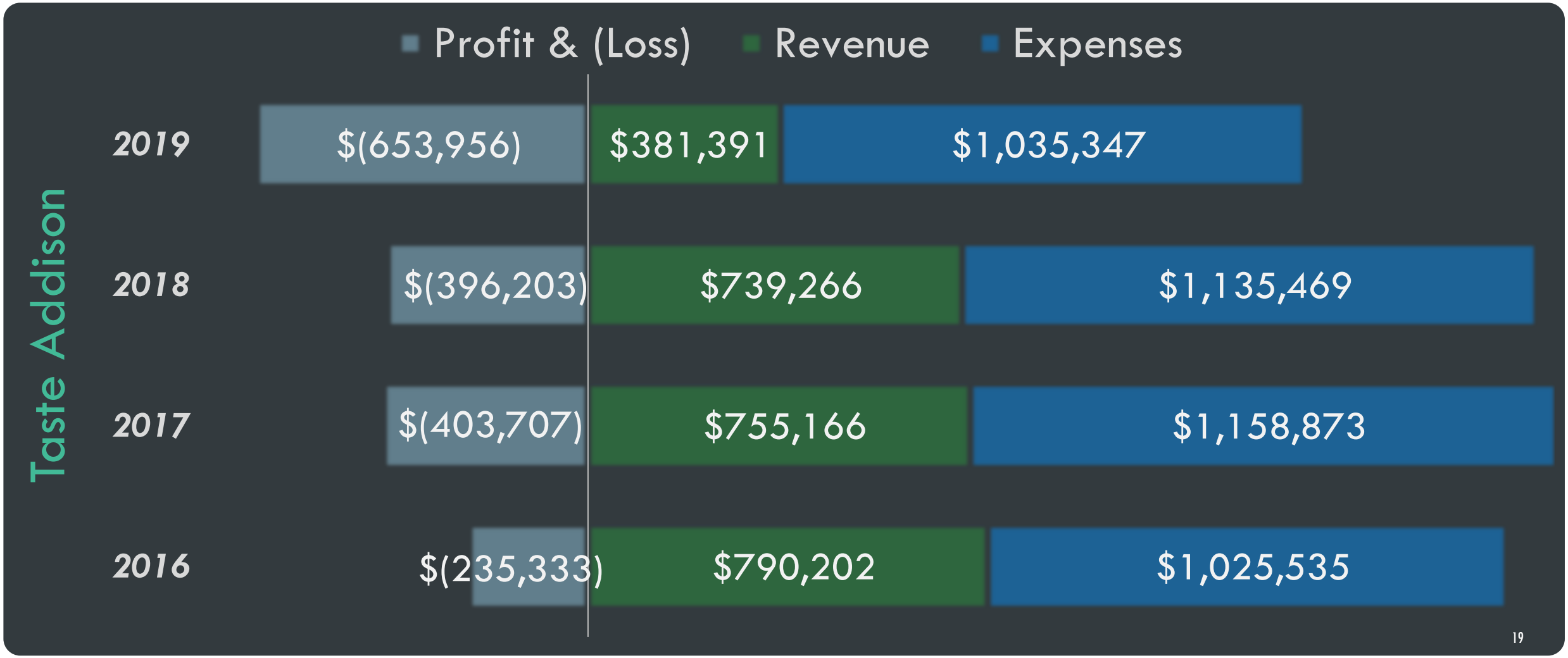






As of 8/13/19

PROFIT OR (LOSS) : 4-YEAR COMPARISON

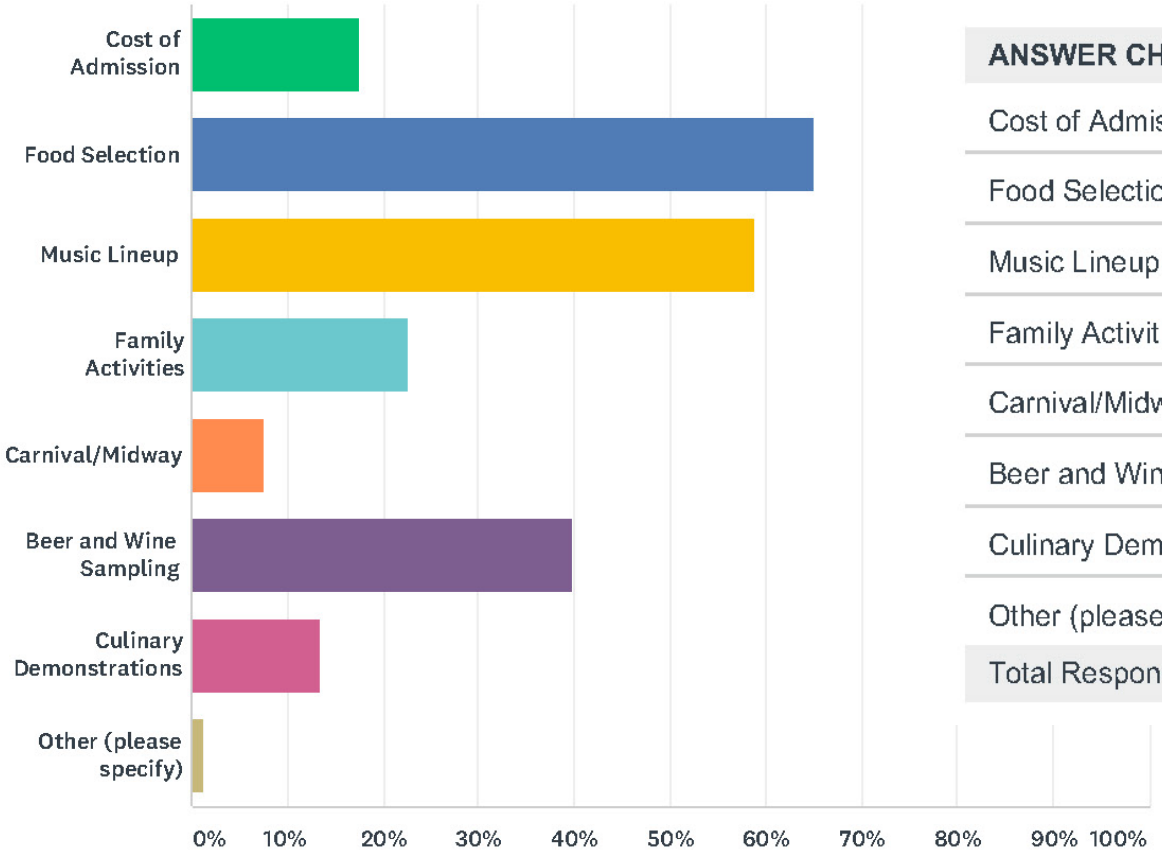


ATTENDEE FEEDBACK



Q8 What attracted you to Taste Addison? (select all that apply)

Answered: 406 Skipped: 1



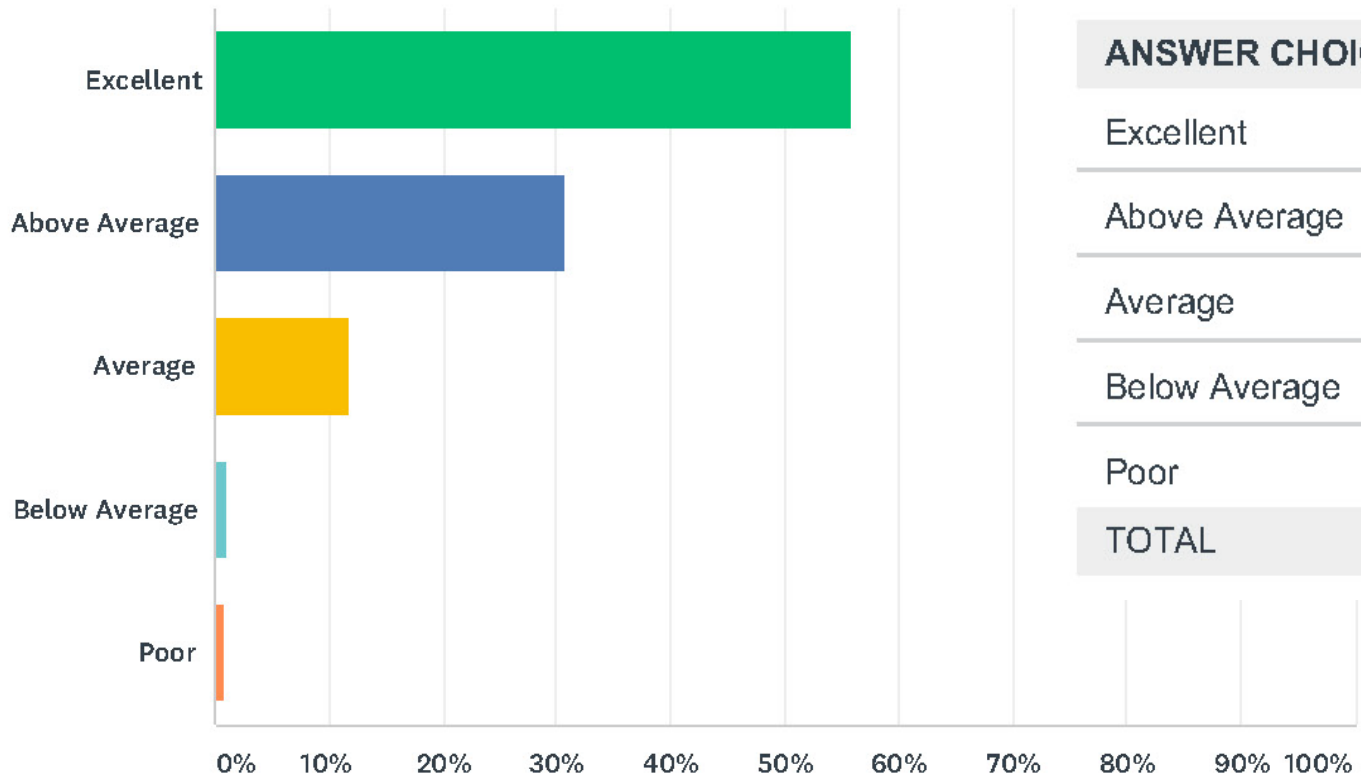
ANSWER CHOICES	RESPONSES
Cost of Admission	17.49%
Food Selection	65.02%
Music Lineup	58.87%
Family Activities	22.66%
Carnival/Midway	7.64%
Beer and Wine Sampling	39.66%
Culinary Demonstrations	13.30%
Other (please specify)	1.23%
Total Respondents: 406	

ATTENDEE FEEDBACK



Q9 How would you rate your overall event experience?

Answered: 403 Skipped: 4



ANSWER CHOICES	RESPONSES
Excellent	55.83%
Above Average	30.77%
Average	11.66%
Below Average	0.99%
Poor	0.74%
TOTAL	

THOUGHTS FOR NEXT YEAR



- Continue with the weekend after Memorial Day; review hours of operation to maximize value for restaurants and attendees.
- Maintain a dual focus on high-level music entertainment and quality culinary experiences.
- Focus on unique and interactive experiences throughout the venue geared toward various demographic groups.
- Redesign ellipse layout to better use event space.

Questions / Comments

Work Session and Regular Meeting **20.**

Meeting Date: 08/27/2019

Department: Special Events

Pillars: Gold Standard for Financial Health
Optimize the Addison Brand

Milestones: Define and promote Addison Identity

AGENDA CAPTION:

Present and Discuss the **Operations and Financial Reconciliation for Addison Kaboom Town! 2019.**

BACKGROUND:

Addison Kaboom Town! is a major event that celebrates America's independence through a festival in Addison Circle Park, as well as privately hosted events and watch parties at restaurants, hotels and other establishments across Addison. The event focuses on promoting tourism in Addison, and is a nationally-recognized event included in lists developed by the New York Times, People Magazine and more. This one day event took place on July 3, 2019.

The Special Events and Finance Departments have prepared a report on the marketing, operational and financial outcomes of Addison Kaboom Town! 2019. This was the first time Addison utilized its own point-of-sale software for food and beverage sales operations at this festival. The new software provided detailed information on the sale of food and beverage throughout the event, allowing the Finance team to quickly and accurately compile the necessary information and provide reporting following the event.

RECOMMENDATION:

Information only, no action required.

Attachments

Presentation - Kaboom Town 2019 Operations and Financial Reconciliation

---

KABOOM TOWN 2019

Council Presentation
August 27, 2019

ADDISON KABOOM TOWN! 2019

A TOWN-WIDE CELEBRATION THAT BRINGS VISITORS TO HOTELS & RESTAURANTS

NEW FOR 2019

- Enhanced fireworks display with 7% more product.
- New elements in Addison Airport Air Show.
- New Main Stage entertainment.
- Brought food vendor selection and management in-house and implemented point-of-sale system.
- Provided food vendors to areas immediately outside of the park.

ADVERTISING (PAID & IN-KIND MEDIA)

Outlet	Cost/ Value	Gross Impressions
Digital (paid)	$4,905	2,393,555
Dallas Morning News	$8,500	643,482
DO 214	$4,333	62,213
Spectrum Reach TV	$24,000	1,882,426
iHeart Radio	$115,250	1,256,400
IN-KIND TOTAL	**$152,083**	**3,844,521**

HOTEL ROOM NIGHTS

- 15 Addison hotels offered special rates. Packages included:
  - Guaranteed admission for up to 6 people
  - 1 branded blanket
- Total Packages Sold: 717 (22% increase)
- Total Room Nights Booked: 735 (11% increase)



REVENUE, EXPENDITURES, AND ATTENDANCE

Kaboom Town 2019

TOTAL REVENUE : KABOOM TOWN 2019



$144,471

- **$90,049** Sponsorships
- **$53,322** Invoice Revenue
- **$1,100** Misc. Revenue

INVOICE REVENUE : BREAKDOWN

25% of Net Sales

Cash & Credit Card Sales
$219,061
- Tips
($3,993)
= Net Sales
$215,068
x 25%
$53,767

Tasty Buck Refunds



Tasty Bucks Count
721
x 75%
($541)

Voucher Refunds

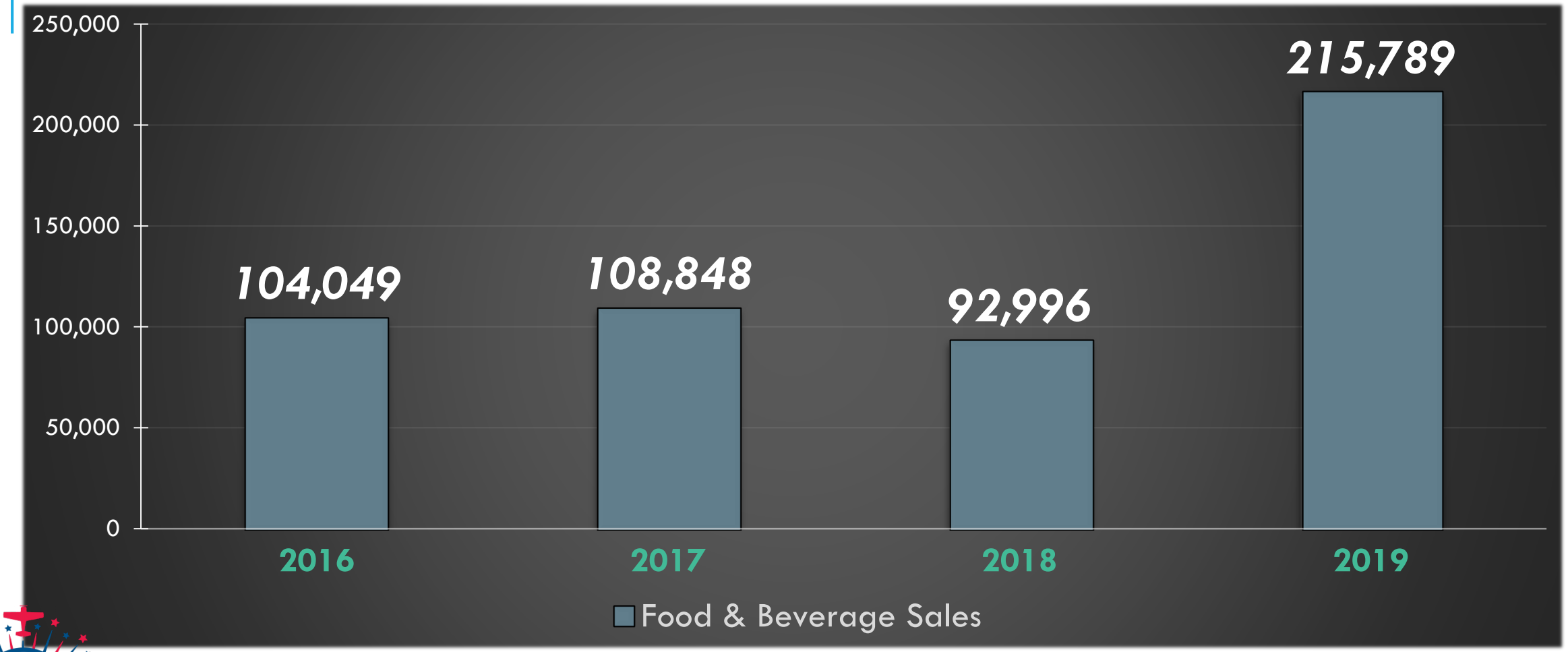
Coca-Cola Count
68
x $3.00
($204)

