City of Willow Park
City Council
Regular Meeting Agenda
Municipal Complex
516 Ranch House Rd, Willow Park, TX 76087
Tuesday, September 08, 2020 at 7:00 p.m.

Call to Order

Invocation & Pledge of Allegiance

Proclamation

Proclamation Honoring the National Day of Service and Remembrance

Public Comments (Limited to five minutes per person)

Residents may address the Council regarding an item that is not listed on the agenda. Residents must complete a speaker form and turn it in to the Secretary five (5) minutes before the start of the meeting (emailed comments MUST be received by 5 p.m., the day of the meeting, in order to be read at that meeting). The Rules of Procedure states that comments are to be limited to five (5) minutes. The Texas Open Meetings Act provides the following:

(a) If, at a meeting of a governmental body, a member of the public or of the governmental body inquiries about a subject for which notice has not been given as required by this subchapter, the notice provisions of this subchapter do not apply to:
(1) A statement of specific factual information given in response to the inquiry; or
(2) A recitation of existing policy in response to the inquiry.
(b) Any deliberation of or decision about the subject of the inquiry shall be limited to a proposal to place the subject on the agenda for a subsequent meeting.

Consideration of Minutes

A. Approve City Council Meeting Minutes – August 25, 2020 workshop and regular meeting minutes.

Regular Agenda Items

1. Discussion /Action: To discuss, consider and act on approving a proposed tax rate.

2. Discussion/ Action: To discuss, consider and act on the appointment of members to the Planning and Zoning Commission.

3. Discussion/ Action: To discuss, consider and act on a Final Plat for Meadow Place Estates Addition Phase II being 9.18 acres John Froman Survey, Abstract No. 471, City of Willow Park, Parker County, Texas and being a portion of Lot 1, Block 2 Trinity Meadows Addition, City of Willow Park, Parker County, Texas located on the northeast corner of Meadow Place Drive and Kings Gate Road.

4. Discussion/ Action: To discuss, consider and act to a Final Plat of a Replat of Lots 5R1, 5R2, 5R3, 6, 7, 8, 9, 10, 11; Block A, Meadow Place Estates, City of Willow Park, Parker County, Texas, located on Breeders Drive.

5. Presentation on Zoning Ordinances Update

6. Discussion /Action: To discuss, consider and act to authorize staff to seek competitive bids on the following items:

   A. FW Water Bid Package 1; Water line from Fort Worth to Willow Park
   B. FW Water Bid Package 3: Water line from Willow Park to Hudson Oaks
   C. FW Water Bid Package 2: Construction of Ground Storage Tank and Pump Station

7. Discussion/ Action: To consider and act to authorize City staff to transfer funds from the General Fund Investment account, in the amount of $67,500, to the Cross Timbers Park Fund to pay for the construction of park improvements.

8. Discussion/ Action: To consider and act on awarding a bid for the Cross Timbers Park.

9. Discussion/ Action: To consider and act on Resolution 2020-08, a Resolution of adopting the Texas Coalition for Affordable Power's (TCA P) professional services agreement and Gexa Energy's commercial electric service agreement for power to be provided on and after January 1, 2021.

10. Discussion/ Action: To consider and act on items to be considered for future council meetings

11. Discussion/ Action: To consider and act on setting the date and time for the next council meeting.

Executive Session

The City Council may convene into a closed executive session pursuant to the provisions of the Texas Open Meetings Act, Texas Government Code Chapter 551, in accordance with the authority contained in the following sections:

The City Council reserves the right to retire into closed, executive session on any of the regular agenda items listed above should the need arise and if authorized by Chapter 551, of the Texas Government Code, including but not limited to: Government Code Sections 551.071-Consultation with Attorney; 551.072-Deliberations about Real Property; 551.074-Personnel Matters; 551.087-Economic Development.

Following Executive Session, the City Council will reconvene into Regular Session and may take any action deemed necessary because of the Executive Session.

Regular Agenda Items

12. Discussion/ Action: To consider and act on items as a result of the Executive Session.

Informational

A. Mayor & Council Member Comments
B. City Manager's Comments

Adjournment

I certify that the above notice of this meeting posted on the bulletin board at the municipal complex of the City of Willow Park, Texas on or before September 04, 2020, at 5:00 p.m.

_____
Alicia Smith TRMC, CMC
City Secretary

If you plan to attend this public meeting and you have a disability that requires special arrangements at this meeting, please contact City Secretary's Office at (817) 441-7108 ext. 4 or email at asmith@willowpark.org, at least two (2) working days prior to the meeting so that appropriate arrangements can be made.

A Proclamation Honoring the National Day of Service and Remembrance

WHEREAS, on September 11, 2001, the American people endured, with courage and heroism, the worst terrorist attack on U. S. soil in our nation's history, coming together in a remarkable spirit of patriotism and unity, performing countless acts of kindness, generosity and compassion; and

WHEREAS, President Bush proclaimed September 11 as Patriot Day in 2002, and Congress approved and enacted into law the Edward M. Kennedy Serve America Act on April 21, 2009, designating September 11 as a "National Day of Service and Remembrance"; and

WHEREAS, September 11, 2020 marks the 19th anniversary of the ruthless terrorist attacks on our country and 12th National Day of Remembrance and participating in service and remembrance activities on September 11 is a positive, respectful way to remember those who lost their lives at the Pentagon, the World Trade Center, and in a field in southwest Pennsylvania, to pay tribute to those who rose in service, and to honor those who continue to serve our country today, including veterans, soldiers, military families, and first responders; and

WHEREAS, we, as a community, wish to honor the heroic service, actions, and sacrifices of first responders, law enforcement personnel, state of local officials, volunteers, and countless others who aided the innocent victims of those attacks, risking and often sacrificing their own lives; and

WHEREAS, the City Council and the City of Willow Park wish to recognize the valiant service and sacrifice given each day by members of our armed forces, intelligence agencies, diplomatic services, homeland security, and Willow Park public safety departments to support the cause of freedom and defend the security of our nation;

NOW, THEREFORE, by virtue of the authority vested in me as **Mayor of the City of Willow Park**, on behalf of the Willow Park City Council and all citizens hereof, I do hereby proclaim **Wednesday, September 11, 2020**, as:

"Stop & Remember – 9/11 National Moment of Remembrance"

and encourage everyone to observe one Moment of Remembrance with silence and prayer in honor of those who gave their lives on Wednesday, September 11, 2020 at 12:00 p.m. CST, and never forget on this 19th anniversary and day of remembrance.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the seal of Willow Park, Texas, to be affixed this the 8th day of September, 2020.

_____

Doyle Moss, Mayor

City of Willow Park
City Council
Special Called Meeting Minutes
Municipal Complex
516 Ranch House Rd, Willow Park, TX 76087
Tuesday, August 25, 2020 at 6:00 p.m.

Call to Order

Mayor Moss called the meeting to order at 6:00 p.m.

Present:

Mayor Doyle Moss

Councilmember Eric Contreras

Councilmember Amy Fennell

Councilmember Greg Runnebaum

Councilmember Lea Young

Councilmember Nathan Crummell

Staff present:

City manager Bryan Grimes

City Attorney Pat Chesser

City Secretary Alicia Smith

Public Hearing

Public Hearing on the City of Willow Park Fiscal Year 2020-2021 Proposed Budget A copy of the proposed budget is on file in the office of the City Secretary and may be viewed at the City's website at www.willowpark.org.

Please note the following:

This budget will raise more total property taxes than last year's budget by $9,044 or 1.0%, and of that amount $30,985 is tax revenue to be raised from new property added to the tax roll this year.

A. **Open Public Hearing**
   Public hearing opened at 6:00 p.m.
B. **Citizen Comments**
   None
C. **Close Public Hearing**
   Public Hearing was closed at 6:03 p.m.

Adjournment

Motion made by Councilmember Runnebaum
To adjourn
Seconded by Councilmember Contreras.
Aye votes: Councilmembers Contreras, Fennell, Runnebaum, Young and Crummell
Motion carries with a vote of 5-0

APPROVED:

_____

Doyle Moss, Mayor

ATTEST:

_____

Alicia Smith, City Secretary

Meeting was adjourned at 6:02 p.m.

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City Council
Regular Meeting Agenda
Municipal Complex
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Call to Order

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Present:

Mayor Doyle Moss

Councilmember Eric Contreras

Councilmember Amy Fennell

Councilmember Greg Runnebaum

Councilmember Lea Young

Councilmember Nathan Crummell

Staff present:

City manager Bryan Grimes

City Attorney Pat Chesser

City Secretary Alicia Smith

Invocation & Pledge of Allegiance

Mayor Moss led a moment of silence.

Chief Carrie West led the pledge of allegiance.

Public Comments (Limited to five minutes per person)

NONE

Consideration of Minutes

A. **Approve City Council Meeting Minutes – August 11, 2020 workshop and regular meeting minutes.**

Motion made by Councilmember Runnebaum
To approve the meeting and workshop minutes from August 11, 2020
Seconded by Councilmember Contreras.
Aye votes: Councilmembers fennel, Runnebaum, Contreras, and Young
Abstain: Councilmember Crummell
Motion passes with a vote of 4-0-1

Regular Agenda Items

1. **Discussion/ Action: To discuss, consider and act on the proposals received for Employee Health benefits, including health insurance, and act on awarding a contract(s) for Employee Health benefits, including health insurance.**

Motion made by Councilmember young

To approve the proposal for employee health benefits

Seconded by Councilmember Runnebaum

Aye votes: Councilmembers Fennell, Runnebaum, Contreras, Young and Crummel
Motion passes with a vote of 5-0

2. **Discussion/ Action: To discuss, consider and act to approve a Request for Sealed Bids for a land exchange for property suitable for the proposed sewer plant.**

Motion made by Councilmember Contreras

To approve the request for sealed bids for a land exchange for property suitable for the proposed sewer plant, as described by Attorney Chesser in the RFP.

Seconded by Councilmember Fennell

Aye votes: Councilmembers Fennell, Runnebaum, Contreras, Young and Crummel

Motion passes with a vote of 5-0

3. **Discussion /Action: To discuss, consider and act to suspend all efforts and/or negotiations on a potential location for a sewer treatment plant south of IH 20 as previously approved by Council.**

   Motion made by Councilmember Contreras

   To suspend all efforts and/or negotiations on a potential location for a sewer treatment plant south of Interstate 20 as previously approved by council.

   Seconded by Councilmember Young

   Aye votes: Councilmembers Fennell, Runnebaum, Contreras, Young and Crummel

   Motion passes with a vote of 5-0

4. **Discussion/ Action: To consider and act on items to be considered for future council meetings.**

Sept. 08:	Adopt proposed tax rate
	Parks RFP
	Water systems presentation on usage
	Discuss water conservation of water source
	Enforcement of watering guidelines
Sept. 22:	Public hearing on Tax rate
	Budget
	Tax rate
	RFP on Fort Worth water project
TBD:	Possible landscape ordinance
	Fort Worth project timeline
	Adjustment of Commercial water rates.

5. **Discussion/ Action: To consider and act on setting the date and time for the next council meeting.**

   Next council meeting is the regular meeting at 7pm on August 25.

Executive Session

None

Regular Agenda Items

6. **Discussion/ Action: To consider and act on items as a result of the Executive Session.**
7. No action

Adjournment

Motion made by councilmember Young

To adjourn

Seconded by Councilmember Fennell

Aye votes: Councilmembers Contreras, Fennell, Runnebaum, Young and Crummell

Motion passes with a votes of 5-0

Meeting adjourned at 7:32 p.m.

APPROVED:

_____

Doyle Moss, Mayor

ATTEST:

_____

Alicia Smith, City Secretary

CITY COUNCIL AGENDA ITEM BRIEFING SHEET

Council Date:	Department:	Presented By:
September 8	Admin	City Manager

AGENDA ITEM:

Adopt Proposed Tax Rate

BACKGROUND:

New to the tax rate setting process, Council must now vote on the Proposed Tax Rate. The Tax Rate that Council has been working with during the Budget process is as follows:

M/O Rate	0.2685
I/S Rate	0.2682
Total Tax Rate	**0.5367**

This is the same overall tax rate as the previous fiscal year.

STAFF/BOARD/COMMISSION RECOMMENDATION:

EXHIBITS:

ADDITIONAL INFO:	FINANCIAL INFO:	
	Cost	$
	Source of Funding	$

CITY COUNCIL AGENDA ITEM BRIEFING SHEET

Meeting Date:	Department:	Presented By:
September 8, 2020	Administration	Mayor Moss

AGENDA ITEM:

Appointment of Planning and Zoning Commission members.

BACKGROUND:

The Mayor annually makes recommendations to City Council for persons to serve as Planning and Zoning Commissioners.

2 Year Term

Commissioner Place 1 – Rodney Wilkins
Commissioner Place 2 – Joe Lane

1 Year Term
Commissioner Alternate 1 – Scott Smith

STAFF/BOARD/COMMISSION RECOMMENDATION:

Recommend Approval

EXHIBITS:

ADDITIONAL INFO:	FINANCIAL INFO:	
	Cost	N/A
	Source of Funding	N/A

P&Z AGENDA ITEM BRIEFING SHEET

Meeting Date:	Department:	Presented By:
September 08, 2020	Development Services	Betty Chew

AGENDA ITEM: 1

Consider and Act on a Final Plat for Meadow Place Estates Addition Phase II being 9.18 acres John Froman Survey, Abstract No. 471, City of Willow Park, Parker County, Texas and being a portion of Lot 1, Block 2, Trinity Meadows Addition, City of Willow Park, Parker County, Texas located on the northeast corner of Meadow Place Drive and Kings Gate Road.

BACKGROUND:

The preliminary plat for this proposed subdivision was approved by City Council October 9, 2018. The preliminary plat contained 11.17 acres of land. The final plat contains 9.18 acres of land. The developer proposes to add the 1.99 acres of land (floodway) located behind Block F, as a replat, with the land being platted as a part of the adjacent lots in Block A of Meadow Place Estate Addition.

The 18 single family residential lots will have frontage on Belmont Drive a 50 foot right of way and Meadow Place Drive a 60 foot right of way. The developer will construct both streets with concrete pavement, with curb and gutter and sidewalks. Kings Gate Road a 60 foot right of way is adjacent to the subdivision.

The subdivision will be served by city water and sanitary sewer. An 8 inch water main will be extended in Meadow Place Drive and Belmont Drive. It will tie into an existing water main in Kings Gate Road to provide a looped system. Fire hydrants will be installed in accordance with I.S. O. regulations. Sanitary sewer service will be provided by an 8 inch sanitary sewer main, installed by the developer, in Belmont Drive and extended south.

Stormwater flows from north to south across the subdivision. A portion of the lots in Block F are located in the floodway. Finished floor elevations are shown on the plat. The stormwater drainage plan has been approved by the City Engineer.

The Plat includes a 25 foot trail easement for trail development as indicated in the park master plan.

STAFF/BOARD/COMMISSION RECOMMENDATION:

The Final Plat for Meadow Place Estates Addition Phase II meets the requirements of the Subdivision Ordinance and Staff recommends approval.

The Planning and Zoning Commission recommends approval as presented.

EXHIBITS:

Plat Application
Final Plat

ADDITIONAL INFO:	FINANCIAL INFO:

City of Willow Park Development Services

516 Ranch House Road
Willow Park, Texas 76087
Phone: (817) 441-7108 · Fax: (817) 441-6900

PLAT APPLICATION ,
MUST BE AN ORIGINAL DOCUMENT – FAXED COPIES WILL NOT BE ACCEPTED
ALL SIGNATURES MUST BE ORIGINAL

Type of Plat: ___Preliminary X Final ___Replat ___ Amended

PROPERTY DESCRIPTION: **SUBMITTAL DATE:** 07/22/2020

Address (If assigned): _____

Name of Additions: MEADOW PLACE ESTATES PHASE 2

Location of Addition: INTERSECTION OF KINGS GATE RD & MEADOW PLACE DR

Number of Lots: 18 Gross Acreage: 9.18 Zoning: R5 # of New Street Intersections: 1

PROPERTY OWNER:

Name: PARKER COUNTY HOLDINGS, LLC Contact: JERRY STOCKON

Address: 5354 AIRPORT FREEWAY Phone: 817-371-6776

City: HALTOM CITY Fax: _____

State: TX Zip: 76117 Email: jerryc21@aol.com

Signature: Cynthia Swift, Authorized Agent

APPLICANT:

Name: BARRON STARK ENGINEERS, LP Contact: CYNTHIA SWIFT, PROJECT MANAGER

Address: 6221 SOUTHWEST BLVD, #100 Phone: 817-231-8114 CELL: 817-846-2878

City: FORT WORTH Fax: 817-231-8144

State: TX Zip: 76132 Email: cynthias@barronstark.com

Signature: Cynthia Swift, Authorized Agent

SURVEYOR:

Name: BARRON STARK ENGINEERS, LP Contact: CHARLES F. STARK, PE

Address: 6221 SOUTHWEST BLVD, #100 Phone: 817-296-9550

City: FORT WORTH Fax: 817-231-8144

State: TX Zip: 76132 Email: chucks@barronstark.com

Signature: Charles F. Stark, RPLS

ENGINEER:

Name: BARRON STARK ENGINEERS, LP

Contact: CHARLES F. STARK, RPLS

Address: 6221 SOUTHWEST BLVD, #100

Phone: 817-296-9550

City: FORT WORTH

Fax: 817-231-8144

State: TX Zip: 76132

Email: chucks@barronstark.com

Signature: *Charles F. Stark, PE*

PRINCIPAL CONTACT: _____ Owner _____ Applicant _____ Surveyor ✓ Engineer

- Staff comment letters and mark-ups will be distributed only to the designated principle contact
- Comments will be sent via email unless otherwise specified

UTILITY PROVIDERS

Electric Provider: ONCOR

Water Provider: CITY OF WILLOW PARK

Wastewater Provider: CITY OF WILLOW PARK

Gas Provider (if applicable): ATMOS

APPLICATION FEES

$750.00 ~~$300.00 PLUS $10 PER LOT FOR LOTS UP TO 1/2 ACRE IN SIZE OR~~

_____ $300.00 PLUS $10 PER ACRE OR FRACTION THEREOF FOR LOTS LARGER THAN 1/2 ACRE

Additional fees (if applicable):

Any reasonable fees and/or costs, which are required by the City of Willow Park for a proper review of this request, are the sole responsibility of the applicant. Such fees or costs shall include, but are not limited to engineering reviews, legal opinions, building(s)/property inspections and/or testing(s).

City Use Only

Fees Collected: $_____ $_____

$_____ $_____

Receipt Number:

PLAT REVIEW CHECKLIST:

****This checklist must be submitted with the initial plat application****

I. GENERAL:

Name of Addition: MEADOW PLACE ESTATES PHASE 2

Applicant: BARRON STARK ENGINEERS, LP

Property Owner(s): PARKER COUNTY HOLDINGS, LLC

Location of Addition: INTERSECTION OF KINGS GATE RD & MEADOW PLACE DR

	II. REQUIRED DOCUMENTS FOR A PRELIMINARY PLAT	APPLICANT	STAFF
A.	Preliminary Plat Application (original signatures)	na	
B.	Preliminary Plat Drawing (5 paper copies & 1 digital)		
C.	Preliminary Drainage Analysis (5 paper copies & 1 digital)		
D.	Concept Construction Plan (5 paper copies & 1 digital)		
E.	Tree Survey		
F.	Location and Dimensions of Existing Structures		
G.	Sectionalizing or Phasing of Plats		
H.	Zoning Classification of All Properties Shown on the Plat		
I.	Dimensions of all Proposed or Existing Lots		
J.	Location of 100-year Flood Limits Where Applicable		

	III. REQUIRED DOCUMENTS FOR A FINAL PLAT		
A.	Final Plat Application (original signatures)	✓	
B.	Final Plat Drawing (5 paper copies & 1 digital copy)	✓	
C.	Drainage Study (5 paper copies & 1 digital)	✓	
D.	Submit 1 mylar copy and 1 paper copy from county filing	after approval	OK
E.	Written Metes and Bounds Description	✓	
F.	Dimensions of All Proposed or Existing Lots	✓	
G.	Area in acres for each lot	✓	
H.	Any Existing Structures which Encroach and Setback Lines	✓	N/A
I.	Parker County Tax Certificate	after approval	OK
J.	Plans for all water & sewer lines	✓	
K.	Plans for fire hydrants	✓	
L.	Plans for all proposed streets and sidewalks	✓	

	IV. REQUIRED DOCUMENTS FOR A REPLAT	NA	
A.	Replat Application (original signatures)	✓	
B.	Replat Drawing (5 paper copies & 1 digital copy)	✓	
C.	Original Plat for comparison	✓	
D.	Drainage Study (5 paper copies & 1 digital)	✓	
E.	Submit 1 mylar copy and 1 paper copy from county filing	after approval	
F.	Written Metes and Bounds Description	✓	
G.	Dimensions of All Proposed or Existing Lots	✓	
H.	Area in acres for each lot	✓	
I.	Any Existing Structures which Encroach and Setback Lines	✓	
J.	Parker County Tax Certificate	with mylar	

	V. REQUIRED DOCUMENTS FOR AN AMENDED PLAT		
A.	Amended Plat Application (original signatures)	NA	
B.	Final Plat Drawing (5 paper copies & 1 digital)		
C.	Original Plat for comparison		
D.	Drainage Study (5 paper copies & 1 digital)		
E.	Submit 1 mylar copy and 1 paper copy from county filing		
F.	Written Metes and Bounds Description		
G.	Dimensions of All Proposed or Existing Lots		
H.	Area in acres for each lot		
I.	Any Existing Structures which Encroach and Setback Lines		

VI.	REQUIREMENTS ON ALL PLATS	APPLICANT	STAFF
A.	Adjacent Property Lines, Streets, Easements	✓	✓
B.	Names of Owners of Property within 200 feet	✓	✓
C.	Names of Adjoining Subdivisions	✓	✓
D.	Front and Rear Building Setback Lines	✓	✓
E.	Side Setback Lines	✓	✓
F.	City Boundaries Where Applicable	✓	N/A
G.	Date the Drawing was Prepared	✓	✓
H.	Location, Width, Purpose of all Existing Easements	✓	✓
I.	Location, Width, Purpose of all Proposed Easements	✓	✓
J.	Consecutively Numbered or Lettered Lots and Blocks	✓	✓
K.	Map Sheet Size of 18"x24" to 24"x36"	✓	✓
L.	North Arrow	✓	✓
M.	Name, Address, Telephone, of Property Owner	✓	✓
N.	Name, Address, Telephone of Developer	✓	✓
O.	Name, Address, Telephone of Surveyor	✓	✓
P.	Seal of Registered Land Surveyor	✓	✓
Q.	Consecutively Numbered Plat Notes and Conditions	✓	✓
R.	City of Willow Park Plat Dedication Language	✓	✓
S.	Location and Dimensions of Public Use Area	✓	✓
T.	Graphic Scale of Not Greater Than 1" = 200'	✓	OK
U.	All Existing and Proposed Street Names	✓	✓
V.	Dimensions of All Existing and Proposed Rights-of-Way as Specified on Master Thoroughfare Plan	✓	✓
W.	Subdivision Boundary in Bold Lines	✓	✓
X.	Subdivision Name	✓	✓
Y.	Title Block Identifying Plat Type	✓	✓
Z.	Key Map at 1"=2000'	✓	✓
AA.	Surveyor's Certification of Compliance	✓	✓
BB.	Texas NAD83 State Plane Coordinates (Grid) (at least 2 corners)	✓	✓
CC.	Show relationship of plat to existing "water, sewage, and drainage	✓	✓

VII.	ADDITIONAL DOCUMENTS REQUIRED ON FINAL PLATS	APPLICANT	STAFF
A.	A written and notarized statement describing the minimum improvements which the subdivider agrees to provide, conditional upon City Council approval of the final plat	NA	N/A
B.	A written and notarized statement that all property taxes and assessments have been paid for past years and up to Current date. This statement shall be signed by the owner or owners (original and one copy)	with mylar	OK
C.	A written and notarized acknowledgement of the dedication to public use of streets, parks, water courses, drains, easements and other such public places as shown on the plat, and of payments in lieu of certain public dedications. Property designated for schools, churches, hospitals, municipal purposes, and other uses, shall be noted, as well as the conditions and procedures by which such property and monies shall be made available to prospective purchasers or governing bodies. This statement shall be signed by the owner or owners, and all persons having a mortgage or lien interest in the property. (if applicable)	✓	✓

PLEASE NOTE: After staff approval, up to fifteen (15) additional paper copies may be required for review by the Planning & Zoning Commission and City Council.

Willow Park
Plat
Building Official Review

Applicant Questions:

Front building setback: 25 ft. Rear building setback: ~~na~~ 10' ft.

Side building setback: 10 ft. Side building setback: 10 ft.

Does the site include any utility/electric/gas/water/sewer easements?	Yes ✓	No
Does the site include any drainage easements?	Yes ✓	No
Does the site include any roadway/through fare easements?	Yes ✓	No

Staff Review:

Does the plat include all the required designations?	Yes	No
Are the setbacks for the building sufficient?	Yes	No
Are there any easement conflicts?	Yes	No
Do the proposed easements align with neighboring easements?	Yes	No
Are the proposed easements sufficient to provide service?	Yes	No
Does the proposed project pose any planning concerns?	Yes	No

Approved Not Approved Needs More Information or Corrections

Building Official Approval Signature: Betty L. Chew Date: 08/11/2020

Willow Park

Plat

Public Works Review

Applicant Questions:

Is the project serviced by an existing road? Yes ✓ No

If yes, which road? MEADOW PLACE DR / KINGSGATE

Is the project serviced by an existing water line? Yes ✓ No

If yes, what size line? 8"

Will the project require the extension of a water line? Yes ✓ No

Does the project use well water? No ✓ Drinking Irrigation

If yes, which aquifer does the well pull from? na

Is the project serviced by an existing sewer line? Yes ✓ No

If yes, what size line? 8"

If no, what type and size is the septic system? na

Staff Review:

Will servicing this project require additional infrastructure beyond what is identified in the Capital Improvement Plan?

Yes (No)

Any additional concerns: _____

(Approved) Not Approved Needs More Information or Corrections

Public Works Approval Signature: MICHELLE QUELKER Date: 08/11/2020

Willow Park

Plat

Flood Plain Review

Applicant Questions:

Is any part of the plat in the 100-year flood plain?	Yes ✓	No
If yes, what is the base flood elevation for the area? tbd		
Is the footprint of any built improvement in the 100-year flood plain?	Yes	No ✓
If yes, what is the base flood elevation for the area? _____		
Is the footprint of any habitable structure in the 100-year flood plain?	Yes	No ✓
If yes, what is the base flood elevation for the area? _____		

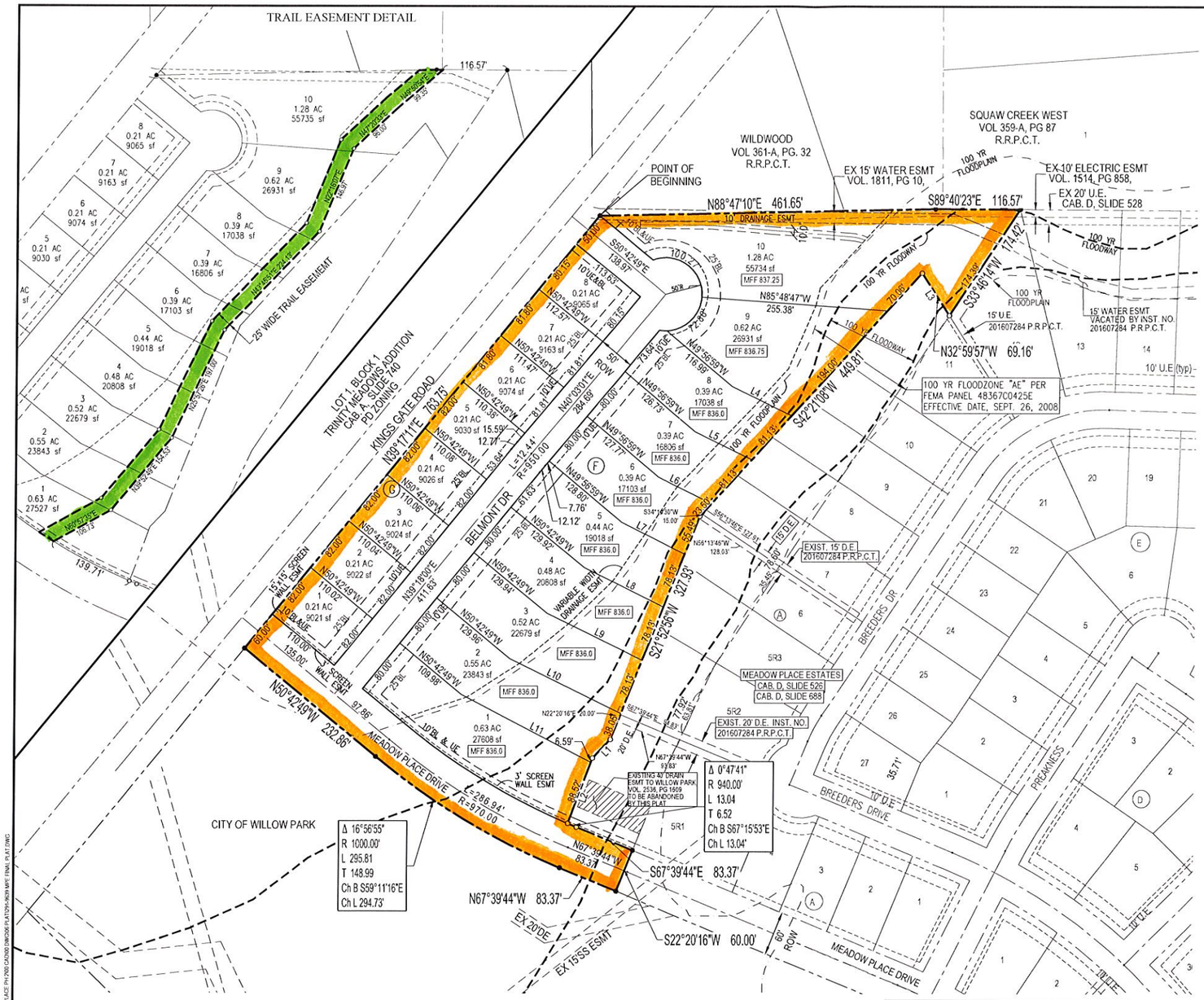
Staff Review:

Base flood elevations confirmed? TBD	Yes	No
Does the proposed project pose any safety concerns?	Yes	(No)

FINISHED FLOOR ELEVATION FOR ALL LOTS BLOCK F

(Approved) Not Approved Needs More Information or Corrections

Flood Plain Manager Approval Signature: DEREK TURNER Date: 08/11/2020



NOTE

○ OPEN CIRCLE INDICATES 1/2" CAPPED IRON ROD SET STAMPED "C.F. STARK RPLS 5084" UNLESS OTHERWISE NOTED.

● SOLID CIRCLE INDICATE 4" STEEL FENCE POST FOUND OR AS LABELED.

NOTE:

1. BASIS OF BEARING FOR THIS PLAT IS TEXAS STATE PLANE COORDINATE SYSTEM, NORTH CENTRAL ZONE NAD83.
2. MMF = MINIMUM FINISH FLOOR ELEVATION.