Additional

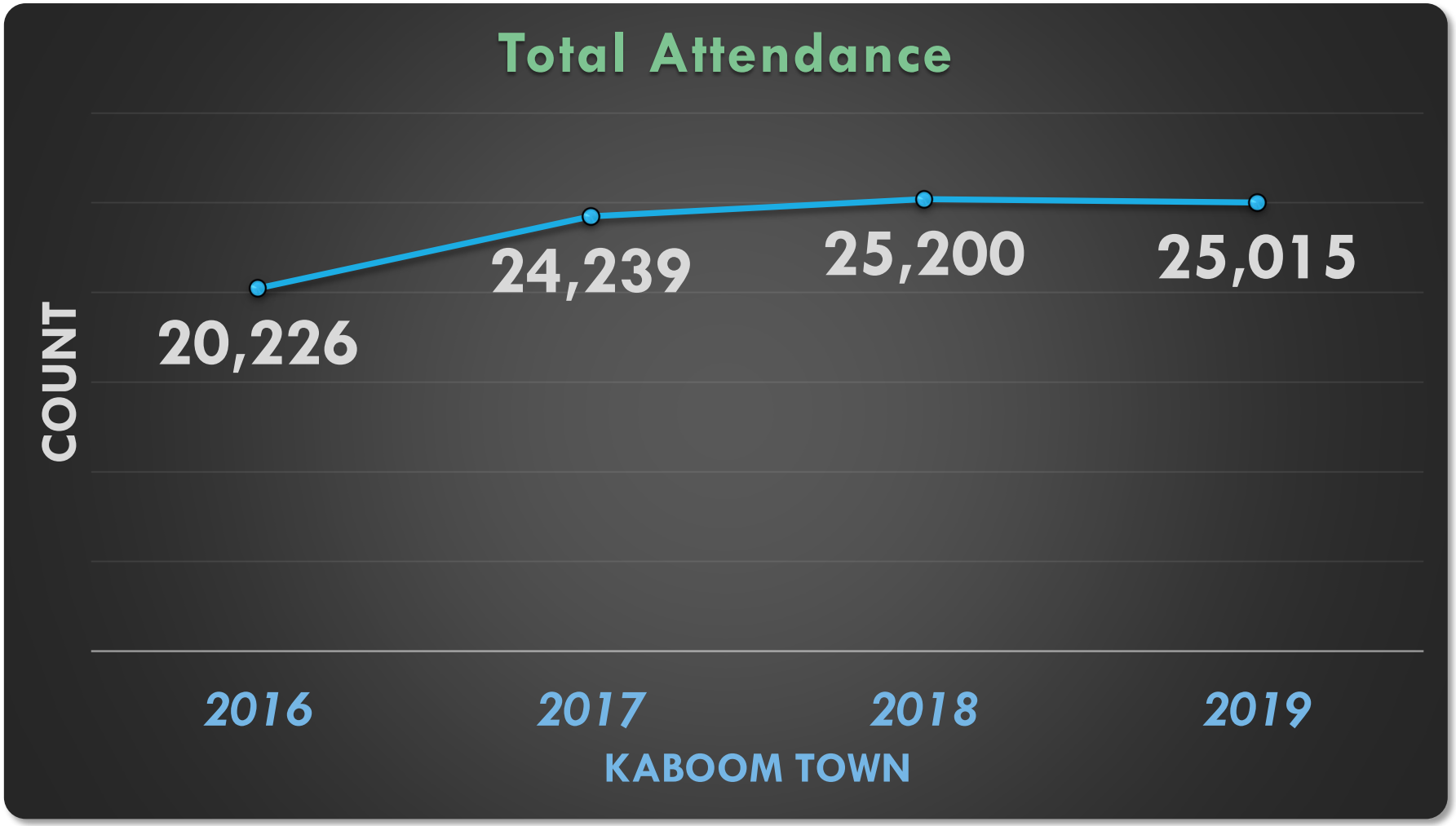
POS Units
$300
$300

Total $53,322

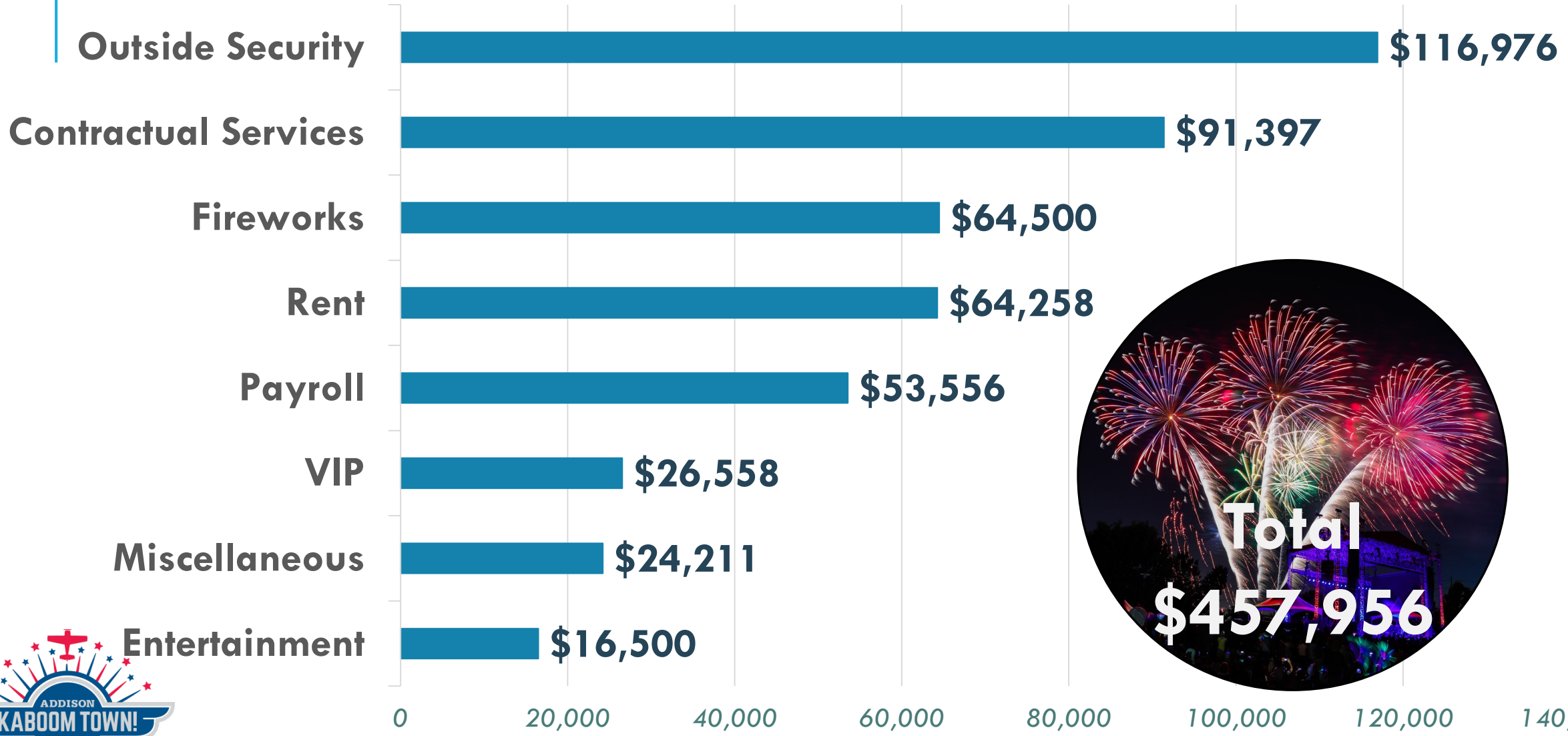
FOOD/BEVERAGE SALES : 4-YEAR COMPARISON



ATTENDANCE : 4-YEAR COMPARISON



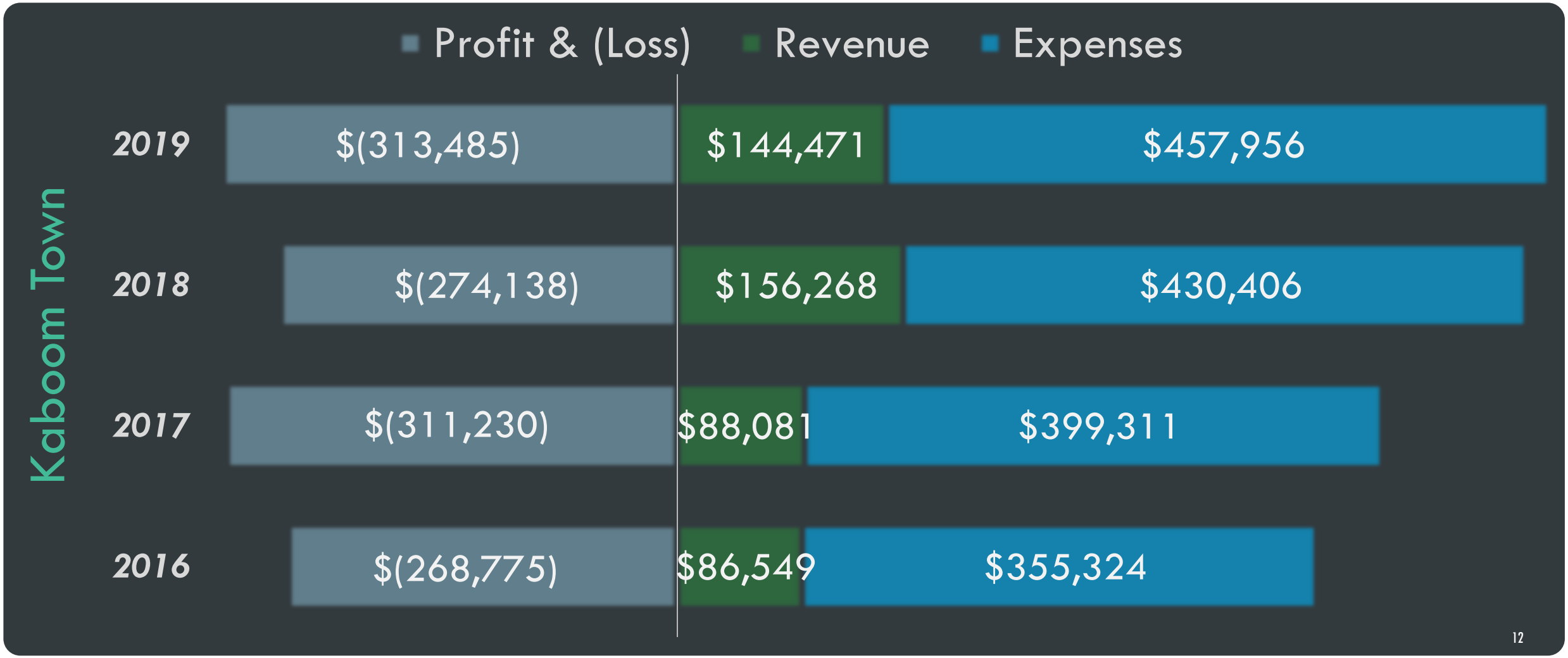
TOTAL EXPENSES : KABOOM TOWN 2019





As of 8/13/19

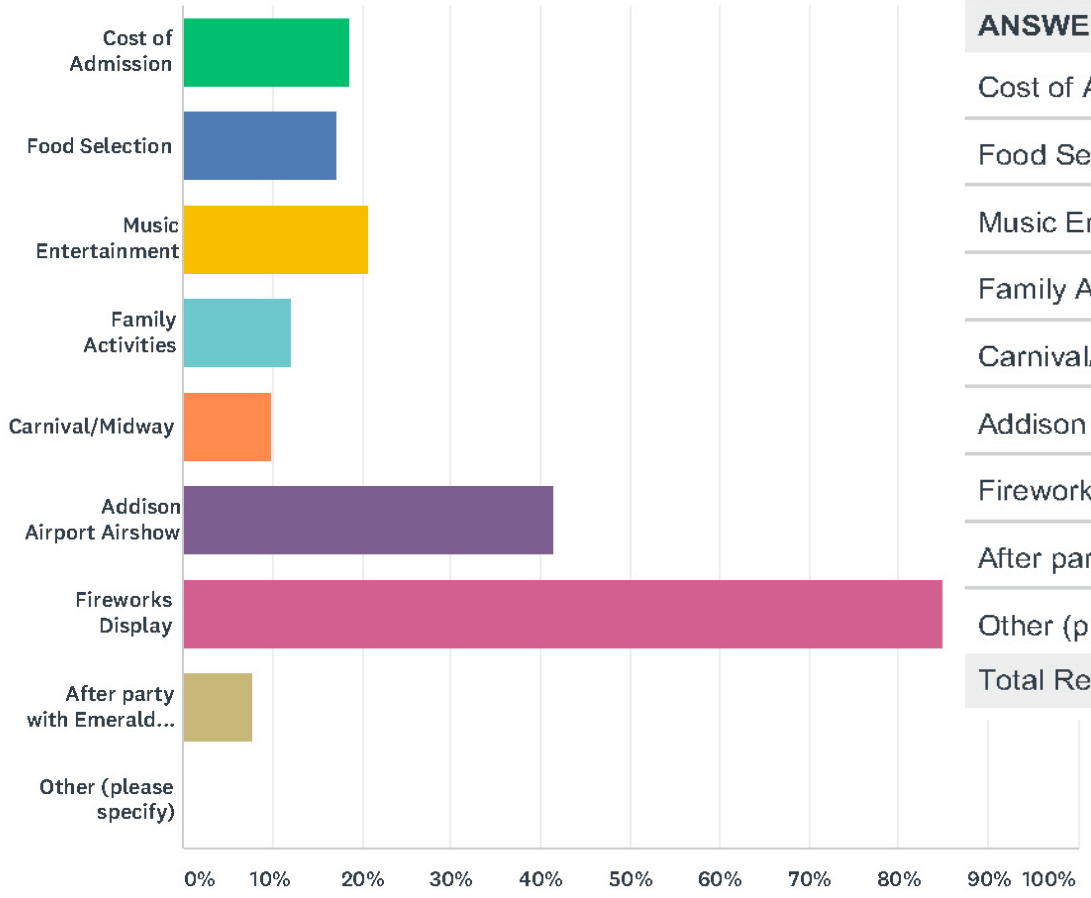
PROFIT OR (LOSS) : 4-YEAR COMPARISON



ATTENDEE FEEDBACK

Q8 What attracted you to this festival? (select all that apply)

Answered: 246 Skipped: 1

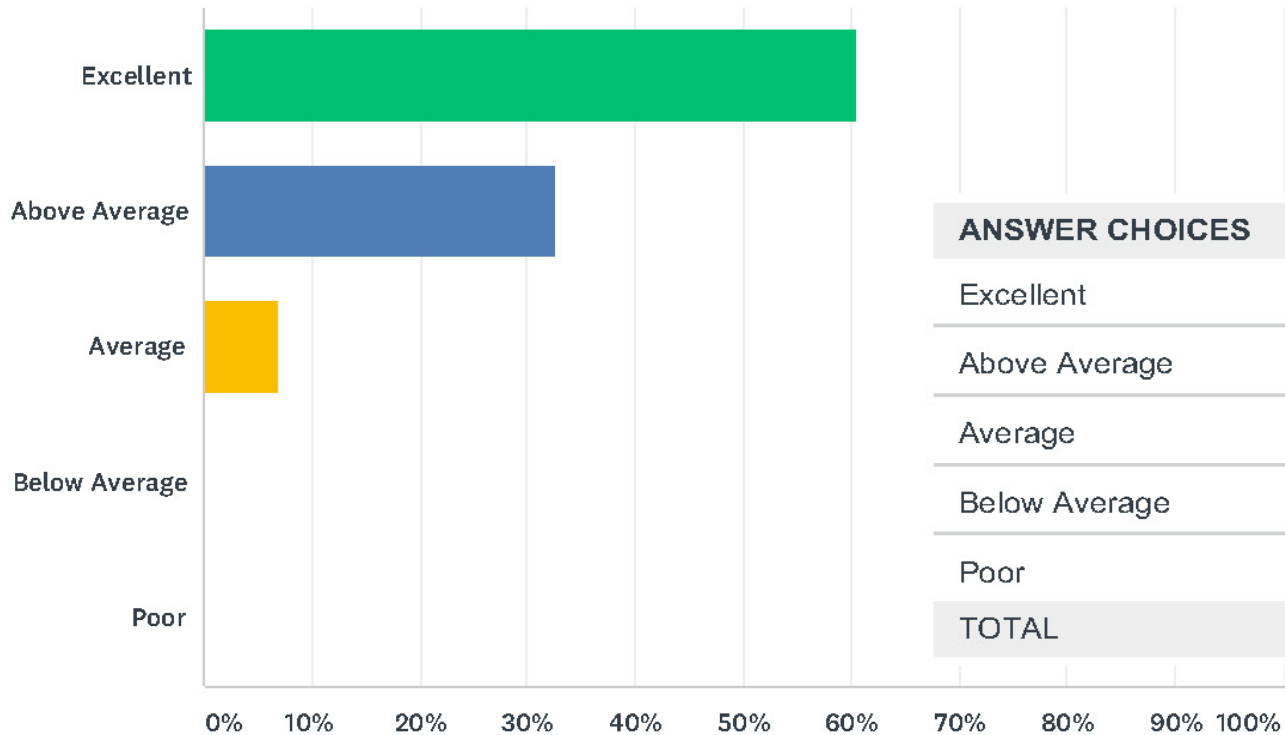


ANSWER CHOICES	RESPONSES
Cost of Admission	18.70%
Food Selection	17.07%
Music Entertainment	20.73%
Family Activities	12.20%
Carnival/Midway	9.76%
Addison Airport Airshow	41.46%
Fireworks Display	84.96%
After party with Emerald City Band	7.72%
Other (please specify)	0.00%
Total Respondents: 246	

ATTENDEE FEEDBACK

Q9 How would you rate your overall event experience?

Answered: 245 Skipped: 2



ANSWER CHOICES	RESPONSES
Excellent	60.41%
Above Average	32.65%
Average	6.94%
Below Average	0.00%
Poor	0.00%
TOTAL	

THOUGHTS FOR NEXT YEAR

- Work with Airport to identify new potential features for air show.
- Seek to further enhance the fireworks display.
- Review transportation plan for potential updates (biking, rideshare, etc.)









Questions / Comments

Work Session and Regular Meeting **21.**

Meeting Date: 08/27/2019

Department: Special Events

Pillars: Optimize the Addison Brand

Milestones: Define and promote Addison Identity

AGENDA CAPTION:

Present and Discuss an **Update on Addison Oktoberfest 2019.**

BACKGROUND:

Staff will provide an updated to the Council on the upcoming Addison Oktoberfest event that will take place September 19-22, 2019. The presentation will include information regarding schedule, tickets and packages, entertainment, activities, and special features.

RECOMMENDATION:

Information only, no action required.

Attachments

Presentation - Addison Oktoberfest

ADDISON SPECIAL EVENTS

Addison Oktoberfest Preview

August 27, 2019

ADDISON SPECIAL EVENTS

Dates & Times



Thursday, Sept. 19	6pm – 11pm
Friday, Sept. 20	6pm – 11pm
Saturday, Sept. 21	11am – 11pm
Sunday, Sept. 22	11am – 6pm

Ticket Information

General Admission

Thursday – Free for all ages
Friday – $10 ages 10+, Free ages 0-9
Saturday – $10 ages 10+, Free ages 0-9
Sunday – Free for all ages

Packages

Kinderpaket - $40
Liebe Paulaner Paket - $50
Addison Oktoberfest Paket - $60
Hotelpaket – Rates starting at $65, 15 hotels

ADDISON SPECIAL EVENTS

Entertainment







Paulaner Partyhalle

- Keg tappings
- Live music
- Dance floor
- Games and activities

Sprint Musikzelt

- Live music
- Games and activities

ADDISON SPECIAL EVENTS

Games & Activities





German Idol

Bier Belly Contest

German Spelling Bee

Masskrugstemmen

Bier Maiden Stein Carrying

Stein Carrying Relay

Bier Barrel Rolling

Dachshund Parade

Dachshund Races

Kinder Games





ADDISON SPECIAL EVENTS

Food & Beverage

Large food court inside the Paulaner Partyhalle.

Almost 20 outside food booths, featuring wild game, strudel, brats and more.

Featured dining areas include:

- Chamberlain's Brau Haus
- Kaffee und Kuchen Haus
- Prestige CCU Draught Haus





ADDISON SPECIAL EVENTS

New for 2019





- Point of sale system replacing Tasty Bucks.
- Expanding games and activities to the Paulaner Biergarten & doubling the number of children's games.
- Embracing authenticity with German names throughout the event.

ADDISON SPECIAL EVENTS

New for 2019





Bringing the sale of event merchandise in-house, including:

- Oktoberfest Shirts
- Oktoberfest Steins
- Oktoberfest Pins
- Paulaner Swag



Questions?

Work Session and Regular Meeting **22.**

Meeting Date: 08/27/2019

Department: Finance

Pillars: Gold Standard for Financial Health

Milestones: Review town ordinances and regulations with a focus on modernizatio in order to facilitate redevelopment
Maximize use of cutting edge technology to enhance public safety

---

AGENDA CAPTION:

Present and Discuss the **Finance Department Quarterly Financial Report of the Town of Addison for the Fiscal Year 2019 Third Quarter Ended June 30, 2019.**

BACKGROUND:

The Town of Addison's financial policies require the publication of a financial report 60 days subsequent to the end of each fiscal quarter. This report covers the financial performance for the third quarter for Fiscal Year 2019 (April 1, 2019 - June 30, 2019). Enclosed in the report is an executive dashboard that provides a high level look at some of the key financial indicators along with more detailed exhibits that demonstrate the current financial position for the various funds. The report includes information for the following funds: General, Hotel, Economic Development, Airport, Utility, and Stormwater funds.

Key highlights for the third quarter include:

- General Fund fiscal year to date revenue totaled $34.4 million, which is 91.8 percent of the overall budget amount. Sales tax collections are 83 percent of the fiscal year 2019 budget. Expenditures for the various departments are in line with budget.
- Hotel occupancy tax collections are 65.5 percent of budget for eight months of collections or 66.7 percent of the fiscal year. Hotel fund expenditures total $4.3 million or 47.7 percent of budget. Performing Arts expenditures are at 98% due to full payment of the Water Tower Theater grant.
- Operating revenue in the Utility Fund through the third quarter totaled just over $7.2 million or 56.5 percent of the fiscal year 2019 budget. With a one-month lag in the collection of utility revenues, eight months (66.7 percent) of the fiscal year has expired. Water revenues are 52.3 percent of the fiscal year 2019 budget, the result of unusually wet weather this spring. Operating expenses through the third quarter totaled approximately $7.9 million, or 66 percent of the fiscal year 2019 budget. Wastewater treatment expenses, however, are unusually high due to the increased costs from the Trinity River Authority wastewater treatment.

- Operating revenue in the Stormwater Fund through the third quarter totaled $1.6 million or 75% of the fiscal year 2019 budget. With a one-month lag in the collection of stormwater revenues, eight months (66.7 percent) of the fiscal year has expired. Operating expenses through the third quarter totaled almost $1.2 million or 58 percent of the fiscal year 2019 budget.

The financial condition of the Town remains strong and all reported funds adhere to the 25% fund balance requirement. Also included is the 3rd Quarter Investment Report for Council's review. Investments adhere to the Town's Investment Policy as adopted by Council.

RECOMMENDATION:

Information only, no action required.

Attachments

Report - FY2019 3rd Quarter Financial Report

Report - FY2019 3rd Quarter Investment Report

ADDISON FINANCE

Department of Finance

Quarterly Review

For the Period Ended June 30, 2019

Town of Addison

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Stormwater Fund 13

Schedule of Sales Tax Collections and Related Analyses 14

Hotel Occupancy Tax Collection by Hotel Service Type 15

To: **Wes Pierson, City Manager**

From: **Olivia Riley, Chief Financial Officer**

Re: **Third Quarter Financial Review**

Date: **8/6/2019**

This is the third quarter report for the 2018-2019 fiscal year. Revenues and expenditures reflect activity from October 1, 2018 through June 30, 2019 or seventy-five percent of the fiscal year.

GENERAL FUND

- Fiscal year to date revenue totaled $34.4 million, which is 91.8 percent of the overall budget amount. Property tax revenues are at 102 percent of budget, but a portion of those collections will be refunded during the remainder of the fiscal year as taxpayers complete the appeal process. Sales tax collections are 83.4 percent of the budget. Two quarters of mixed beverage taxes has been received from the state as of June 30, 2019. Municipal court fines are at 89.4 percent of budget.

- Fiscal year-to-date expenditures and transfers totaled approximately $28.6 million, which is 68 percent of budget. All departments are on pace with or below their respective budgets.

HOTEL FUND

- Revenues through the third quarter totaled approximately $4.7 million, 52.5 percent of the fiscal year 2019 budget. Hotel occupancy tax collections 65.5 percent of budget eight months of collections.
    1. Special Events revenues are trending slightly lower than expected; the fiscal year 2019 budget has not been amended to reflect the elimination of Tasty Bucks.
    2. Conference Centre revenues are currently projected to end the fiscal year $95 thousand below budget, based on events currently booked through the end of the fiscal year.

- Hotel Fund expenditures total $4.3 million or 47.7 percent of budget. Performing Arts expenditures are at 98.4 percent due to the release of the second payment of the Water Tower Theater grant.

AIRPORT FUND

- Operating revenue through the third quarter totaled approximately $4.4 million or 81 percent of the fiscal year 2019 budget.
- Year-to-date operating expenses amounted to $3.4 million, resulting in operating income of $985 thousand.

UTILITY FUND

- Operating revenue through the third quarter totaled $7.2 million or 56.5 percent of the fiscal year 2019 budget. With a one-month lag in the collection of utility revenues, eight months (66.7 percent) of the fiscal year has expired.
    3. Water sales are 52.3 percent of the fiscal year 2019 budget, the result of unusually wet weather this spring. Sewer charges are 59.4% of budget, also the result of unusually wet weather.

- Operating expenses through the third quarter totaled approximately $7.9 million, or 66 percent of the fiscal year 2019 budget.
    4. Wastewater treatment expenses are unusually high due to increased costs from the Trinity River Authority wastewater treatment.

STORMWATER FUND

- Operating revenue through the third quarter totaled $1.6 million or 75.4 percent of the fiscal year 2019 budget. With a one-month lag in the collection of stormwater revenues, eight months (66.7 percent) of the fiscal year has expired.

- Operating expenses through the third quarter totaled approximately $1.2 million or 58.2 percent of the fiscal year 2019 budget. Three quarterly transfers have been made to the Addison Grove Escrow fund.

Executive Dashboard - 3rd Quarter, 2019 Fiscal Year

Financial Indicators

Positive variance compared to historical trends	Positive
Negative variance of 3%-5% and more than $50,000 compared to historical trends	Warning
Negative variance of >5% and more than $50,000 compared to historical trends	Negative

Key Revenue Sources	FY2019 Budget	Actual through 06/30/19	% Annual Budget	
Ad Valorem Taxes - General Fund	$ 16,950,736	$ 17,265,200	101.86%	
Non-Property Taxes - General Fund	14,900,000	11,998,837	80.53%	
Hotel Tax	5,530,000	3,622,426	65.50%	
Franchise Fees - General Fund	2,575,000	1,965,549	76.33%	
Service/Permitting/License Fees - General Fund	2,442,570	2,254,459	92.30%	
Rental Income - All Funds	5,013,255	3,814,881	76.10%	
Fines and Penalties - All Funds	395,000	362,981	91.89%	
Special Event Revenue - Hotel Fund	2,647,700	509,762	19.25%	(1)
Fuel Flowage Fees - Airport Fund	917,400	763,171	83.19%	
Water and Sewer Charges - Utility Fund	12,584,297	6,975,263	55.43%	(3)

Key Expenditures	FY2019 Budget	Actual through 06/30/19	% Annual Budget
General Fund	$ 41,906,493	$ 28,551,101	68.13%
Hotel Fund	8,944,381	4,268,800	47.73%
Economic Development	1,860,868	1,016,745	54.64%
Airport Operations	5,576,572	3,437,733	61.65%
Utility Operations	12,035,512	7,939,753	65.97%

Executive Dashboard - 3rd Quarter, 2019 Fiscal Year

Financial & Staffing Indicators

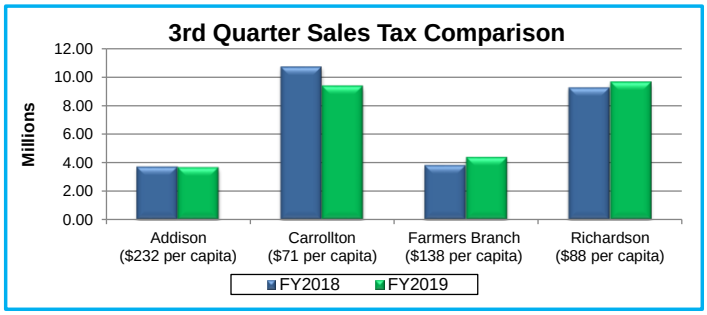
Personnel Information:

New Hires - Benefitted Positions				
	04/2019-06/2019			FY2019
Department	Part-Time Positions	Full-time positions	Total, 3rd Qtr	YTD
City Manager	0	0	0	3
Development Services	0	1	1	3
Finance	0	0	0	1
Fire	0	3	3	3
General Services	0	0	0	1
Human Resources	0	1	1	1
Public Works	0	1	1	6
Parks	0	2	2	5
Police	0	1	1	6
Recreation	1	0	1	2
Streets	0	0	0	2
Grand Total	**1**	**9**	**10**	**33**

Separations - Benefitted Positions				
	04/2019-06/2019			FY2019
Department	Part-Time Positions	Full-time positions	Total, 3rd Qtr	YTD
City Manager	0	0	0	2
Conference Centre	0	1	1	1
Development Services	0	0	0	2
Finance	0	3	3	4
Fire	0	0	0	3
Human Resources	0	0	0	1
Public Works	0	1	1	1
Municipal Court	0	1	1	1
Parks	0	1	1	3
Police	0	2	2	8
Recreation	1	0	1	1
Grand Total	**1**	**9**	**10**	**27**