LOCATION MAP

Line Table		
Line #	Length	Direction
L1	35.11'	S43° 42' 36"W
L2	95.11'	N20° 35' 06"E
L3	69.16'	N32° 59' 57"W
L4	91.68'	N63° 50' 15"W
L5	87.26'	N63° 50' 15"W
L6	82.83'	N63° 50' 15"W
L7	98.62'	N63° 50' 15"W
L8	121.65'	N63° 50' 15"W
L9	145.65'	N63° 50' 15"W
L10	169.64'	N63° 50' 15"W
L11	200.23'	N62° 30' 59"W

GENERAL NOTES:

1. TOTAL NUMBER OF RESIDENTIAL LOTS = 18 LOTS.
2. MINIMUM LOT SIZE – (9,000 sf).
3. MINIMUM FRONTAGE ON CULDESACS & RADII – 40'.
4. BUILDING SETBACK LINES – FRONT YARD 25'.
   REAR YARD 10', SIDE YARD 10'
5. 10' UTILITY EASEMENT ADJACENT TO PROPOSED ROW
6. PROPERTY LOCATED IN CITY OF WILLOW PARK.
7. SEWER SERVICE PROVIDED BY CITY OF WILLOW PARK.
8. WATER SERVICE PROVIDED BY CITY OF WILLOW PARK.
9. A PORTION OF THIS PROPERTY DOES LIE WITHIN A DESIGNATED 'AE' FLOODWAY ZONE PER FIRM MAP # 48367C0425E.
10. THIS PROPERTY IS SITUATED IN ALEDO ISD.
11. EXIST ZONING "R5".
12. 3' MASONRY SCREENING WALL EASEMENT ADJACENT TO MEADOW PLACE DR.

FINAL PLAT

LOTS 1-10, BLOCK F
LOTS 1-8, BLOCK G

MEADOW PLACE ESTATES, PHASE 2

AN ADDITION TO THE CITY OF WILLOW PARK
PARKER COUNTY, TEXAS

BEING A REPLAT OF A PORTION OF LOT 1, BLOCK 2
TRINITY MEADOWS AS RECORDED IN
CABINET A, SLIDE 740, PLAT RECORDS, PARKER COUNTY, TEXAS

BEING 9.18 ACRES SITUATED IN THE
JOHN FROMAN SURVEY, ABSTRACT NO. 471

FILED FOR RECORD
PARKER COUNTY, TEXAS PLAT RECORD

CABINET ____________, SLIDE ____________

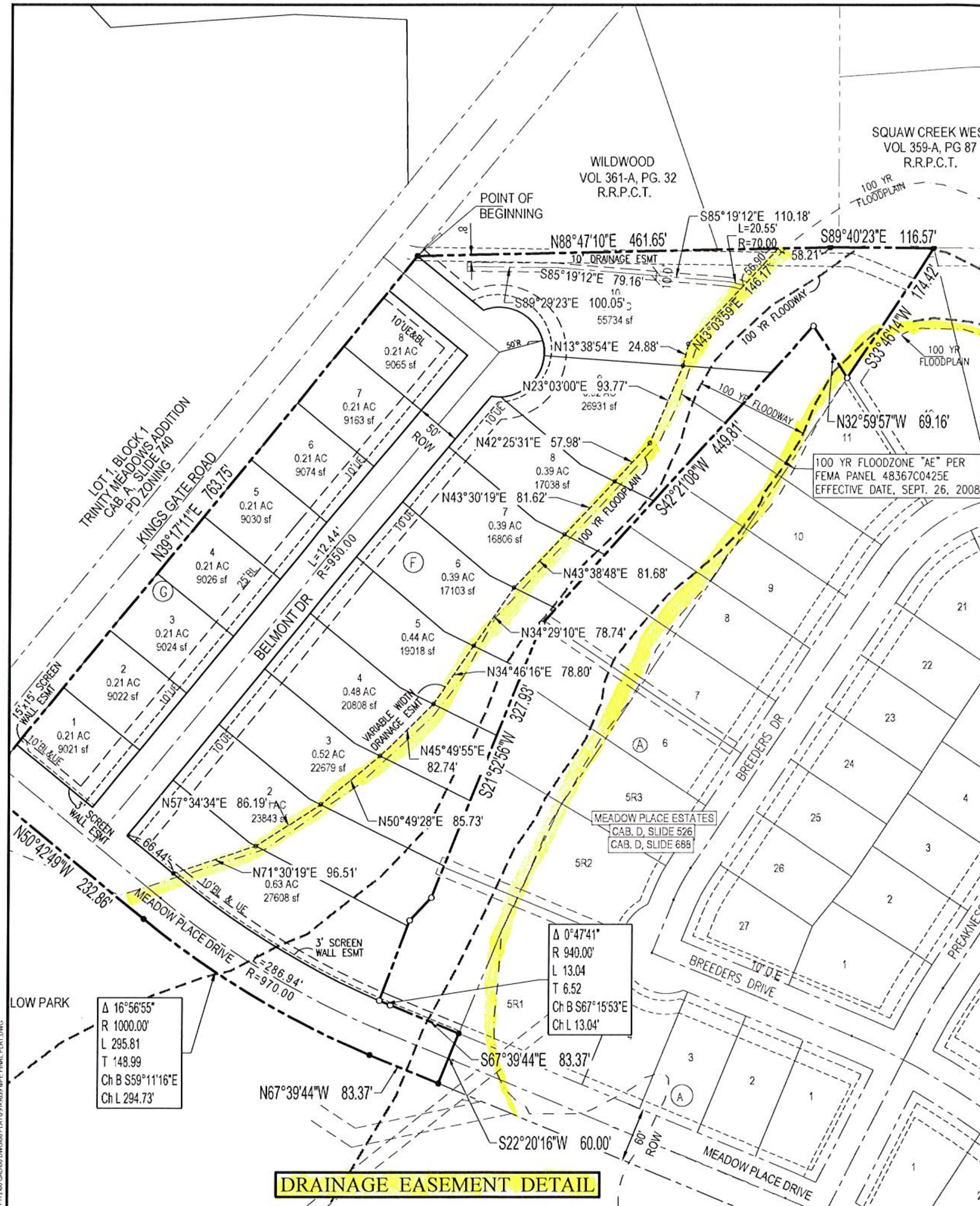
DATE ________________________

OWNER:
PARKER COUNTY HOLDINGS, LLC
5354 AIRPORT FREEWAY
HALTOM CITY, TEXAS 76117
817-371-6776

Barron•Stark
Engineers

6221 Southwest Boulevard, Suite 100
Fort Worth, Texas 76132
(O) 817.231.8100 (F) 817.231.8144
Texas Registered Engineering Firm F-10998
Texas Registered Survey Firm F-10158800
www.barronstark.com

JOB No. 291-9639
DATE JUNE 2020
SHEET
1 OF 2



OWNER DEDICATION:
NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS:

That, Parker County Holdings, LLC acting herein by and through its duly authorized officer, does hereby certify and adopt this plat designating the hereinabove described property as Lots 1-10, Block F, & Lots 1-8, Block G, Meadow Place Addition, Phase 2 being a Re-Plat of Lot 1, Block 2, Trinity Meadows, an addition to the City of Willow Park, Texas ("City") as recorded in Cabinet A, Slide 740, Plat Records, Parker County, Texas and does hereby dedicate to the public use forever, the streets, easements, and encumbrances shown hereon.

Parker County Holdings, LLC herein certifies the following:

1. The public improvements and dedications shall be free and clear of all debt, liens, and/or encumbrances.
2. The easements, streets, and public use areas, as shown, are dedicated for the public use forever for the purposes indicated or shown on this plat.
3. No buildings, fences, trees, shrubs or other improvements or growths shall be constructed or placed upon, over or across the easements as shown, except that landscape improvements may be placed in landscape easements if approved by the City.
4. The City is not responsible for replacing any improvements in, under, or over any easements caused by maintenance or repair.
5. Utility easements may also be used for the mutual use and accommodation of all public utilities desiring to use or using the same unless the easement limits the use to particular utilities, said use by the public utilities being subordinate to the public's and the City's use thereof.
6. The City and public utilities shall have the right to remove and keep removed all or part of any building, fences, trees, shrubs or other improvements or growths which may in any way endanger or interfere with the construction, maintenance, or efficiency of their respective systems or public use in the easements.
7. The City and public utilities shall at all times have a right of ingress and egress to or from their respective easements for the purpose of constructing, reconstructing, inspecting, patrolling, maintaining, reading meters, and adding to or removing all or parts of their respective systems or public use without the necessity of procuring permission from anyone.
8. Any modification of this document shall be by means of plat and shall be approved by the City.

This plat is approved subject to the conditions herein and to all platting ordinances, rules, regulations and resolutions of the City of Willow Park, Texas.

Witness my hand this the__________day of______________________ 2020.

Parker County Holdings, LLC

NAME:______________________________.

TITLE:______________________________.

STATE OF TEXAS }

COUNTY OF____________________ }

Before me, the undersigned authority, on this day appeared Randy Pack, known by me to be the person whose name is subscribed to the forgoing instrument.

GIVEN UNDER MY HAND AND SEAL OF OFFICE

on the______day of____________________, 2020

____
Notary Public in and for the State of Texas

APPROVED BY THE CITY OF WILLOW PARK

APPROVED BY — CITY COUNCIL, CITY OF WILLOW PARK, TEXAS

SIGNED ____________________ ____________
MAYOR DATE

SIGNED ____________________ ____________
CITY ADMINISTRATOR DATE

LEGAL DESCRIPTION

Being a 9.18 acre tract of land situated in the John Froman Survey, Abstract No. 471, City of Willow Park, Parker County, Texas and being a portion of Lot 1, Block 2 Trinity Meadows, an addition to the City of Willow Park, Texas as recorded in Cabinet A, Slide 740, Plat Records Parker County, Texas as conveyed to Parker County Holdings, LLC as recorded in Clerk Document 201605144, Deed Records Parker County, Texas and being more particularly described by metes and bounds as follows;

Beginning at a 1/2 inch found iron rod capped "Yarger 5854" for the southwest corner of of a tract of land conveyed to Wildwood recorded in Volume 361-A, PG 32, Plat Records, Parker County, Texas, said point also being in the easterly right-of-way line of Kings Gate Road

Thence North 88° 47' 10" East with the south line of Wildwood a distance of 461.65 feet to a 1/2 inch found iron rod;

Thence South 89° 40' 23" East a distance of 116.57 feet to a 1/2 inch set iron rod; said point being the northwest corner of lot 13, Block A, Meadow Place Estates, Phase 1 as recorded in Cabinet D, Slide 528;

Thence South 33° 46' 14" West a distance of 174.422 feet along the west line of said Meadow Place Estates Phase 1, to a 1/2 inch found iron rod found at the common rear corner of Lots 11 and 12, Block a of said Meadow Place Estates Phase 1;

Thence leaving the west line of said Meadow Place Estates Phase 1 and being along the southeasterly of the herein described 9.18 acre tract, as follows:

North 32° 59' 57" West a distance of 69.16 feet to a point;
South 42° 21' 08" West a distance of 449.81 feet to a point;
South 21° 52' 56" West a distance of 327.93 feet to a point;
South 43° 42' 36" West a distance of 35.11 feet to a point;
South 20° 35' 06" West, a distance of 95.11 feet to a point for the beginning of a curve to the left with a radius of 940.000 feet;

Thence along curve to the left with an arc length of 13.04 feet through a central angle of 00°47'41" with a chord bearing of South 67°15'53" East, a distance of 13.04 feet to a 1/2 inch set iron rod;

Thence South 67° 39' 44" East a distance of 83.37 feet to a 1/2 inch iron rod at the southwest corner of said Meadow Place Estates Phase 1, being in the north dedicated line of Meadow Place Drive;

Thence South 22° 20' 16" West a distance of 60.00 feet to a 1/2 inch iron rod being in the south dedicated line of said Meadow Place Drive;

Thence North 67° 39' 44" West a distance of 83.37 feet to a 1/2 inch set iron rod for the beginning of a curve to the right with a radius of 1000.00 feet;

Thence along curve to the right with an arc length of 295.81 feet through a central angle of 16°56'55" with a chord bearing of North 59°11'16" West a distance of 294.73 feet to a 1/2 inch set iron rod;

Thence North 50° 42' 49" West a distance of 232.86 feet to a 1/2 inch set iron rod, said point being on the east right-of-way line of said Kings Gate Road;

Thence North 39° 17' 11" East with the Kings Gate Road east line a distance of 763.75 feet to the POINT OF BEGINNING and containing 399,881 square feet, 9.18 acres of land, more or less.

SURVEYOR CERTIFICATE

I, Charles F. Stark, a Registgered Professional Land Surveyor in the State of Texas, hereby certify this drawing correctly reflects the facts found at the time of this survey and that this drawing correctly shows all visible easements and rights-of-way known to me at the time of this survey.

STATE OF TEXAS — REGISTERED — CHARLES F. STARK — 5084 — PROFESSIONAL LAND SURVEYOR

PRELIMINARY
NOT TO BE RECORDED
FOR ANY PURPOSES

____
Charles F. Stark, R.P.L.S. No. 5084

STATE OF TEXAS }

COUNTY OF____________________ }

Before me, the undersigned authority, on this day appeared Charles F. Stark, known by me to be the persons whose names are subscribed to the forgoing instrument.

GIVEN UNDER MY HAND AND SEAL OF OFFICE

on the______day of____________________, 2020

____
Notary Public in and for the State of Texas

FINAL PLAT

LOTS 1-10, BLOCK F
LOTS 1-8, BLOCK G

MEADOW PLACE ESTATES, Phase 2

AN ADDITION TO THE CITY OF WILLOW PARK
PARKER COUNTY, TEXAS

BEING A REPLAT OF A PORTION OF LOT 1, BLOCK 2
TRINITY MEADOWS AS RECORDED IN
CABINET A, SLIDE 740, PLAT RECORDS, PARKER COUNTY, TEXAS

BEING 9.18 ACRES SITUATED IN THE
JOHN FROMAN SURVEY, ABSTRACT NO. 471

BASIS OF BEARING FOR THIS PLAT IS TEXAS STATE PLANE COORDINATE SYSTEM, NORTH CENTRAL ZONE NAD83.

FILED FOR RECORD
PARKER COUNTY, TEXAS PLAT RECORD

CABINET ____________, SLIDE ____________

DATE ______________________________

OWNER:
PARKER COUNTY HOLDINGS, LLC
5354 AIRPORT FREEWAY
HALTOM CITY, TEXAS 76117
817-371-6776

Barron•Stark Engineers

6221 Southwest Boulevard, Suite 100
Fort Worth, Texas 76132
(O) 817.231.8100 (F) 817.231.8144
Texas Registered Engineering Firm F-10998
Texas Registered Survey Firm F-10158800
www.barronstark.com

JOB No. 291-9539
DATE JUNE 2020
SHEET

P&Z AGENDA ITEM BRIEFING SHEET

Meeting Date:	Department:	Presented By:
September 08, 2020	Development Services	Betty Chew

AGENDA ITEM: 2

Consider and Act on a Final Plat of a Replat of Lots 5R1, 5R2, 5R3, 6, 7, 8, 9, 10, 11; Block A, Meadow Place Estates, City of Willow Park, Parker County, Texas, located on Breeders Drive.

BACKGROUND:

The owners of these 9 lots propose to replat their current lots adding 1.99 acres to the back of their lots. The area is flood plain and floodway. Elevation certificates will be required for structures built on these replatted lots.

All infrastructure improvements have been constructed and accepted by the City of Willow Park.

STAFF/BOARD/COMMISSION RECOMMENDATION:

The Final Plat of a Replat of Lots 5R1, 5R2, 5R3, 6, 7, 8, 9, 10, 11; Block A, Meadow Place Estates Addition meets the requirements of the Subdivision Ordinance and Staff recommends approval.

The Planning and Zoning Commission recommends approval as presented.

EXHIBITS:

Plat Application
Final Plat

ADDITIONAL INFO:	FINANCIAL INFO:	
	Cost	N/A
	Source of Funding	N/A

City of Willow Park Development Services

516 Ranch House Road
Willow Park, Texas 76087
Phone: (817) 441-7108 · Fax: (817) 441-6900

PLAT APPLICATION
MUST BE AN ORIGINAL DOCUMENT – FAXED COPIES WILL NOT BE ACCEPTED
ALL SIGNATURES MUST BE ORIGINAL

Type of Plat: ___Preliminary ___Final ✓ Replat ___ Amended

PROPERTY DESCRIPTION: **SUBMITTAL DATE:** 07/22/2020

Address (if assigned): 117, 119, 123, 125, 129, 133, 139, 143, & 147 BREEDERS DRIVE

Name of Additions: MEADOW PLACE ESTATES REPLAT

Location of Addition: 117 - 147 BREEDERS DRIVE

Number of Lots: 9 Gross Acreage: ___ Zoning: R5 # of New Street Intersections: 0

PROPERTY OWNER:

Name: SEE ATTACHED LIST Contact: JERRY STOCKON

Address: FOR LOTS 117 - 147 Phone: 817-371-6776

City: OWNERS NAME AND ADDRESS Fax: ___

State: ___ Zip: ___ Email: jerryc21@aol.com

Signature: Cynthia Swift, Authorized Agent

APPLICANT:

Name: BARRON STARK ENGINEERS, LP Contact: CYNTHIA SWIFT, PROJECT MANAGER

Address: 6221 SOUTHWEST BLVD, #100 Phone: 817-231-8114 CELL: 817-846-2878

City: FORT WORTH Fax: 817-231-8144

State: TX Zip: 76132 Email: cynthias@barronstark.com

Signature: Cynthia Swift, Authorized Agent

SURVEYOR:

Name: BARRON STARK ENGINEERS, LP Contact: CHARLES F. STARK, PE

Address: 6221 SOUTHWEST BLVD, #100 Phone: 817-296-9550

City: FORT WORTH Fax: 817-231-8144

State: TX Zip: 76132 Email: chucks@barronstark.com

Signature: Charles F. Stark, RPLS

ENGINEER:

Name: BARRON STARK ENGINEERS, LP
Contact: CHARLES F. STARK, RPLS

Address: 6221 SOUTHWEST BLVD, #100
Phone: 817-296-9550

City: FORT WORTH
Fax: 817-231-8144

State: TX Zip: 76132
Email: chucks@barronstark.com

Signature: Charles F. Stark, PE

PRINCIPAL CONTACT: ________ Owner ________ Applicant ________ Surveyor ✓ Engineer

- Staff comment letters and mark-ups will be distributed only to the designated principle contact
- Comments will be sent via email unless otherwise specified

UTILITY PROVIDERS

Electric Provider: ONCOR

Water Provider: CITY OF WILLOW PARK

Wastewater Provider: CITY OF WILLOW PARK

Gas Provider (if applicable): ATMOS

APPLICATION FEES

$525.00 $300.00 PLUS $10 PER LOT FOR LOTS UP TO 1/2 ACRE IN SIZE OR XX

__________ $300.00 PLUS $10 PER ACRE OR FRACTION THEREOF FOR LOTS LARGER THAN 1/2 ACRE

Additional fees (if applicable):

Any reasonable fees and/or costs, which are required by the City of Willow Park for a proper review of this request, are the sole responsibility of the applicant. Such fees or costs shall include, but are not limited to engineering reviews, legal opinions, building(s)/property inspections and/or testing(s).

City Use Only

Fees Collected: $__________ $__________

$__________ $__________

Receipt Number:

PLAT REVIEW CHECKLIST:

****This checklist must be submitted with the initial plat application****

I. GENERAL:

Name of Addition: MEADOW PLACE ESTATES

Applicant: BARRON STARK ENGINEERS, LP

Property Owner(s): SEE ATTACHED LIST

Location of Addition: 117-147 BREEDERS DRIVE

II.	REQUIRED DOCUMENTS FOR A PRELIMINARY PLAT	APPLICANT	STAFF
A.	Preliminary Plat Application (original signatures)	na	
B.	Preliminary Plat Drawing (5 paper copies & 1 digital)		
C.	Preliminary Drainage Analysis (5 paper copies & 1 digital)		
D.	Concept Construction Plan (5 paper copies & 1 digital)		
E.	Tree Survey		
F.	Location and Dimensions of Existing Structures		
G.	Sectionalizing or Phasing of Plats		
H.	Zoning Classification of All Properties Shown on the Plat		
I.	Dimensions of all Proposed or Existing Lots		
J.	Location of 100-year Flood Limits Where Applicable		

III.	REQUIRED DOCUMENTS FOR A FINAL PLAT	NA	
A.	Final Plat Application (original signatures)	X	✓
B.	Final Plat Drawing (5 paper copies & 1 digital copy)	X	✓
C.	Drainage Study (5 paper copies & 1 digital)	X	N/A
D.	Submit 1 mylar copy and 1 paper copy from county filing	X	✓
E.	Written Metes and Bounds Description	X	✓
F.	Dimensions of All Proposed or Existing Lots	X	✓
G.	Area in acres for each lot	X	
H.	Any Existing Structures which Encroach and Setback Lines	X	N/A
I.	Parker County Tax Certificate	X	OK
J.	Plans for all water & sewer lines	X	N/A
K.	Plans for fire hydrants	X	N/A
L.	Plans for all proposed streets and sidewalks	X	N/A

IV.	REQUIRED DOCUMENTS FOR A REPLAT		
A.	Replat Application (original signatures)	✓	✓
B.	Replat Drawing (5 paper copies & 1 digital copy)	✓	✓
C.	Original Plat for comparison	✓	✓
D.	Drainage Study (5 paper copies & 1 digital)	✓	N/A
E.	Submit 1 mylar copy and 1 paper copy from county filing	after approval	OK
F.	Written Metes and Bounds Description	✓	✓
G.	Dimensions of All Proposed or Existing Lots	✓	✓
H.	Area in acres for each lot	✓	✓
I.	Any Existing Structures which Encroach and Setback Lines	✓	N/A
J.	Parker County Tax Certificate	with mylar	OK

CKS

V.	REQUIRED DOCUMENTS FOR AN AMENDED PLAT		
A.	Amended Plat Application (original signatures)	NA	
B.	Final Plat Drawing (5 paper copies & 1 digital)		
C.	Original Plat for comparison		
D.	Drainage Study (5 paper copies & 1 digital)		
E.	Submit 1 mylar copy and 1 paper copy from county filing		
F.	Written Metes and Bounds Description		
G.	Dimensions of All Proposed or Existing Lots		
H.	Area in acres for each lot		
I.	Any Existing Structures which Encroach and Setback Lines		

VI.	REQUIREMENTS ON ALL PLATS	APPLICANT	STAFF
A.	Adjacent Property Lines, Streets, Easements	✓	✓
B.	Names of Owners of Property within 200 feet	✓	✓
C.	Names of Adjoining Subdivisions	✓	✓
D.	Front and Rear Building Setback Lines	✓	✓
E.	Side Setback Lines	✓	✓
F.	City Boundaries Where Applicable	✓	N/A
G.	Date the Drawing was Prepared	✓	✓
H.	Location, Width, Purpose of all Existing Easements	✓	✓
I.	Location, Width, Purpose of all Proposed Easements	✓	✓
J.	Consecutively Numbered or Lettered Lots and Blocks	✓	✓
K.	Map Sheet Size of 18"x24" to 24"x36"	✓	✓
L.	North Arrow	✓	✓
M.	Name, Address, Telephone, of Property Owners	✓	✓
N.	Name, Address, Telephone of Developer	✓	✓
O.	Name, Address, Telephone of Surveyor	✓	✓
P.	Seal of Registered Land Surveyor	✓	✓
Q.	Consecutively Numbered Plat Notes and Conditions	✓	✓
R.	City of Willow Park Plat Dedication Language	✓	N/A
S.	Location and Dimensions of Public Use Area	✓	N/A
T.	Graphic Scale of Not Greater Than 1" = 200'	✓	DK
U.	All Existing and ~~Proposed~~ Street Names	✓	✓
V.	Dimensions of All Existing and ~~Proposed~~ Rights-of-Way as Specified on Master Thoroughfare Plan	✓	✓
W.	Subdivision Boundary in Bold Lines	✓	✓
X.	Subdivision Name	✓	✓
Y.	Title Block Identifying Plat Type	✓	✓
Z.	Key Map at 1"=2000'	✓	✓
AA.	Surveyor's Certification of Compliance	✓	✓
BB.	Texas NAD83 State Plane Coordinates (Grid) (at least 2 corners)	✓	✓
CC.	Show relationship of plat to existing "water, sewage, and drainage	✓	✓

VII.	ADDITIONAL DOCUMENTS REQUIRED ON FINAL PLATS	APPLICANT	STAFF
A.	A written and notarized statement describing the minimum improvements which the subdivider agrees to provide, conditional upon City Council approval of the final plat	NA	N/A
B.	A written and notarized statement that all property taxes and assessments have been paid for past years and up to Current date. This statement shall be signed by the owner or owners (original and one copy)	with mylar	DK
C.	A written and notarized acknowledgement of the dedication to public use of streets, parks, water courses, drains, easements and other such public places as shown on the plat, and of payments in lieu of certain public dedications. Property designated for schools, churches, hospitals, municipal purposes, and other uses, shall be noted, as well as the conditions and procedures by which such property and monies shall be made available to prospective purchasers or governing bodies. This statement shall be signed by the owner or owners, and all persons having a mortgage or lien interest in the property. (if applicable)	✓	✓

PLEASE NOTE: After staff approval, up to fifteen (15) additional paper copies may be required for review by the Planning & Zoning Commission and City Council.

Willow Park
Plat
Building Official Review

Applicant Questions:

Front building setback: 25 ft. Rear building setback: ~~NA~~ 10' ft.

Side building setback: 10 ft. Side building setback: 10 ft.

Does the site include any utility/electric/gas/water/sewer easements?	Yes ✓	No
Does the site include any drainage easements?	Yes ✓	No
Does the site include any roadway/through fare easements?	Yes ✓	No

Staff Review:

Does the plat include all the required designations?	(Yes)	No
Are the setbacks for the building sufficient?	(Yes)	No
Are there any easement conflicts?	Yes	(No)
Do the proposed easements align with neighboring easements?	(Yes)	No
Are the proposed easements sufficient to provide service?	(Yes)	No
Does the proposed project pose any planning concerns?	Yes	(No)

(Approved) Not Approved Needs More Information or Corrections

Building Official Approval Signature: BETTY L. CHELD Date: 08/11/2020

Willow Park

Plat

Public Works Review

Applicant Questions:

Is the project serviced by an existing road? Yes ✓ No

If yes, which road? BREEDERS DRIVE

Is the project serviced by an existing water line? Yes ✓ No

If yes, what size line? 8"

Will the project require the extension of a water line? Yes ✓ No

Does the project use well water? No ✓ Drinking Irrigation

If yes, which aquifer does the well pull from? na

Is the project serviced by an existing sewer line? Yes ✓ No

If yes, what size line? 8"

If no, what type and size is the septic system? na

Staff Review:

Will servicing this project require additional infrastructure beyond what is identified in the Capital Improvement Plan?

Yes (No)

Any additional concerns: NO NEW INFRASTRUCTURE REQD.

(Approved) Not Approved Needs More Information or Corrections

Public Works Approval Signature: MICHELLE QUELKER Date: 08/11/2020

Willow Park

Plat

Flood Plain Review

Applicant Questions:

Is any part of the plat in the 100-year flood plain?	Yes ✓	No
If yes, what is the base flood elevation for the area? tbd		
Is the footprint of any built improvement in the 100-year flood plain?	Yes	No ✓
If yes, what is the base flood elevation for the area? N/A		
Is the footprint of any habitable structure in the 100-year flood plain?	Yes	No ✓
If yes, what is the base flood elevation for the area? TBD		

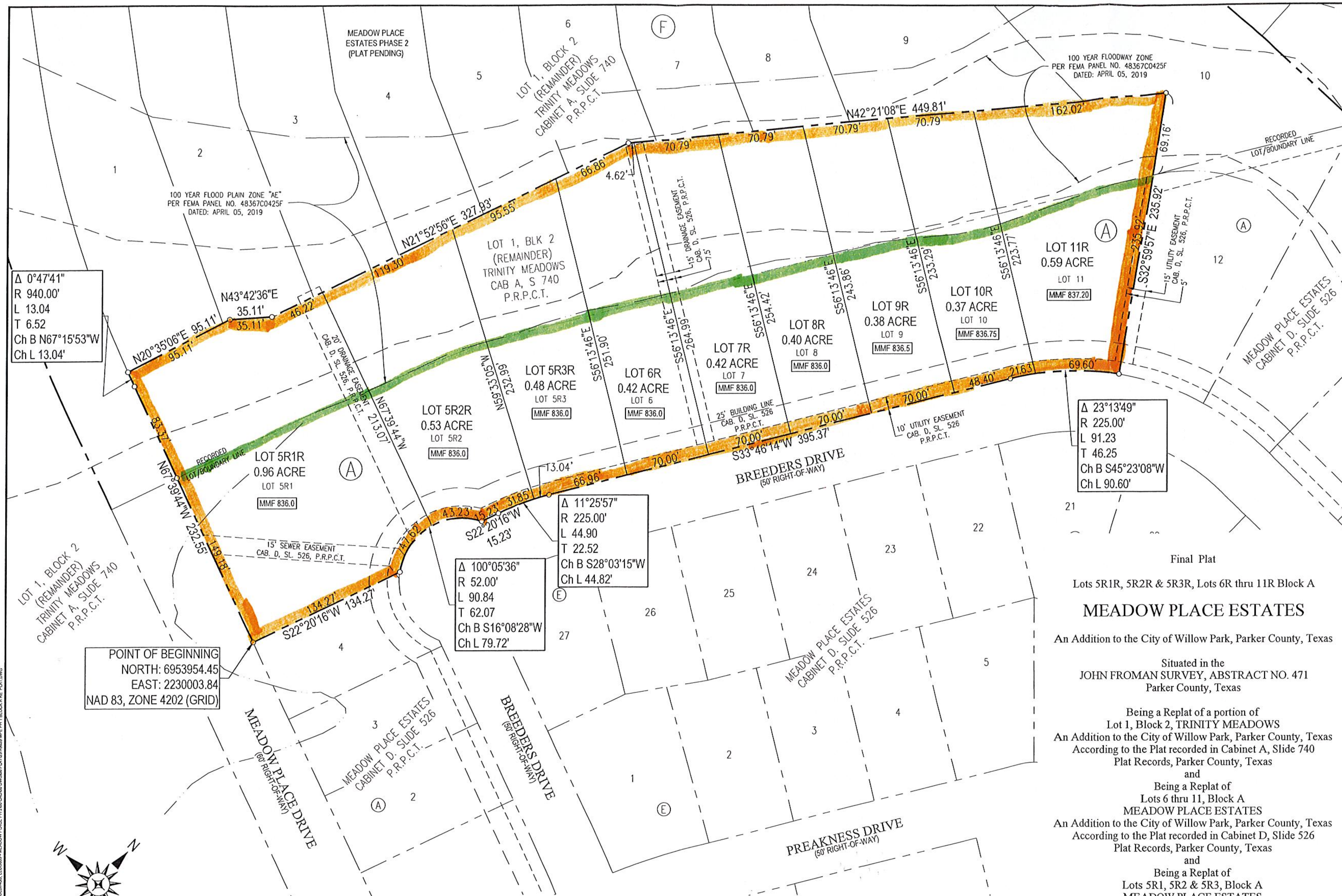
Staff Review:

Base flood elevations confirmed? TBD	Yes	No
Does the proposed project pose any safety concerns?	Yes	(No)

FINISHED FLOOR ELEVATIONS REQUIRED FOR ALL STRUCTURES - TO BE BUILT

(Approved) Not Approved Needs More Information or Corrections

Flood Plain Manager Approval Signature: DEREK TURNER Date: 08/11/2020



SURVEYOR CERTIFICATE

I. Charles F. Stark, a Registered Professional Land Surveyor in the State of Texas hereby certify this drawing correctly reflects the facts found at the time of this survey and that this drawing correctly shows all visible easements and rights-of-way known to me at the time of this survey. Basis of Bearing for this plat is Texas State Plain Coordinate System North Central Zone 4202 NADB3.