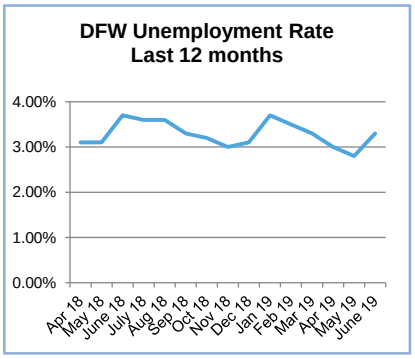
Economic Development Incentives:

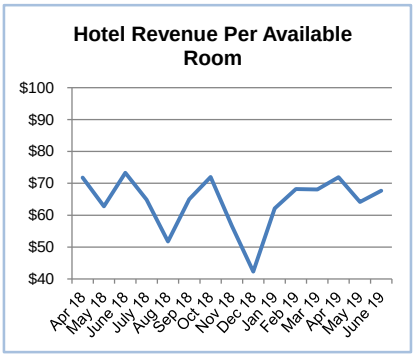
Executed Agreements	Amount Paid FY19	Total Incentives Committed
3	$357,309	$505,334

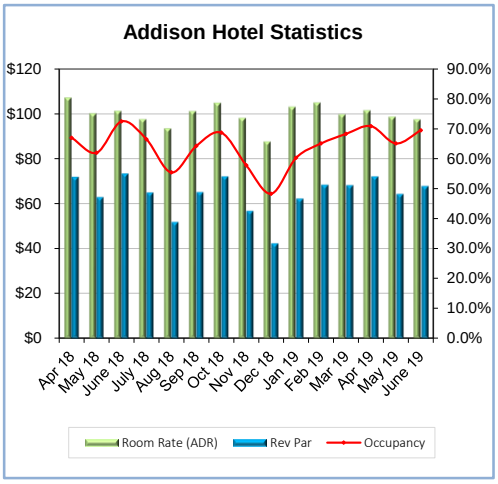


Executive Dashboard - 3rd Quarter, 2019 Fiscal Year

Economic Indicators







Occupancy Indicators:

Office Occupancy = 83.3%

1.7%

Retail Occupancy = 92.1%

2.0%

Source: CoStar (compares to prior year)

Hotel Indicators

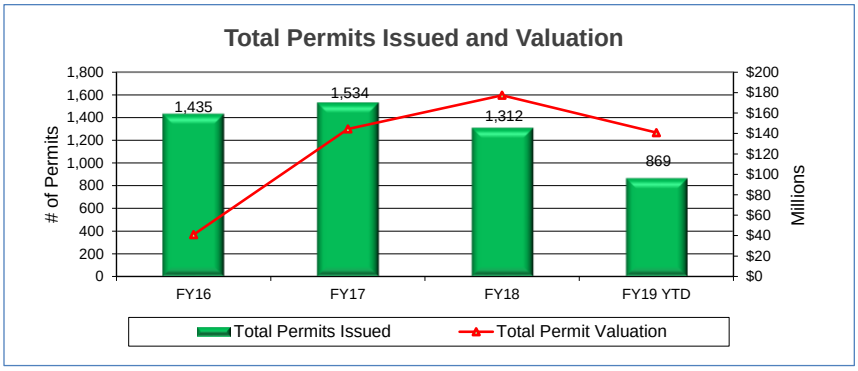
Hotel Occupancy = 68.5%

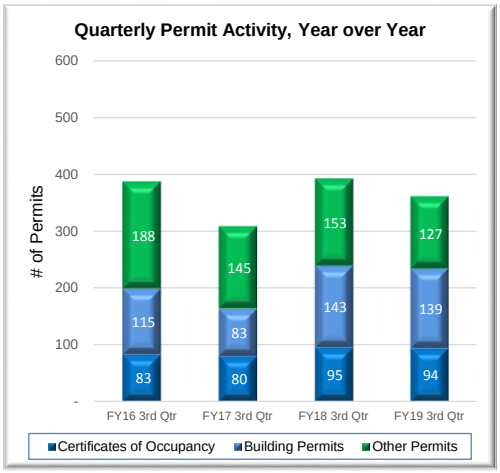
2.0%

RevPar = $67.92

2.0%

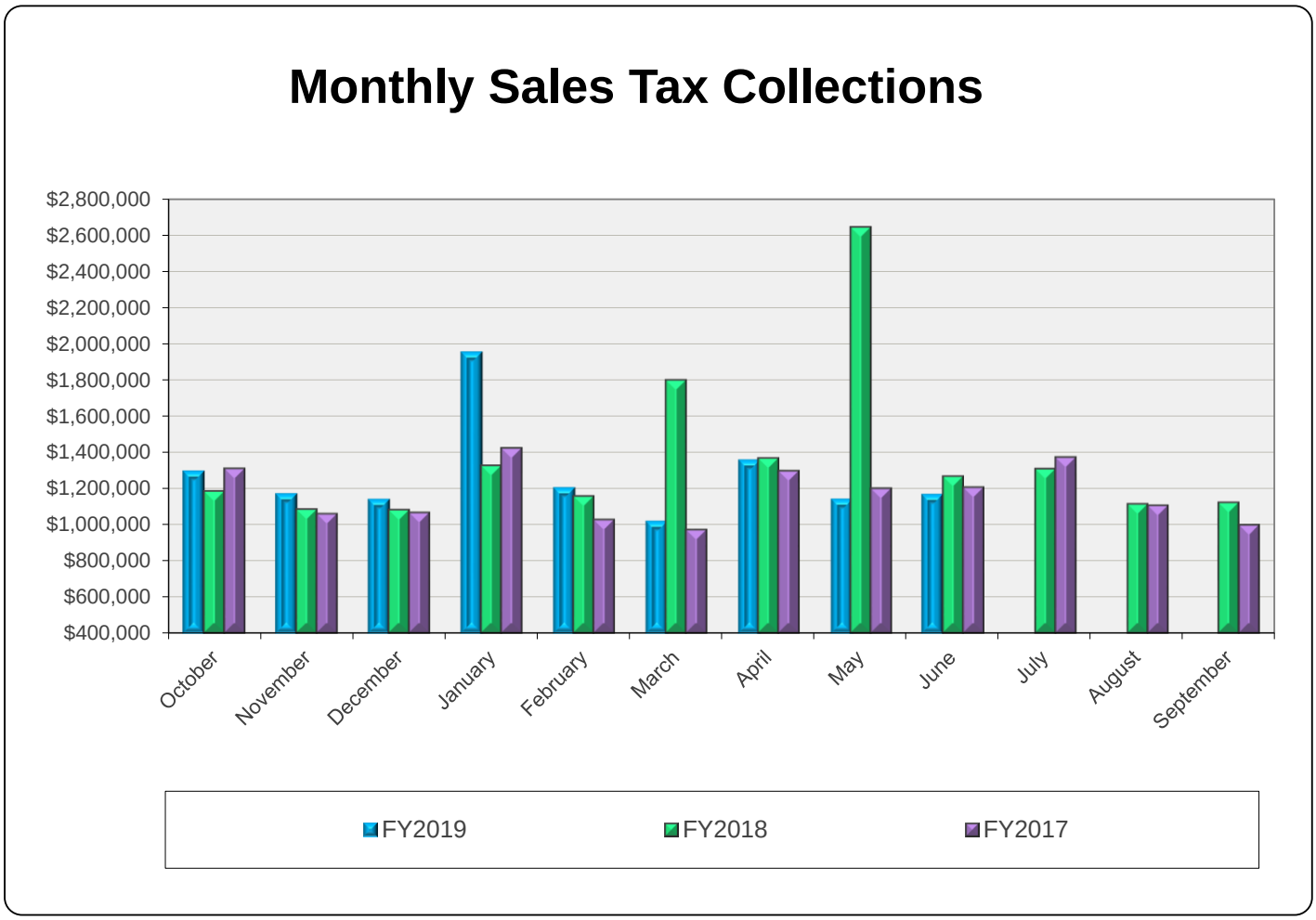
Source: STR Report (compares to prior year)





Executive Dashboard - 3rd Quarter, 2019 Fiscal Year

Sales Tax Information



Positive variance compared to historical trends	Positive
Negative variance of 3%-5% and more than $50,000 compared to historical trends	Warning
Negative variance of >5% and more than $50,000 compared to historical trends	Negative

TOWN OF ADDISON

GENERAL FUND

FY2019 QUARTERLY STATEMENT OF REVENUES AND EXPENDITURES COMPARED TO BUDGET

With Comparative Information from Prior Fiscal Year

CATEGORY	FY 2017-18 ACTUAL PRIOR YEAR	FY 2018-19 REVISED BUDGET	FY 2018-19 ACTUAL 3RD QTR	FY 2018-19 ACTUAL YTD	ACTUAL YTD as % of Budget
Revenues:					
Ad Valorem taxes:					
Current taxes	$ 15,904,272	$ 16,965,736	$ 10,466	$ 17,330,711	102.2%
Delinquent taxes	(73,767)	(45,000)	(65,372)	(99,561)	221.2%
Penalty & interest	44,338	30,000	12,624	34,050	113.5%
Non-property taxes:					
Sales tax	16,449,993	13,700,000	3,658,303	11,428,104	83.4%
Alcoholic beverage tax	1,146,633	1,200,000	294,942	570,733	47.6%
Franchise / right-of-way use fees:					
Electric franchise	1,568,812	1,600,000	384,206	1,204,478	75.3%
Gas franchise	229,319	200,000	-	253,426	126.7%
Telecommunication access fees	468,770	475,000	99,745	303,876	64.0%
Cable franchise	288,094	300,000	68,741	203,769	67.9%
Street rental fees	11,844	-	-	-	0.0%
Licenses and permits:					
Business licenses and permits	117,157	194,900	44,411	95,965	49.2%
Building and construction permits	1,286,878	603,900	412,979	919,856	152.3%
Service fees:					
General government	31	100	-	-	0.0%
Public safety	974,914	870,000	219,771	649,673	74.7%
Urban development	890	2,850	530	1,690	59.3%
Streets and sanitation	414,493	371,000	93,097	278,583	75.1%
Recreation	70,715	71,300	15,552	46,657	65.4%
Interfund	530,520	328,520	87,345	262,035	79.8%
Court fines	334,467	320,000	101,278	285,949	89.4%
Interest earnings	333,192	100,000	232,166	504,563	504.6%
Rental income	8,120	6,600	370	4,950	75.0%
Other	193,845	158,000	23,546	101,496	64.2%
Total Revenues	**40,303,530**	**37,452,906**	**5,694,700**	**34,381,003**	**91.8%**

Positive variance compared to historical trends	Positive
Negative variance of 3%-5% and more than $50,000 compared to historical trends	Warning
Negative variance of >5% and more than $50,000 compared to historical trends	Negative

TOWN OF ADDISON

GENERAL FUND

FY2019 QUARTERLY STATEMENT OF REVENUES AND EXPENDITURES COMPARED TO BUDGET

With Comparative Information from Prior Fiscal Year

CATEGORY	FY 2017-18 ACTUAL PRIOR YEAR	FY 2018-19 REVISED BUDGET	FY 2018-19 ACTUAL 3RD QTR	FY 2018-19 ACTUAL YTD	ACTUAL YTD as % of Budget
Expenditures:					
General Government:					
City secretary	180,167	180,089	38,788	116,549	64.7%
City manager	1,098,973	1,148,976	274,846	825,391	71.8%
Finance	1,832,385	1,820,814	704,796	1,560,607	85.7%
General services	637,461	742,211	151,268	482,500	65.0%
Municipal court	623,809	737,885	129,656	466,948	63.3%
Human resources	629,992	696,206	162,529	465,748	66.9%
Information technology	1,865,571	2,100,593	513,573	1,412,820	67.3%
Combined services	1,186,403	1,360,626	131,683	893,497	65.7%
Council projects	312,580	341,507	107,628	278,350	81.5%
Public safety:					
Police	8,726,035	9,509,734	2,147,556	6,601,240	69.4%
Emergency communications	1,375,968	1,383,152	320,254	1,340,301	96.9%
Fire	7,713,285	7,851,079	1,748,566	5,575,180	71.0%
Development services	1,374,246	1,611,844	289,405	932,536	57.9%
Streets	1,895,171	2,204,253	323,905	918,800	41.7%
Parks and Recreation:					
Parks	3,381,066	3,882,652	745,360	2,249,057	57.9%
Recreation	1,673,500	1,863,368	344,861	1,077,949	57.8%
Other financing uses:					
Transfers to other funds	1,202,000	4,471,504	1,299,420	3,353,628	75.0%
Total Expenditures	**35,708,612**	**41,906,493**	**9,434,094**	**28,551,101**	**68.1%**
Net Change in Fund Balance	4,594,918	(4,453,587)	(3,739,394)	5,829,902	
Fund Balance at Beginning of Year	**16,368,038**	**20,962,956**		**20,962,956**	
Fund Balance at End of Year	**$ 20,962,956**	**$ 16,509,369**		**$ 26,792,858**	

Positive variance compared to historical trends	Positive
Negative variance of 3%-5% and more than $50,000 compared to historical trends	Warning
Negative variance of >5% and more than $50,000 compared to historical trends	Negative

TOWN OF ADDISON

HOTEL FUND

FY2019 QUARTERLY STATEMENT OF REVENUES AND EXPENDITURES COMPARED TO BUDGET

With Comparative Information from Prior Fiscal Year

CATEGORY	FY 2017-18 ACTUAL PRIOR YEAR	FY 2018-19 REVISED BUDGET	FY 2018-19 ACTUAL 3RD QTR	FY 2018-19 ACTUAL YTD	ACTUAL YTD as % of Budget	
Revenues:						
Hotel/Motel occupancy taxes	$ 5,552,084	$ 5,530,000	$ 1,492,126	$ 3,622,426	65.5%	
Proceeds from special events	1,570,391	2,647,700	480,086	509,762	19.3%	(1)
Conference centre rental	629,278	620,000	136,191	398,543	64.3%	(2)
Theatre centre rental	77,992	80,000	32,669	60,023	75.0%	
Interest and miscellaneous	555,313	17,000	32,279	75,474	444.0%	
Total Revenues	**8,385,058**	**8,894,700**	**2,173,351**	**4,666,228**	**52.5%**	
Expenditures:						
Addison theatre centre	352,605	395,452	62,253	201,770	51.0%	
Conference centre	1,027,977	1,100,052	233,011	678,800	61.7%	
General hotel operations	150,178	161,470	34,855	103,283	64.0%	
Marketing	922,818	1,083,888	339,246	622,186	57.4%	
Performing arts	500,126	445,000	-	437,900	98.4%	
Special events	2,889,450	4,060,994	740,613	1,106,540	27.2%	
Special events operations	937,755	982,525	192,615	582,071	59.2%	
Other financing uses:						
Transfer to Debt service fund	710,800	-	-	-	0.0%	
Transfer to Economic development fund	610,000	715,000	178,750	536,250	75.0%	
Total Expenditures	**8,101,709**	**8,944,381**	**1,781,343**	**4,268,800**	**47.7%**	
Net Change in Fund Balance	283,349	(49,681)	392,008	397,428		
Fund Balance at Beginning of Year	**3,839,188**	**4,122,537**		**4,122,537**		
Fund Balance at End of Year	**$ 4,122,537**	**$ 4,072,856**		**$ 4,519,965**		

Positive variance compared to historical trends	Positive
Negative variance of 3%-5% and more than $50,000 compared to historical trends	Warning
Negative variance of >5% and more than $50,000 compared to historical trends	Negative