STATE OF TEXAS REGISTERED CHARLES F. STARK 5084 PROFESSIONAL LAND SURVEYOR

Charles F. Stark, R.P.L.S. No. 5084 Date:

State of Texas
County of ___________

This instrument was witnessed before me by Charles F. Stark, R.P.L.S.,

on the ________ of ______________ 2020

Notary Public in and for the State of Texas

NOTE:
MFF = MINIMUM FINISH FLOOR ELEVATION

Final Plat

Lots 5R1R, 5R2R & 5R3R, Lots 6R thru 11R Block A

MEADOW PLACE ESTATES

An Addition to the City of Willow Park, Parker County, Texas

Situated in the
JOHN FROMAN SURVEY, ABSTRACT NO. 471
Parker County, Texas

Being a Replat of a portion of
Lot 1, Block 2, TRINITY MEADOWS
An Addition to the City of Willow Park, Parker County, Texas
According to the Plat recorded in Cabinet A, Slide 740
Plat Records, Parker County, Texas
and
Being a Replat of
Lots 6 thru 11, Block A
MEADOW PLACE ESTATES
An Addition to the City of Willow Park, Parker County, Texas
According to the Plat recorded in Cabinet D, Slide 526
Plat Records, Parker County, Texas
and
Being a Replat of
Lots 5R1, 5R2 & 5R3, Block A
MEADOW PLACE ESTATES
An Addition to the City of Willow Park, Parker County, Texas
According to the Plat recorded in Cabinet D, Slide 688
Plat Records, Parker County, Texas

FILED FOR RECORD PARKER COUNTY, TEXAS PLAT RECORD	OWNER:			
CABINET ________, SLIDE ________ DATE ________	PARKER COUNTY HOLDINGS, LLC 5354 AIRPORT FREEWAY HALTOM CITY, TEXAS 76117 817-371-6776	Barron•Stark Engineers	6221 Southwest Boulevard, Suite 100 Fort Worth, Texas 76132 (O) 817.231.8100 (F) 817.231.8144 Texas Registered Engineering Firm F-10998 Texas Registered Survey Firm F-10158800 www.barronstark.com	JOB No. 291-9639 DATE JULY 2020 SHEET 1 of 2

OWNER DEDICATION:
NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS:

That, we being the owners of Lots 1 through 6, and Lots 5R1, 5R2, and 5R3, Block A, Meadow Place Estates, and Randy Pack authorized officer of Parker County Holdings, LLC does hereby certify and adopt this plat designating the hereinabove described property as Lots 6R through 11R, Block A, and Lots 5R1R, 5R2R and 5R3R, Block A, MEADOW PLACE ESTATES being a Re-Plat of a portion of Lot 1, Block 2, TRINITY MEADOWS, an Addition to the City of Willow Park, Parker County, Texas, according to the Plat recorded in Cabinet A, Slide 740, Plat Records, Parker County, Texas, Lots 6 through 11, Block A, MEADOW PLACE ESTATES, an Addition to the City of Willow Park, Parker County, Texas, according to the Plat recorded in Cabinet D, Slide 526, Plat Records, Parker County, Texas and Lots 5R1, 5R2 and 5R3, Block A,MEADOW PLACE ESTATES, an Addition to the City of Willow Park, Parker County, Texas, according to the Plat recorded in Cabinet D, Slide 688, Plat Records, Parker County, Texas and does hereby dedicate to the public use forever, the streets, easements, and encumbrances shown hereon.

Owners of Lots 1 through 6, and Lots 5R1, 5R2, and 5R3, Block A, Meadow Place Estates
and Parker County Holdings, LLC herein certifies the following:

1. The public improvements and dedications shall be free and clear of all debt, liens, and/or encumbrances.
2. The easements, streets, and public use areas, as shown, are dedicated for the public use forever for the purposes indicated or shown on this plat.
3. No buildings, fences, trees, shrubs or other improvements or growths shall be constructed or placed upon, over or across the easements as shown, except that landscape improvements may be placed in landscape easements if approved by the City.
4. The City is not responsible for replacing any improvements in, under, or over any easements caused by maintenance or repair.
5. Utility easements may also be used for the mutual use and accommodation of all public utilities desiring to use or using the same unless the easement limits the use to particular utilities, said use by the public utilities being subordinate to the public's and the City's use thereof.
6. The City and public utilities shall have the right to remove and keep removed all or part of any building, fences, trees, shrubs or other improvements or growths which may in any way endanger or interfere with the construction, maintenance, or efficiency of their respective systems or public use in the easements.
7. The City and public utilities shall at all times have a right of ingress and egress to or from their respective easements for the purpose of constructing, reconstructing, inspecting, patrolling, maintaining, reading meters, and adding to or removing all or parts of their respective systems or public use without the necessity of procuring permission from anyone.
8. Any modification of this document shall be by means of plat and shall be approved by the City.

This plat is approved subject to the conditions herein and to all platting ordinances, rules, regulations and resolutions of the City of Willow Park, Texas.

Parker County Holdings, LLC
Witness my hand this the ________ day of ______________, 2020.

By: ______________________________

State of Texas
County of ____________

Before me, the undersigned authority, on this day appeared Randy Pack, officer of Parker County Holdings, LLC, known by me to be the person whose name is subscribed to the forgoing instrument.

GIVEN UNDER MY HAND AND SEAL OF OFFICE
on the ______ day of _________________, 2020

____
Notary Public in and for the State of Texas

Lot 5R1R
Witness my hand this the ________ day of ______________, 2020.

By: ______________________________

State of Texas
County of ____________

Before me, the undersigned authority, on this day appeared Hunter Stockon, known by me to be the person whose name is subscribed to the forgoing instrument.

GIVEN UNDER MY HAND AND SEAL OF OFFICE
on the ______ day of _________________, 2020

____
Notary Public in and for the State of Texas

Lot 5R2R
Witness my hand this the ________ day of ______________, 2020.

By: ______________________________

By: ______________________________

State of Texas
County of ____________

Before me, the undersigned authority, on this day appeared Gerardus and Valda Vierling, known by me to be the persons whose name is subscribed to the forgoing instrument.

GIVEN UNDER MY HAND AND SEAL OF OFFICE
on the ______ day of _________________, 2020

____
Notary Public in and for the State of Texas

Lot 5R3R
Witness my hand this the ________ day of ______________, 2020.

By: ______________________________

By: ______________________________

State of Texas
County of ____________

Before me, the undersigned authority, on this day appeared Glen and Tina Pitts, known by me to be the persons whose name is subscribed to the forgoing instrument.

GIVEN UNDER MY HAND AND SEAL OF OFFICE
on the ______ day of _________________, 2020

____
Notary Public in and for the State of Texas

Lot 6R
Witness my hand this the ________ day of ______________, 2020.

By: ______________________________

By: ______________________________

State of Texas
County of ____________

Before me, the undersigned authority, on this day appeared Chasity Nicole and Nicholas Wood Clifton, known by me to be the persons whose name is subscribed to the forgoing instrument.

GIVEN UNDER MY HAND AND SEAL OF OFFICE
on the ______ day of _________________, 2020

____
Notary Public in and for the State of Texas

Lot 7R
Witness my hand this the ________ day of __________, 2020.

By: ______________________________

By: ______________________________

State of Texas
County of __________

Before me, the undersigned authority, on this day appeared Brittany and Will Schoonover, known by me to be the persons whose name is subscribed to the forgoing instrument.

GIVEN UNDER MY HAND AND SEAL OF OFFICE
on the ______ day of _________________, 2020

____
Notary Public in and for the State of Texas

Lot 8R
Witness my hand this the ________ day of ______________, 2020.

By: ______________________________

State of Texas
County of ____________

Before me, the undersigned authority, on this day appeared Jennifer Angell, known by me to be the person whose name is subscribed to the forgoing instrument.

GIVEN UNDER MY HAND AND SEAL OF OFFICE
on the ______ day of _________________, 2020

____
Notary Public in and for the State of Texas

Lot 9R
Witness my hand this the ________ day of ______________, 2020.

By: ______________________________

By: ______________________________

State of Texas
County of ____________

Before me, the undersigned authority, on this day appeared Joe and Jane Hamstra, known by me to be the persons whose name is subscribed to the forgoing instrument.

GIVEN UNDER MY HAND AND SEAL OF OFFICE
on the ______ day of _________________, 2020

____
Notary Public in and for the State of Texas

Lot 10R
Witness my hand this the ________ day of ______________, 2020.

By: ______________________________

By: ______________________________

State of Texas
County of ____________

Before me, the undersigned authority, on this day appeared Mathew B. and Candace R. Additnton, known by me to be the persons whose name is subscribed to the forgoing instrument.

GIVEN UNDER MY HAND AND SEAL OF OFFICE
on the ______ day of _________________, 2020

____
Notary Public in and for the State of Texas

Lot 11R
Witness my hand this the ________ day of ______________, 2020.

By: ______________________________

By: ______________________________

State of Texas
County of ____________

Before me, the undersigned authority, on this day appeared Bryan R. and Emmalee E. Jones, known by me to be the persons whose name is subscribed to the forgoing instrument.

GIVEN UNDER MY HAND AND SEAL OF OFFICE
on the ______ day of _________________, 2020

____
Notary Public in and for the State of Texas

LEGAL DESCRIPTION

BEING 4.55 acres situated in the JOHN FROMAN SURVEY, Abstract No. 471, City of Willow Park, Parker County, Texas, being a portion of Lot 1, Block 2, TRINITY MEADOWS, an Addition to the City of Willow Park, Parker County, Texas, according to the Plat recorded in Cabinet D, Slide 740, Plat Records, Parker County, Texas, being all of Lots 6 through 11, Block A, MEADOW PLACE ESTATES, an Addition to the City of Willow Park, Parker County, Texas, according to the Plat recorded in Cabinet D, Slide 526, Plat Records, Parker County, Texas and being all of Lots 5R1, 5R2 and 5R3, Block A, MEADOW PLACE ESTATES, an Addition to the City of Willow Park, Parker County, Texas, according to the Plat recorded in Cabinet D, Slide 688, Plat Records, Parker County, Texas, being more particularly described, as follows:

BEGINNING at a 1/2" capped iron rod found stamped "C.F. Stark, RPLS 5084", in the northeasterly line of Meadow Place Drive (a Dedicated 60' Public Right-of-Way), being at the southeast corner of said Lot 5R1;

THENCE N 67°39'44" W, along the northeasterly line of said Meadow Place Drive and along the southwesterly line of said Lot 5R1, at a distance of 149.18 feet, passing a 1/2" capped iron rod found stamped "C.F. Stark, RPLS 5084", at the southwest corner of said Lot 5R1 and being the northwest corner of said Meadow Place Drive Dedicated Public Right-of-Way, and continuing across and through said Lot 1, Block 2, TRINITY MEADOWS, in all, a distance of 232.55 feet to a 1/2" capped iron set stamped "C.F. Stark, RPLS 5084", at the beginning of a curve to the right, whose radius is 940.00 feet and whose long chord bears N 67°15'53" W, a chord distance of 13.04 feet;

THENCE continuing across and through said Lot 1, Block 2, TRINITY MEADOWS, along said curve, in a northwesterly direction, through a central angle of 00°47'41", an arc distance of 13.04 feet to a point for the southwest corner of herein described 4.55 acre tract;

THENCE continuing across and through said Lot 1, Block 2, TRINITY MEADOWS, and being the northwesterly line of the herein described 4.55 acre tract, as follows:

N 20°35'06" E, a distance of 95.11 feet to a point;
N 43°42'36" E, a distance of 35.11 feet to a point;
N 21°52'56" E, a distance of 327.93 feet to a point;
N 42°21'08" E, a distance of 449.81 feet to a point for the northwest corner of the herein described 4.55 acre tract;

THENCE S 32°59'57" E, continuing across and through said Lot 1, Block 2, TRINITY MEADOWS, at a distance of 69.16 feet, passing a 1/2" capped iron rod found stamped "C.F. Stark, RPLS 5084", at the north corner of said Lot 11, Block A, MEADOW PLACE ESTATES (recorded in said Cabiner D, Slide 526) and continuing along the northeasterly line of said Lot 11, Block A, MEADOW PLACE ESTATES, in all, a distance of 235.92 feet to a 1/2" capped iron rod found stamped "C.F. Stark, RPLS 5084", in the northwesterly line of Breeders Drive (a Dedicated 50' Public Right-of-Way), being in a curve to the left, whose radius is 225.00 feet and whose long chord bears S 45°23'08" W, a chord distance of 90.60 feet;

THENCE along the northwesterly line of said Breeders Drive, as follows:

Along said curve in a southwesterly direction, through a central angle of 23°13'49", an arc distance of 91.23 feet to a 1/2" capped iron rod found stamped "C.F. Stark, RPLS 5084";
S 33°46'14" W, a distance of 395.37 feet to a 1/2" capped iron rod found stamped "C.F. Stark, RPLS 5084", at the beginning of a curve to the left, whose radius is 225.00 feet and whose long chord bears S 28°03'15" W, a distance of 44.82 feet;
Along said curve in a southwesterly direction, through a central angle of 11°25'57", an arc distance of 44.90 feet to a 1/2" capped iron rod found stamped "C.F. Stark, RPLS 5084";
S 22°20'16" W, a distance of 15.23 feet to a 1/2" capped iron rod found stamped "C.F. Stark, RPLS 5084" at the beginning of a curve to the left, whose radius is 52.00 feet and whose long chord bears S 16°08'28" W, a chord distance of 79.72 feet;
Along said curve in a southwesterly direction, through a central mangle of 100°05'36", an arc distance of 90.84 feet to a 1/2" capped iron rod found stamped "C.F. Stark, RPLS 5084" at the easterly northeast corner of said Lot 5R1;

THENCE S 22°20'16" W, leaving the northwesterly line of said Breeders Drive and being along the southeasterly line of said Lot 5R1, a distance of 134.27 feet to the POINT OF BEGINNING and containing 4.55 acres (198,173 square feet) of land, more or less.

APPROVED BY THE CITY OF WILLOW PARK

APPROVED BY: CITY COUNCIL
CITY OF WILLOW PARK, TEXAS

SIGNED ______________________ ____________
MAYOR DATE

SIGNED ______________________ ____________
CITY ADMINISTRATOR DATE

SURVEYOR CERTIFICATE

STATE OF TEXAS REGISTERED CHARLES F. STARK 5084 PROFESSIONAL LAND SURVEYOR

I. Charles F. Stark, a Registered Professional Land Surveyor in the State of Texas hereby certify this drawing correctly reflects the facts found at the time of this survey and that this drawing correctly shows all visible easements and rights-of-way known to me at the time of this survey. Basis of Bearing for this plat is Texas State Plain Coordinate System North Central Zone 4202 NADB3.

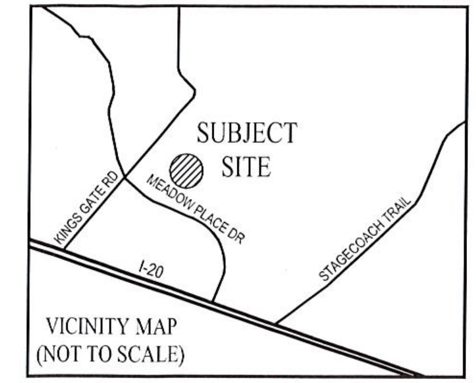
____
Charles F. Stark, R.P.L.S. No. 5084 Date:

State of Texas
County of __________

This instrument was witnessed before me by Charles F. Stark, R.P.L.S.,

on the________of______________2020

____
Notary Public in and for the State of Texas



1. TOTAL NUMBER OF RESIDENTIAL LOTS = 9 LOTS.
2. AVERAGE LOT SIZE – 70'x130' (9,100 sf).
3. SMALLEST LOT SIZE – (9,001 sf).
4. BUILDING SETBACK LINES
   FRONT – 25 FEET
   SIDE & REAR – 10 FEET
5. SEWER SERVICE–CITY OF WILLOW PARK
6. WATER SERVICE–CITY OF WILLOW PARK
7. A PORTION OF THIS PROPERTY DOES LIE WITHIN A DESIGNATED 'AE' FLOODPLAIN ZONE PER FIRM MAP #48367C0425E
8. THIS PROPERTY IS IN ALEDO ISD
9. EXISTING ZONING "R5"

NOTES:

1.) BEARINGS & COORDINATES SHOWN HEREON ARE REFERENCED TO THE TEXAS STATE PLANE COORDINATE SYSTEM, N.A.D. 83 DATUM (TEXAS NORTH CENTRAL ZONE 4202) DERIVED FROM RESOLVED OPUS SOLUTIONS.

2.) ANY REFERENCE TO THE 100 YEAR FLOOD PLAIN OR FLOOD HAZARD ZONES ARE AN ESTIMATE BASED ON THE DATA SHOWN ON THE FLOOD INSURANCE RATE MAP PROVIDED BY FEMA AND SHOULD NOT BE INTERPRETED AS A STUDY OR DETERMINATION OF THE FLOODING PROPENSITIES OF THIS PROPERTY. ACCORDING TO THE FLOOD INSURANCE RATE MAP FOR PARKER COUNTY, TEXAS, DATED SEPT. 26, 2008 MAP NO. 48367C425E, THE PROPERTY DESCRIBED HEREIN DOES APPEAR TO LIE WITHIN A SPECIAL FLOOD HAZARD AREA.

Final Plat

Lots 5R1R, 5R2R & 5R3R, Lots 6R thru 11R Block A

MEADOW PLACE ESTATES

An Addition to the City of Willow Park, Parker County, Texas

Situated in the
JOHN FROMAN SURVEY, ABSTRACT NO. 471
Parker County, Texas

Being a Replat of a portion of
Lot 1, Block 2, TRINITY MEADOWS
An Addition to the City of Willow Park, Parker County, Texas
According to the Plat recorded in Cabinet A, Slide 740
Plat Records, Parker County, Texas
and
Being a Replat of
Lots 6 thru 11, Block A
MEADOW PLACE ESTATES
An Addition to the City of Willow Park, Parker County, Texas
According to the Plat recorded in Cabinet D, Slide 526
Plat Records, Parker County, Texas
and
Being a Replat of
Lots 5R1, 5R2 & 5R3, Block A
MEADOW PLACE ESTATES
An Addition to the City of Willow Park, Parker County, Texas
According to the Plat recorded in Cabinet D, Slide 688
Plat Records, Parker County, Texas

FILED FOR RECORD
PARKER COUNTY, TEXAS PLAT RECORD

CABINET ________, SLIDE __________

DATE ______________________

OWNER:
PARKER COUNTY HOLDINGS, LLC
5354 AIRPORT FREEWAY
HALTOM CITY, TEXAS 76117
817-371-6776

Barron•Stark
Engineers

6221 Southwest Boulevard, Suite 100
Fort Worth, Texas 76132
(O) 817.231.8100 (F) 817.231.8144
Texas Registered Engineering Firm F-10998
Texas Registered Survey Firm F-10158800
www.barronstark.com

JOB No. 291-9639
DATE JULY 2020
SHEET
2 of 2

USER CYNTHIA SWIFT
PLOTTED ON: 7/22/2020 11:29 AM
FILE NAME: N:\BARRON STARK SWIFT ENG\291 PARKER COUNTY HOLDINGS, LLC\9639 - MEADOW PLACE PH 2\00 CAD\00 DWG\06 PLAT\291-9639 MPE PH 1 BLOCK A RE PLAT.DWG

CITY OF WILLOW PARK

LETTER OF AUTHORIZATION FOR OWNER REPRESENTATION

AUTHORITY IS HEREBY GRANTED TO BARRON-STARK ENGINEERS, LP, ACTING ON MY/OUR BEHALF AS THE OWNER OF THIS PROPERTY AND AS INDICATED AT THE PARKER COUNTY APPRAISAL DISTRICT, TO SUBMIT, FILE AND PRESENT AN APPLICATION TO THE CITY OF WILLOW PARK, PARKER COUNTY, TEXAS, TO REQUEST A REPLAT OF PROPERTY WITHIN MEADOW PLACE ESTATES.:

ACKNOWLEDGEMENTS:

I certify that the above information is correct and complete to the best of my knowledge and authorize representation by BARRON-STARK ENGINEERS, L.P. at the Planning and Zoning Commission and City Council Meetings.

REPLAT OF LOTS 5R1 THROUGH 11, BLOCK A
MEADOW PLACE ESTATES

A. I certify, by this written and signed statement and agree to the re-platting of my lot situated in Meadow Place Estates.

REPLAT APPLICATION

B. I certify, by this written and signed statement, that all property taxes and assessments have been paid for past years and up to current date.

MEADOW PLACE ESTATES
OWNER LOT 5R1, BLOCK A:

HUNTER STOCKON
117 BREEDERS DRIVE
WILLOW PARK, TX 76087

Hunter Stockon

MEADOW PLACE ESTATES
OWNER LOT 5R2, BLOCK A:

GERARDUS & VALDA VIERLING
119 BREEDERS DRIVE
WILLOW PARK, TX 76087

Gerardus Vierling
Valda Vierling

MEADOW PLACE ESTATES
OWNER LOT 5R3, BLOCK A:

GLEN & TINA PITTS
123 BREEDERS DRIVE
WILLOW PARK, TX 76087

Glen Pitts
Tina Pitts

MEADOW PLACE ESTATES
OWNER LOT 6, BLOCK A:

CHASITY NICOLE & NICHOLAS WOOD CLIFTON
125 BREEDERS DRIVE
WILLOW PARK, TX 76087

MEADOW PLACE ESTATES
OWNER LOT 7, BLOCK A:

BRITTANY & WILL SCHOONOVER
129 BREEDERS DRIVE
WILLOW PARK, TX 76087

MEADOW PLACE ESTATES
OWNER LOT 8, BLOCK A:

JENNIFER ANGEL
133 BREEDERS DRIVE
WILLOW PARK, TX 76087

MEADOW PLACE ESTATES
OWNER LOT 9, BLOCK A:

JOE & JANE HAMSTRA
139 BREEDERS DRIVE
WILLOW PARK, TX 76087

MEADOW PLACE ESTATES
OWNER LOT 10, BLOCK A:

MATHEW G. & CANDACE R. ADDINGTON
143 BREEDERS DRIVE
WILLOW PARK, TX 76087

MEADOW PLACE ESTATES
OWNER LOT 11, BLOCK A:

BRYAN R. & EMMALEE E. JONES
147 BREEDERS DRIVE
WILLOW PARK, TX 76087

CITY COUNCIL AGENDA ITEM BRIEFING SHEET

Council Date:	Department:	Presented By:
September 8	Admin	City Manager

AGENDA ITEM:

Discussion /Action: To discuss, consider and act to authorize staff to seek competitive bids on the following items:

A. FW Water Bid Package 1; Water line from Fort Worth to Willow Park
B. FW Water Bid Package 3: Water line from Willow Park to Hudson Oaks
C. FW Water Bid Package 2: Construction of Ground Storage Tank and Pump Station

BACKGROUND:

Staff is seeking authorization from Council to begin the RFP Process for various phases of the Fort Worth Water Project. East Bid Package will be a separate Agenda items.

Bid Package #1: Construction of a water line from Fort Worth Interconnect to a new GST located at 203 El Chico

Bid Package #3: Construction of a new water line from Willow Park to Hudson Oaks

Bid Package #2: Construction of a 750K GST and pump station located at 203 El Chico.
NOTE: The advertisement on BP #2 is not ready at the time of this meeting, but staff is asking for authorization to proceed when the plans, specs, and construction docs are completed based on the site plan, rendering, and elevations.

This will include placing ads in various publications, correspondence with vendors per TWDB Procurement requirements, specs / plans / construction documents, and other associated activities.

STAFF/BOARD/COMMISSION RECOMMENDATION:

EXHIBITS:

ADDITIONAL INFO:	FINANCIAL INFO:	
	Cost	$
	Source of Funding	$

9/3/2020

ADVERTISEMENT FOR BIDS
CITY OF WILLOW PARK
APPROACH MAIN TO HUDSON OAKS AND WILLOW PARK

Separate sealed bids for the APPROACH MAIN TO HUDSON OAKS AND WILLOW PARK project will be received by the CITY OF WILLOW PARK, TEXAS until **October 15, 2020 at 3:00 PM** at City Hall, 516 Ranch House Road, Willow Park, Texas 76087 and then at said location publicly opened and read aloud.

The project includes the construction of approximately

1,160 LF 16" Water Pipe by Open Cut
3,860 LF 18" Water Pipe by Open Cut
6,180 LF 24" Water Pipe by Open Cut
40 LF 36" Water Pipe by Open Cut, and
60 LF 16" Water Pipe by Other Than Open Cut
100 LF 18" Water Pipe by Other Than Open Cut
180 LF 24" Water Pipe by Other Than Open Cut
Piping and Appurtenances to connect the Approach Main to the Willow Park water distribution system.

The Contract Documents, consisting of Advertisement for Bids, Information for Bidders, Bid Proposal, Bid Bond, Contract, Performance and Payment Bonds, General Conditions, Notice of Award, Notice to Proceed, Plans, Specifications, Addenda (if any) and Project Contracting and Compliance Provisions may be examined at the following locations:

Halff Associates, Inc.
4000 Fossil Creek Blvd.
Fort Worth, Texas 76137

Bids will not be received from contractors who have not obtained original plans and specifications from Halff Associates, Inc. The cost for Contract Documents is $50.00 per half size set. The cost of Contract Documents is not refunded. Submit check, cashier check or money order for payment. Cash will not be accepted.

A non-mandatory prebid meeting for the project will be held at the City of Willow Park, 516 Ranch House Road, Willow Park, Texas 76087 at 10:00 AM, CST, Tuesday, October 1, 2020.

Direct questions regarding distribution of Contract Documents, and the design of Approach Main to Hudson Oaks and Willow Park to Leah Hodge, P.E., Halff Associates, Inc., at (817) 764-7459.

The Owner reserves the right to waive any informalities and to reject any or all bids, and to accept the bid they consider most advantageous to the Owner. Bids may be held by the Owner for a period not to exceed sixty (60) days from the date of bid opening for the purpose of reviewing the bids and investigating the qualifications of Bidders prior to awarding of the contract. Award of the contract will be made as a whole to one Bidder. The contract shall be awarded to the lowest responsive, responsible bidder.

Small and minority firms are encouraged to submit bids for this project.

A certified check or bank draft, payable to the order of **CITY OF WILLOW PARK**, negotiable U.S. Government bonds (at par value) or a satisfactory Bid Bond executed by the Bidder and an acceptable surety in an amount equal to five percent (5%) of the total bid shall be submitted with each bid.

This contract is contingent upon release of funds from the Texas Water Development Board (TWDB).

This contract is to be funded through a loan obtained from the Texas Water Development Board as part of the Drinking Water State Revolving Fund (DWSRF). There are a number of special provisions for this funding that bidders, by submitting a bid, acknowledge understanding, including the following: Any contract or contracts awarded under this Invitation for bid (IFB) are expected to be funded in part by financial assistance from the

TWDB. Neither the U.S. Environmental Protection Agency (EPA) or the State of Texas, nor any of its departments, agencies, or employees, are or will be a party to this IFB, or any resulting contract.

Any contract(s) awarded under this Invitation for Bids is/are subject to the American Iron and Steel (AIS) requirements of federal law, including federal appropriation acts and Section 1452 (a)(4) of the Safe Drinking Water Act (42 U.S.C. *§300j-12(a)(4),* as applicable.

This contract is subject to the Environmental Protection Agency's (EPA) Disadvantaged Business Enterprise (DBE) Program, which includes EPA-approved fair share goals toward procurement of Minority and Women-owned Business Enterprise (M/WBE) businesses. EPA rules require that applicants and prime contractors make a good faith effort to award a fair share of contracts, subcontracts, and procurements to M/WBEs through demonstration of the six affirmative steps. For more details on the DBE Program and the current, applicable fair share goals, please visit www.twdb.texas.gov/dbe.

The party to whom the contract is awarded shall be required to furnish performance and payment bonds for 100% of the contract price, from a surety company holding a permit from the State of Texas to act as surety.

Equal Opportunity in Employment - All qualified Applicants will receive consideration for employment without regard to race, color, religion, sex (including pregnancy), sexual orientation, gender identity, national origin, age (40 or older), disability, or genetic information. Bidders on this work will be required to comply with the Department of Labor regulations at 41 CFR Part 60-4, relating to Construction Contractors--Affirmative Action Requirements, which include the President's Executive Order No. 11246, as amended by Executive Order No. 11375 and Executive Order No. 13672, in the award and administration of contracts awarded under TWDB financial assistance agreements. Failure by the Contractor to carry out these requirements is a material breach, which may result in the termination of the awarded financial assistance.

All laborers and mechanics working on the work site and employed by contractors and subcontractors on projects funded directly by or assisted in whole or in part by and through the Clean Water State Revolving Fund or Drinking Water State Revolving Fund shall be paid wages as described in the section, Mandatory Davis-Bacon Act Contract Conditions.

Davis-Bacon prevailing wage requirements apply to the construction, alteration or repair of treatment works carried out, in whole or in part, with assistance made available by the Clean Water State Revolving Fund (CWSRF) or a construction project financed, in whole or in part, from the Drinking Water State Revolving Fund (DWSRF).

Any contracts in excess of $2,000 for construction, alteration or repair (including painting and decorating) and funded under the Clean Water State Revolving Fund and Drinking Water State Revolving Fund programs shall include the mandatory Davis-Bacon Act Contract Conditions.

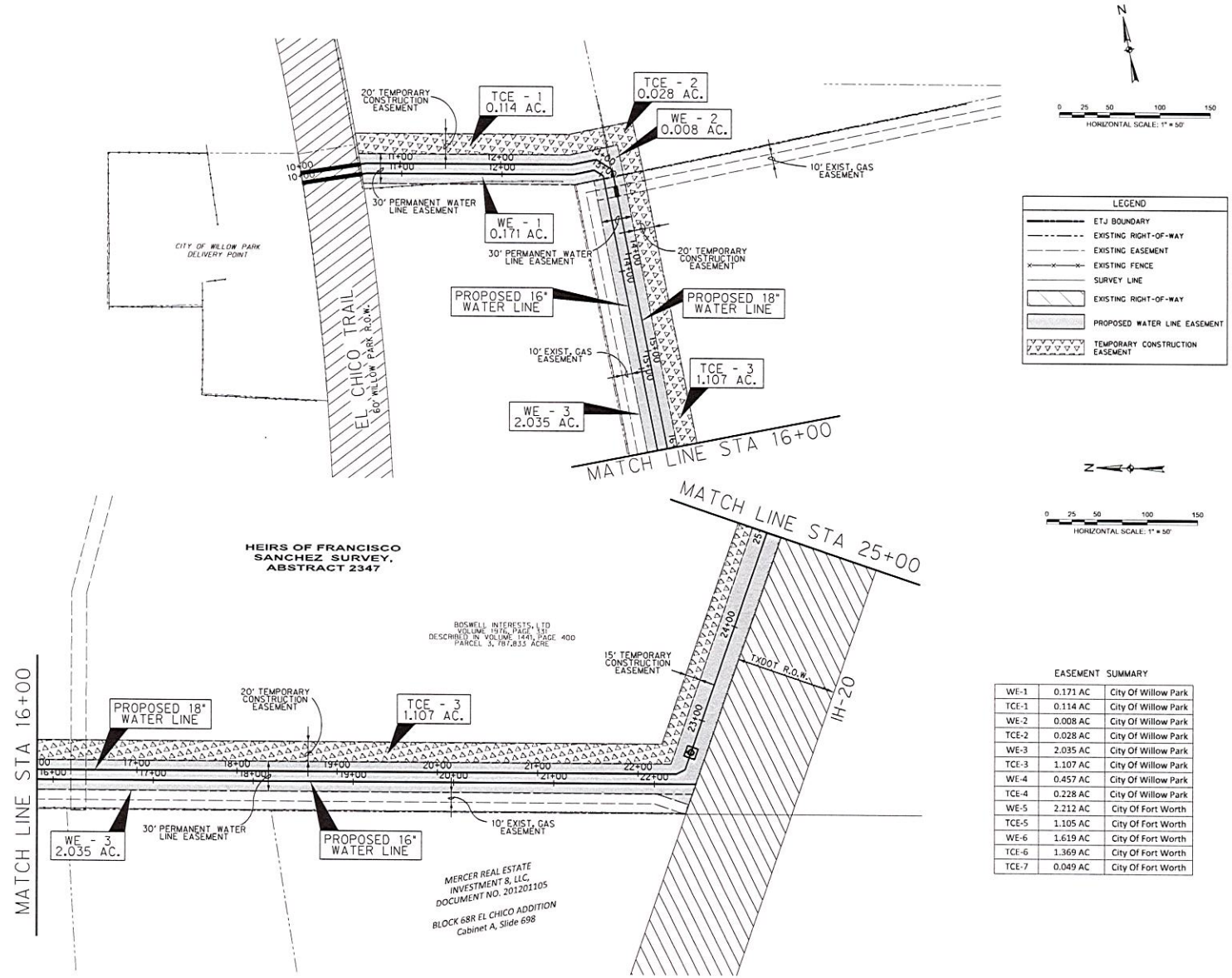
Any contracts or subcontracts in excess of $2000 must include the provisions of the Davis-Bacon Wage Rate Requirements found in TWDB Guidance No. DB-0156.

For prime contracts in excess of $100,000, Contractors and Subcontractors must also, under the provisions of the Contract Work Hours and Safety Standards Act, as amended, pay laborers and mechanics, including guards and watchmen, at least one and one-half times their regular rate of pay for all hours worked over 40 in a workweek. The Fair Labor Standards Act may also apply to Davis-Bacon covered contracts.

CITY OF WILLOW PARK

Dates: September 11 and 18, 2020 By: _____

Doyle Moss, Mayor



EASEMENT SUMMARY

WE-1	0.171 AC	City Of Willow Park
TCE-1	0.114 AC	City Of Willow Park
WE-2	0.008 AC	City Of Willow Park
TCE-2	0.028 AC	City Of Willow Park
WE-3	2.035 AC	City Of Willow Park
TCE-3	1.107 AC	City Of Willow Park
WE-4	0.457 AC	City Of Willow Park
TCE-4	0.228 AC	City Of Willow Park
WE-5	2.212 AC	City Of Fort Worth
TCE-5	1.105 AC	City Of Fort Worth
WE-6	1.619 AC	City Of Fort Worth
TCE-6	1.369 AC	City Of Fort Worth
TCE-7	0.049 AC	City Of Fort Worth

APPROACH MAIN TO HUDSON OAKS AND WILLOW PARK

FORT WORTH WATER

HALFF

Revision No.	Date	Description

LEAH M. HODGE 103662 LICENSED PROFESSIONAL ENGINEER

NAME: Leah M Hodge
DATE: 9/3/2020
HALFF ENGINEERING FIRM #312

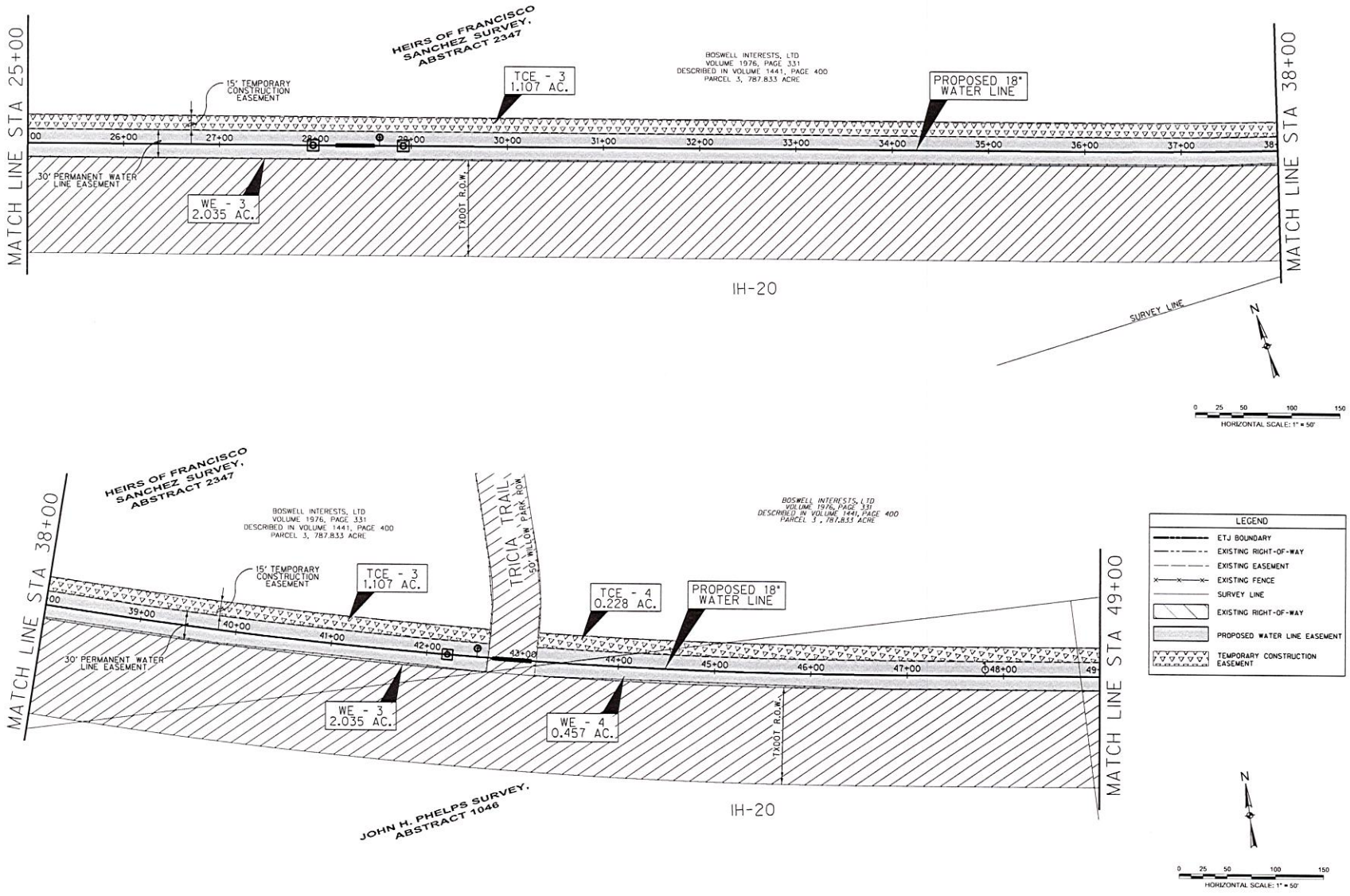
Project No.:	32654
Issued:	9/3/2020
Drawn By:	LMH
Checked By:	DMS
Scale:	AS NOTED

Sheet Title: RIGHT-OF-WAY MAP STA 10+00 TO STA 25+00

Sheet Number: 6

X-26452

APPROACH MAIN TO HUDSON OAKS AND WILLOW PARK, CITY OF FORT WORTH PROJECT NO. 102609



APPROACH MAIN TO HUDSON OAKS AND WILLOW PARK

FORT WORTH WATER

HALFF

Revision No.	Date	Description

STATE OF TEXAS
LEAH M. HODGE
103863
LICENSED PROFESSIONAL ENGINEER

NAME: Leah M Hodge
DATE: 9/3/2020
TBPELS ENGINEERING FIRM #312

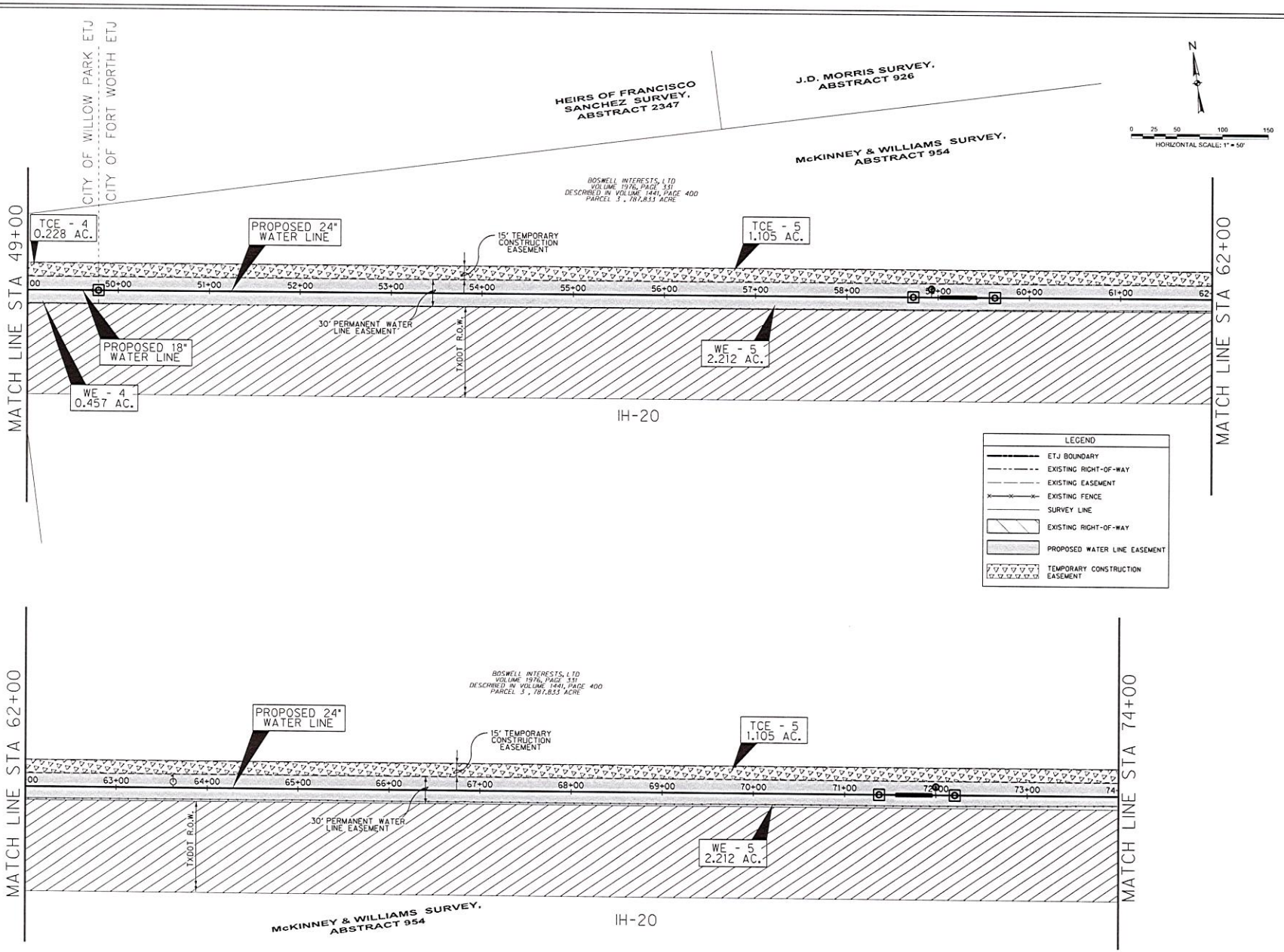
Project No.:	32654
Issued:	9/3/2020
Drawn By:	LMH
Checked By:	DMS
Scale:	AS NOTED

Sheet Title
RIGHT-OF-WAY MAP
STA 25+00 TO STA 49+00

7
Sheet Number

X-26452

APPROACH MAIN TO HUDSON OAKS AND WILLOW PARK, CITY OF FORT WORTH PROJECT NO. 102609



APPROACH MAIN TO HUDSON OAKS AND WILLOW PARK

FORT WORTH WATER

HALFF

Revision No.	Date	Description

STATE OF TEXAS
LEAH M. HODGE
103562
LICENSED
PROFESSIONAL ENGINEER

NAME Leah M. Hodge
DATE 9/3/2020
HALFF ENGINEERING FIRM #312

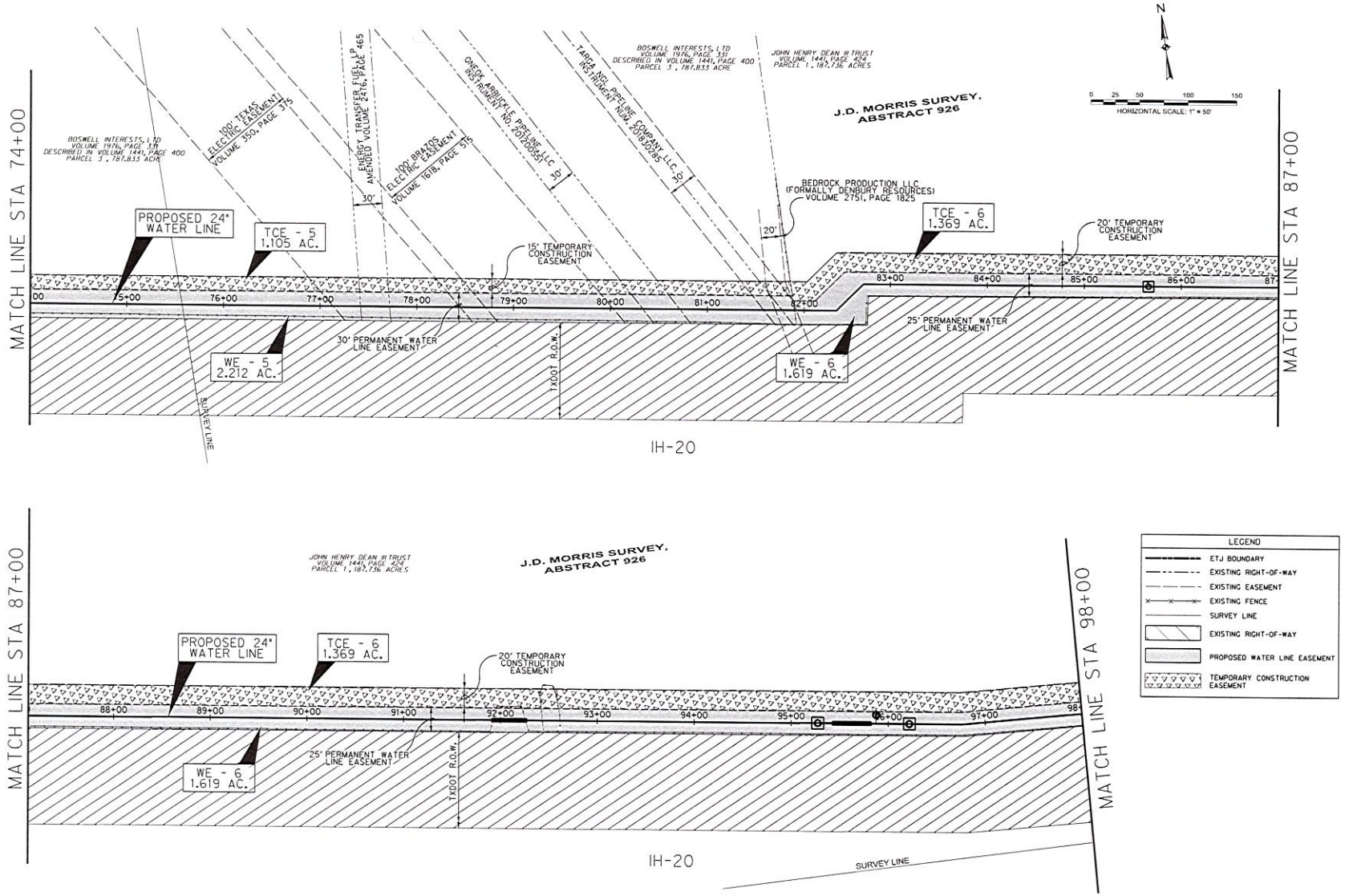
Project No.:	32654
Issued:	9/3/2020
Drawn By:	LMH
Checked By:	DMS
Scale:	AS NOTED

Sheet Title
RIGHT-OF-WAY MAP STA 49+00 TO STA 74+00

8
Sheet Number

X-26452

APPROACH MAIN TO HUDSON OAKS AND WILLOW PARK, CITY OF FORT WORTH PROJECT NO. 102609



APPROACH MAIN TO HUDSON OAKS AND WILLOW PARK

FORT WORTH WATER

HALFF

Revision No.	Date	Description

LEAH M. HODGE 102642 LICENSED PROFESSIONAL ENGINEER

NAME: Leah M. Hodge
DATE: 9/3/2020
TBPELS ENGINEERING FIRM #312

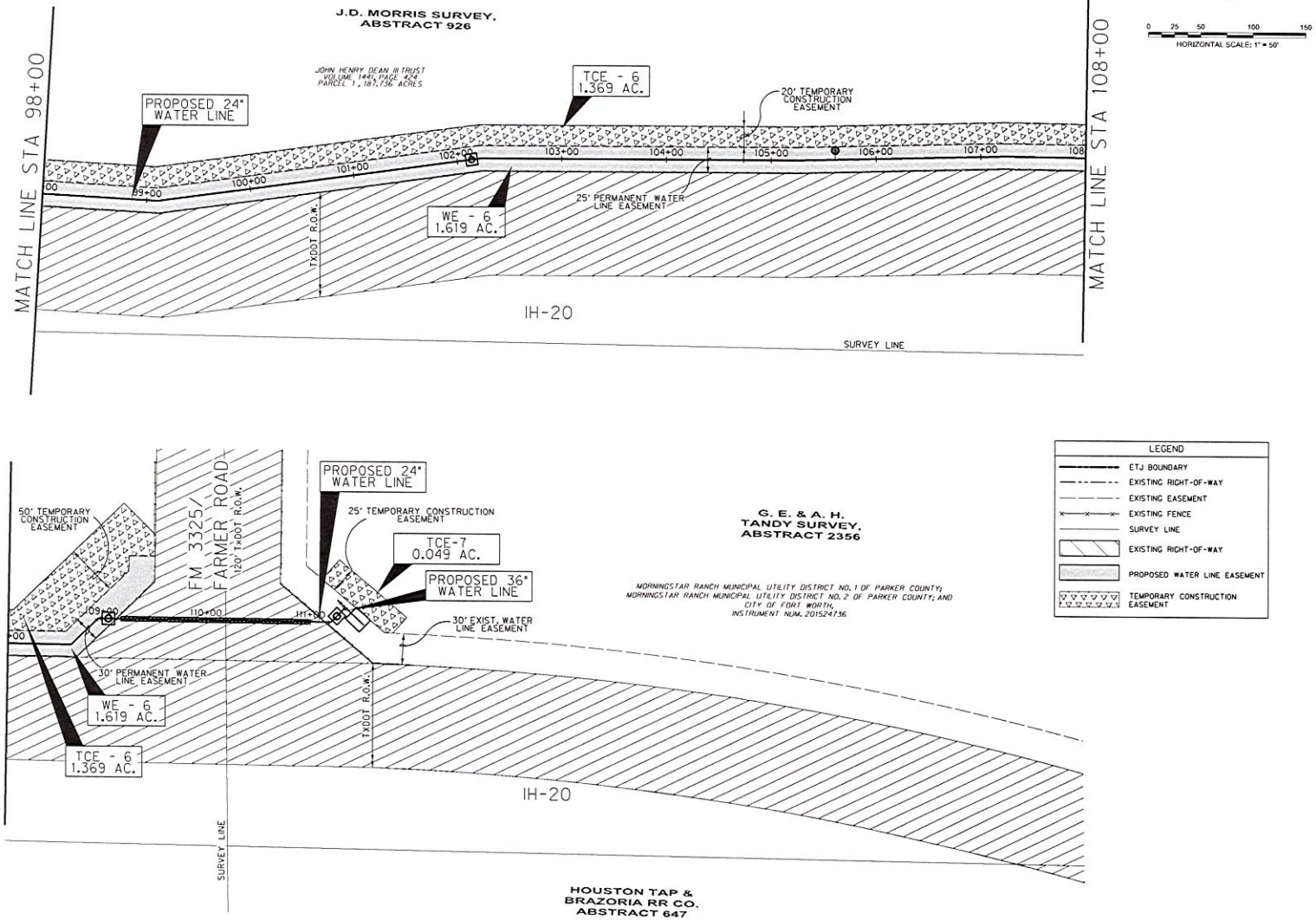
Project No.:	32654
Issued:	9/3/2020
Drawn By:	LMH
Checked By:	DMS
Scale:	AS NOTED

Sheet Title: RIGHT-OF-WAY MAP STA 74+00 TO STA 98+00

Sheet Number: 9

X-26452

APPROACH MAIN TO HUDSON OAKS AND WILLOW PARK, CITY OF FORT WORTH PROJECT NO. 102609



APPROACH MAIN TO HUDSON OAKS AND WILLOW PARK

FORT WORTH WATER

HALFF

Revision No.	Date	Description

LEAH M. HODGE 103850 LICENSED PROFESSIONAL ENGINEER

NAME: Leah M. Hodge
DATE: 9/3/2020
TBPELS ENGINEERING FIRM #312

Project No.:	32654
Issued:	9/3/2020
Drawn By:	LMH
Checked By:	DMS
Scale:	AS NOTED

Sheet Title
RIGHT-OF-WAY MAP
STA 98+00 TO END

10
Sheet Number

X-26452

APPROACH MAIN TO HUDSON OAKS AND WILLOW PARK, CITY OF FORT WORTH PROJECT NO. 102609

ADVERTISEMENT FOR BIDS
CITY OF WILLOW PARK
FORT WORTH WHOLESALE WATER SHARED 16-INCH WATER MAIN

Separate sealed bids for the FORT WORTH WHOLESALE WATER SHARED 16-INCH WATER MAIN project will be received by the CITY OF WILLOW PARK, TEXAS until **October 22, 2020 at 3:00 PM** at City Hall, 516 Ranch House Road, Willow Park, Texas 76087 and then at said location publicly opened and read aloud.

The project includes the construction of approximately 18,000 feet of 16-inch water line along Interstate Highway 20 westbound Frontage Road, and appurtenances.

The Contract Documents, consisting of Advertisement for Bids, Information for Bidders, Bid Proposal, Bid Bond, Contract, Performance and Payment Bonds, General Conditions, Notice of Award, Notice to Proceed, Plans, Specifications, Addenda (if any) and Project Contracting and Compliance Provisions may be examined at the following locations:

Halff Associates, Inc.
4000 Fossil Creek Blvd.
Fort Worth, Texas 76137

Bids will not be received from contractors who have not obtained original plans and specifications from Halff Associates, Inc. The cost for Contract Documents is $50.00 per half size set. The cost of Contract Documents is not refunded. Submit check, cashier check or money order for payment. Cash will not be accepted.

A non-mandatory prebid meeting for the project will be held at the City of Willow Park, 516 Ranch House Road, Willow Park, Texas 76087 at 1:30 PM, CST, Tuesday, October 1, 2020.

Direct questions regarding distribution of Contract Documents, and the design of Fort Worth Wholesale Water Shared 16-inch Water Main to Preston Dillard, P.E., Halff Associates, Inc., at (817) 764-7504.

The Owner reserves the right to waive any informalities and to reject any or all bids, and to accept the bid they consider most advantageous to the Owner. Bids may be held by the Owner for a period not to exceed sixty (60) days from the date of bid opening for the purpose of reviewing the bids and investigating the qualifications of Bidders prior to awarding of the contract. Award of the contract will be made as a whole to one Bidder. The contract shall be awarded to the lowest responsive, responsible bidder.

Small and minority firms are encouraged to submit bids for this project.

A certified check or bank draft, payable to the order of **CITY OF WILLOW PARK**, negotiable U.S. Government bonds (at par value) or a satisfactory Bid Bond executed by the Bidder and an acceptable surety in an amount equal to five percent (5%) of the total bid shall be submitted with each bid.

This contract is contingent upon release of funds from the Texas Water Development Board (TWDB).

This contract is to be funded through a loan obtained from the Texas Water Development Board as part of the Drinking Water State Revolving Fund (DWSRF). There are a number of special provisions for this funding that bidders, by submitting a bid, acknowledge understanding, including the following: Any contract or contracts awarded under this Invitation for bid (IFB) are expected to be funded in part by financial assistance from the TWDB. Neither the U.S. Environmental Protection Agency (EPA) or the State of Texas, nor any of its departments, agencies, or employees, are or will be a party to this IFB, or any resulting contract.

Any contract(s) awarded under this Invitation for Bids is/are subject to the American Iron and Steel (AIS)

requirements of federal law, including federal appropriation acts and Section 1452 (a)(4) of the Safe Drinking Water Act (42 U.S.C. *§300j-12(a)(4),* as applicable.

This contract is subject to the Environmental Protection Agency's (EPA) Disadvantaged Business Enterprise (DBE) Program, which includes EPA-approved fair share goals toward procurement of Minority and Women-owned Business Enterprise (M/WBE) businesses. EPA rules require that applicants and prime contractors make a good faith effort to award a fair share of contracts, subcontracts, and procurements to M/WBEs through demonstration of the six affirmative steps. For more details on the DBE Program and the current, applicable fair share goals, please visit www.twdb.texas.gov/dbe.

The party to whom the contract is awarded shall be required to furnish performance and payment bonds for 100% of the contract price, from a surety company holding a permit from the State of Texas to act as surety.

Equal Opportunity in Employment - All qualified Applicants will receive consideration for employment without regard to race, color, religion, sex (including pregnancy), sexual orientation, gender identity, national origin, age (40 or older), disability, or genetic information. Bidders on this work will be required to comply with the Department of Labor regulations at 41 CFR Part 60-4, relating to Construction Contractors--Affirmative Action Requirements, which include the President's Executive Order No. 11246, as amended by Executive Order No. 11375 and Executive Order No. 13672, in the award and administration of contracts awarded under TWDB financial assistance agreements. Failure by the Contractor to carry out these requirements is a material breach, which may result in the termination of the awarded financial assistance.

All laborers and mechanics working on the work site and employed by contractors and subcontractors on projects funded directly by or assisted in whole or in part by and through the Clean Water State Revolving Fund or Drinking Water State Revolving Fund shall be paid wages as described in the section, Mandatory Davis-Bacon Act Contract Conditions.

Davis-Bacon prevailing wage requirements apply to the construction, alteration or repair of treatment works carried out, in whole or in part, with assistance made available by the Clean Water State Revolving Fund (CWSRF) or a construction project financed, in whole or in part, from the Drinking Water State Revolving Fund (DWSRF).

Any contracts in excess of $2,000 for construction, alteration or repair (including painting and decorating) and funded under the Clean Water State Revolving Fund and Drinking Water State Revolving Fund programs shall include the mandatory Davis-Bacon Act Contract Conditions.

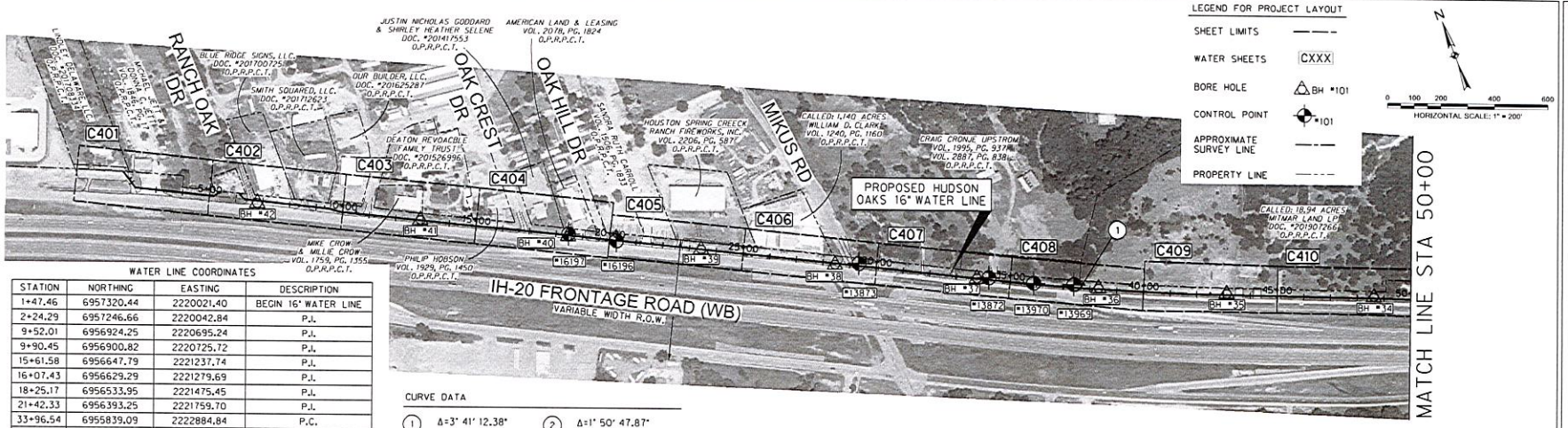
Any contracts or subcontracts in excess of $2000 must include the provisions of the Davis-Bacon Wage Rate Requirements found in TWDB Guidance No. DB-0156.

For prime contracts in excess of $100,000, Contractors and Subcontractors must also, under the provisions of the Contract Work Hours and Safety Standards Act, as amended, pay laborers and mechanics, including guards and watchmen, at least one and one-half times their regular rate of pay for all hours worked over 40 in a workweek. The Fair Labor Standards Act may also apply to Davis-Bacon covered contracts.

CITY OF WILLOW PARK

Dates: September 18 and 25, 2020 By: _____

Doyle Moss, Mayor



WATER LINE COORDINATES

STATION	NORTHING	EASTING	DESCRIPTION
1+47.46	6957320.44	2220021.40	BEGIN 16" WATER LINE
2+24.29	6957246.66	2220042.84	P.I.
9+52.01	6956924.25	2220695.24	P.I.
9+90.45	6956900.82	2220725.72	P.I.
15+61.58	6956647.79	2221237.74	P.I.
16+07.43	6956629.29	2221279.69	P.I.
18+25.17	6956533.95	2221475.45	P.I.
21+42.33	6956393.25	2221759.70	P.I.
33+96.54	6955839.09	2222884.84	P.C.
41+30.42	6955536.23	2223553.17	P.T.
41+75.85	6955518.82	2223595.13	P.I.
49+06.41	6955250.97	2224274.82	P.I.
51+93.29	6955145.00	2224541.42	P.I.
55+30.72	6955022.23	2224855.71	P.I.
60+18.22	6954842.71	2225308.95	P.I.
61+96.51	6954784.35	2225477.42	P.I.
68+54.56	6954542.97	2226089.60	P.I.
71+36.46	6954437.24	2226350.93	P.I.
84+75.44	6953946.09	2227596.57	P.C.
88+42.88	6953816.84	2227940.51	P.T.
88+61.58	6953807.54	2227956.74	P.I.
95+78.70	6953579.02	2228636.47	P.I.
96+05.81	6953591.31	2228660.63	P.I.