TOWN OF ADDISON

ECONOMIC DEVELOPMENT FUND

FY2019 QUARTERLY STATEMENT OF REVENUES AND EXPENDITURES COMPARED TO BUDGET

With Comparative Information from Prior Fiscal Year

CATEGORY	FY 2017-18 ACTUAL PRIOR YEAR	FY 2018-19 REVISED BUDGET	FY 2018-19 ACTUAL 3RD QTR	FY 2018-19 ACTUAL YTD	ACTUAL YTD as % of Budget
Revenues:					
Ad Valorem taxes:	$ 1,024,998	$ 1,080,834	$ (2,730)	$ 1,114,770	103.1%
Business license fee	58,304	60,500	3,521	52,380	86.6%
Interest income and other	23,162	7,000	24,969	44,726	638.9%
Transfers from General/Hotel Fund	610,000	715,000	178,750	536,250	75.0%
Total Revenues	**1,716,464**	**1,863,334**	**204,510**	**1,748,126**	**93.8%**
Expenditures:					
Personnel services	412,407	463,125	101,236	319,948	69.1%
Supplies	16,200	23,604	4,157	13,650	57.8%
Maintenance	16,980	22,866	2,779	11,528	50.4%
Contractual services	1,011,926	1,329,252	285,767	655,103	49.3%
Capital replacement/lease	17,688	22,021	5,505	16,516	75.0%
Other financing uses:					
Transfers to other funds	100,000	-	-	-	0.0%
Total Expenditures	**1,575,201**	**1,860,868**	**399,444**	**1,016,745**	**54.6%**
Net Change in Fund Balance	141,263	2,466	(194,934)	731,381	
Fund Balance at Beginning of Year	**1,295,762**	**1,437,025**		**1,437,025**	
Fund Balance at End of Year	**$ 1,437,025**	**$ 1,439,491**		**$ 2,168,406**	

Positive variance compared to historical trends	Positive
Negative variance of 3%-5% and more than $50,000 compared to historical trends	Warning
Negative variance of >5% and more than $50,000 compared to historical trends	Negative

AIRPORT FUND

FY2019 QUARTERLY STATEMENT OF REVENUES AND EXPENDITURES COMPARED TO BUDGET

With Comparative Information from Prior Fiscal Year

CATEGORY	FY 2017-18 ACTUAL PRIOR YEAR	FY 2018-19 REVISED BUDGET	FY 2018-19 ACTUAL 3RD QTR	FY 2018-19 ACTUAL YTD	ACTUAL YTD as % of Budget
Operating Revenues:					
Operating grants	$ 50,000	$ 50,000	$ -	$ -	0.0%
Service fees	127,023	145,391	24,759	78,603	54.1%
Fuel flowage fees	975,818	917,400	247,554	763,171	83.2%
Rental income	4,473,583	4,306,655	1,121,702	3,351,365	77.8%
Interest income and other	719,627	24,500	142,497	229,940	938.5%
Total Operating Revenues:	**6,346,051**	**5,443,946**	**1,536,512**	**4,423,079**	**81.2%**
Operating Expenses:					
Town - Personnel services	378,066	446,673	72,472	222,653	49.8%
Town - Supplies	11,795	40,000	4,128	7,506	18.8%
Town - Maintenance	36,482	53,000	11,034	35,170	66.4%
Town - Contractual services	194,042	249,308	33,247	156,210	62.7%
Town - Capital Replacement/Lease	26,823	222,292	55,573	166,719	75.0%
Town - Debt service	588,112	902,466	2,793	547,026	60.6%
Town - Capital Outlay	279,034	-	-	-	0.0%
Operator - Operations and maintenance	2,793,948	3,255,453	717,346	2,029,732	62.3%
Operator - Service contract	452,169	407,380	89,121	272,717	66.9%
Total Operating Expenses:	**4,760,471**	**5,576,572**	**985,714**	**3,437,733**	**61.6%**
Net Change in Fund Balance	1,585,580	(132,626)	550,798	985,346	
Fund Balance at Beginning of Year	**5,037,537**	**6,623,117**		**6,623,117**	
Fund Balance at End of Year	**$ 6,623,117**	**$ 6,490,491**		**$ 7,608,463**	

Positive variance compared to historical trends	Positive
Negative variance of 3%-5% and more than $50,000 compared to historical trends	Warning
Negative variance of >5% and more than $50,000 compared to historical trends	Negative

UTILITY FUND

FY2019 QUARTERLY STATEMENT OF REVENUES AND EXPENDITURES COMPARED TO BUDGET

With Comparative Information from Prior Fiscal Year

CATEGORY	FY 2017-18 ACTUAL PRIOR YEAR	FY 2018-19 REVISED BUDGET	FY 2018-19 ACTUAL 3RD QTR	FY 2018-19 ACTUAL YTD	ACTUAL YTD as % of Budget	
Operating revenues:						
Water sales	$ 6,997,055	$ 6,998,344	$ 1,431,248	$ 3,659,198	52.3%	
Sewer charges	5,073,338	5,585,953	1,230,975	3,316,065	59.4%	
Tap fees	18,496	25,275	1,375	5,050	20.0%	
Penalties	89,342	75,000	36,187	77,032	102.7%	
Interest income and other	225,792	79,600	65,863	148,970	187.1%	
Total Operating Revenues:	**12,404,023**	**12,764,172**	**2,765,648**	**7,206,315**	**56.5%**	(3)
Operating expenses:						
Personnel services	1,578,303	2,057,126	390,792	1,205,320	58.6%	
Supplies	147,849	208,040	35,590	115,544	55.5%	
Maintenance	358,293	487,177	94,029	209,829	43.1%	
Contractual services						
Water purchases	3,871,343	3,519,797	563,640	2,236,786	63.5%	
Wastewater treatment	3,341,843	2,978,229	491,798	2,541,999	85.4%	(4)
Other services	1,163,952	1,247,802	141,213	541,066	43.4%	
Capital Replacement/Lease	54,394	340,657	85,164	255,493	75.0%	
Debt service	982,597	1,056,684	-	833,716	78.9%	
Capital outlay	255,351	140,000	-	-	0.0%	
Other financing uses:						
Transfers to other funds	500,000	-	-	-	0.0%	
Total Operating Expenses:	**12,253,925**	**12,035,512**	**1,802,226**	**7,939,753**	**66.0%**	
Net Change in Fund Balance	150,098	728,660	963,422	(733,438)		
Fund Balance at Beginning of Year	**12,061,540**	**12,211,638**		**12,211,638**		
Fund Balance at End of Year	**$ 12,211,638**	**$ 12,940,298**		**$ 11,478,200**		

Positive variance compared to historical trends	Positive
Negative variance of 3%-5% and more than $50,000 compared to historical trends	Warning
Negative variance of >5% and more than $50,000 compared to historical trends	Negative

STORMWATER UTILITY FUND

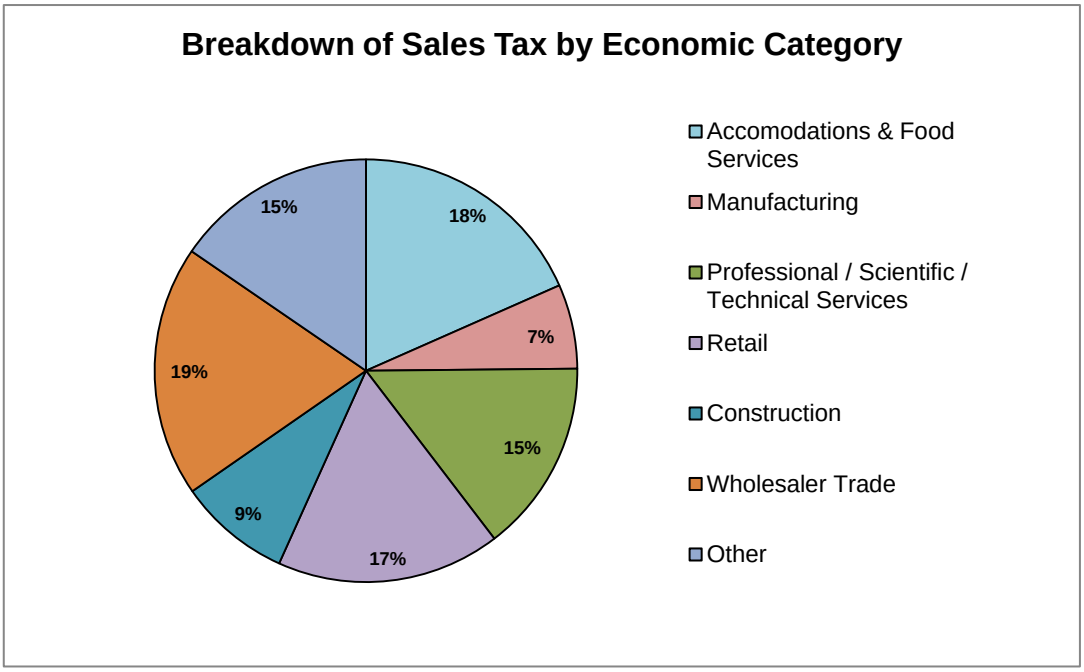
FY2019 QUARTERLY STATEMENT OF REVENUES AND EXPENDITURES COMPARED TO BUDGET

With Comparative Information from Prior Fiscal Year

CATEGORY	FY 2017-18 ACTUAL PRIOR YEAR	FY 2018-19 REVISED BUDGET	FY 2018-19 ACTUAL 3RD QTR	FY 2018-19 ACTUAL YTD	ACTUAL YTD as % of Budget
Operating revenues:					
Drainage Fees	$ 2,137,942	$ 2,134,800	$ 557,528	$ 1,512,238	70.8%
Interest income and other	203,768	30,000	41,939	120,271	400.9%
Total Operating Revenues:	**2,341,710**	**2,164,800**	**599,467**	**1,632,509**	**75.4%**
Operating expenses					
Personnel services	157,845	312,464	68,711	189,828	60.8%
Supplies	8,084	41,597	2,432	13,490	32.4%
Maintenance	84,131	216,200	30,861	49,305	22.8%
Contractual services	189,334	351,083	50,523	110,166	31.4%
Debt service	522,210	546,108	-	420,458	77.0%
Capital outlay	13,760	50,000	-	15,695	31.4%
Other financing uses:					
Transfers to other funds	-	500,000	125,000	375,000	75.0%
Total Operating Expenses:	**975,364**	**2,017,452**	**277,527**	**1,173,942**	**58.2%**
Net Change in Fund Balance	1,366,346	147,348	321,940	458,567	
Fund Balance at Beginning of Year	**4,050,787**	**5,417,133**		**5,417,133**	
Fund Balance at End of Year	**$ 5,417,133**	**$ 5,564,481**		**$ 5,875,700**	

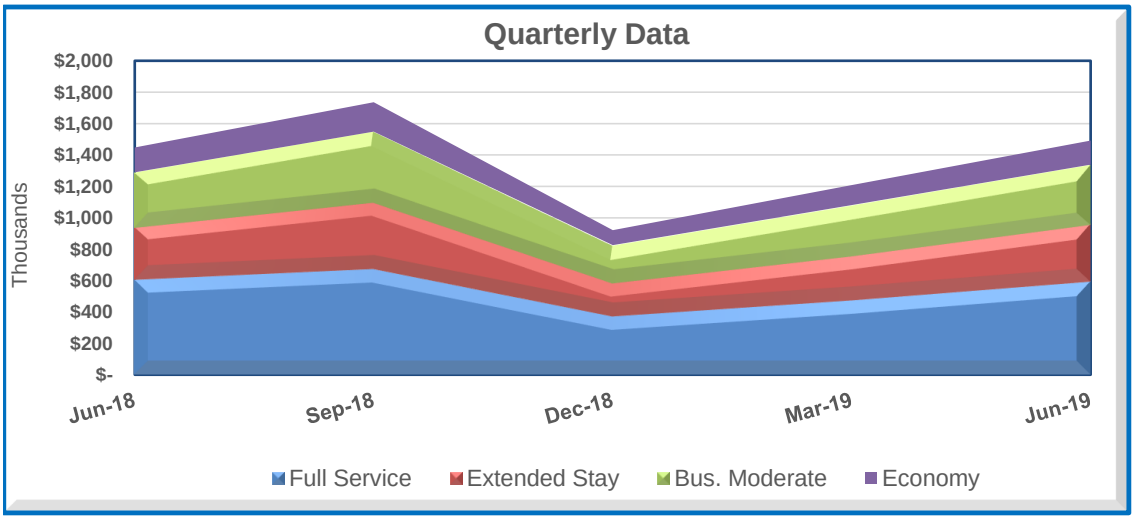
TOWN OF ADDISON
Schedule of Sales Tax Collections
For the quarter ending June 30, 2019

	FY2019 Monthly Collections	% Change from Prior Year	FY2018 Monthly Collections
October	$ 1,294,332	9.3%	$ 1,184,668
November	1,168,041	7.7%	1,084,154
December	1,137,218	5.2%	1,080,572
January	1,951,678	47.1%	1,326,683
February	1,202,189	3.9%	1,156,819
March	1,016,343	-43.5%	1,798,199
April	1,355,558	-0.8%	1,366,196
May	1,138,099	-56.9%	2,643,325
June	1,164,646	-8.0%	1,266,269
July			1,308,045
August			1,113,326
September			1,121,736
	$ 11,428,104		**$ 16,449,992**
Budget:	13,700,000	83.4%	13,400,000



TOWN OF ADDISON
HOTEL OCCUPANCY TAX COLLECTION
Hotels By Service Type for the Quarter and Year-to-Date Ended June 30, 2019
With Comparative Information from Prior Fiscal Year

	Rooms		Apr - June 2019		19 to 18	YTD FY 2019		19 to 18
	Number	%	Amount	%	% Diff.	Amount	%	% Diff.
Full Service								
Marriott Quorum	547	13%	$ 260,301	17%	0%	$ 595,167	16%	-14%
Renaissance	528	13%	216,128	14%	11%	545,445	15%	-5%
Crowne Plaza	428	10%	115,059	8%	-21%	294,057	8%	-24%
	1,503	37%	591,488	40%	-2%	1,434,668	40%	-13%
Extended Stay								
Budget Suites	344	8%	3,860	0%	133%	9,426	0%	34%
Hawthorn Suites	70	2%	19,471	1%	-2%	47,528	1%	-3%
Marriott Residence Inn	150	4%	72,787	5%	29%	181,014	5%	27%
Hyatt House	132	3%	61,511	4%	-2%	131,592	4%	-8%
Homewood Suites	120	3%	59,853	4%	35%	141,120	4%	22%
Home2Suites	132	3%	80,638	5%	2%	190,136	5%	4%
Springhill Suites	159	4%	69,601	5%	-4%	168,115	5%	-8%
	1,107	27%	367,721	25%	9%	868,931	24%	6%
Business Moderate								
Marriott Courtyard Quorum	176	4%	93,219	6%	-6%	240,270	7%	-4%
LaQuinta Inn	152	4%	54,730	4%	-10%	134,467	4%	-5%
Marriott Courtyard Midway	145	4%	63,031	4%	1%	156,692	4%	-1%
Radisson - Addison	101	2%	38,795	3%	-3%	96,588	3%	-9%
Hilton Garden Inn	96	2%	54,259	4%	-2%	133,881	4%	-5%
Holiday Inn Express	97	2%	42,896	3%	100%	105,010	3%	100%
Holiday Inn Beltway	102	2%	2,182	0%	100%	2,182	0%	-94%
Best Western Plus	84	2%	29,937	2%	-8%	71,805	2%	-10%
	953	23%	379,049	25%	8%	940,895	26%	3%
Economy								
Motel 6	127	3%	29,669	2%	25%	71,704	2%	23%
Hampton Inn	158	4%	63,483	4%	-10%	156,715	4%	-6%
Red Roof Inn	105	3%	27,723	2%	-6%	71,310	2%	-3%
Quality Suites North/Galleria	78	2%	25,958	2%	10%	62,437	2%	14%
America's Best Value Inn	60	1%	7,035	0%	-15%	15,766	0%	-14%
	528	13%	153,868	10%	-3%	377,933	10%	-2%
TOTAL	4,091	100%	1,492,126	100%	3%	3,622,426	100%	-4%



HilltopSecurities
Asset Management

Investment Portfolio Summary

Town of Addison

ADDISON

For the Quarter Ended

June 30, 2019

Prepared by
HilltopSecurities Asset Management

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Report Name

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Executive Summary

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Change in Value

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Projected Fixed Income Cash Flows

MARKET RECAP - JUNE 2019:

June started off on a sour note as trade tensions ramped up after the administration threatened tariffs on Mexican imports in an attempt to address issues with immigration and border security. A week later, it was announced the tariffs would not take effect as the Mexican government had agreed to step up their efforts at the border. The trade outlook with China dimmed after the President reiterated his firm stance on tariffs and China pledged to "fight to the end." All eyes were on the G-20 Summit in late June in hope of something resembling a resolution. The meeting ultimately resulted in a cease-fire and an agreement to restart negotiations, sending the S&P 500 to a new all-time high.

Factory managers are feeling the effects of tariffs, while their more domestically focused service sector counterparts appear better insulated. The ISM manufacturing index continued its descent in May, sliding to the lowest level since October 2016 at 52.1. In contrast, the ISM non-manufacturing index rose to 56.9 in May, its highest level since February, with the employment component reaching a two-year high. Nonfarm payrolls added just 75k jobs in May, falling well below the Bloomberg median forecast for 175k. Downward revisions to March and April subtracted a net 75k jobs, completely negating the May gains. Headline unemployment held steady at a five-decade low of 3.6%, but this was bit deceptive as the participation rate has retreated over the last three months and was back near a 40-year low. May retail sales rose by +0.5%, just below the median forecast, but the big surprise was a recalculation of April sales, revised significantly higher from -0.2% to +0.3%. The important "control group" figure used in GDP calculations climbed +0.5% in May, while April was revised upward from 0.0% to +0.4%. The Consumer Price Index showed less price pressure than expected as both headline and core CPI rose by just +0.1% during May. On a year-over-year basis, overall consumer inflation slowed from +2.0% to +1.8%, while core CPI slowed from +2.1% to +2.0%. Fed Chair Jerome Powell has said on a number of occasions that the lack of price pressures early in the year is transitory, suggesting that the Fed was willing to wait patiently for inflation to turn upward. The weak CPI report disputes this transitory idea and supports the market's belief that the Fed will cut the overnight rate this summer.

At its mid-June meeting, the FOMC voted to hold the fed funds target rate steady in a range from 2.25% to 2.50%. However, the decision was not unanimous as St. Louis Fed President James Bullard preferred an immediate 25 basis point cut. As expected, the committee altered its message, shifting dovishly and opening the door to rate cuts in the near future. Following the FOMC meeting, a wave of new rate forecasts were published, with many Wall Street economists completely shifting gears. Bloomberg unexpectedly released a mid-month update to its survey of economists because so many opinions had changed. The majority surveyed now expect between 25 and 75 basis points of easing this year, with the first rate cut expected at the end of July. Bond yields continued their slide with the two-year Treasury note closing the month at 1.76% and the 10-year at 2.00%.

For the Quarter Ended

June 30, 2019

This report is prepared for the **Town of Addison** (the "Entity") in accordance with Chapter 2256 of the Texas Public Funds Investment Act ("PFIA"). Section 2256.023(a) of the PFIA states that: "Not less than quarterly, the investment officer shall prepare and submit to the governing body of the entity a written report of the investment transactions for all funds covered by this chapter for the preceding reporting period." This report is signed by the Entity's investment officers and includes the disclosures required in the PFIA. To the extent possible, market prices have been obtained from independent pricing sources.

The investment portfolio complied with the PFIA and the Entity's approved Investment Policy and Strategy throughout the period. All investment transactions made in the portfolio during this period were made on behalf of the Entity and were made in full compliance with the PFIA and the approved Investment Policy.

Officer Names and Titles:

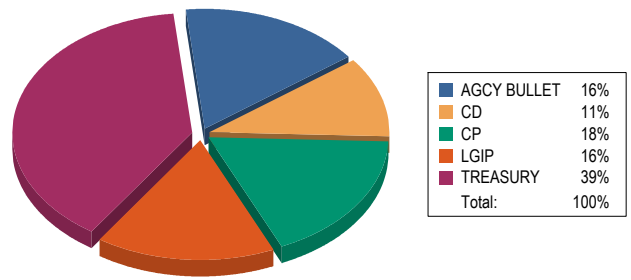
Name: Olivia Espinoza-Riley, CPA Title: Chief Financial Officer

Name: Amanda D. Turner, CPA Title: Controller

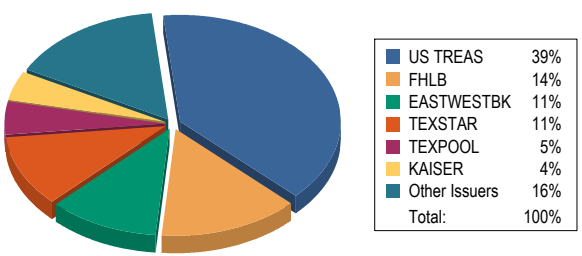
Account Summary

	Beginning Values as of 03/31/19	Ending Values as of 06/30/19
Par Value	97,713,623.15	92,537,669.66
Market Value	97,531,963.15	92,532,399.86
Book Value	97,472,346.79	92,384,970.91
Unrealized Gain /(Loss)	59,616.36	147,428.95
Market Value %	**100.06%**	**100.16%**
Weighted Avg. YTW	2.470%	2.475%
Weighted Avg. YTM	2.470%	2.475%

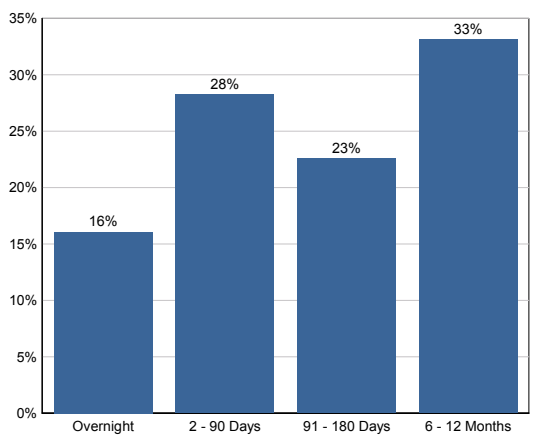
Allocation by Security Type



Allocation by Issuer

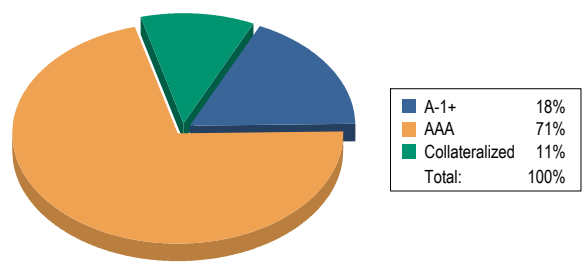


Maturity Distribution %

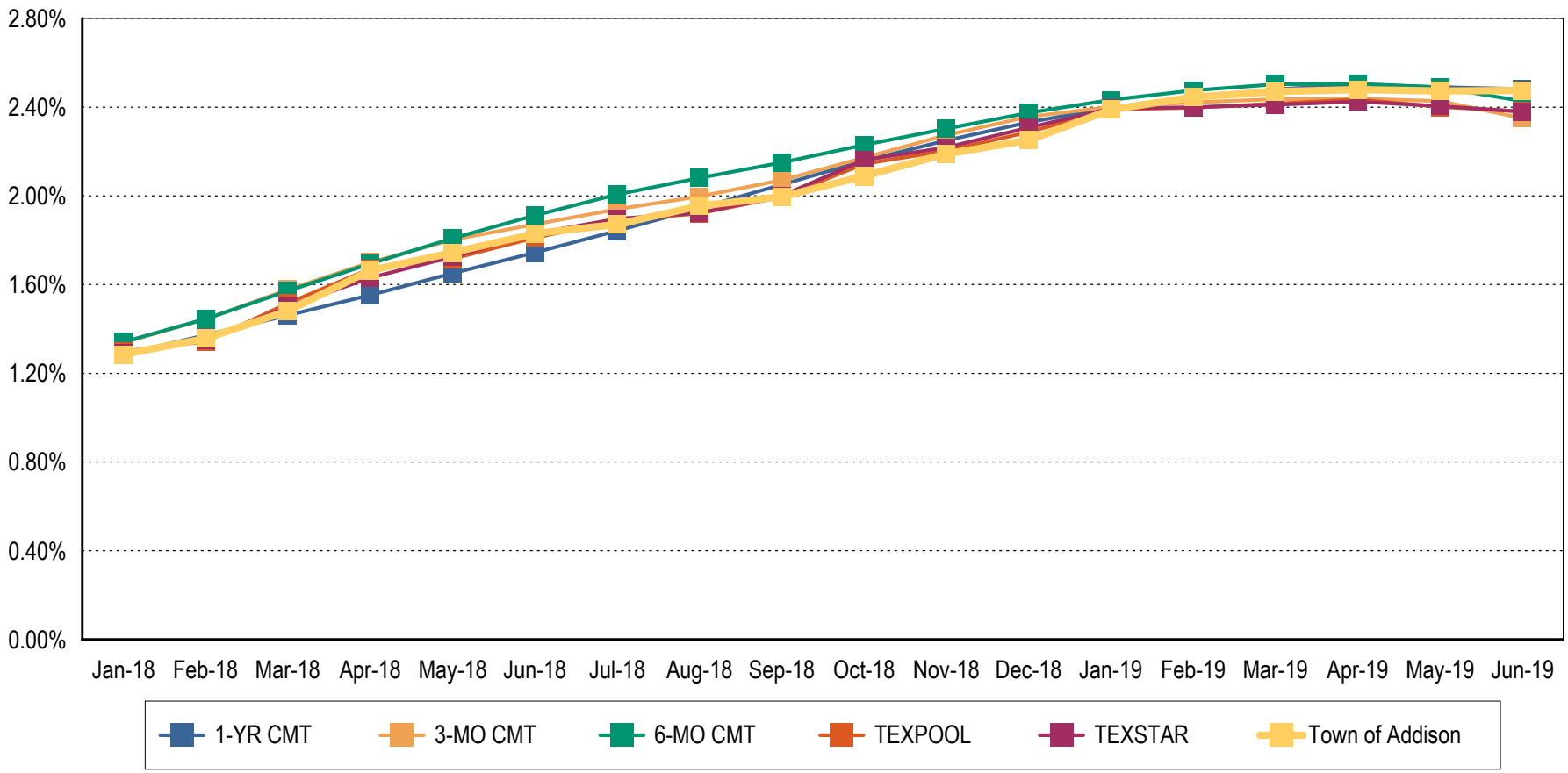


Weighted Average Days to Maturity: 132

Credit Quality



Town of Addison
Benchmark Comparison
As of 06/30/2019



Note 1: CMT stands for Constant Maturity Treasury. This data is published in Federal Reserve Statistical Release H.15 and represents an average of all actively traded Treasury securities having that time remaining until maturity. This is a standard industry benchmark for Treasury securities. The CMT benchmarks are moving averages. The 3-month CMT is the daily average for the previous 3 months, the 6-month CMT is the daily average for the previous 6 months, and the 1-year and 2-year CMT's are the daily averages for the previous 12-months.

Note 2: Benchmark data for TexPool is the monthly average yield.

Note 3: Benchmark data for TexSTAR is the monthly average yield.



Town of Addison

Detail of Security Holdings

As of 06/30/2019

CUSIP	Settle Date	Sec. Type	Sec. Description	CPN	Mty Date	Next Call	Call Type	Par Value	Purch Price	Orig Cost	Book Value	Mkt Price	Market Value	Days to Mty	Days to Call	YTM	YTW
Pooled Funds																	
TEXPOOL		LGIP	TexPool					4,811,896.53	100.000	4,811,896.53	4,811,896.53	100.000	4,811,896.53	1		2.381	2.381
TEXSTAR		LGIP	TexSTAR					10,033,357.06	100.000	10,033,357.06	10,033,357.06	100.000	10,033,357.06	1		2.379	2.379
78009BUK6	10/26/18	CP - DISC	Royal Bank of Canada		07/19/19			3,000,000.00	97.902	2,937,046.67	2,995,740.00	99.860	2,995,787.70	19		2.901	2.901
CD-8603	07/28/16	CD	East West Bk CD	0.950	07/28/19			5,140,934.20	100.000	5,140,934.20	5,140,934.20	100.000	5,140,934.20	28		0.950	0.950
89233HUW2	11/05/18	CP - DISC	Toyota Mtr Cr		07/30/19			2,000,000.00	97.879	1,957,576.67	1,995,392.22	99.793	1,995,857.80	30		2.922	2.922
CD-8019	02/12/19	CD	East West Bk CD	2.690	08/12/19			5,051,481.87	100.000	5,051,481.87	5,051,481.87	100.000	5,051,481.87	43		2.690	2.690
912828TN0	06/08/18	TREAS NOTE	U.S. Treasury	1.000	08/31/19			5,000,000.00	98.301	4,915,039.06	4,988,438.90	99.787	4,989,368.50	62		2.412	2.412
48306BWA9	06/05/19	CP - DISC	Kaiser Foundation Hospital		09/10/19			4,000,000.00	99.340	3,973,594.44	3,980,672.24	99.469	3,978,778.40	72		2.466	2.466
3135G0ZG1	10/26/18	AGCY BULET	FNMA	1.750	09/12/19			2,000,000.00	99.190	1,983,800.00	1,996,346.64	99.898	1,997,951.00	74		2.689	2.689
912828F39	08/15/18	TREAS NOTE	U.S. Treasury	1.750	09/30/19			2,500,000.00	99.172	2,479,296.88	2,495,397.38	99.898	2,497,461.00	92		2.500	2.500
64105SXF0	02/13/19	CP - DISC	Nestle Finance Intl Ltd		10/15/19			3,000,000.00	98.211	2,946,320.00	2,976,680.01	99.311	2,979,326.40	107		2.688	2.688
912828T59	09/07/18	TREAS NOTE	U.S. Treasury	1.000	10/15/19			2,500,000.00	98.344	2,458,593.75	2,489,056.90	99.680	2,491,992.25	107		2.531	2.531
3130ACM92	11/05/18	AGCY BULET	FHLB	1.500	10/21/19			2,000,000.00	98.827	1,976,548.00	1,992,499.66	99.785	1,995,694.20	113		2.744	2.744
91514BGE7	02/11/19	CP - INT	Univ of TX	2.730	11/05/19			2,000,000.00	100.000	2,000,000.00	2,000,000.00	100.048	2,000,960.00	128		2.729	2.729
3130AA3R7	08/31/18	AGCY BULET	FHLB	1.375	11/15/19			3,500,000.00	98.614	3,451,490.00	3,484,899.81	99.727	3,490,431.00	138		2.549	2.549
912828U73	01/25/19	TREAS NOTE	U.S. Treasury	1.375	12/15/19			3,000,000.00	98.961	2,968,828.13	2,983,904.07	99.688	2,990,625.00	168		2.566	2.566
46640QZT1	04/02/19	CP - DISC	J.P.Morgan Sec		12/27/19			2,500,000.00	98.102	2,452,551.39	2,468,426.40	98.854	2,471,360.25	180		2.589	2.589
9128283S7	03/21/19	TREAS NOTE	U.S. Treasury	2.000	01/31/20			3,000,000.00	99.570	2,987,109.38	2,991,300.57	99.961	2,998,828.20	215		2.504	2.504
3130ADN32	03/20/19	AGCY BULET	FHLB	2.125	02/11/20			3,000,000.00	99.634	2,989,020.00	2,992,466.73	100.053	3,001,577.40	226		2.541	2.541
912828MP2	12/17/18	TREAS NOTE	U.S. Treasury	3.625	02/15/20			4,000,000.00	100.988	4,039,531.25	4,021,413.48	100.938	4,037,500.00	230		2.753	2.753
912828J50	01/30/19	TREAS NOTE	U.S. Treasury	1.375	02/29/20			3,000,000.00	98.699	2,960,976.56	2,975,854.77	99.551	2,986,523.40	244		2.604	2.604
3133XXP50	01/18/19	AGCY BULET	FHLB	4.125	03/13/20			4,500,000.00	101.688	4,575,946.50	4,546,416.15	101.447	4,565,098.80	257		2.627	2.627
912828X21	02/08/19	TREAS NOTE	U.S. Treasury	1.500	04/15/20			5,000,000.00	98.805	4,940,234.38	4,959,930.15	99.582	4,979,101.50	290		2.533	2.533
912828ND8	02/27/19	TREAS NOTE	U.S. Treasury	3.500	05/15/20			5,000,000.00	101.156	5,057,812.50	5,041,829.35	101.277	5,063,867.00	320		2.524	2.524
912828XU9	02/28/19	TREAS NOTE	U.S. Treasury	1.500	06/15/20			3,000,000.00	98.680	2,960,390.63	2,970,635.82	99.555	2,986,640.40	351		2.543	2.543
Total for Pooled Funds								**92,537,669.66**	**99.477**	**92,049,375.85**	**92,384,970.91**	**99.997**	**92,532,399.86**	**132**		**2.475**	**2.475**
Total for Town of Addison								**92,537,669.66**	**99.477**	**92,049,375.85**	**92,384,970.91**	**99.997**	**92,532,399.86**	**132**		**2.475**	**2.475**