GRID TO SURFACE FACTOR: 1.00012

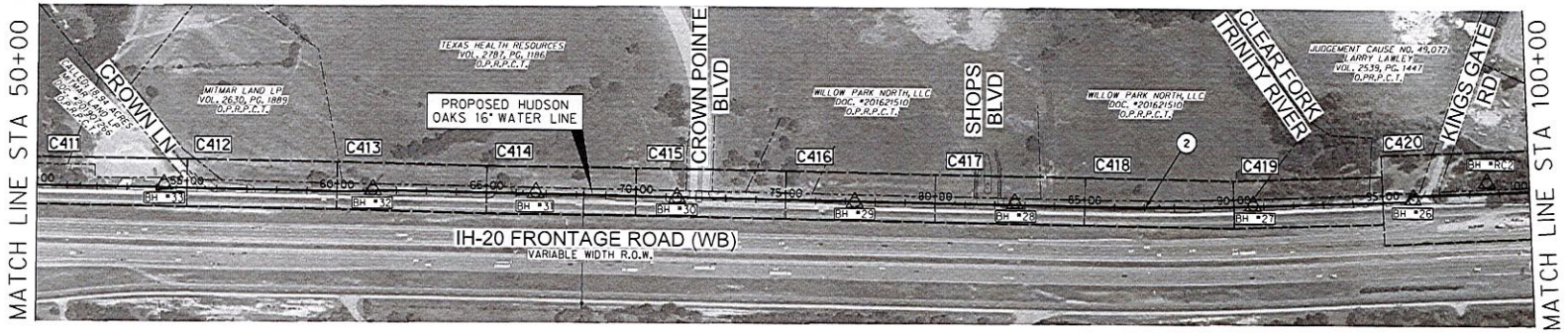
CURVE DATA

① Δ=3° 41' 12.38" R=11405.25' T=367.07' L=733.89'

② Δ=1° 50' 47.87" R=11400.65' T=183.74' L=367.44'

CONTROL POINTS

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
13872	6955835.57	2222909.78	905.79	SNTP
13873	6956051.61	2222473.32	918.34	SNTP
13969	6955702.44	2223198.80	909.01	SNTP
13970	6955759.51	2223058.36	908.21	SNTP
16196	6956443.98	2221655.08	940.65	SNTP
16197	6956528.93	2221495.77	946.70	SNTP



FORT WORTH WHOLESALE WATER

HALFF

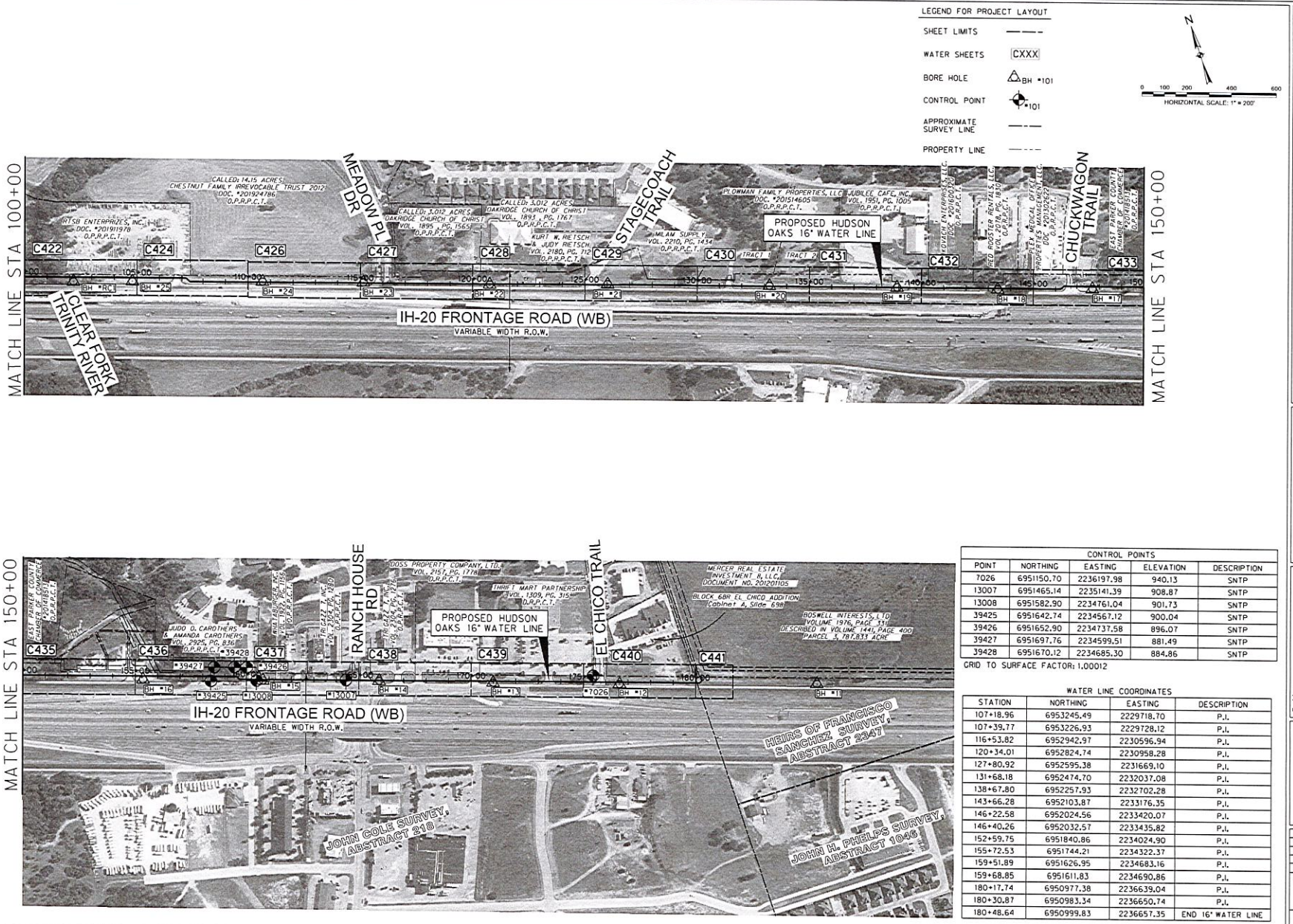
Revision No.	Date	Description

Project No.: 034094.001
Issued: 09/03/2020
Drawn By: KJG
Checked By: Halff
Scale: As Noted

Sheet Title: PROJECT LAYOUT (SHEET 1 OF 2)

C011
Sheet Number

CITY OF WILLOW PARK PROJECT NO. XXXXX



CONTROL POINTS				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
7026	6951150.70	2236197.98	940.13	SNTP
13007	6951465.14	2235141.39	908.87	SNTP
13008	6951582.90	2234761.04	901.73	SNTP
39425	6951642.74	2234567.12	900.04	SNTP
39426	6951652.90	2234737.58	896.07	SNTP
39427	6951697.76	2234599.51	881.49	SNTP
39428	6951670.12	2234685.30	884.86	SNTP

GRID TO SURFACE FACTOR: 1.00012

WATER LINE COORDINATES			
STATION	NORTHING	EASTING	DESCRIPTION
107+18.96	6953245.49	2229718.70	P.I.
107+39.77	6953226.93	2229728.12	P.I.
116+53.82	6952942.97	2230596.94	P.I.
120+34.01	6952824.74	2230958.28	P.I.
127+80.92	6952595.38	2231669.10	P.I.
131+68.18	6952474.70	2232037.08	P.I.
138+67.80	6952257.93	2232702.28	P.I.
143+66.28	6952103.87	2233176.35	P.I.
146+22.58	6952024.56	2233420.07	P.I.
146+40.26	6952032.57	2233435.82	P.I.
152+59.75	6951840.86	2234024.90	P.I.
155+72.53	6951744.21	2234322.37	P.I.
159+51.89	6951626.95	2234683.16	P.I.
159+68.85	6951611.83	2234690.86	P.I.
180+17.74	6950977.38	2236639.04	P.I.
180+30.87	6950983.34	2236650.74	P.I.
180+48.64	6950999.83	2236657.35	END 16" WATER LINE

FORT WORTH WHOLESALE WATER

HALFF

Revision No.	Date	Description

KEVIN J. GRONWALDT 139871 LICENSED PROFESSIONAL ENGINEER

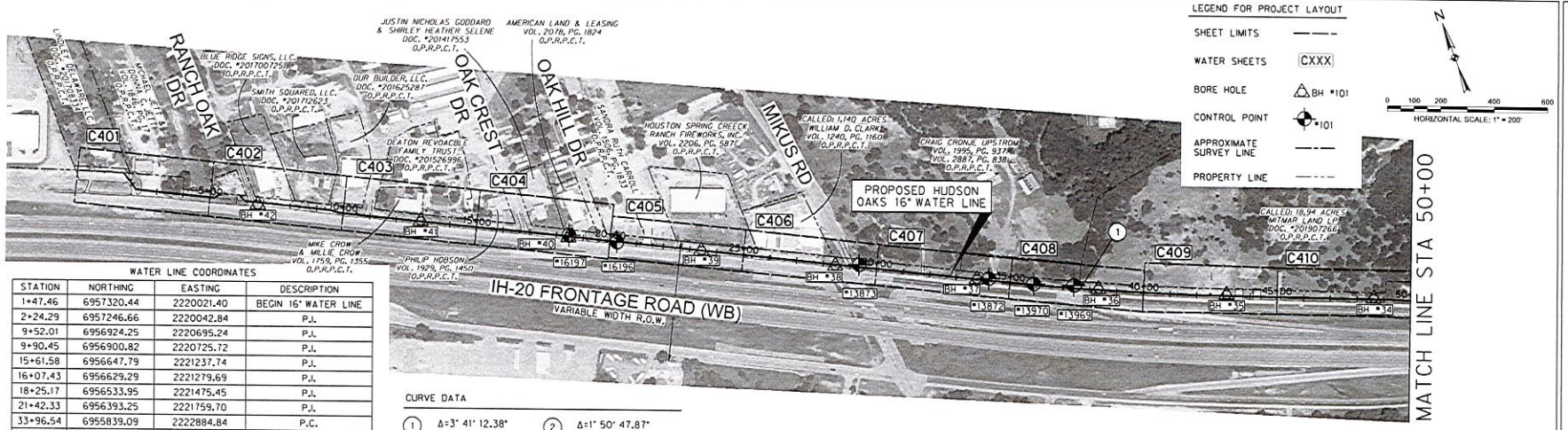
NAME: Kevin J. Gronwaldt
DATE: 9/3/2020
TEXAS ENGINEERING FIRM #470

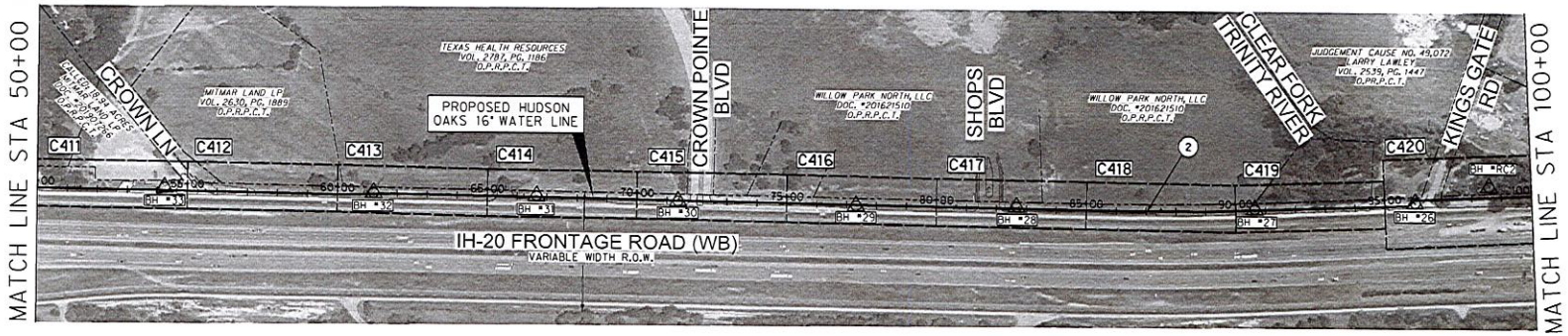
Project No.:	034094.001
Issued:	09/03/2020
Drawn By:	KJG
Checked By:	Halff
Scale:	As Noted

Sheet Title: PROJECT LAYOUT (SHEET 2 OF 2)

C012
Sheet Number

CITY OF WILLOW PARK PROJECT NO. XXXXX





WATER LINE COORDINATES

STATION	NORTHING	EASTING	DESCRIPTION
1+47.46	6957320.44	2220021.40	BEGIN 16" WATER LINE
2+24.29	6957246.66	2220042.84	P.I.
9+52.01	6956924.25	2220695.24	P.I.
9+90.45	6956900.82	2220725.72	P.I.
15+61.58	6956647.79	2221237.74	P.I.
16+07.43	6956629.29	2221279.69	P.I.
18+25.17	6956533.95	2221475.45	P.I.
21+42.33	6956393.25	2221759.70	P.I.
33+96.54	6955839.09	2222884.84	P.C.
41+30.42	6955536.23	2223553.17	P.T.
41+75.85	6955518.82	2223595.13	P.I.
49+06.41	6955250.97	2224274.82	P.I.
51+93.29	6955145.00	2224541.42	P.I.
55+30.72	6955022.23	2224855.71	P.I.
60+18.22	6954842.71	2225308.95	P.I.
61+96.51	6954784.35	2225477.42	P.I.
68+54.56	6954542.97	2226089.60	P.I.
71+36.46	6954437.24	2226350.93	P.I.
84+75.44	6953946.09	2227596.57	P.C.
88+42.88	6953816.84	2227940.51	P.T.
88+61.58	6953807.54	2227956.74	P.I.
95+78.70	6953579.02	2228636.47	P.I.
96+05.81	6953591.31	2228660.63	P.I.

GRID TO SURFACE FACTOR: 1.00012

CURVE DATA

① Δ=3° 41' 12.38" R=11405.25' T=367.07' L=733.89'

② Δ=1° 50' 47.87" R=11400.65' T=183.74' L=367.44'

CONTROL POINTS

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
13872	6955835.57	2222909.78	905.79	SNTP
13873	6956051.61	2222473.32	918.34	SNTP
13969	6955702.44	2223198.80	909.01	SNTP
13970	6955759.51	2223058.36	908.21	SNTP
16196	6956443.98	2221655.08	940.65	SNTP
16197	6956528.93	2221495.77	946.70	SNTP

FORT WORTH WHOLESALE WATER

HALFF

Revision No.	Date	Description

STATE OF TEXAS — KEVIN J. GRONWALDT — 130811 — LICENSED PROFESSIONAL ENGINEER

NAME: K. J. Gronwaldt

DATE: 9/3/2020

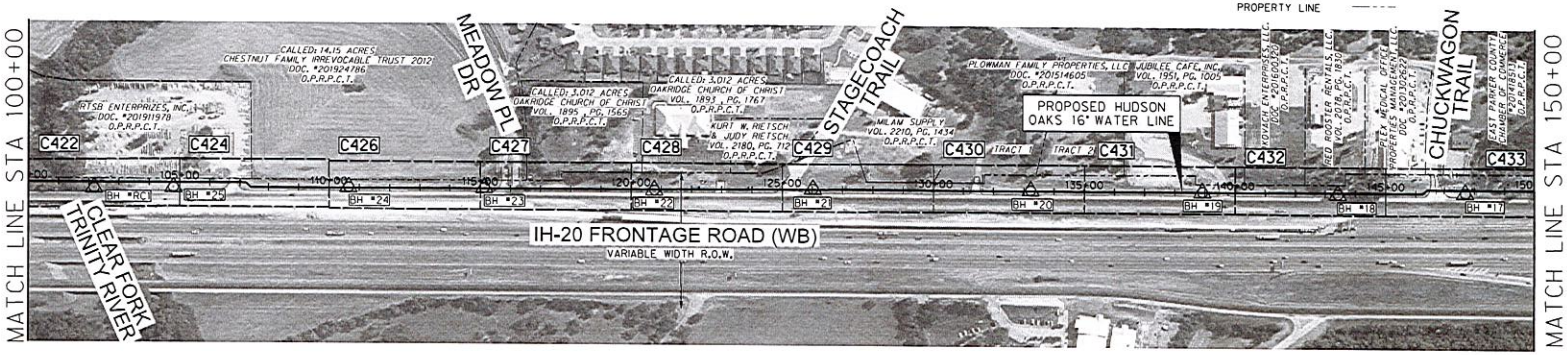
TBPELS ENGINEERING FIRM #312

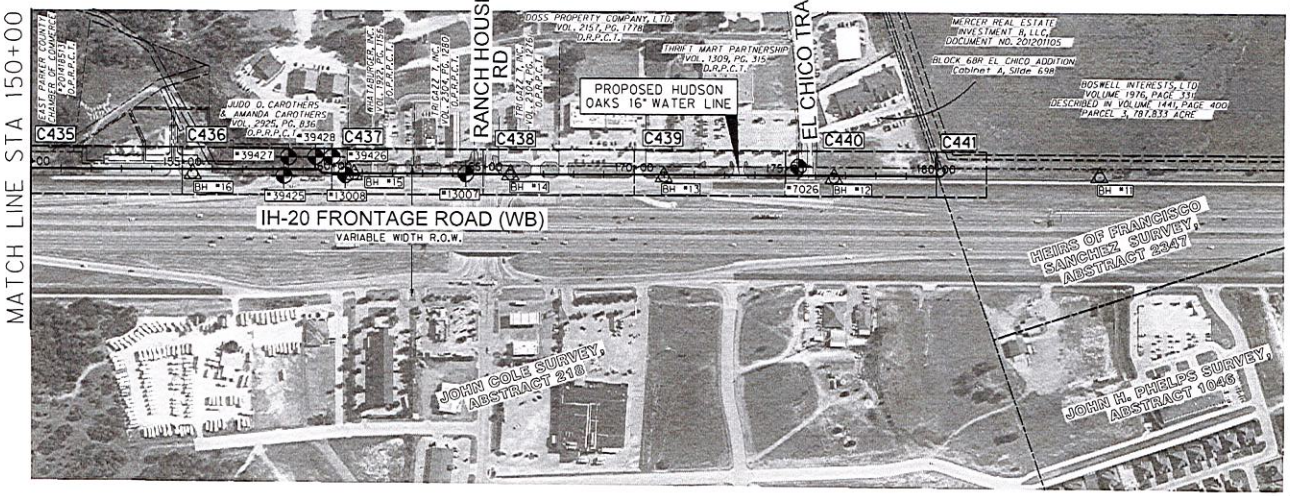
Project No.:	034094.001
Issued:	09/03/2020
Drawn By:	KJG
Checked By:	HalFF
Scale:	As Noted

Sheet Title: PROJECT LAYOUT (SHEET 1 OF 2)

Sheet Number: C011

CITY OF WILLOW PARK PROJECT NO. XXXXX





LEGEND FOR PROJECT LAYOUT

SHEET LIMITS	———
WATER SHEETS	CXXX
BORE HOLE	△BH #101
CONTROL POINT	#101
APPROXIMATE SURVEY LINE	———
PROPERTY LINE	———

N

0 100 200 400 600
HORIZONTAL SCALE: 1" = 200'

CONTROL POINTS

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
7026	6951150.70	2236197.98	940.13	SNTP
13007	6951465.14	2235141.39	908.87	SNTP
13008	6951582.90	2234761.04	901.73	SNTP
39425	6951642.74	2234567.12	900.04	SNTP
39426	6951652.90	2234737.58	896.07	SNTP
39427	6951697.76	2234599.51	881.49	SNTP
39428	6951670.12	2234685.30	884.86	SNTP

GRID TO SURFACE FACTOR: 1.00012

WATER LINE COORDINATES

STATION	NORTHING	EASTING	DESCRIPTION
107+18.96	6953245.49	2229718.70	P.I.
107+39.77	6953226.93	2229728.12	P.I.
116+53.82	6952942.97	2230596.94	P.I.
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127+80.92	6952595.38	2231669.10	P.I.
131+68.18	6952474.70	2232037.08	P.I.
138+67.80	6952257.93	2232702.28	P.I.
143+66.28	6952103.87	2233176.35	P.I.
146+22.58	6952024.56	2233420.07	P.I.
146+40.26	6952032.57	2233435.82	P.I.
152+59.75	6951840.86	2234024.90	P.I.
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159+68.85	6951611.83	2234690.86	P.I.
180+17.74	6950977.38	2236639.04	P.I.
180+30.87	6950983.34	2236650.74	P.I.
180+48.64	6950999.83	2236657.35	END 16" WATER LINE

FORT WORTH WHOLESALE WATER

HALFF

Revisions		
No.	Date	Description

KEVIN J. GRONWALDT 130671 LICENSED PROFESSIONAL ENGINEER

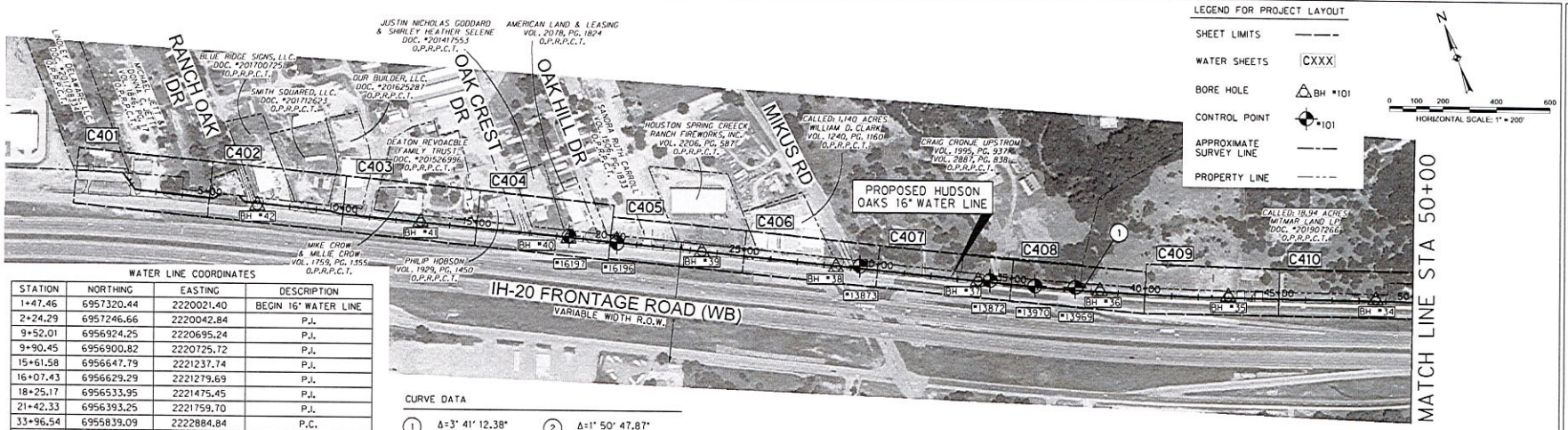
NAME: K J Gronwaldt
DATE: 9/3/2020
TBPE & S ENGINEERING FIRM #312

Project No.:	034094.001
Issued:	09/03/2020
Drawn By:	KJG
Checked By:	Halff
Scale:	As Noted

Sheet Title
PROJECT LAYOUT (SHEET 2 OF 2)

C012
Sheet Number

CITY OF WILLOW PARK PROJECT NO. XXXXX



WATER LINE COORDINATES

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33+96.54	6955839.09	2222884.84	P.C.
41+30.42	6955536.23	2223553.17	P.T.
41+75.85	6955518.82	2223595.13	P.I.
49+06.41	6955250.97	2224274.82	P.I.
51+93.29	6955145.00	2224541.42	P.I.
55+30.72	6955022.23	2224855.71	P.I.
60+18.22	6954842.71	2225308.95	P.I.
61+96.51	6954784.35	2225477.42	P.I.
68+54.56	6954542.97	2226089.60	P.I.
71+36.46	6954437.24	2226350.93	P.I.
84+75.44	6953946.09	2227596.57	P.C.
88+42.88	6953816.84	2227940.51	P.T.
88+61.58	6953807.54	2227956.74	P.I.
95+78.70	6953579.02	2228636.47	P.I.
96+05.81	6953591.31	2228660.63	P.I.

GRID TO SURFACE FACTOR: 1.00012

CURVE DATA

① Δ=3° 41' 12.38" R=11405.25' T=367.07' L=733.89'

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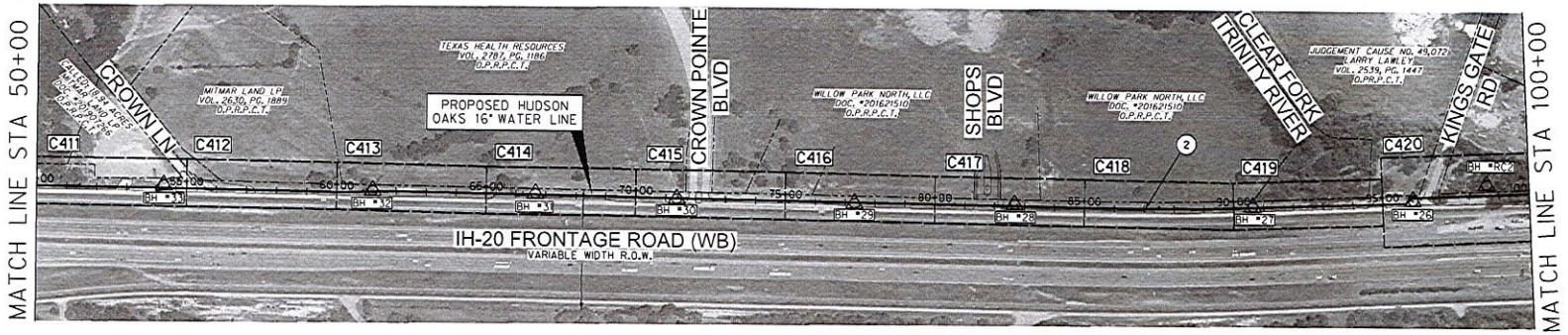
16196	6956443.98	2221655.08	940.65	SNTP
16197	6956528.93	2221495.77	946.70	SNTP



FORT WORTH WHOLESALE WATER

HALFF

Revision No.	Date	Description

STATE OF TEXAS KEVIN J. GRONWALDT 130811 LICENSED PROFESSIONAL ENGINEER

NAME: Kevin J. Gronwaldt

DATE: 9/3/2020

TBPELS ENGINEERING FIRM #10

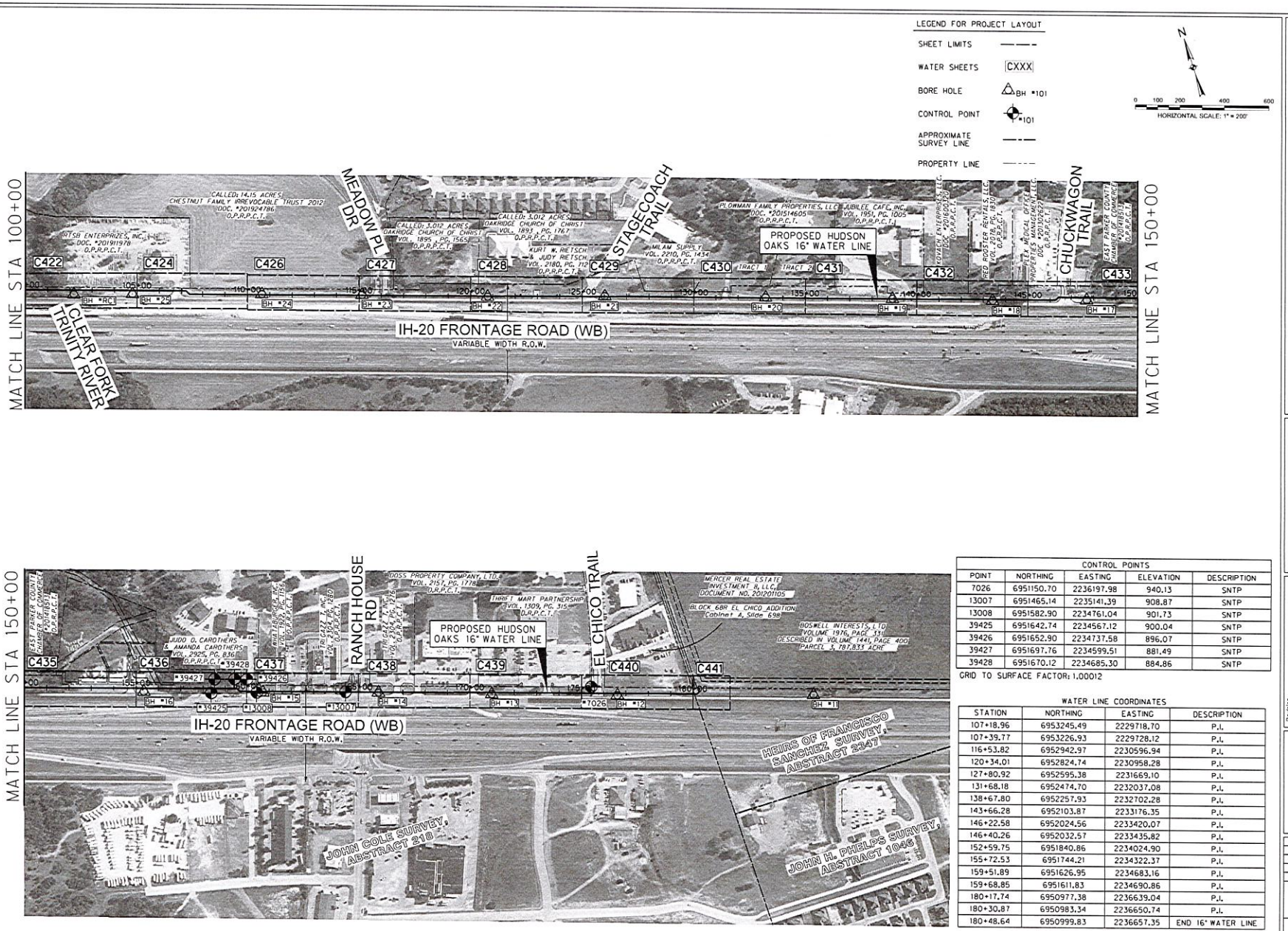
Project No.:	034094.001
Issued:	09/03/2020
Drawn By:	KJG
Checked By:	Halff
Scale:	As Noted

Sheet Title: PROJECT LAYOUT (SHEET 1 OF 2)

C011

Sheet Number

CITY OF WILLOW PARK PROJECT NO. XXXXX



CONTROL POINTS				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
7026	6951150.70	2236197.98	940.13	SNTP
13007	6951465.14	2235141.39	908.87	SNTP
13008	6951582.90	2234761.04	901.73	SNTP
39425	6951642.74	2234567.12	900.04	SNTP
39426	6951652.90	2234737.58	896.07	SNTP
39427	6951697.76	2234599.51	881.49	SNTP
39428	6951670.12	2234685.30	884.86	SNTP

GRID TO SURFACE FACTOR: 1.00012

WATER LINE COORDINATES

STATION	NORTHING	EASTING	DESCRIPTION
107+18.96	6953245.49	2229718.70	P.I.
107+39.77	6953226.93	2229728.12	P.I.
116+53.82	6952942.97	2230596.94	P.I.
120+34.01	6952824.74	2230958.28	P.I.
127+80.92	6952595.38	2231669.10	P.I.
131+68.18	6952474.70	2232037.08	P.I.
138+67.80	6952257.93	2232702.28	P.I.
143+66.28	6952103.87	2233176.35	P.I.
146+22.58	6952024.56	2233420.07	P.I.
146+40.26	6952032.57	2233435.82	P.I.
152+59.75	6951840.86	2234024.90	P.I.
155+72.53	6951744.21	2234322.37	P.I.
159+51.89	6951626.95	2234683.16	P.I.
159+68.85	6951611.83	2234690.86	P.I.
180+17.74	6950977.38	2236639.04	P.I.
180+30.87	6950983.34	2236650.74	P.I.
180+48.64	6950999.83	2236657.35	END 16" WATER LINE