Town of Addison
Change in Value
From 03/31/2019 to 06/30/2019

CUSIP	Security Type	Security Description	03/31/19 Book Value	Cost of Purchases	Maturities / Calls / Sales	Amortization / Accretion	Realized Gain/(Loss)	06/30/19 Book Value	03/31/19 Market Value	06/30/19 Market Value	Change in Mkt Value
Pooled Funds											
TEXPOOL	LGIP	TexPool	4,783,155.30	28,741.23	0.00	0.00	0.00	4,811,896.53	4,783,155.30	4,811,896.53	28,741.23
TEXSTAR	LGIP	TexSTAR	5,283,977.02	7,027,523.73	(2,278,143.69)	0.00	0.00	10,033,357.06	5,283,977.02	10,033,357.06	4,749,380.04
46640QR29	CP - DISC	J.P.Morgan Sec 0.000 04/02/19	2,499,819.45	0.00	(2,500,000.00)	180.55	0.00	0.00	2,499,625.00	0.00	(2,499,625.00)
912828Q52	TREAS NOTE	U.S. Treasury 0.875 04/15/19	1,999,038.60	0.00	(2,000,000.00)	961.40	0.00	0.00	1,998,800.00	0.00	(1,998,800.00)
89233HSE5	CP - DISC	Toyota Mtr Cr 0.000 05/14/19	2,990,217.51	0.00	(3,000,000.00)	9,782.49	0.00	0.00	2,990,640.00	0.00	(2,990,640.00)
3130ABF92	AGCY BULET	FHLB 1.375 05/28/19	3,994,760.80	0.00	(4,000,000.00)	5,239.20	0.00	0.00	3,993,240.00	0.00	(3,993,240.00)
313379EE5	AGCY BULET	FHLB 1.625 06/14/19	4,992,609.20	0.00	(5,000,000.00)	7,390.80	0.00	0.00	4,992,100.00	0.00	(4,992,100.00)
78009BUK6	CP - DISC	Royal Bank of Canada 0.000 07/19/19	2,974,203.33	0.00	0.00	21,536.67	0.00	2,995,740.00	2,975,610.00	2,995,787.70	20,177.70
CD-8603	CD	East West Bk CD 0.950 07/28/19	5,128,772.50	12,161.70	0.00	0.00	0.00	5,140,934.20	5,128,772.50	5,140,934.20	12,161.70
89233HUW2	CP - DISC	Toyota Mtr Cr 0.000 07/30/19	1,980,933.34	0.00	0.00	14,458.88	0.00	1,995,392.22	1,982,900.00	1,995,857.80	12,957.80
CD-8019	CD	East West Bk CD 2.690 08/12/19	5,017,718.33	33,763.54	0.00	0.00	0.00	5,051,481.87	5,017,718.33	5,051,481.87	33,763.54
912828TN0	TREAS NOTE	U.S. Treasury 1.000 08/31/19	4,971,192.05	0.00	0.00	17,246.85	0.00	4,988,438.90	4,969,900.00	4,989,368.50	19,468.50
48306BWA9	CP - DISC	Kaiser Foundation Hospital 0.000 09/10/19	0.00	3,973,594.44	0.00	7,077.80	0.00	3,980,672.24	0.00	3,978,778.40	3,978,778.40
3135G0ZG1	AGCY BULET	FNMA 1.750 09/12/19	1,991,715.62	0.00	0.00	4,631.02	0.00	1,996,346.64	1,993,620.00	1,997,951.00	4,331.00
912828F39	TREAS NOTE	U.S. Treasury 1.750 09/30/19	2,490,794.73	0.00	0.00	4,602.65	0.00	2,495,397.38	2,491,300.00	2,497,461.00	6,161.00
64105SXF0	CP - DISC	Nestle Finance Intl Ltd 0.000 10/15/19	2,956,659.99	0.00	0.00	20,020.02	0.00	2,976,680.01	2,957,610.00	2,979,326.40	21,716.40
912828T59	TREAS NOTE	U.S. Treasury 1.000 10/15/19	2,479,672.55	0.00	0.00	9,384.35	0.00	2,489,056.90	2,480,575.00	2,491,992.25	11,417.25
3130ACM92	AGCY BULET	FHLB 1.500 10/21/19	1,986,379.90	0.00	0.00	6,119.76	0.00	1,992,499.66	1,989,380.00	1,995,694.20	6,314.20
91514BGE7	CP - INT	Univ of TX 2.730 11/05/19	2,000,000.00	0.00	0.00	0.00	0.00	2,000,000.00	1,999,200.00	2,000,960.00	1,760.00
3130AA3R7	AGCY BULET	FHLB 1.375 11/15/19	3,474,820.30	0.00	0.00	10,079.51	0.00	3,484,899.81	3,478,090.00	3,490,431.00	12,341.00
912828U73	TREAS NOTE	U.S. Treasury 1.375 12/15/19	2,975,163.12	0.00	0.00	8,740.95	0.00	2,983,904.07	2,978,190.00	2,990,625.00	12,435.00
46640QZT1	CP - DISC	J.P.Morgan Sec 0.000 12/27/19	0.00	2,452,551.39	0.00	15,875.01	0.00	2,468,426.40	0.00	2,471,360.25	2,471,360.25
9128283S7	TREAS NOTE	U.S. Treasury 2.000 01/31/20	2,987,561.37	0.00	0.00	3,739.20	0.00	2,991,300.57	2,990,400.00	2,998,828.20	8,428.20
3130ADN32	AGCY BULET	FHLB 2.125 02/11/20	2,989,395.39	0.00	0.00	3,071.34	0.00	2,992,466.73	2,991,570.00	3,001,577.40	10,007.40
912828MP2	TREAS NOTE	U.S. Treasury 3.625 02/15/20	4,029,941.68	0.00	0.00	(8,528.20)	0.00	4,021,413.48	4,040,480.00	4,037,500.00	(2,980.00)
912828J50	TREAS NOTE	U.S. Treasury 1.375 02/29/20	2,966,973.39	0.00	0.00	8,881.38	0.00	2,975,854.77	2,971,770.00	2,986,523.40	14,753.40
3133XXP50	AGCY BULET	FHLB 4.125 03/13/20	4,562,839.26	0.00	0.00	(16,423.11)	0.00	4,546,416.15	4,569,750.00	4,565,098.80	(4,651.20)
912828X21	TREAS NOTE	U.S. Treasury 1.500 04/15/20	4,947,407.70	0.00	0.00	12,522.45	0.00	4,959,930.15	4,954,500.00	4,979,101.50	24,601.50
912828ND8	TREAS NOTE	U.S. Treasury 3.500 05/15/20	5,053,568.55	0.00	0.00	(11,739.20)	0.00	5,041,829.35	5,060,950.00	5,063,867.00	2,917.00
912828XU9	TREAS NOTE	U.S. Treasury 1.500 06/15/20	2,963,055.81	0.00	0.00	7,580.01	0.00	2,970,635.82	2,968,140.00	2,986,640.40	18,500.40
Total for Pooled Funds			**97,472,346.79**	**13,528,336.03**	**(18,778,143.69)**	**162,431.78**	**0.00**	**92,384,970.91**	**97,531,963.15**	**92,532,399.86**	**(4,999,563.29)**



Town of Addison
Change in Value
From 03/31/2019 to 06/30/2019

CUSIP	Security Type	Security Description	03/31/19 Book Value	Cost of Purchases	Maturities / Calls / Sales	Amortization / Accretion	Realized Gain/(Loss)	06/30/19 Book Value	03/31/19 Market Value	06/30/19 Market Value	Change in Mkt Value
Total for Town of Addison			97,472,346.79	13,528,336.03	(18,778,143.69)	162,431.78	0.00	92,384,970.91	97,531,963.15	92,532,399.86	(4,999,563.29)



Town of Addison

Earned Income

From 03/31/2019 to 06/30/2019

CUSIP	Security Type	Security Description	Beg. Accrued	Interest Earned	Interest Rec'd / Sold / Matured	Interest Purchased	Ending Accrued	Disc Accr / Prem Amort	Net Income
Pooled Funds									
TEXPOOL	LGIP	TexPool	0.00	28,741.23	28,741.23	0.00	0.00	0.00	28,741.23
TEXSTAR	LGIP	TexSTAR	0.00	34,380.04	34,380.04	0.00	0.00	0.00	34,380.04
46640QR29	CP - DISC	J.P.Morgan Sec 0.000 04/02/19	0.00	0.00	0.00	0.00	0.00	180.55	180.55
912828Q52	TREAS NOTE	U.S. Treasury 0.875 04/15/19	8,076.92	673.08	8,750.00	0.00	0.00	961.40	1,634.48
89233HSE5	CP - DISC	Toyota Mtr Cr 0.000 05/14/19	0.00	0.00	0.00	0.00	0.00	9,782.49	9,782.49
3130ABF92	AGCY BULET	FHLB 1.375 05/28/19	18,791.67	8,708.33	27,500.00	0.00	0.00	5,239.20	13,947.53
313379EE5	AGCY BULET	FHLB 1.625 06/14/19	24,149.31	16,475.69	40,625.00	0.00	0.00	7,390.80	23,866.49
78009BUK6	CP - DISC	Royal Bank of Canada 0.000 07/19/19	0.00	0.00	0.00	0.00	0.00	21,536.67	21,536.67
CD-8603	CD	East West Bk CD 0.950 07/28/19	133.49	12,162.02	12,161.70	0.00	133.81	0.00	12,162.02
89233HUW2	CP - DISC	Toyota Mtr Cr 0.000 07/30/19	0.00	0.00	0.00	0.00	0.00	14,458.88	14,458.88
CD-8019	CD	East West Bk CD 2.690 08/12/19	369.80	33,766.03	33,763.54	0.00	372.29	0.00	33,766.03
912828TN0	TREAS NOTE	U.S. Treasury 1.000 08/31/19	4,347.83	12,364.13	0.00	0.00	16,711.96	17,246.85	29,610.98
48306BWA9	CP - DISC	Kaiser Foundation Hospital 0.000 09/10/19	0.00	0.00	0.00	0.00	0.00	7,077.80	7,077.80
3135G0ZG1	AGCY BULET	FNMA 1.750 09/12/19	1,847.22	8,750.00	0.00	0.00	10,597.22	4,631.02	13,381.02
912828F39	TREAS NOTE	U.S. Treasury 1.750 09/30/19	21,994.54	10,877.73	21,875.00	0.00	10,997.27	4,602.65	15,480.38
64105SXF0	CP - DISC	Nestle Finance Intl Ltd 0.000 10/15/19	0.00	0.00	0.00	0.00	0.00	20,020.02	20,020.02
912828T59	TREAS NOTE	U.S. Treasury 1.000 10/15/19	11,538.46	6,221.10	12,500.00	0.00	5,259.56	9,384.35	15,605.45
3130ACM92	AGCY BULET	FHLB 1.500 10/21/19	13,333.33	7,500.00	15,000.00	0.00	5,833.33	6,119.76	13,619.76
91514BGE7	CP - INT	Univ of TX 2.730 11/05/19	7,886.67	13,801.66	0.00	0.00	21,688.33	0.00	13,801.66
3130AA3R7	AGCY BULET	FHLB 1.375 11/15/19	18,180.56	12,031.25	24,062.50	0.00	6,149.31	10,079.51	22,110.76
912828U73	TREAS NOTE	U.S. Treasury 1.375 12/15/19	12,125.69	10,302.59	20,625.00	0.00	1,803.28	8,740.95	19,043.54
46640QZT1	CP - DISC	J.P.Morgan Sec 0.000 12/27/19	0.00	0.00	0.00	0.00	0.00	15,875.01	15,875.01
9128283S7	TREAS NOTE	U.S. Treasury 2.000 01/31/20	9,944.75	15,082.87	0.00	0.00	25,027.62	3,739.20	18,822.07
3130ADN32	AGCY BULET	FHLB 2.125 02/11/20	8,854.17	15,937.50	0.00	0.00	24,791.67	3,071.34	19,008.84
912828MP2	TREAS NOTE	U.S. Treasury 3.625 02/15/20	18,024.86	36,450.28	0.00	0.00	54,475.14	(8,528.20)	27,922.08
912828J50	TREAS NOTE	U.S. Treasury 1.375 02/29/20	3,586.96	10,200.40	0.00	0.00	13,787.36	8,881.38	19,081.78
3133XXP50	AGCY BULET	FHLB 4.125 03/13/20	9,281.25	46,406.25	0.00	0.00	55,687.50	(16,423.11)	29,983.14
912828X21	TREAS NOTE	U.S. Treasury 1.500 04/15/20	34,615.38	18,663.31	37,500.00	0.00	15,778.69	12,522.45	31,185.76
912828ND8	TREAS NOTE	U.S. Treasury 3.500 05/15/20	66,229.28	43,621.26	87,500.00	0.00	22,350.54	(11,739.20)	31,882.06
912828XU9	TREAS NOTE	U.S. Treasury 1.500 06/15/20	13,228.02	11,239.19	22,500.00	0.00	1,967.21	7,580.01	18,819.20
Total for Pooled Funds			**306,540.16**	**414,355.94**	**427,484.01**	**0.00**	**293,412.09**	**162,431.78**	**576,787.72**



Town of Addison

Earned Income

From 03/31/2019 to 06/30/2019

CUSIP	Security Type	Security Description	Beg. Accrued	Interest Earned	Interest Rec'd / Sold / Matured	Interest Purchased	Ending Accrued	Disc Accr / Prem Amort	Net Income
Total for Town of Addison			306,540.16	414,355.94	427,484.01	0.00	293,412.09	162,431.78	576,787.72