FORT WORTH
WHOLESALE WATER

HALFF

Revision No	Date	Description

STATE OF TEXAS
KEVIN J. GROHMANN
130871
LICENSED
PROFESSIONAL ENGINEER

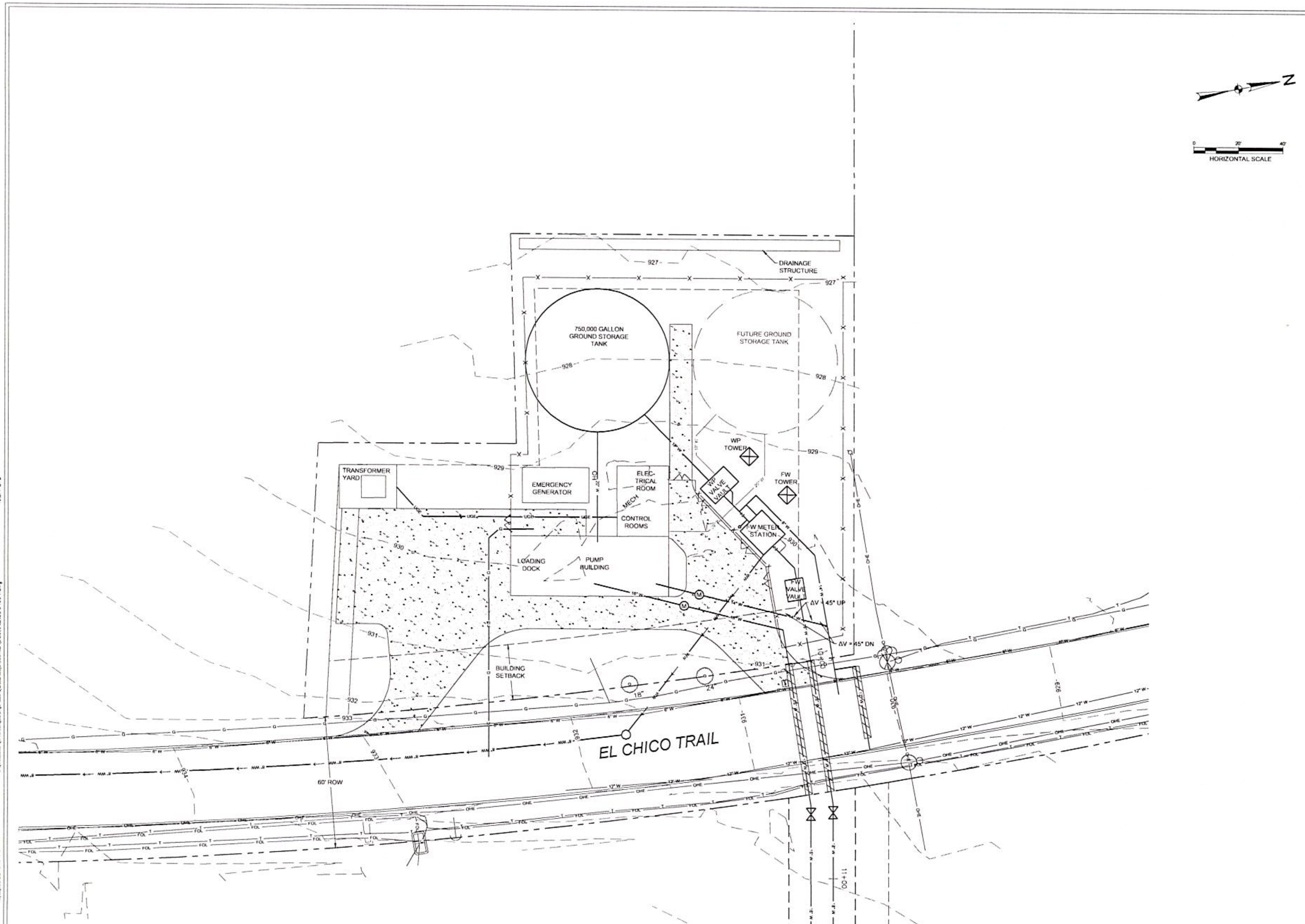
NAME: K J Grohmann
DATE: 9/3/2020
TEXAS ENGINEERING FIRM #470

Project No.:	034094.001
Issued:	09/03/2020
Drawn By:	KJG
Checked By:	Halff
Scale:	As Noted

Sheet Title
PROJECT LAYOUT
(SHEET 2 OF 2)

C012
Sheet Number

CITY OF WILLOW PARK PROJECT NO. XXXXX



HUDSON OAKS AND WILLOW PARK WATER FACILITIES AND WHOLESALE METER

HUDSON OAKS, TEXAS
WILLOW PARK, TEXAS

HALFF

12225 GREENVILLE AVE., SUITE 200
DALLAS, TEXAS 75243-9362
TEL (214) 572-2272
TBPE FIRM #F 312

REVISION	
NO.	DATE

PRELIMINARY

FOR INTERIM REVIEW ONLY

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND NOT INTENDED FOR REGULATORY APPROVAL, PERMIT, BIDDING OR CONSTRUCTION PURPOSES. THEY WERE PREPARED BY OR UNDER THE SUPERVISION OF

TIMOTHY E. LACKEY 81212
NAME P.E. NO.
September 3, 2020
TBPE FIRM #: 312

NOT FOR CONSTRUCTION

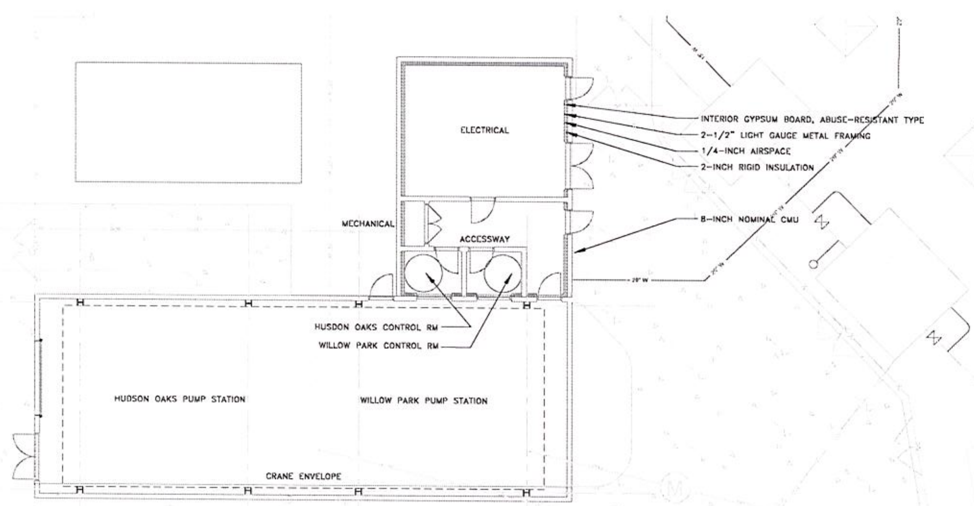
PROJECT NO.:	34094.002
ISSUED:	9/3/2020
DRAWN BY:	JMA
CHECKED BY:	TEL
SCALE:	AS SHOWN

SHEET TITLE

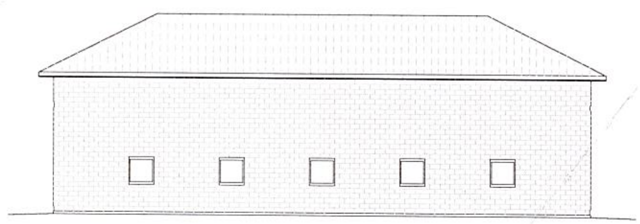
EL CHICO SITE LAYOUT

6

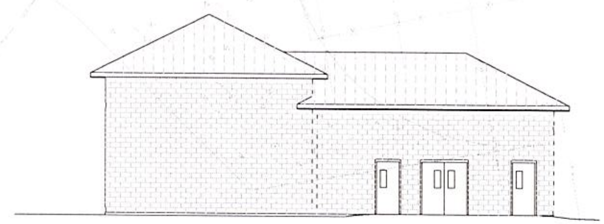
SHEET NUMBER



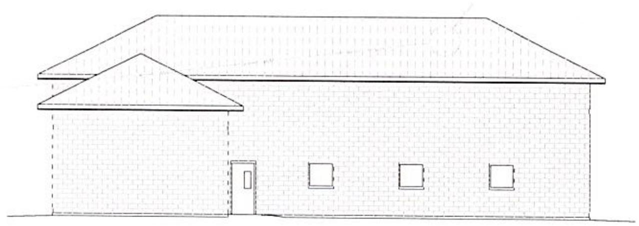
01 BUILDING PLAN
SCALE: 1/8" = 1'-0"



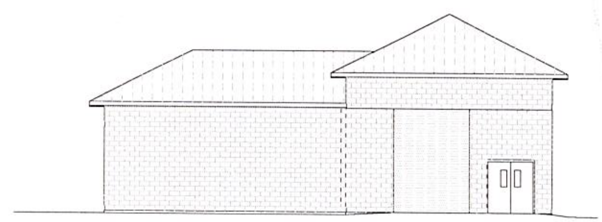
02 EAST ELEVATION
SCALE: 1/8" = 1'-0"



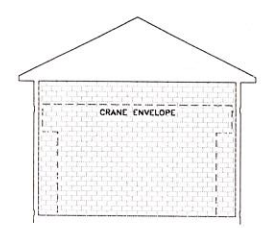
04 NORTH ELEVATION
SCALE: 1/8" = 1'-0"



03 WEST ELEVATION
SCALE: 1/8" = 1'-0"



05 WEST ELEVATION
SCALE: 1/8" = 1'-0"



06 BUILDING SECTION
SCALE: 1/8" = 1'-0"

HUDSON OAKS AND WILLOW PARK WATER FACILITIES AND WHOLESALE METER
HUDSON OAKS, TEXAS
WILLOW PARK, TEXAS

HALFF
12225 GREENVILLE AVE., SUITE 200
DALLAS, TEXAS 75243-9362
TEL (214) 572-2272
TPBE FIRM #F-312

CITY COUNCIL AGENDA ITEM BRIEFING SHEET

Council Date:	Department:	Presented By:
September 8	Admin	City Manager

AGENDA ITEM:

Discussion/Action: To consider and act to authorize City staff to transfer funds from the General Fund Investments account, in the amount of $67,500, to the Cross Timbers Park Fund to pay for the construction of park improvements.

BACKGROUND:

Staff is requesting authorization to transfer funds from General Fund Investment account to related expenses related to the Cross Timbers Park Project.

STAFF/BOARD/COMMISSION RECOMMENDATION:

EXHIBITS:

ADDITIONAL INFO:	FINANCIAL INFO:	
	Cost	$
	Source of Funding	$

CITY COUNCIL AGENDA ITEM BRIEFING SHEET

Council Date:	Department:	Presented By:
9-08-2020	Development Services	Bernie Parker

AGENDA ITEM:

8. Discussion/Action: Award Bid to Contractor for Cross Timbers Park.

BACKGROUND:

May 12, 2020 City Council gave staff direction to proceed with developing bid documents for purpose of obtaining a potential contractor for the project.

July 28, 2020 Staff presented the process for invitation for bids.

August 20, 2020 Staff and PK conducted a Pre-Bid Meeting.
August 28, 2020 Staff and PK conducted a Bid Opening Meeting.
(All Meetings were held a City Hall)

STAFF/BOARD/COMMISSION RECOMMENDATION:

Staff and PK recommends awarding the Contract to the lowest bidder Cole Construction, Inc – Sprinkle n Sprout.

EXHIBITS:

1. Contractor Summary
2. Bid Tabulation (Bid Opening Form)
3. Construction Specifications (BID Specs)

ADDITIONAL INFO:	FINANCIAL INFO:	
	Cost	
	Source of Funding	$

Pacheco Koch

BID OPENING FOR WILLOW PARK PLAYGROUND AND PARKING IMPROVEMENTS

Date: August 28, 2020

Job # 4469-19.592

Name of Company	Proposal Bond	Bid Cost	Notes
North Rock Construction, LLC	Yes	$541,530.79	Bid Alt 1: $77,319.69 Bid Alt 2: $22,143.25
NorthStar Construction, LLC	Yes	$547,700.00	Bid Alt 1: $59,000.00 Bid Alt 2: $22,500.00
Cole Construction, INC.	Yes	$427,258.00	Bid Alt 1: $44,620.00 Bid Alt 2: $15,616.00
Home Run Construction, LLC	Yes	$469,967.00	Bid Alt 1: $46,778.00 Bid Alt 2: $21,718.00
SDB Construction Services,	Yes	$548,610.00	Bid Alt 1: $52,625.00 Bid Alt 2: $19,965.00
Ratliff Hardscape, Ltd.	Yes	$641,486.88	Bid Alt 1: $254,912.50 Bid Alt 2: $19,777.50

Pacheco Koch

BID OPENING FOR WILLOW PARK PLAYGROUND AND PARKING IMPROVEMENTS

Date: August 28, 2020

Job # 4469-19.592

Name of Company	Proposal Bond	Bid Cost	Notes

\\nasuniftw.pkce.com\dwg\DWG-44\4469-19.592\Bid Phase\Bid Opening Form

Pacheco Koch

BID OPENING FOR WILLOW PARK PLAYGROUND AND PARKING IMPROVEMENTS

Date: August 28, 2020

Job # 4469-19.592

Name of Company	Proposal Bond	Bid Cost	Notes

\\nasuniftw.pkce.com\dwg\DWG-44\4469-19.592\Bid Phase\Bid Opening Form

Pacheco Koch

BID OPENING FOR WILLOW PARK PLAYGROUND AND PARKING IMPROVEMENTS

Date: August 28, 2020

Job # 4469-19.592

Name of Company	Proposal Bond	Bid Cost	Notes

Pacheco Koch

Sept 3, 2020
PK No.: 4469—19.592

CONTRACTOR SUMMARY – Two Lowest Bidders

Cole Construction, Inc. – Sprinkle n Sprout:
Base Bid - $427,258.00; Bid Alt 1 – 44,620.00; Bid Alt 2 - $15,616.00; Total - $487,494.00

Cole Construction has 14+ years as a General Contractor in DFW, Sprinkle n Sprout has over 22+ year experience. All of their concrete work, drainage, landscape, hardscape and irrigation work is done in house. Four references were contacted, three of them generated a response and the fourth did not call back. Each of the three references commented on how easy they were to work with and how they would hire them again. Their list of projects and equipment was included and extensive. They were the lowest bidder and we find no reason to exclude them from the awarding of the contract.

References:

Grapevine, Tx - FM 2499 Landscape Enhancement
Contact: Kathy Nelson
Enjoyed working with them, Ken, the owner, is really hands on. It's rare that it gets done right the first time, but they realize time is money. They had good communication, felt like they really studied the plans beforehand and solid processes in place.

Mansfield ISD - Timberview Ballfield
Contact: Garry Walker, PM
Ken Horner (owner) and Sprinkle and Sprout is one of their favorite contractors to use. The scope of work included chemically injecting the soil to prevent heaving and redoing the irrigation, sod, fields grading and a concrete road extension.

Colony, Tx - Trail Project & Parking Drive Rebuild
Contact: Bob Stoffels
Would definitely use them again, they did a good job with the trail construction. They were responsive and easy to work with. Completed the work half a month early.

Home Run Construction, LLC.:
Base Bid - $469,967.00; Bid Alt 1 – 46,778.00; Bid Alt 2 - $21,718.00; Total - $538,463.00

A new company. The owner has over 20 years of experience in park building. Mr. Yentes has worked for another GC/CMAR company for the past 14 years and decide to branch out on his own. All subcontractors have worked 10 plus years with Mr. Yentes. No References were included in his bid package. An equipment list was included.

CONSTRUCTION SPECIFICATIONS

FOR

PLAYGROUND AND PARKING IMPROVEMENTS
CROSS TIMBERS PARK

CITY OF WILLOW PARK, TEXAS
AUGUST 2020

PACHECO KOCH
TEXAS FIRM REGISTRATION NUMBER F-469
4060 BRYANT IRVIN ROAD
FORT WORTH, TEXAS 76109

SECTION A - TABLE OF CONTENTS

SECTION B - LEGAL NOTICE ADVERTISEMENT FOR BIDS

The City of Willow Park, Texas is accepting sealed bids for construction of:
Cross Timbers Park Playground and Parking Improvements at Stagecoach Trail.

The project is generally described as: **Site development to Cross Timbers Park Playground,** for the City of Willow Park, Texas as shown in plans prepared by Pacheco Koch.

Plans, Specifications, and other Bidding Documents for this project may be obtained from Dorothy Witmeyer (dwitmeyer@pkce.com) with Pacheco Koch, 4060 Bryant Irvin Road, Fort Worth, Texas 76109 (phone 817-412-7155) from August 7th, 2020 through August 28th, 2020 between the hours of 8 AM and 4 PM, Monday through Friday. A pdf of the plans and specifications will be available for download through a file sharing site for no fee or can be placed on a USB flash drive for a non-refundable $25.00 fee. If hard copies are preferred, a non-refundable $150.00 fee in the form of a cashier's check or a money order payable to Pacheco Koch will be due at time of pick up. Requests for bidding documents shall be made a minimum of four hours prior to the intended pick up time. Partial sets of drawings and specifications will not be available. **Plan holders receiving bidding documents in electronic form or hard copy will be recorded, and only bids from recorded plan holders will be eligible for award.**

Bids will be accepted at the office of the **City Secretary of the City of Willow Park, 516 Ranch House Road, Willow Park, Texas 76087 UNTIL August 28th, 2020 at 10:00 AM.** Bids shall be identified on the outside of the envelope with the following: **Bids for Cross Timbers Park Playground and Parking Improvements, City of Willow Park, Texas.** Bids received after bid closing will be returned unopened.

All bids received prior to the closing of the bid period will be publicly opened and read aloud at the City of Willow Park City Hall, 516 Ranch House Road, Willow Park, Texas 76087 beginning at 10:05 AM on August 28th, 2020. Following bid opening, tabulation will be made for consideration of the City of Willow Park in awarding a contract.

The Mayor and the City Council of Willow Park, Texas reserve the right, as the interest of the City may require, to reject any and all bids, and to waive any informality in bids received. No officer or employee of the City of Willow Park shall have a financial interest, direct or indirect, in any contract with the City of Willow Park.

General Conditions and General Specifications used in this project are contained in the **City of Willow Park Building Code**. Dorothy Witmeyer, RLA, may be reached with questions at 817-412-7155. All project specific questions must be asked no later than 10:00 A.M. on August 26st.

ADVERTISEMENT DATES: **FIRST - AUGUST 7, 2020**

SECOND - AUGUST 14, 2020

SECTION C - INSTRUCTION TO BIDDERS

1.0 Defined Terms

Terms used in the Instructions to Bidders which are defined in the General Provisions have the meanings assigned to them in the General Provisions. The term "Bidder" means one who submits a Bid directly to the Owner, as distinct from a sub-Bidder, who submits a Bid to a Bidder. The term "Successful Bidder" means the lowest responsible Bidder to whom the Owner makes an award. The term "Bidding Documents" includes the; Instructions to Bidders; the Bid proposal form; Construction Trade Requirements Assurance form; the General, Special, and Supplemental Conditions; Standard Specifications and Supplemental Specifications; Federal requirements; and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids), Contract Drawings and any documents referenced in the above. General Provisions and Specifications are included in the **Willow Park City Building Code**.

2.0 Copies of Bidding Documents

Complete sets of Bidding Documents can be obtained from the office of Pacheco Koch, 4060 Bryant Irvin Road Fort Worth, Texas 76109 (phone 817-412-7155). Copies of the **Willow Park City Building Code** are also available through the City of Willow Park website.

3.0 Examination of Contract Documents and Site

3.1 The Contract Documents can be divided into four major portions;

- Conditions of the Contract
- Technical Specifications
- Forms of the Contract
- Contract Drawings

Each of these parts is repetitive in nature from one contract to the next. For that reason, standards have been adopted to aid both in the preparation of documents and in the preparation of bids.

The standards for the Conditions of Contract are found in Section 100 of the **Standard Specifications for Public Works Construction - North Central Texas** published by and available through the North Central Texas Council of Governments, referred to as "The Blue Book." These "General Provisions" do not always correspond to the needs of the City of Willow Park, or the specific projects being bid. Adaptations are included in a section of the bid package referred to as the Supplemental Conditions.

The Blue Book contains the technical material and construction methods specifications (in Divisions 200 through 800). These will need to be modified from time to time to fit the requirements of a particular project. The Supplemental Specifications and Project Specific Special Requirements and Specifications sections of this document provide those modifications.

3.2 It is the responsibility of each Bidder before submitting a Bid, to (a) examine the Contract Documents thoroughly, (b) visit the site to become familiar with local conditions which may affect cost, progress, performance or furnishing of the Work, (c) consider federal, state, and local laws and regulations that may affect cost, progress, performance or furnishing of the Work, (d) study and carefully correlate the Bidder's observations with the Contract Documents, (e) notify the Engineer of any conflicts, errors or discrepancies in the Contract Documents, and (f) have

possession of and be familiar with the **Standard Specifications for Public Works Construction - North Central Texas** as revised and updated, latest revision.

3.3 Information and data reflected in the Contract Documents with respect to underground facilities at or contiguous to the site is based upon information and data furnished to the Owner and Engineer by owners of such underground facilities or others, and Owner does not assume responsibility for the accuracy or completeness thereof unless it is expressly provided in the Special Conditions. The Contractor is responsible for observing meters, valves, and other surface appurtenances related to the underground facilities and probe ahead of excavation to locate underground facilities that may interfere with the work. Any damage to underground facilities will be repaired at the expense of the Contractor.

4.0 Interpretation and Addenda

4.1 All questions about the meaning or intent of the Contract Documents are to be directed to the Engineer. Interpretations or clarifications considered necessary by the Engineer in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by the Engineer as having received the Bidding Documents. Questions received less than two days prior to the date of opening of bids may not be answered. Only questions answered by written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

4.2 Addenda may also be issued to modify the Bidding Documents as deemed advisable by the Owner or Engineer.

4.3 In the event an Addendum is issued, the Addendum shall be signed and returned with the Bid proposal form. Failure to submit a signed addendum will be cause for rejection of bid.

5.0 Bid Security

5.1. Each Bid must be accompanied by a bid security made payable to the Owner in an amount of not less than 5% of the Bidder's maximum bid price and in the form of either a cashier's check, certified check, or a Bid Bond as specified in the General Provisions. Bid Bonds furnished must be in general agreement with the provisions of the form provided. **Bid security shall be placed at the beginning of the submitted bid package or the bid may not be accepted.** Item 102.5 of the General Provisions contains further information about bid securities.

6.0 Substitute or "Or-Equal" Items

6.1 The materials and equipment described in the bidding documents establish a standard of required function, dimension, appearance and quality to be met by any proposed substitution. No substitution will be considered unless a written request for approval has been submitted by the Bidder and has been received by the Engineer at least seven (7) working days prior to the date for receipt of bids. Each such request shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitute including drawings, cuts, performance and test data and any other information necessary for an evaluation. A statement setting forth any changes in other materials, equipment or work that incorporation of the substitute would require shall be included. The burden of proof of merit of the proposed substitute is upon the Bidder.

6.2 The Engineer's decision of approval or disapproval of a proposed substitution shall be final. If the Engineer approves any proposed substitution, such approval will be set forth in an addendum issued to all prospective Bidders. Bidders shall not rely on approvals made in any other manner.

7.0 Bid Proposal Form

7.1. The Bid Proposal Form is included with the Bidding Documents. For additional copies of items, contact Pacheco Koch.

7.2. All blanks on the Bid Proposal Form should be completed in ink or by typewriter. Any changes shall be initialed.

7.3 In the event alternates are presented in the Bid Proposal Form, Bidders must submit a bid for all the separate sections defined.

7.4 Although the contractor must fill in unit prices, the project will be awarded by considering the LUMP SUM total of all items necessary to complete the project per the plans and specifications. All items not specifically listed as a bid item are considered SUBSIDIARY to other items. No additional payment will be made for items simply because there was not a specific pay item. The requirement to fill out unit prices is only a means by which the Engineer can fairly evaluate monthly pay requests or evaluate the fairness of any potential additive or deductive change orders.

8.0 Submission of Bids

8.1 Bids shall be submitted at the time and place indicated in the Legal Notice Advertisement for Bids and shall be enclosed in an opaque sealed envelope, marked with the project title, and name and address of the Bidder and shall be accompanied by the bid security and other related documents. If the bid is sent through the mail or other delivery system, the sealed envelope shall be enclosed in a separate envelope with the notation "Bid enclosed" on the face of it.

9.0 Opening of Bids and Award of Contract

9.1 Bids will be opened and read aloud publicly. Bidders, at the time of the bid opening, may request a formal bid tabulation be mailed. Bidders will be permitted to inspect Bid Proposals in the presence of the Owner.

9.2 The Owner 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 to negotiate contract terms with the successful Bidder inside the limits established by statute. The Owner reserves the right to disregard all nonconforming, nonresponsive, unbalanced or conditional bids. Owner reserves the right to reject the bid of any Bidder if Owner believes 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 Owner within the constraints of state statute.

10.0 Visitation Prior to Bid

Guided Visitation of the worksite must be arranged through the City of Willow Park (817-441-7108). Visitors shall be escorted at the discretion of the Owner. Visitation requests will not be granted later than 2 days prior to bid opening. Visitation hours will be limited to appointments

made during normal working hours (8:00 a.m. to 5:00 p.m., Monday - Friday) and subject to the availability of personnel. A pre-bid meeting at Willow Park City Hall at 2pm Thursday, August 20, 2020.

11.0 Work Schedule

Time anticipated to complete the project is critical for some items; the following applies:

- The entire contract work must be substantially complete by February 1, 2021. Liquidated damages of $200.00 per calendar day will be assessed beginning February 1, 2021.
- This is a calendar day contract. A notice to proceed will be issued no later than October 1, 2020. Work shall begin within the 10 calendar days following the notice.

Bid Checklist

Please include the following items with the bid proposal. Refer to the Instructions to Bidders for detailed information regarding the information on this Bid Checklist.

1) _____ Read Instructions to Bidders section.

2) _____ Completed and signed Bid Proposal Forms.

3) _____ OSHA safety forms.

4) _____ Proposal Guaranty.

5) _____ Qualification Questionnaire

6) _____ Surety company information.

7) _____ List of similar completed projects.

8) _____ Bidder's work force and equipment summary.

9) _____ List of Bidder's projects currently under construction.

10) _____ List of Bidder's projects currently under contract.

11) _____ Addenda

12) _____ Key personnel information

13) _____ List of Contract Exceptions, if applicable

14) _____ Proposed Construction Schedule

SECTION D – QUALIFICATION QUESTIONNAIRE

Complete the following questions and return with bid:

1. Read in its entirety, Division 100 General Provisions of the Standard Specifications and the Special Provisions or Conditions included with the Bid Documents.

   I hereby certify that I have read and made any and all investigations necessary to fully understand Division 100 General Provisions of the Standard Specifications for Public Works Construction – North Central Texas, October 2017 and the Special Provisions or Conditions contained within the Bid Documents.

   _____

   _____

   _____
   Printed Company Name and Address

   _____
   Printed name, signature of a duly authorized officer or agent of the Bidder's company, and date.

2. Safety record (102.4.1) - The City of Willow Park hereby notifies all prospective bidders that the safety record of a bidder may be considered in determining the responsibility of the bidder. Submit bidder's Summary of Work Related Injuries and Illnesses (OSHA's Form 300A) for the last three years and a copy of the bidder's Log of Work-Related Injuries and Illnesses (OSHA's Form 300) for last year with column B blacked-out.

3. Bidder Background Information:

   I. Is the bidder or bidder's surety currently in any litigation against the City of Willow Park? If yes, please explain:

   _____

   _____

   _____

   II. Is the bidder or bidder's surety currently in any litigation against Pacheco Koch? If yes, please explain:

   _____

   _____

   _____

III. Is the bidder or his surety contemplating litigation against the City of Willow Park or is litigation against the City of Willow Park imminent? If so, please explain:

_____

_____

_____

IV. Is the bidder or his surety contemplating litigation against Pacheco Koch or is litigation against Pacheco Koch imminent? If so, please explain:

_____

_____

_____

V. The bidder may be disqualified if, in the sole opinion of the City of Willow Park, the City of Willow Park believes that litigation between the City of Willow Park and the Bidder is imminent.

VI. Has the bidder had any claims on any of its bonds in the past three years? If so, please explain:

_____

_____

_____

VII. Attach name, contact information, and authorization from bidder for each surety to release information to the City of Willow Park for all surety companies used by the bidder in the past three years. If the City of Willow Park cannot obtain information from a bidder's surety, the bid may be deemed non-responsive by the City of Willow Park.

VIII. Is the bidder in arrears on any existing contract? If so, explain and provide client contact information.

_____

_____

_____

IX. Has the bidder defaulted on any previous contract? If so, explain and provide client contact information.

_____

_____

_____

X. Has the bidder ever failed to make payments due to any subcontractor, vendor, or employee? If so, please explain.

_____

_____

_____

XI. Is the bidder a defendant in any lawsuit for failure to make payments to any subcontractor, vendor, or employee? If so, please explain and provide contact information for plaintiff in the law suit?

_____

_____

_____

XII. Is the bidder in litigation with regard to any current or past contracts? If so, please explain and provide client contact information.

_____

_____

XIII. Bidder may be disqualified by the City of Willow Park for uncompleted work which, in the sole judgment of the City of Willow Park, could prevent or hinder the prompt completion of this project, if awarded.

(1) Attach a list of projects similar in scope and size completed in past three years. Include the name of the Bidder's project manager and project superintendent and client contact information.

(2) Attach a summary of the Bidder's work force and equipment owned or leased.

(3) Attach a summary of current projects under construction including total contract value, total estimated schedule, percent complete, client contact information (client name, client contact, phone number, e-mail address, physical address)

(4) Attach a summary of projects currently under contract, but not under construction with contract value, estimated start and finish dates, client contact

information (client name, client contact, phone number, e-mail address, physical address)

(5) Estimate the percentage of work proposed to be completed by bidder's own work force and to be subcontracted.

_____

_____

4. Provide the names and contact information for the following key project personnel proposed for the project. The key personnel named in this proposal shall be assigned to this project until completion, except as otherwise provided in Section 105.6 of the Specifications.

   a. Proposed Contract Manager – bidder's representative with authority to execute contracts on behalf of the bidder

   _____

   _____

   b. Proposed Project Manager

   _____

   _____

   c. Proposed Field Superintendent, attach resume and references

   _____

   _____

   d. Project Scheduler and Project Controller

   _____

   _____

5. Designate an address, fax number, and e-mail address where all notices, directions or other communications may be delivered, refer to section 105.8 of the Standard Specifications.

_____

_____

_____

6. Exceptions – Summarize and attach all contract exceptions proposed by the Bidder. Contract exceptions shall be cited by exact section, paragraph, etc. along with proposed alternative contract language, as applicable. The City of Willow Park reserves the right to reject any and all contract exceptions and award a contract with original contract terms and conditions. The City of Willow Park may, at the City's sole discretion, disqualify a bid submitted with any contract exceptions. Does the bidder have any exceptions to the Contract?