Town of Addison

Investment Transactions

From 04/01/2019 to 06/30/2019

Trade Date	Settle Date	CUSIP	Security Type	Security Description	Coupon	Mty Date	Call Date	Par Value	Price	Principal Amount	Int Purchased / Received	Total Amount	Realized Gain / Loss	YTM	YTW
Pooled Funds															
Maturities															
04/02/19	04/02/19	46640QR29	CP - DISC	J.P.Morgan Sec		04/02/19		2,500,000.00	100.000	2,500,000.00	0.00	2,500,000.00		2.651	
04/15/19	04/15/19	912828Q52	TREAS NOTE	U.S. Treasury	0.875	04/15/19		2,000,000.00	100.000	2,000,000.00	0.00	2,000,000.00		2.138	
05/14/19	05/14/19	89233HSE5	CP - DISC	Toyota Mtr Cr		05/14/19		3,000,000.00	100.000	3,000,000.00	0.00	3,000,000.00		2.768	
05/28/19	05/28/19	3130ABF92	AGCY BULET	FHLB	1.375	05/28/19		4,000,000.00	100.000	4,000,000.00	0.00	4,000,000.00		2.211	
06/14/19	06/14/19	313379EE5	AGCY BULET	FHLB	1.625	06/14/19		5,000,000.00	100.000	5,000,000.00	0.00	5,000,000.00		2.363	
Total for: Maturities								**16,500,000.00**		**16,500,000.00**	**0.00**	**16,500,000.00**		**2.416**	
Purchases															
04/02/19	04/02/19	46640QZT1	CP - DISC	J.P.Morgan Sec		12/27/19		2,500,000.00	98.102	2,452,551.39	0.00	2,452,551.39		2.589	2.589
06/04/19	06/05/19	48306BWA9	CP - DISC	Kaiser Foundation Hospital		09/10/19		4,000,000.00	99.340	3,973,594.44	0.00	3,973,594.44		2.466	2.466
Total for: Purchases								**6,500,000.00**		**6,426,145.83**	**0.00**	**6,426,145.83**		**2.514**	**2.514**
Income Payments															
04/01/19	03/31/19	912828F39	TREAS NOTE	U.S. Treasury	1.750	09/30/19				0.00	21,875.00	21,875.00			
04/15/19	04/15/19	912828X21	TREAS NOTE	U.S. Treasury	1.500	04/15/20				0.00	37,500.00	37,500.00			
04/15/19	04/15/19	912828T59	TREAS NOTE	U.S. Treasury	1.000	10/15/19				0.00	12,500.00	12,500.00			
04/15/19	04/15/19	912828Q52	TREAS NOTE	U.S. Treasury	0.875	04/15/19				0.00	8,750.00	8,750.00			
04/22/19	04/21/19	3130ACM92	AGCY BULET	FHLB	1.500	10/21/19				0.00	15,000.00	15,000.00			
04/30/19	04/30/19	CD-8019	CD	East West Bk CD	2.690	08/12/19				0.00	11,105.83	11,105.83			
05/15/19	05/15/19	3130AA3R7	AGCY BULET	FHLB	1.375	11/15/19				0.00	24,062.50	24,062.50			
05/15/19	05/15/19	912828ND8	TREAS NOTE	U.S. Treasury	3.500	05/15/20				0.00	87,500.00	87,500.00			
05/28/19	05/28/19	3130ABF92	AGCY BULET	FHLB	1.375	05/28/19				0.00	27,500.00	27,500.00			
05/31/19	05/31/19	CD-8019	CD	East West Bk CD	2.690	08/12/19				0.00	11,501.85	11,501.85			
06/14/19	06/14/19	313379EE5	AGCY BULET	FHLB	1.625	06/14/19				0.00	40,625.00	40,625.00			
06/17/19	06/15/19	912828U73	TREAS NOTE	U.S. Treasury	1.375	12/15/19				0.00	20,625.00	20,625.00			
06/17/19	06/15/19	912828XU9	TREAS NOTE	U.S. Treasury	1.500	06/15/20				0.00	22,500.00	22,500.00			
06/30/19	06/30/19	CD-8603	CD	East West Bk CD	0.950	07/28/19				0.00	12,161.70	12,161.70			
06/30/19	06/30/19	CD-8019	CD	East West Bk CD	2.690	08/12/19				0.00	11,155.86	11,155.86			
Total for: Income Payments										**0.00**	**364,362.74**	**364,362.74**			

Trade Date	Settle Date	CUSIP	Security Type	Security Description	Coupon	Mty Date	Call Date	Par Value	Price	Principal Amount	Int Purchased / Received	Total Amount	Realized Gain / Loss	YTM	YTW
Pooled Funds															
Capitalized Interest															
04/30/19	04/30/19	CD-8019	CD	East West Bk CD	2.690	08/12/19		11,105.83	100.000	11,105.83	0.00	11,105.83			
05/31/19	05/31/19	CD-8019	CD	East West Bk CD	2.690	08/12/19		11,501.85	100.000	11,501.85	0.00	11,501.85			
06/30/19	06/30/19	CD-8603	CD	East West Bk CD	0.950	07/28/19		12,161.70	100.000	12,161.70	0.00	12,161.70			
06/30/19	06/30/19	CD-8019	CD	East West Bk CD	2.690	08/12/19		11,155.86	100.000	11,155.86	0.00	11,155.86			
Total for: Capitalized Interest								**45,925.24**		**45,925.24**	**0.00**	**45,925.24**			

Trade Date	Settle Date	CUSIP	Security Type	Security Description	Coupon	Mty Date	Call Date	Par Value	Price	Principal Amount	Int Purchased / Received	Total Amount	Realized Gain / Loss	YTM	YTW

Total for All Portfolios

Transaction Type	Quantity	Total Amount	Realized G/L	YTM	YTW
Total Maturities	16,500,000.00	16,500,000.00		2.416	
Total Purchases	6,500,000.00	6,426,145.83		2.514	2.514
Total Income Payments	0.00	364,362.74			
Total Capitalized Interest	45,925.24	45,925.24			



Town of Addison

Amortization and Accretion

From 03/31/2019 to 06/30/2019

CUSIP	Settle Date	Security Type	Security Description	Next Call Date	Purchase Qty	Orig Price	Original Cost	Amrt/Accr for Period	Total Amrt/Accr Since Purch	Remaining Disc / Prem	Book Value
Pooled Funds											
46640QR29	07/09/18	CP - DISC	J.P.Morgan Sec 0.000 04/02/19		0.00	98.072	0.00	180.55	0.00	0.00	0.00
912828Q52	04/13/18	TREAS NOTE	U.S. Treasury 0.875 04/15/19		0.00	98.750	0.00	961.40	0.00	0.00	0.00
89233HSE5	11/15/18	CP - DISC	Toyota Mtr Cr 0.000 05/14/19		0.00	98.635	0.00	9,782.49	0.00	0.00	0.00
3130ABF92	04/13/18	AGCY BULET	FHLB 1.375 05/28/19		0.00	99.075	0.00	5,239.20	0.00	0.00	0.00
313379EE5	05/11/18	AGCY BULET	FHLB 1.625 06/14/19		0.00	99.209	0.00	7,390.80	0.00	0.00	0.00
78009BUK6	10/26/18	CP - DISC	Royal Bank of Canada 0.000 07/19/19		3,000,000.00	97.902	2,937,046.67	21,536.67	58,693.33	4,260.00	2,995,740.00
CD-8603	07/28/16	CD	East West Bk CD 0.950 07/28/19		5,140,934.20	100.000	5,140,934.20	0.00	0.00	0.00	5,140,934.20
89233HUW2	11/05/18	CP - DISC	Toyota Mtr Cr 0.000 07/30/19		2,000,000.00	97.879	1,957,576.67	14,458.88	37,815.55	4,607.78	1,995,392.22
CD-8019	02/12/19	CD	East West Bk CD 2.690 08/12/19		5,051,481.87	100.000	5,051,481.87	0.00	0.00	0.00	5,051,481.87
912828TN0	06/08/18	TREAS NOTE	U.S. Treasury 1.000 08/31/19		5,000,000.00	98.301	4,915,039.06	17,246.85	73,399.84	11,561.10	4,988,438.90
48306BWA9	06/05/19	CP - DISC	Kaiser Foundation Hospital 0.000 09/10/19		4,000,000.00	99.340	3,973,594.44	7,077.80	7,077.80	19,327.76	3,980,672.24
3135G0ZG1	10/26/18	AGCY BULET	FNMA 1.750 09/12/19		2,000,000.00	99.190	1,983,800.00	4,631.02	12,546.64	3,653.36	1,996,346.64
912828F39	08/15/18	TREAS NOTE	U.S. Treasury 1.750 09/30/19		2,500,000.00	99.172	2,479,296.88	4,602.65	16,100.50	4,602.62	2,495,397.38
64105SXF0	02/13/19	CP - DISC	Nestle Finance Intl Ltd 0.000 10/15/19		3,000,000.00	98.211	2,946,320.00	20,020.02	30,360.01	23,319.99	2,976,680.01
912828T59	09/07/18	TREAS NOTE	U.S. Treasury 1.000 10/15/19		2,500,000.00	98.344	2,458,593.75	9,384.35	30,463.15	10,943.10	2,489,056.90
3130ACM92	11/05/18	AGCY BULET	FHLB 1.500 10/21/19		2,000,000.00	98.827	1,976,548.00	6,119.76	15,951.66	7,500.34	1,992,499.66
91514BGE7	02/11/19	CP - INT	Univ of TX 2.730 11/05/19		2,000,000.00	100.000	2,000,000.00	0.00	0.00	0.00	2,000,000.00
3130AA3R7	08/31/18	AGCY BULET	FHLB 1.375 11/15/19		3,500,000.00	98.614	3,451,490.00	10,079.51	33,409.81	15,100.19	3,484,899.81
912828U73	01/25/19	TREAS NOTE	U.S. Treasury 1.375 12/15/19		3,000,000.00	98.961	2,968,828.13	8,740.95	15,075.94	16,095.93	2,983,904.07
46640QZT1	04/02/19	CP - DISC	J.P.Morgan Sec 0.000 12/27/19		2,500,000.00	98.102	2,452,551.39	15,875.01	15,875.01	31,573.60	2,468,426.40
9128283S7	03/21/19	TREAS NOTE	U.S. Treasury 2.000 01/31/20		3,000,000.00	99.570	2,987,109.38	3,739.20	4,191.19	8,699.43	2,991,300.57
3130ADN32	03/20/19	AGCY BULET	FHLB 2.125 02/11/20		3,000,000.00	99.634	2,989,020.00	3,071.34	3,446.73	7,533.27	2,992,466.73
912828MP2	12/17/18	TREAS NOTE	U.S. Treasury 3.625 02/15/20		4,000,000.00	100.988	4,039,531.25	(8,528.20)	(18,117.77)	(21,413.48)	4,021,413.48
912828J50	01/30/19	TREAS NOTE	U.S. Treasury 1.375 02/29/20		3,000,000.00	98.699	2,960,976.56	8,881.38	14,878.21	24,145.23	2,975,854.77
3133XXP50	01/18/19	AGCY BULET	FHLB 4.125 03/13/20		4,500,000.00	101.688	4,575,946.50	(16,423.11)	(29,530.35)	(46,416.15)	4,546,416.15
912828X21	02/08/19	TREAS NOTE	U.S. Treasury 1.500 04/15/20		5,000,000.00	98.805	4,940,234.38	12,522.45	19,695.77	40,069.85	4,959,930.15
912828ND8	02/27/19	TREAS NOTE	U.S. Treasury 3.500 05/15/20		5,000,000.00	101.156	5,057,812.50	(11,739.20)	(15,983.15)	(41,829.35)	5,041,829.35
912828XU9	02/28/19	TREAS NOTE	U.S. Treasury 1.500 06/15/20		3,000,000.00	98.680	2,960,390.63	7,580.01	10,245.19	29,364.18	2,970,635.82
Total for Pooled Funds					**77,692,416.07**		**77,204,122.26**	**162,431.78**	**335,595.06**	**152,698.75**	**77,539,717.32**

CUSIP	Settle Date	Security Type	Security Description	Next Call Date	Purchase Qty	Orig Price	Original Cost	Amrt/Accr for Period	Total Amrt/Accr Since Purch	Remaining Disc / Prem	Book Value
Total for Town of Addison					77,692,416.07		77,204,122.26	162,431.78	335,595.06	152,698.75	77,539,717.32



Town of Addison

Projected Cash Flows

Cash Flows for next 180 days from 06/30/2019

CUSIP	Security Type	Security Description	Pay Date	Interest	Principal	Total Amount
Pooled Funds						
78009BUK6	CP - DISC	Royal Bank of Canada 0.000 07/19/19	07/19/19	0.00	3,000,000.00	3,000,000.00
CD-8603	CD	East West Bk CD 0.950 07/28/19	07/28/19	3,746.54	5,140,934.20	5,144,680.74
89233HUW2	CP - DISC	Toyota Mtr Cr 0.000 07/30/19	07/30/19	0.00	2,000,000.00	2,000,000.00
CD-8019	CD	East West Bk CD 2.690 08/12/19	07/31/19	11,323.73	0.00	11,323.73
9128283S7	TREAS NOTE	U.S. Treasury 2.000 01/31/20	07/31/19	30,000.00	0.00	30,000.00
3130ADN32	AGCY BULET	FHLB 2.125 02/11/20	08/11/19	31,875.00	0.00	31,875.00
CD-8019	CD	East West Bk CD 2.690 08/12/19	08/12/19	4,467.44	5,051,481.87	5,055,949.31
912828MP2	TREAS NOTE	U.S. Treasury 3.625 02/15/20	08/15/19	72,500.00	0.00	72,500.00
912828J50	TREAS NOTE	U.S. Treasury 1.375 02/29/20	08/31/19	20,625.00	0.00	20,625.00
912828TN0	TREAS NOTE	U.S. Treasury 1.000 08/31/19	08/31/19	25,000.00	5,000,000.00	5,025,000.00
48306BWA9	CP - DISC	Kaiser Foundation Hospital 0.000 09/10/19	09/10/19	0.00	4,000,000.00	4,000,000.00
3135G0ZG1	AGCY BULET	FNMA 1.750 09/12/19	09/12/19	17,500.00	2,000,000.00	2,017,500.00
3133XXP50	AGCY BULET	FHLB 4.125 03/13/20	09/13/19	92,812.50	0.00	92,812.50
912828F39	TREAS NOTE	U.S. Treasury 1.750 09/30/19	09/30/19	21,875.00	2,500,000.00	2,521,875.00
64105SXF0	CP - DISC	Nestle Finance Intl Ltd 0.000 10/15/19	10/15/19	0.00	3,000,000.00	3,000,000.00
912828T59	TREAS NOTE	U.S. Treasury 1.000 10/15/19	10/15/19	12,500.00	2,500,000.00	2,512,500.00
912828X21	TREAS NOTE	U.S. Treasury 1.500 04/15/20	10/15/19	37,500.00	0.00	37,500.00
3130ACM92	AGCY BULET	FHLB 1.500 10/21/19	10/21/19	15,000.00	2,000,000.00	2,015,000.00
91514BGE7	CP - INT	Univ of TX 2.730 11/05/19	11/05/19	40,950.00	2,000,000.00	2,040,950.00
3130AA3R7	AGCY BULET	FHLB 1.375 11/15/19	11/15/19	24,062.50	3,500,000.00	3,524,062.50
912828ND8	TREAS NOTE	U.S. Treasury 3.500 05/15/20	11/15/19	87,500.00	0.00	87,500.00
912828U73	TREAS NOTE	U.S. Treasury 1.375 12/15/19	12/15/19	20,625.00	3,000,000.00	3,020,625.00
912828XU9	TREAS NOTE	U.S. Treasury 1.500 06/15/20	12/15/19	22,500.00	0.00	22,500.00
46640QZT1	CP - DISC	J.P.Morgan Sec 0.000 12/27/19	12/27/19	0.00	2,500,000.00	2,500,000.00
Total for Pooled Funds				**592,362.71**	**47,192,416.07**	**47,784,778.78**

CUSIP	Security Type	Security Description	Pay Date	Interest	Principal	Total Amount
Total for All Portfolios						
			July 2019	45,070.27	10,140,934.20	10,186,004.47
			August 2019	154,467.44	10,051,481.87	10,205,949.31
			September 2019	132,187.50	8,500,000.00	8,632,187.50
			October 2019	65,000.00	7,500,000.00	7,565,000.00
			November 2019	152,512.50	5,500,000.00	5,652,512.50
			December 2019	43,125.00	5,500,000.00	5,543,125.00
		Total Projected Cash Flows for Town of Addison		**592,362.71**	**47,192,416.07**	**47,784,778.78**