   _____ If so, please attach List of Contract Exceptions.

7. City may contact apparent low responsive bidder(s) during proposal evaluation to seek clarification of the Bidder's proposal or request additional information. Failure of Bidder to provide additional information or clarification of Bidder's proposal in writing to the City of Willow Park in a timely fashion may, in the City of Willow Park's sole discretion, result in the bidder being deemed non-responsive by the City of Willow Park. Additional information that the City of Willow Park may request includes, but is not limited to:

   a. Financial statements for previous year(s);

   b. Construction sequencing plan;

   c. Critical Path Schedule (108.8) – A critical path schedule which substantiates the bidder's proposed schedule and will be used in part as a basis for contractor selection and for assessing liquidated damages in accordance with Section 108.8.1 of the Contract should the contractor fail to meet the proposed schedule shall be submitted prior to award of contract. Begin the Critical Path Schedule at day one with Award of Contract as described in Section 103.2 of the Standard Specifications. Other key milestones in the schedule include, but are not limited to, submission of surety bonds, insurance, contract execution, notice to proceed, mobilization, progress reports and invoicing, significant project progress milestones that affect lane closures and traffic control. The critical path schedule shall include key milestone dates that demonstrate the bidder's understanding of required contract milestones and project scope of work. Insufficient schedule detail may, in the City of Willow Park's sole discretion, result in the bidder being deemed non-responsive by the City of Willow Park.

SECTION E - BID PROPOSAL FORM

Proposal of _____
hereinafter called the "Bidder."

To: Mr. Doyle Moss, Mayor
City of Willow Park, Texas

Gentlemen:

The Bidder, in compliance with your Legal Notice Advertisement for Cross Timbers Park Playground and Parking Improvements, having thoroughly examined the plans, specifications, Instructions to Bidders, Legal Notice Advertisement for Bids, and all of the other related contract documents as amended by proper addenda, and the site(s) of the proposed work and being familiar with all of the conditions surrounding the construction of the proposed project including the availability of materials and labor, hereby proposes to furnish all labor, materials, and supplies; and to construct the project in accordance with the plans, specifications and contract documents, as amended by proper addenda, in accordance with the time set forth therein and at the prices stated in Attachment A.

The Bidder confirms that the General Provisions and the standard specifications for this contract are located in the **City of Willow Park Building Code**

Accompanying this Bid Proposal is a cashier's check, certified check, or acceptable bid bond (in general agreement with the provisions of the form provided) in the total amount of $_____ (not less than five percent of the maximum amount Bid) made payable to the City of Willow Park, Texas. The bid security will be returned to the Bidder unless, in case of award, the undersigned fails to execute a contract and file the required bonds and insurance within ten (10) calendar days of the date of receipt of a written Notice of Award, in which case it shall be retained by the Owner as liquidated damages due to delay and other inconveniences suffered by the Owner as a result of such failure on the part of the Bidder.

It is understood that the City of Willow Park reserves the right to reject any or all bids.

It is understood that any quantities shown in the plans are for convenience only, and it is the responsibility of the contractor to verify any and all work required.

Bidder hereby agrees to commence work under this contract within ten (10) calendar days of the date specified in a written "Notice to Proceed" by the Engineer of the City of Willow Park, and to complete the project within the number of calendar days proposed by the bidder on the Proposal.

In the event of the award of a contract to the undersigned by the City Council of the City of Willow Park, Texas, the undersigned will furnish Performance and Warranty, and Payment Bonds in the amount required, to secure proper compliance with the terms and provisions of the contract, to guarantee and insure the work until final completion and acceptance and to guarantee payment of all lawful claims for labor performed and materials furnished in the fulfillment of the contract.

Selection Criteria:

The lowest responsible bidder will be chosen, in a manner solely determined by the Owner, based on a combination of the bidder's qualifications statements submitted with the bid lump sum bid.

The undersigned certifies that the bid prices shown on Attachment A have been carefully checked and are submitted as correct and final.

All addenda have been signed and submitted with the bid proposal.
The address indicated below will be used for all correspondence in relation to this contract unless otherwise noted.

Bid Submitted By:

_____
Contractor:

_____
Contractor's Representative

Seal
(If Corporation)

_____
Title

_____
Street Address

ATTEST:

_____
Secretary

_____
City and State

_____
Telephone No.

NOTE: Powers of attorney authorizing agents to sign the proposal must be certified, must be in writing and must accompany this proposal.

SECTION E BID FORM

Bid will be evaluated by the total sum of all categories. All items required by the plans and specifications are to be included, and the lump sum total price provided will be the total value of the project unless change orders are approved through a change in scope to the contract documents.

CATEGORY	***ITEM DESCRIPTION PRICES TO BE WRITTEN IN WORDS***	***PRICE IN FIGURES***	***PRICE IN WORDS***
1	Mobilization, General Conditions, Bonds, Overhead, Fees and Other Miscellaneous Expenses.	$_____	_____ dollars & _____ cents
2	Coordination and install with the vendor chosen by the City to provide complete in place playground A and playground B with turn-key system for the internal drainage to the playground areas, playground structures and surfacing.	$_____	_____ dollars & _____ cents
3	Clearing, Selective Demolition, Clearing, Tree Protection and Erosion Control Permits and Measures Complete in Place	$_____	_____ dollars & _____ cents
4	Vehicular Paving, Integral Curbs, Signage, Parking Bumpers, Associated Sealants Complete in Place	$_____	_____ dollars & _____ cents
5	Pedestrian Paving and Landscape Concrete, Retaining Wall, Mow Curbs, Associated Sealants Complete in Place	$_____	_____ dollars & _____ cents
6	Earthwork, Storm Drainage Items, Including Finish Grading, All Cut and Fill, Construction Staking and Layout with Digital Files Provided by the Landscape Architect Complete in Place	$_____	_____ dollars & _____ cents
7	Water and Sanitary Sewer Utility Items, and Connections Complete in Place	$_____	_____ dollars & _____ cents
8	Landscape Items Including Plants, Sod, Accessories, Planting Soil Preparation, Mulch Complete In Place	$_____	_____ dollars & _____ cents
9	Stone Benches, Drinking Fountain and Trash Receptacles, Complete in Place	$_____	_____ dollars & _____ cents
10	Landscape Irrigation System, Complete in Place	$_____	_____ dollars & _____ cents

CATEGORY	*ITEM DESCRIPTION* *PRICES TO BE WRITTEN IN WORDS*	*PRICE IN FIGURES*	*PRICE IN WORDS*
	BASE BID, LUMP SUM TOTAL	**$**_____	_____ **dollars &** _____ **cents**

BID ALT. 1	Install artifical turf playground surfacing per manufacture's recommendation in place of base bid fibar mulch at both playground locations, complete in place.	$_____	_____ dollars & _____ cents

BID ALT. 2	Electrical Alternate: Light Fixtures, Conduits, Connections, Pull Boxes, Meters, Transformers and all Associated Items, Complete in Place	$_____	_____ dollars & _____ cents

SECTION F - BID BOND

STATE OF TEXAS §
§ **KNOW ALL MEN BY THESE PRESENTS:**
COUNTY OF PARKER §

THAT _____, a corporation organized and existing under the laws of the State of _____, and fully authorized to transact business in the State of Texas, whose address is _____ _____of the City of _____, County of _____, State of_____, (hereinafter referred to as "Principal"), and _____ (hereinafter referred to as "Surety"), a corporation organized under the laws of the State of _____ and authorized under the laws of the State of Texas to act as Surety on bonds for principals, are held and firmly bound unto _____ _____ (hereinafter referred to as "OWNER") in the penal sum of $_____ in lawful money of the United States, for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors, and assigns, jointly and severally, firmly by these presents:

SIGNED, **SEALED** and **DATED** this _____day of_____ 2020

WHEREAS, the Principal is herewith submitting its proposal for_____ _____

the condition of the above obligations are such that if the aforesaid Principal shall be awarded the Contract, the said Principal will, within the time required, enter into a Contract and give Bonds, if required, for the faithful performance of the Contract and the prompt payment for labor and materials in the prosecution thereof, then this obligation shall be null and void; otherwise the Principal and Surety will pay unto the OWNER the full penal sum hereof, as liquidated damages, it being difficult and impractical to determine accurately the actual amount of damages occurring to OWNER by reason of Principal's failure to execute said Contract and Bonds.

PROVIDED FURTHER, that if any legal action be filed upon this Bond, venue shall lie exclusively in **PARKER** County, Texas.

The Resident Agent of the Surety for delivery of notice and service of process is:
Name: _____
Address: _____
Phone number: _____

WITNESS

_____

PRINCIPAL

_____

Printed/Typed Name:_____

Title:_____

Company:_____

Address:_____
_____
_____

WITNESS

_____

SURETY

_____

Printed/Typed Name:_____

Title:_____

Company:_____

Address:_____
_____
_____

SECTION G - NOTICE OF AWARD

TO: _____
_____
_____
_____
_____

Project known as Cross Timbers Park Playground and Parking Improvements and described as Cross Timbers Park Playground and Parking Improvements.

The OWNER has considered the bid submitted by you for the above described work in response to its Legal Notice Advertisement for Bids and Instructions to Bidders.

You are hereby notified that your bid has been accepted in the amount of $ _____.

You are required to execute the contract and furnish the required Contractor's Performance and Warranty, and Payment Bonds within ten (10) calendar days from the date of this notice to you.

If you fail to execute said contract and to furnish said bonds within ten (10) calendar days from the date of this notice, said OWNER will be entitled to consider all your rights arising out of the OWNER's acceptance of your bid as abandoned and as a forfeiture of your Bid Bond. The OWNER will be entitled to such other rights as may be granted by law.

Please return an acknowledged copy of this Notice of Award to the OWNER.

Dated this ___ day of _____ , 2020.

_____ City of Willow Park _____
(Owner)

By_____

Title _____

_____
(Owner Signature)

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged by

_____

this the ____ day of _____, 2020

By _____

Title _____

Signature_____

SECTION H – STANDARD CONSTRUCTION CONTRACT

STATE OF TEXAS §
§ **KNOW ALL MEN BY THESE PRESENTS:**
COUNTY OF PARKER §

THIS CONTRACT is made and entered into on this the _____ day of _____, 2020, by and between the City of Willow Park, PARKER County, Texas, (hereinafter referred to as "Owner") and _____-_____, (hereinafter referred to as "Contractor"). In consideration of the mutual covenants hereinafter set forth, the Owner and Contractor agree as follows:

Article I. Work

The Contractor shall perform all of the work as specified in the Contract Documents. The work is generally described as follows: Cross Timbers Park Playground and Parking Improvements as shown on the plans prepared by Pacheco Koch titled “Landscape Plans Cross Timbers Park Playground and Parking Improvements.”, dated August 2020.

Plans and Specifications prepared by: Pacheco Koch
4060 Bryant Irvin Road
Fort Worth, TX 76109

All work shall be performed as specified or indicated in the Contract Documents; and, at the Contractor's own cost and expense, the Contractor shall furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, and other accessories and services as may be necessary in order to complete the construction, as described above and in accordance with the Contract Documents unless otherwise agreed to by the Owner.

Article II. Contract Documents

The Contract Documents may only be altered, amended or modified as provided in the General Conditions. The Contract Documents consist of: this written agreement setting forth the work to be performed; advertisement, if any; instructions to bidders, if any; proposal; addenda; specifications, including the general, special, and technical conditions, provisions, plans, or working drawings; any supplemental changes or agreements pertaining to the work or materials therefore; bonds; the Standard Specifications for Public Works Construction published by the North Central Texas Council of Governments, as amended; the Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges, as amended; and any additional documents incorporated by reference. These form the Contract Documents and all are as fully a part of the Contract as if attached to this agreement or repeated herein.

Article III. Contract Time

The Contractor shall perform and complete all the items of work listed and referred to in the Contract Documents within _____calendar days.

Article IV. Contract Price

The Owner shall pay the Contractor **$**_____ for completion of the work in accordance with the Contract Documents using current funds. Such payments shall be subject to the General and Special Conditions to the Contract, as contained in the Contract Documents.

Article V. Miscellaneous Provisions

The terms used in this Contract shall have the same meaning as designated in the General Provisions of the Standard Specifications for Public Works Construction, North Central Texas Council of Governments, as amended. The Contract Documents, which constitute the entire agreement between the Owner and Contractor, are listed in Article II. No assignment by either party hereto of any rights under or interests in the Contract Documents will be binding on the other party hereto without the written consent of the party sought to be bound. The Owner and Contractor each binds itself, its partners, successors, assigns, and legal representatives hereto to the covenants, agreements, and obligations contained in the Contract Documents.

Article VI. Texas Government Code Section 2252.908

Before this Standard Contract can be signed, the Contractor shall complete "New Form 1295 Filing Application," which can be downloaded at www.ethics.state.tx.us and submit it to the City Secretary. The City Secretary will complete the form online when the paper copy is received.

IN WITNESS WHEREOF, the Owner and Contractor have executed this Contract in duplicate and on the date aforementioned. All portions of the Contract Documents have been signed or identified by the Owner and Contractor.

CONTRACTOR:	**ATTEST:**
_____	_____
By: _____	By: _____
Printed Name: _____	Printed Name: _____
Title:_____	Title:_____

OWNER:	**ATTEST:**
_____	_____
By: _____	By: _____
Printed Name: _____	Printed Name: _____
Title:_____	Title:_____

SECTION I: PERFORMANCE BOND

STATE OF TEXAS §
§ **KNOW ALL MEN BY THESE PRESENTS:**
COUNTY OF PARKER §

THAT _____, a corporation organized and existing under the laws of the State of _____, and fully authorized to transact business in the State of Texas, whose address is _____of the City of _____, County of _____, State of _____, (hereinafter referred to as "Principal"), and _____ (hereinafter referred to as "Surety"), a corporation organized under the laws of the State of _____ and authorized under the laws of the State of Texas to act as Surety on bonds for principals, are held and firmly bound unto _____ (hereinafter referred to as "OWNER") in the penal sum of $ _____ (not less than 100% of the approximate total amount of the Contract as evidenced in the proposal plus 10-percent of the stated penal sum as an additional sum of money representing additional court expenses, attorneys' fees, and liquidated damages arising out of or connected with the below identified Contract) in lawful money of the United States, for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors, and assigns, jointly and severally, firmly by these presents:

WHEREAS, the Principal has entered into a certain written Contract with the OWNER, dated the _____day of _____, 20_____, to which said Contract is hereby referred to and made a part hereof and as fully and to the same extent as if copied at length herein for the construction of_____
_____.

NOW, THEREFORE, the condition of this obligation is such, that if the said Principal fully and faithfully executes the work and performance of the Contract in accordance with the plans, specifications, and Contract Documents, including any extensions thereof which may be granted with our without notice to Surety, during the original term thereof, and during the life of any guaranty required under the Contract, and according to the true intent and meaning of said Contract and the plans and specifications hereto annexed, if the Principal shall repair and/or replace all defects due to faulty materials or workmanship that appear within a period of one year from the date of final completion and final acceptance of the work by OWNER; and if the Principal shall fully indemnify and save harmless the OWNER from all costs and damages which OWNER may suffer by reason of failure to so perform herein and shall fully reimburse and repay OWNER all outlay and expense which the OWNER may incur in making good any default or deficiency, then this obligation shall be void; otherwise, to remain in full force and effect; and in case said CONTRACTOR shall fail to do so, it is agreed that the OWNER may do said work and supply such materials and charge the same against said CONTRACTOR and Surety on this obligation. Provided further, that if any legal action be filed on this Bond, venue shall lie in **PARKER** County, Texas.

PROVIDED, HOWEVER, that this Bond is executed pursuant to the provisions Texas Government Code, Chapter 2253, as amended, and Article 7.19-1 of the Insurance Code, as amended., and all liabilities on this bond shall be determined in accordance with the provisions of said articles to the same extent as if they were fully copied at length herein.

Surety, for value received, stipulates and agrees that the bond shall automatically be increased by the amount of any change order or supplemental agreement which increases the Contract price with or without notice to the Surety, but in no event shall a Change Order or

Supplemental Agreement which reduces the Contract price decrease the penal sum of this Bond. And further that no change, extension of time, alteration, or addition to the terms of the Contract, or to the work performed thereunder, or the plans, specifications, or drawings accompanying the same shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the Contract or to the work to be performed thereunder.

Surety agrees that the bond provides for the repairs and/or replacement of all defects due to faulty materials and workmanship that appear within a period of one (1) year from the date of completion and acceptance of the improvement by the OWNER.

The undersigned and designated agent is hereby designated by Surety herein as the agent resident to whom any requisite notice may be delivered and on who service of process may be had in matters arising out of such suretyship.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument on this the _____day of _____, 20_____.

WITNESS

_____

PRINCIPAL

_____

Printed/Typed Name:_____

Title:_____

Company:_____

Address:_____

_____

_____

WITNESS

_____

SURETY

_____

Printed/Typed Name:_____

Title:_____

Company:_____

Address:_____

_____

_____

The Resident Agent of the Surety for delivery of notice and service of process is:
Name: _____
Address: _____
Phone number: _____

Note: Date of bond must NOT be prior to date of Contract.

SECTION J: PAYMENT BOND

STATE OF TEXAS §
§ **KNOW ALL MEN BY THESE PRESENTS:**
COUNTY OF PARKER §

THAT _____, a corporation organized and existing under the laws of the State of _____, and fully authorized to transact business in the State of Texas, whose address is _____, of the City of _____, County of _____, State of _____, (hereinafter referred to as "Principal"), and _____ _____(hereinafter referred to as "Surety"), a corporation organized under the laws of the State of _____ and authorized under the laws of the State of Texas to act as Surety on bonds for principals, are held and firmly bound unto _____ (hereinafter referred to as "OWNER") and unto all persons, firms and corporations who may furnish materials for or perform labor upon the buildings, structures or improvements referred to in the attached Contract, in the penal sum of $_____ (not less than 100% of the approximate total amount of the Contract as evidenced in the proposal) in lawful money of the United States, for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors, and assigns, jointly and severally, firmly by these presents:

WHEREAS, the Principal has entered into a certain written Contract with the OWNER, dated the _____day of _____,20____, to which said Contract is hereby referred to and made a part hereof and as fully and to the same extent as if copied at length herein for the construction of _____ _____.

NOW, THEREFORE, the condition of this obligation is such, that the bond guarantees the full and proper protection of all claimants supplying labor and material in the prosecution of the work provided for in said Contract and for the use of each claimant, and that conversely should the Principal faithfully perform said Contract and in all respects duly and faithfully observe and perform all and singular the covenants, conditions, and agreements in and by said Contract, agreed to by the Principal, and according to the true intent and meaning of said Contract and the claims and specifications hereto annexed, and any and all duly authorized modifications of said Contract that may hereafter be made, notice of which modification to Surety being hereby waived, then this obligation shall be void; otherwise, to remain in full force and effect. Provided further, that if any legal action be filed on this Bond, venue shall lie in **PARKER** County, Texas.

PROVIDED, HOWEVER, that this Bond is executed pursuant to the provisions Texas Government Code, Chapter 2253, as amended, and Article 7.19-1 of the Insurance Code, as amended, and all liabilities on this bond shall be determined in accordance with the provisions of said articles to the same extent as if they were fully copied at length herein.

Surety, for value received, stipulates and agrees that the bond shall automatically be increased by the amount of any Change Order or supplemental agreement which increases the Contract price with or without notice to the Surety and that no change, extension of time, alteration, or addition to the terms of the Contract, or to the work performed thereunder, or the plans, specifications, or drawings accompanying the same shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the Contract or to the work to be performed thereunder.

The undersigned and designated agent is hereby designated by Surety herein as the agent resident to whom any requisite notice may be delivered and on whom service of process may be had in matters arising out of such suretyship.

WITNESS

_____

PRINCIPAL

_____

Printed/Typed Name:_____

Title:_____

Company:_____

Address:_____

_____

_____

WITNESS

_____

SURETY

_____

Printed/Typed Name:_____

Title:_____

Company:_____

Address:_____

_____

_____

The Resident Agent of the Surety for delivery of notice and service of process is:
Name: _____
Address: _____
Phone number: _____

Note: Date of bond must NOT be prior to date of Contract.

SECTION K: NOTICE TO PROCEED

TO: _____ DATE: _____

_____ PROJECT: _____

_____ _____

_____ _____

You are hereby notified to commence work in accordance with the contract dated _____, on or before _____, and you are to complete the work within _____ ( ) consecutive calendar days thereafter. The date of completion of all work is therefore _____, 20__.

_____
(Owner Signature)

Printed Name_____

Title _____

ACCEPTANCE OF NOTICE:

Receipt of the above Notice to Proceed is hereby acknowledged:

By _____
(Contractor Signature)

This the _____ day of _____, 20___

Printed Name _____

Title _____

SECTION L - SUPPLEMENTAL CONDITIONS

1.0 General: These Supplemental Conditions modify or expand the General Provisions found in the **Standard Specifications for Public Works Construction - North Central Texas** published by and available through the North Central Texas Council of Governments. It is the intent of the Owner that these documents should be viewed together.

2.0 Modification of Existing Sections: Item numbers below correspond to item numbers in the General Provisions. This section contains modifications or additions to the existing items.

Item 101. Definitions and Abbreviations

Add the following definitions to those listed:

Advertisement: When the word advertisement is used, it shall be interpreted to mean the **Legal Notice Advertisement for Bids**, duly signed and published.

Certificate of Acceptance: A document, issued to the Owner, constituting a representation on the part of Pacheco Koch acting as the Owner's representative, stating the referenced project has been completed in general accordance with the Contract Documents on a specified date; and that, furthermore, final payment on the project as modified is due. The Owner will issue the Certificate of Acceptance stating the date upon which, ***in the opinion of staff***, the project was complete and thus time charges should cease.

General Provisions: Division 100 of the **Standard Specifications for Public Works Construction - North Central Texas** published by and available through the North Central Texas Council of Governments as amended and revised and incorporated documents thereto.

Notice to Proceed: A written notice, delivered in accordance with the definition of NOTICE, to the address indicated in the Contract Document stating the date by which work on the Contract must begin.

Standard Specifications: When referenced in general terms, the entire Standard Specifications for Public Works Construction published by and available through the North Central Texas Council of Governments; when referenced in specific, division numbers 200 through 800 of that document as amended and revised and incorporated documents thereto.

Superintendent: The authorized representative of the Contractor.

Supplemental Agreement: A written agreement between the parties of the contract covering alterations and unforeseen work incidental to the project.

Substantially Completed: By the term "substantially completed" is meant that the structure has been made suitable for use or occupancy or the facility is in condition to serve its intended purpose, but still may require minor miscellaneous work and adjustment.

Work Order: Same as Notice to Proceed.

Replace Definition of Contract or Contract Documents with the following:

Contract or Contract Documents: The written agreement covering the performance of work. The contract and contract documents include the Legal Notice Advertisement for Bids; instructions to bidders; bid proposal form; addendum; General Provisions and Specifications as found in the Standard Specifications for Public Works Construction as amended and revised published by and available through the North Central Texas Council of Governments; these Supplemental Conditions; the Special Conditions (if any); the Supplemental Specifications (if any); Federal Requirements Section (if any); Project Specific Special Requirements and Specifications (if any); plans and/or working drawings (if any) and any supplemental changes or agreements pertaining to the work or materials thereof; bonds; and any additional documents incorporated by reference in the above.

Replace Definition of Equal with the following:

Equal: Materials, articles or methods which are of equal or higher quality than those specified, or shown on the drawings in the sole opinion of the Engineer, and as further defined in the "or equal" clause, said materials being approved by the Engineer.

The following legal holidays are listed to supplement the definition of "Working Days":

New Year's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Add the following abbreviations to those listed:

ASCE	American Society of Civil Engineers
HI	Hydraulic Institute
Asph	Asphalt
GI	Galvanized Iron
SF	Square Feet
CF	Cubic Feet
CFS	Cubic Feet per Second
MGD	Million Gallons per Day
@	At

Item 102.1. Proposal Form

Add the following paragraphs to this section:

The Owner shall make available to the bidders additional, unbound copies of the Bid proposal form for use in submitting of the bids at the bidder’s request. Not withstanding the Measurement and Payment section of the technical specifications, unless otherwise modified by a written change order to the contract, the pay items outlined in the bid proposal form shall be the only pay items used for compensation to the Contractor for a completed project as shown in the Contract Documents. All work not specifically described as a payment item required to produce

a fully functional and warranted project as shown and specified shall be considered subsidiary to the various pay items listed in the bid proposal form.

Item 102.5. Proposal Guaranty

Modify the first paragraph in this section to allow the use of a certified check as bid surety. Modify language throughout to indicate that statements referring to cashier's checks also apply to certified checks.

Section 103.3.1.4 Bond Amounts Based on Contract Amount

Remove the following (ln 3-9) – "If the Contract amount is greater than $25,000 but less than or equal to $100,000… If the Contract amount is less than or equal to $25,000, the bidder receiving the award may elect not to provide Performance or Payment Bonds, …"
Replace with the following (ln 3-9) – "If the Contract amount is greater than $50,000 but less than or equal to $100,000… If the Contract amount is less than or equal to $50,000, the bidder receiving the award may elect not to provide Performance or Payment Bonds, …"

Item 105.1. Priority of Contract Documents

Replace this section in its entirety with the following:
In case of conflict between contract documents, priority of interpretation shall be in the following order: signed agreement (or contract); performance and warranty, and payment bonds; bid proposal form; Project Specific Special Requirements and Specifications; Supplemental Specifications; Special Conditions; Supplemental Conditions; Legal Notice Advertisement for Bids (or request for proposals); project drawings; **Standard Specifications for Public Works Construction - North Central Texas**; standard drawings; and referenced specifications; or all as may exist in this contract.

Item 105.1. Contract Documents

Add the following paragraph to Item 105.1.3:
All drawings, specifications and copies thereof furnished by the Engineer shall not be reused on other work, and, with the exception of the signed contract sets, are to be returned to the Engineer on request at the completion of the work. All models are the property of the Owner.

Item 103.3 Surety Bonds

It should be understood, that this section, by reference to Article 5160 of the Revised Civil Statutes of Texas, requires performance and warranty, and payment bonds (as outlined elsewhere) for projects where the total cost of the project equals or exceeds fifty thousand dollars ($50,000). The section also (implicitly) waives said requirements where a project cost is less than twenty five thousand dollars ($25,000).

Add the following paragraph to Item 107.16.3: Trench Safety.

107.16.3 Additional Safety Requirement

a) The Contractor is responsible to test for toxic and combustible gases and oxygen deficiency prior to entry into manholes (or other confined spaces) and at all times personnel are inside the

manholes. At the first indication of the presence of toxic or combustible gas or oxygen deficiency, the Contractor shall take such precautions as are required.

b) The Contractor is responsible to provide forced air or other remedial measures to clear the manholes prior to and during entry.

Item 107.18 Public Convenience and Safety:

Modify the item to indicate that the City will not charge the Contractor for emergency work, as defined in this section, until and unless telephone calls to the contractor's listed emergency numbers have been unsuccessful in resolving the emergency situation in an expedient manner.

Add the following paragraph as the fifth paragraph of this section:
The Contractor shall supply the names and phone numbers of at least two competent employees to handle general emergency and emergency traffic needs on the project twenty four hours a day. Failure of the Contractor to immediately correct improper or dangerous conditions after the City attempts to contact these employees shall be grounds for action on the part of the City as defined in the second paragraph of this section.

Add the following paragraph as the sixth and last paragraph of this section:
All fences, outbuildings, trees, or other encumbrances, accepting houses, upon or within the limits of the right-of-way and interfering with construction, shall be removed by the Contractor or otherwise disposed of if, and as, required by the engineer. The City will provide for removing all houses within the limits of the right- of- way which interfere with construction.

SECTION M – CONTRACT SPECIAL CONDITIONS AND PROVISIONS

1. **AWARD AND EXECUTION OF CONTRACT:** Addendum to Section 103.

   Add Section 103.8 Contract Time and Inclement Weather: Time will be charged for all calendar days regardless of weather conditions.

2. **TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER**: This provision specifies the procedure for the determination of time extensions for unusually severe weather. The listing below defines adverse weather days to be anticipated monthly. An adverse weather day is defined as being caused by any weather which caused or would have caused the progression of work to be halted for no less than half of one typical working day. The listing is based upon data from the National Oceanographic & Atmospheric Administration (NOAA) or similar data.

   MONTHLY ANTICIPATED ADVERSE WEATHER CALENDAR DAYS:

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
13	12	12	9	7	10	9	10	7	8	10	12

   The above schedule of anticipated adverse weather will constitute the baseline for monthly (or portion thereof) weather time evaluations. Upon acknowledgment of the Notice to Proceed and continuing throughout the contract on a monthly basis, actual adverse weather days will be recorded on a calendar day basis (include weekends and holidays) and compared to the monthly anticipated adverse weather in the schedule above. The term “actual adverse weather days” shall include days impacted by actual adverse weather days.

   The number of actual adverse weather days shall be calculated chronologically from the first to the last day in each month. Once the number of actual adverse weather days anticipated in the schedule above have occurred, the Engineer, upon the Contractor's written request, will examine any subsequently occurring adverse weather days to determine whether the Contractor is entitled to a time extension. The Contractor’s written request must be received within seven (7) calendar days of the requested day. Before adverse weather entitlement is granted, the Contractor must demonstrate fifty percent or more of the individual workdays were affected by the subsequent adverse weather. The adverse weather must also delay work critical to the timely completion of the project. The Engineer will convert any delays meeting the above requirements to calendar days and issue a modification.

   For all weather dependent activities, the Contractor’s schedule must reflect the anticipated adverse weather delays noted above.

   The following is considered as adverse weather: Weather of a nature where workers cannot perform work as scheduled or gain access to the work site (i.e. hurricane, tornado, high winds, floods, extremely cold weather, ice storm, sleet, heavy snow storm, et cetera).

3. **WORK HOURS:** Standard construction work hours are between 7:00 AM and 6:00 PM Monday through Friday. Standard inspection hours are between 8:00 AM and 5:00 PM Monday through Friday. Requests to work on Saturday shall be received in written form no later than the preceding Thursday by 12:00 p.m. Inspections performed on Saturdays or not within standard hours will be billed to the contractor directly. Requests to work on

any legal holiday shall be received in written form 48-hours prior to the listed holiday. Work on a Sunday or any legal holiday will be permitted only with written permission from the City of Willow Park. If work suspends for more than two days, a written communication is required to notify the intent to resume work. The written communication shall give the inspection personnel a minimum of 24 hour notice of the intent to resume work.

4. **CONTRACT DRAWINGS AND SPECIFICATIONS:** Addendum to Section 105.1.3 – The OWNER, through the Engineer, shall furnish to the Contractor, without charge, five copies of the contract and any supplemental drawings and specifications for the project. Contractor can acquire additional copies, if so desired, from Pacheco Koch for $150.00 per set.

5. **INSPECTION OVERTIME:** Addendum to Section 105.9.3. Inspection Overtime – All inspection overtime in excess of what is specified in Section 105.9.3, including weekday, weekend, and holiday overtime, associated with this project shall be billed to the Contractor at a rate of $60.00 plus 15%, or $69.00 per hour plus expenses. Vehicle expenses will be determined based on Continental United States (CONUS) privately owned vehicle mileage rates. This specification is intended to cover the overtime costs associated with inspection, observation and/or material testing performed by City staff and/or a Geotechnical Professional. The Contractor shall notify the Engineer by 12 P.M. of the immediately preceding Thursday of intent to work on the weekend. The contract shall be prepared to authorize overtime inspection upon request. Failure of the Contractor to work on the weekend after notifying the Engineer of intent to work may result in overtime charges if deemed by the Engineer as excessively revising the proposed schedule.

6. **PRE-CONSTRUCTION CONFERENCE:** Contractor shall attend a pre-construction conference within 10 days following Contractor's receipt of the Notice to Proceed from the OWNER. At a minimum, the Contractor's Contract Manager, Project Manager, Field Superintendent, Project Scheduler/Controller, and major subcontractor representatives shall attend the meeting. Topics of discussion may include introductions, scope, schedule, budget, invoicing and reporting, contract review, change orders, communications, submittals, construction sequencing plan, traffic control plan, emergency contact information, and public relations. City Representatives in attendance may include City Administrator, Mayor, Director of Public Works, Police Chief, Fire Chief, Inspector, materials testing representative, City Engineer, County Engineer, and Franchise Utilities representatives. The cost of the preconstruction conference is incidental to the project; and the cost for such shall be included in unit rates for the work.

7. **MONTHLY STATEMENT:** On a monthly basis, on an agreed upon date, the Contractor shall prepare and submit to the OWNER, through Pacheco Koch, an itemized statement specifying project costs which have been incurred for the reporting period and for the project to date. In addition, the Contractor shall prepare a monthly written progress report which includes a written description of the work accomplished for each pay item during the invoicing period. The itemized statement and written monthly progress report shall be submitted for review and approval on a monthly basis and a minimum of 7 days prior to submittal of progress payment invoices.

8. **SAMPLES AND MATERIAL TESTING:** Addendum to Section 106.5. Samples and Tests of Materials – OWNER will contract with a reputable commercial materials testing laboratory to verify that material testing specifications are being met. OWNER will forward the materials testing laboratory invoice to The Contractor and Contractor shall pay the

material testing laboratory directly for all material testing costs incurred for the project. The cost of materials testing shall be incidental to each respective item of work; and the cost for such shall be included with respective unit rates. Payment to the materials testing laboratory shall be made within 10 days of receipt of invoice for the same. Failure to submit payment for materials testing may result in the OWNER withholding the next monthly partial payment. No additional compensation or time shall be granted the Contractor for withheld monthly partial payments due to nonpayment of material testing costs. If retesting is required due to unsatisfactory test results, contractor shall reimburse the OWNER, or OWNER's representative, for any additional costs incurred due to the additional testing required including time and mileage.

9. **EROSION CONTROL:** Contractor shall minimize erosion during construction by disturbing minimal vegetation and earth as necessary to accommodate construction, and shall install erosion protection measures as shown on the approved SWP3 and in accordance with its detail sheets. Inspection and maintenance of erosion protection measures is the responsibility of the Contractor and shall be performed in compliance with (TPDES) General Construction Permit TXR150000 and frequently enough to prevent excessive sediment buildup and keep erosion protection structures intact, and whenever else deemed necessary by the OWNER, Engineer, or other authorized representative of either. At creek crossings, hydro-mulch shall be used to re-establish vegetation on disturbed areas for a distance of at least one hundred (100) feet in both directions along the project line from the centerline of the creek as soon as possible after land disturbing activities, installation of the proposed line and backfilling have been completed.

10. **UTILITY RELOCATION:** Contractor shall incorporate utility relocations as necessary into project execution and schedule. Contractor shall coordinate directly with each affected utility. Utilities crossed lying within City's easement or right of way shall be relocated at the expense of the utility owner. Likewise, utilities found lying in dedicated easements shall be relocated at the expense of the City. The Contractor is responsible for coordination of all utility locations and resolving conflicting areas.

11. **CONSTRUCTION PLAN:** Based on the Contractor's proposed Construction Sequencing Plan, Contractor shall prepare and submit a Control Plan for pollution prevention of the public roadway system. The Contractor must prevent the tracking of pollutants onto the roadway system from the site.

12. **SANITARY PROVISIONS:** Addendum to Section 107.17 - Contractor shall provide toilet facilities within 500 feet of all active work areas.

13. **STANDARD DRAWINGS:** City of Willow Park Building Code. Details are provided with bid documents. Modifications to the Standard Drawings, as may or may not be shown in the detail sheets, shall be used in lieu of the Standard Drawings when present. For all items of work where the City does not have modifications to the Standard Drawings, the Standard Drawing Details shall be followed.

14. **INSURANCE:** Insurance Certificates shall list as additional insured: THE CITY OF WILLOW PARK, CITY ENGINEER OF THE CITY OF WILLOW PARK, and PACHECO KOCH. The minimum insurance coverage shall be as defined in NTCOG Section 103.4. The contractor, in addition to the provisions stated above, should carry an "umbrella" liability coverage as defined in Section 103.4.3.

15. **EXISTING SITE PROTECTION:** Contractor shall protect any and all existing structures, underground utilities, existing trees, and existing fences to maximum extent possible.

16. **PAY ITEMS:** Items not listed in the bid proposal shall be considered subsidiary to the construction and no separate pay items will be issued.

17. **CONTINGENT FEES:** OWNER prohibits contingent fees for securing business.

18. **GRATUITIES:** OWNER prohibits gratuities from or to any parties engaged in this project.

SECTION 02 40 00

TRENCHLESS INSTALLATION

PART 1 - GENERAL

1.1 Description
A. This item establishes the requirements for Bore and Trenchless Installation.

1.2 Base Specification
A. Reference Specification for Trenchless Installation and Jack and Bore and related products shall be the North Central Texas Council of Government (NCTCOG) unless otherwise specified herein.

PART 2 - MATERIAL

2.1 Materials:
A. The encasement and carrier pipe shall be of the type and strength as indicated on the plans. All necessary materials shall conform to the applicable sections of these specifications or as specified by NCTCOG Items 501 and 503.

PART 3 – EXECUTION

3.1 General
A. Where encasement or carrier pipe is required to be installed under roadways by jacking, boring or tunneling methods, construction shall be made in a manner that shall not interfere with the operation of the roadway and shall not weaken or damage any embankment or structure. The CONTRACTOR shall notify City of Willow Park at least 48-hours prior to construction. The CONTRACTOR shall provide insurance as required by the governing authority.
B. During construction operations, barricades and lights to safeguard traffic and pedestrians shall be furnished and maintained around the excavation, equipment, and materials as required in Item 107.19. Protection of Work and of Persons and Property (with Addendum Items), until such time as the backfill has been completed and then shall be removed from the site. All excavations shall be safely secured at all times to prevent unauthorized access to the excavation site.
C. The CONTRACTOR shall take the proper precautions to avoid excavating earth or rock or shattering rock beyond the limits of excavation needed to install the conduit. All damages caused by excavating or blasting, either to surface or subsurface structures, shall be repaired or replaced by the CONTRACTOR at the CONTRACTOR'S own cost and expense. The CONTRACTOR shall dispose of all surplus materials at its own expense.
D. The drilling of pilot holes for the alignment of pipe prior to its installation by jacking, boring, or tunneling shall not be a requirement but may be necessary to maintain grade.
E. In cases where grout is to be used to fill the void between the carrier pipe and encasement, or the carrier pipe and rock/earth (if an encasement is not required), the CONTRACTOR may submit a request to use injected pea gravel in lieu of grout. Requests will be reviewed by the City on a case-by-case basis. If the request is not granted, the refusal will not constitute the basis for a claim. If the request is granted, a submittal detailing the means and methods of performing the work will be required for approval by the City. The City will have the option to require the use of grout and reject the entire concept of using injected pea gravel if the submittal is not approved. If the submittal is approved, it will not constitute a basis for an increase or a decrease to the cost of the CONTRACT. If the submittal is approved, the City accepts no responsibility for the final construction results by using pea gravel in lieu of grout.

END OF SECTION 02 40 00

SECTION 024119

SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:
   1. Demolition and removal of selected items on the site.
   2. Salvage and return to the owner of selected items.
   3. Salvage of existing items to be reused or recycled.

B. Related Sections include the following:
   1. Division 31 Section "Site Clearing" for site clearing and removal of above- and below-grade improvements.

1.3 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.

B. Remove and Salvage: Detach or remove items from existing construction and set aside or deliver them to Owner per the drawing notes.

C. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.4 MATERIALS OWNERSHIP

A. Items specifically identified on the plans as returned to owner shall be done so at the earliest convenience. All other items scheduled for demolition shall become the property of the contractor to dispose of in a legal manner.

1.5 SUBMITTALS

A. Qualification Data: None required.

B. Schedule of Selective Demolition Activities: Indicate the following:
   1. Interruption of utility services. Indicate how long utility services will be interrupted.
   2. Coordination for shutoff, capping, and continuation of utility services.
   3. Locations of proposed dust- and noise-control temporary partitions and means of egress.

C. Pre-demolition Video: Show existing conditions of entire site and each adjacent property to the construction and site improvements, including finish surfaces that might be misconstrued as damage caused by selective demolition operations.

1.6 QUALITY ASSURANCE

A. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.

B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

C. Standards: Comply with ANSI A10.6 and NFPA 241.

1.7 PROJECT CONDITIONS

A. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

B. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

C. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.

D. Storage or sale of removed items or materials on-site is not permitted.

E. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

PART 2 - EXECUTION

2.1 EXAMINATION

A. Verify that utilities have been disconnected and capped.
B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.
D. Perform surveys as the work progresses to detect hazards resulting from selective demolition activities.

2.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.
   1. If required, arrange to shut off indicated utilities with utility companies.
   2. If services/systems are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.

2.3 PREPARATION

A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
   1. Provide protection to ensure safe passage of people around selective demolition area.

2.4 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
   1. Dispose of demolished items and materials promptly.
B. Removed and Salvaged Items:
   1. Clean salvaged items.
   2. Store items in a secure area until delivery to Owner.
C. Removed and Reinstalled Items:
   1. Clean and repair items to functional condition adequate for intended reuse.
   2. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.

2.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals, using power-driven saw, then remove concrete between saw cuts.
B. Concrete and asphalt demolished on site can be used as fill in berm fill areas under the following conditions:
   1. Pieces are no larger than 4 square feet in size.
   2. At least 24" of soil cover is used over this fill in every location it is used.

C. Concrete and any stone demolished on site can be used as rip-rap on the condition that the pieces used are free of steel reinforcement and are between 4"and 12" in diameter on the longest side.

2.6 DISPOSAL OF DEMOLISHED MATERIALS

A. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

2.7 CLEANING

A. Clean adjacent off-site structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent off-site areas to condition existing before selective demolition operations began.

END OF SECTION 02 41 19

SECTION 04 42 50

LEUDERS LIMESTONE BLOCKS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes cut blocks of shelf limestone as shown in the plans and described herein.

1.2 SUBMITTALS

A. Photos: Show 2-3 individual photos of representative sample stones at the quarry. Each photo shall have a yardstick or tape measure to demonstrate general length, width and depth. Photos shall be taken in full sunlight to demonstrate range of color hues.

1.3 QUALITY ASSURANCE

A. Source Limitations for Stone: Obtain stone from a single quarry.
B. Mockups: Contractor shall provide one (1), full mock-up for approval by owner.

PART 2 - PRODUCTS

2.1 LIMESTONE

A. Sources:
   1. Mezger Enterprises, PO Box 1553, Lampasas, TX 76550 254-547-8598, www.mezger.com:
   2. Approved Equal.
B. Shapes and Sizes:
   1. Stone Benches: Quarry block, reference plans for size, sawn on top, bottom and ends only, remaining sides roughhewn. Drill marks are acceptable.

PART 3 - EXECUTION

3.1 SETTING STONE, GENERAL

A. Set stone directly onto the concrete as shown in the drawings. Drawings show location of each bench.

END OF SECTION 04 42 50

SECTION 12 93 00

SITE FURNISHINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:
   1. Water Fountain
   2. Trash receptacles.
B. Related Sections include the following:
   1. Division 32 Section "Concrete Pavements" for concrete footings and slabs and for the concrete used in the picnic tables.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated, provide cutsheets and shop drawings.
B. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below.
   1. Size: Not less than 6-inch- long linear components and 4-inch- square sheet components.
C. Product Schedule: See schedule indicated on Drawings.
D. Maintenance Data: For site furnishings to include in maintenance manuals.

1.4 QUALITY ASSURANCE

A. Source Limitations: Obtain each type of site furnishing through one source from a single manufacturer.

PART 2 - PRODUCTS

2.1 TRASH RECEPTACLES:

A. As indicated on the drawings.

2.2 WATER FOUNTAIN

A. As indicated on the drawings.

2.3 FABRICATION

A. Metal Components: Form to required shapes and sizes with true, consistent curves, lines, and angles. Separate metals from dissimilar materials to prevent electrolytic action.
B. Welded Connections: Weld connections continuously. Weld solid members with full-length, full-penetration welds and hollow members with full-circumference welds. At exposed connections, finish surfaces smooth and blended so no roughness or unevenness shows after finishing and welded surface matches contours of adjoining surfaces.
C. Pipes and Tubes: Form simple and compound curves by bending members in jigs to produce uniform curvature for each repetitive configuration required; maintain cylindrical cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of handrail and railing components.
D. Exposed Surfaces: Polished, sanded, or otherwise finished; all surfaces smooth, free of burrs, barbs, splinters, and sharpness; all edges and ends rolled, rounded, or capped.
E. Factory Assembly: Assemble components in the factory to greatest extent possible to minimize field assembly. Clearly mark units for assembly in the field.

2.4 FINISHES, GENERAL

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.5 STEEL AND GALVANIZED STEEL FINISHES

A. Baked-Enamel, Powder-Coat Finish: Manufacturer's standard, baked, polyester, powder-coat finish complying with finish manufacturer's written instructions for surface preparation, including pretreatment, application, baking, and minimum dry film thickness.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for correct and level finished grade, mounting surfaces, installation tolerances, and other conditions affecting performance.
   1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. Comply with manufacturer's written installation instructions unless more stringent requirements are indicated. Complete field assembly of site furnishings where required.
B. Unless otherwise indicated, install site furnishings concurrent to the paving.
C. Install site furnishings level, plumb, true, and securely anchored at locations indicated on Drawings.
D. Post Setting: Set cast-in support posts in concrete footing with smooth top, shaped to shed water. Protect portion of posts above footing from concrete splatter. Verify that posts are set plumb or at correct angle and are aligned and at correct height and spacing. Hold posts in position during placement and finishing operations until concrete is sufficiently cured.

3.3 CLEANING

A. After completing site furnishing installation, inspect components. Remove spots, dirt, and debris. Repair damaged finishes to match original finish or replace component.

END OF SECTION 12 93 00

SECTION 13 34 23

FABRICATED STRUCTURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes:
   1. Prefabricated playground

1.3 SUBMITTALS

A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each structure.
B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
   1. For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
C. Samples for Initial Selection: Color samples for-applied color finishes.
D. Warranties: Special warranties specified in this Section.

1.4 QUALITY ASSURANCE

A. Welding (if applicable): Qualify procedures and personnel according to the following:
   1. AWS D1.1, "Structural Welding Code--Steel."
B. Electrical Components, Devices, and Accessories (if applicable): Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

1.5 PROJECT CONDITIONS

A. Field Measurements: Verify actual locations of walls, columns, and other construction contiguous with control booths by field measurements before fabrication and indicate measurements on Shop Drawings.

1.6 COORDINATION

A. Coordinate installation of piers, beams and pads for the structures. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

WARRANTY

B. Manufacturer's standard warranty for finishes and connections apart from normal wear.
   1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Basis of design products are shown below, substitutions shall be or approved equal:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

2.2 PREFABRICATED PLAYGROUND

A. Manufacturer and Model: Reference plans.
B. Colors: Reference plans and manufacturer specifications

2.3 FINISHES

A. If applicable, comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
B. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.
   1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Per Manufacturer specifications.

3.3 ADJUSTING AND CLEANING

A. After completing installation, inspect exposed finishes and repair damaged finishes.

END OF SECTION 13 34 23

SECTION 31 00 00

EARTHWORK

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Geotechnical Report (if applicable): Perform earthwork complying with the requirements of Geotechnical Report for the site.
B. Codes and Standards: Perform earthwork complying with requirements of authorities with jurisdiction.
C. Existing Utilities: Do not interrupt existing utilities serving facilities occupied by the Owner or others except when permitted in writing by the Engineer and then only after acceptable temporary utility services have been provided.
D. Limits of this section: This section shall include earthwork on site outside of building pad areas. Refer to structural section for building pad requirements.
E. Reference Specification for earthwork and related products shall be the "Standard Specifications for Public Works Improvements", latest edition as published by the North Central Texas Council of Governments. (NCTCOG)
F. Per Landscape Architect, only backfill landscape area to a point 0.4 feet or 5 inches below the proposed finish grade. Refer to Landscape Plans and Specifications for further instructions.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. Provide approved borrow soil materials from offsite when sufficient approved soil materials are not available from excavations.
B. Import any additional topsoil that may be required to achieve the final grades shown in the plans.

2.2 SATISFACTORY SOIL MATERIALS

A. ASTM D 2487 soil classification groups GW, GP, GM, SW, SP, and SM; free of rock or gravel larger than 2 inches in any dimension, debris, waste, frozen materials, vegetation, or other deleterious matter.

2.3 UNSATISFACTORY SOIL MATERIALS

A. ASTM D 2487 soil classification groups GC, SC, ML, MH, CL, CH, OL, OH, and PT.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
B. Provide erosion and sedimentation control measures.
    a. Sediment control fencing shall be modified minimally, to exclude wildlife access to the construction areas. The exclusion fence should be buried at least six inches and be at least 24 inches high. The exclusion fence should be maintained for the life of the project only removed after construction is completed. Construction personnel should examine the inside of the exclusion area daily to determine if any wildlife species have been trapped inside the area of impact. Open trenches or excavation areas shall be covered overnight and/or inspected every morning to ensure no wildlife species have been trapped. Inspect excavation areas for trapped wildlife, prior to refilling.
C. Prevent surface water and subsurface or groundwater from entering excavations, from ponding on prepared subgrades, and from flooding project site and surrounding area.
D. Protect subgrades and foundation soils from softening and damage by rain or water accumulation and from freezing temperatures or frost.

3.2 EXPLOSIVES

A. Do not use explosives.

3.3 UNCLASSIFIED EXCAVATION

A. Excavation is unclassified and includes excavation to required subgrade elevations regardless of character of materials and obstructions encountered.

3.4 COMPACTION

A. Place backfill and fill materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers. Place evenly alongside structures and utilities to required elevations.

B. Compact soil to not less than the following percentages of maximum dry density according to ASTM D 698:

1. Under lawn or unpaved areas, compact the top 6 inches below subgrade and each layer of backfill or fill material to 90 percent.
2. Under walkways and pavement, compact the top 6 inches below subgrade and each layer of backfill or fill material to 95 percent.

END OF SECTION 31 00 00

SECTION 31 10 00

SITE CLEARING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, specifications and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section. It is the responsibility of the Contractor and all subcontractors to locate information pertaining to required items of work specified or indicated elsewhere in the Contract Documents.

1.2 SUMMARY

A. Protection of existing trees indicated to remain.
B. Removal of trees and other vegetation.
C. Topsoil stripping.
D. Clearing and grubbing.
E. Removing above-grade improvements.
F. Removing below-grade improvements.

1.3 PROJECT CONDITIONS

A. Traffic: Conduct site-clearing operations to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities. Do not close or obstruct streets, walks, or other occupied or used facilities without permission from authorities having jurisdiction. Provide barricading in accordance with local and state requirements.
B. Protection of Existing Improvements: Provide protections necessary to prevent damage to existing improvements indicated to remain in place.
   1. Protect improvements on adjoining properties and on Owner's property.
   2. Restore damaged improvements to their original condition, as acceptable to property owners.
C. Protection of Existing Trees and Vegetation: Protect existing trees and other vegetation indicated to remain in place against unnecessary cutting, breaking or skinning of roots, skinning or bruising of bark, smothering of trees by stockpiling construction materials or excavated materials within drip line, excess foot or vehicular traffic, or parking of vehicles within drip line. Provide temporary guards to protect trees and vegetation to be left standing.
   1. Water trees and other vegetation to remain within limits of contract work as required to maintain their health during course of construction operations.
   2. Provide protection for roots over 1-1/2 inch in diameter that are cut during construction operations. Coat cut faces with an emulsified asphalt or other acceptable coating formulated to use on damaged plant tissues. Temporarily cover exposed roots with wet burlap to prevent roots from drying out; cover with earth as soon as possible.
   3. Repair or replace trees and vegetation indicated to remain that are damaged by construction operations in a manner acceptable to Architect. Employ a licensed arborist to repair damage to trees and shrubs.
D. Improvements on Adjoining Property: Authority for performing removal and alteration work on property adjoining Owner's property will be obtained by Owner prior to award of contract.
   1. Extent of work on adjacent property is indicated on Drawings.
E. Salvable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises where indicated or directed.

1.4 EXISTING SERVICES

A. Indicated locations are approximate; determine exact locations before commencing Work.
B. Arrange and pay for disconnecting, removing, capping, and plugging utility services. Notify affected utility companies in advance and obtain approval before starting this Work.
C. Place markers to indicate location of disconnected services. Identify service lines and capping locations on Project Record Documents.

PART 2 - PRODUCTS (Not Applicable)

PART 3 – EXECUTION

3.1 SITE CLEARING

A. Remove trees, shrubs, grass, and other vegetation, improvements, or obstructions, as required, to permit installation of new construction. Remove similar items elsewhere on site or premises as specifically indicated. Removal includes digging out and off-site disposal of stumps and roots.
   1. Cut minor roots and branches of trees indicated to remain in a clean and careful manner where such roots and branches obstruct installation of new construction.

B. Topsoil is defined as friable clay loam surface soil found in a depth of not less than 4 inches. Satisfactory topsoil is reasonably free of subsoil, clay lumps, stones, and other objects over 2 inches in diameter, and without weeds, roots, and other objectionable material.
   1. Strip topsoil to whatever depths encountered in a manner to prevent intermingling with underlying subsoil or other objectionable material. Remove heavy growths of grass from areas before stripping.
      a. Where existing trees are indicated to remain, leave existing topsoil in place within drip lines to prevent damage to root system.
   2. Stockpile topsoil in storage piles in areas indicated or directed. Construct storage piles to provide free drainage of surface water. Cover storage piles, if required, to prevent wind erosion.
   3. Dispose of unsuitable or excess topsoil as specified for disposal of waste material.

C. Clearing and Grubbing: Clear site of trees, shrubs, and other vegetation, except for those indicated to be left standing.
   1. Completely remove stumps, roots, and other debris protruding through ground surface.
   2. Use only hand methods for grubbing inside drip line of trees indicated to remain.
   3. Fill depressions caused by clearing and grubbing operations with satisfactory soil material, unless further excavation or earthwork is indicated.
      a. Place fill material in horizontal layers not exceeding 6 inches loose depth, and thoroughly compact each layer to a density equal to adjacent original ground.
   4. Exception: Site Prep for Wet Area. Contractor shall identify waters edge and designate offset for site prep and seed installation.

D. Removal of Improvements: Remove existing above-grade and below-grade improvements as indicated and as necessary to facilitate new construction.
   1. Abandonment or removal of certain underground pipe or conduits may be indicated on mechanical or electrical drawings and is included under work of related Division 15 and 16 Sections. Removing abandoned underground piping or conduits interfering with construction is included under this Section.

3.2 DISPOSAL OF WASTE MATERIALS

A. Burning on Owner's Property: Burning is not permitted on Owner's property.

B. Removal to Owner's Spoil Area: Transport waste materials and unsuitable topsoil materials to designated spoil areas on Owner's property and dispose of as directed.

C. Removal from Owner's Property: Remove waste materials and unsuitable or excess topsoil from Owner's property.

END OF SECTION 31 10 00

SECTION 31 25 00

EROSION AND SEDIMENTATION CONTROLS

PART 1 – GENERAL

1.1. This section will consist of the completion and implementation of a storm water pollution prevention plan (SWPPP).

PART 2 – PRODUCTS

2.1. The contractor will be provided with a package outlining contractor requirements regarding the SWPPP. In addition, reference is made to the SWPPP construction plan prepared for this project.

PART 3 – EXECUTION

3.1. The contractor will be responsible for execution and implementation of the SWPPP, including construction of all required erosion control features, reporting to TCEQ and completion of inspection forms.
Contractor shall provide a copy of TCEQ Water permit for construction to Landscape Architect, prior to construction start date.

END OF SECTION 31 25 00

SECTION 32 13 13

PORTLAND CEMENT CONCRETE PAVING

PART 1 - GENERAL

1.1 SECTION INCLUDES
- A. Concrete, integral curbs, gutters and roads.

1.2 REFERENCES
- A. ACI 301 - Specifications for Structural Concrete for Buildings.
- B. ACI 304 - Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.
- C. ANSI/ASTM D1751 - Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction.
- D. ANSI/ASTM D1752 - Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
- E. ASTM A615 - Deformed and Plain Billet-Steel for Concrete Reinforcement.
- F. ASTM C33 - Concrete Aggregates.
- G. ASTM C94 - Ready Mix Concrete.
- H. ASTM C150 - Portland Cement.
- I. ASTM C260 - Air-Entraining Admixtures for Concrete.
- J. ASTM C309 - Liquid Membrane-Forming Compounds for Curing Concrete.
- K. ASTM C494 - Chemical Admixtures for Concrete.
- L. FS TT-C-800 - Curing Compound, Concrete, for New and Existing Surfaces.
- M. Reference Specification for portland cement concrete and related products shall be the "Texas Standard Specifications", latest edition as published by the Texas Department of Transportation (TxDOT).

1.3 SUBMITTALS
- A. Product Data: Provide data on joint filler admixtures curing compounds.
- B. Project Data: Provide concrete mix design.

1.4 QUALITY ASSURANCE
- A. Perform work in accordance with ACI 301.
- B. Obtain cementitious materials from same source throughout.

1.5 REGULATORY REQUIREMENTS
- A. Conform to applicable standards for paving work on public property.

1.6 ENVIRONMENTAL REQUIREMENTS
- A. Do not place concrete when base surface temperature is less than 40 degrees F (4 degrees C), or surface is wet or frozen.

PART 2 - PRODUCTS

2.1 FORM MATERIALS
- A. Form Materials: Conform to ACI 301.
- B. Joint Filler: ANSI/ASTM D1751 D1752 Asphalt Board type; 1/2 inch thick.

2.2 REINFORCEMENT
- A. Reinforcing Steel: ASTM A615; 60 yield grade; deformed billet steel bars; unfinished finish.
- B. Dowels: ASTM A615; 40 ksi (276 MPa) yield grade, plain steel, unfinished finish.

2.3 CONCRETE MATERIALS
- A. Cement: ASTM C150 Normal - Type I Portland type, grey color.
- B. Fine and Coarse Mix Aggregates: ASTM C33.

C. Water: Potable, not detrimental to concrete.
D. Air Entrainment: ASTM C260.

2.4 ACCESSORIES
A. Curing Compound: FS TT-C-800, Type 1, 30 percent solids ASTM C309, Type 1, Class A.

2.5 CONCRETE MIX – BY PERFORMANCE CRITERIA
A. Mix concrete in accordance with ACI 304. Deliver concrete in accordance with ASTM C94.
B. Select proportions for normal weight concrete in accordance with ACI 301 Method 3.
C. Provide concrete to the following criteria as shown on plans:
1. Compressive Strength: 3000 psi @ 28 days.
a. Average slump slip form paving: 3 in.
Maximum slump slip form paving: 4 in.
Average slump hand formed paving: 4 in.
Maximum slump hand formed paving: 5 in.
Slump for sidewalk, separate curb & gutter, and other miscellaneous concrete: As specified by Owner.
b. Maximum Water/Cement Ratio: 0.58.
c. Minimum Bags Cement per C.Y.: 5.0; min 470 lbs total cementions material.
2. Compressive Strength: 3600 psi @ 28 days.
a. Slump: 3 to 4 inches.
b. Maximum Water/Cement Ratio: 0.53.
c. Minimum Bags Cement per C.Y.: 6.0; min 564 lbs total cementions material.
D. Use accelerating admixtures in cold weather only when approved by Engineer. Use of admixtures will not relax cold weather placement requirements.
E. Use calcium chloride only when approved by Engineer.
F. Use set retarding admixtures during hot weather only when approved by Engineer.
G. With the approval of the Owner, fly ash may be used in all classes of concrete to replace a portion of the Portland cement in a mix design. Unless otherwise approved by the Owner, the maximum cement reduction shall not exceed 25-percent by weight per cubic-yard of concrete. If historical data and general practice in locality usage substantiates fly ash concrete using higher percentages, Contractor may submit written request to Owner for review. Fly ash replacement shall be on a weight basis. The minimum replacement ratio shall be 1.0-pounds of fly ash per 1.0-pounds (1kg-per-1kg) of cement replaced.

PART 3 - EXECUTION

3.1 EXAMINATION
A. Verify base conditions.
B. Verify compacted subgrade granular base stabilized soil is acceptable and ready to support paving and imposed loads.
C. Verify grades and elevations of base are correct.

3.2 SUBBASE
A. Prepare subbase in accordance with plan details

3.3 PREPARATION
A. Moisten base to minimize absorption of water from fresh concrete.
B. Coat surfaces of manhole catch basin frames with oil to prevent bond with concrete pavement.
C. Notify Engineer minimum 24 hours prior to commencement of concreting operations.

3.4 FORMING
A. Place and secure forms to correct location, dimension, and profile.
B. Assemble formwork to permit easy stripping and dismantling without damaging concrete.
C. Place joint filler vertical in position, in straight lines. Secure to formwork during concrete placement.

3.5 REINFORCEMENT

A. Place reinforcement as indicated.
B. Interrupt reinforcement at contraction expansion joints.
C. Place dowels reinforcement to achieve pavement and curb alignment as detailed.
D. Provide doweled joints 12 inches o.c. at interruptions of concrete with one end of dowel set in capped sleeve to allow longitudinal movement.

3.6 PLACING CONCRETE

A. Ensure reinforcement, inserts, embedded parts, formed joints and structures are not disturbed during concrete placement.
B. Place concrete continuously between predetermined construction joints. Do not break or interrupt successive pours such that cold joints occur.

3.7 JOINTS

A. Place expansion/contraction joints as shown on plans. Align curb, gutter, and sidewalk joints.
B. Place joint filler between paving components and building or other appurtenances. Recess top of filler 1/2 inch for sealant placement.
C. Provide scored sawn joints as shown on plans in standard curb and curb and gutter.
D. Provide keyed joints as indicated.

3.8 FINISHING

A. Area Paving: Light broom.
B. Sidewalk Paving: Light broom, radius to 1/2 inch radius, and trowel joint edges.
C. Curbs and Gutters: Light broom.
D. Place curing compound on exposed concrete surfaces immediately after finishing. Apply in accordance with manufacturer's instructions.

3.9 FIELD QUALITY CONTROL

A. Field inspection and testing will be performed under provisions of the General Conditions.
B. Three concrete test cylinders will be taken for every 75 or less cu yds of each class of concrete placed each day.
C. One additional test cylinder will be taken during cold weather and cured on site under same conditions as concrete it represents.
D. One slump test will be taken for each set of test cylinders taken.
E. Maintain records of placed concrete items. Record date, location of pour, quantity, air temperature, and test samples taken.

3.10 PROTECTION

A. Immediately after placement, protect pavement from premature drying, excessive hot or cold temperatures, and mechanical injury.

END OF SECTION 32 13 13

SECTION 32 13 14

CONCRETE PAVING FOR LANDSCAPE WORK

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes labor, materials, equipment, and appliances necessary to install exterior concrete pavement over prepared subgrades, which includes the following:
   1. Concrete Sidewalks
   2. Concrete Pads.
   3. Concrete Footings.
   4. Any other Non-vehicular Flatwork as shown on plans.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.
B. Design Mixtures: For each concrete pavement mixture.

1.3 QUALITY ASSURANCE

A. Manufacturer Qualifications: Manufacturer of ready-mixed concrete products who complies with ASTM C 94/C 94M requirements for production facilities and equipment.
B. ACI Publications: Comply with ACI 301, "Specification for Structural Concrete," unless modified by requirements in the Contract Documents.
C. Mock-Up: The landscape architect will approve the following to use as a benchmark throughout the remainder of the project:
   1. 1 - 4'x4' square of natural gray concrete with light broom finish.
   2. 1 - 4'x4' square of enhanced concrete. Reference plans.

PART 2 - PRODUCTS

2.1 STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60; deformed.
B. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded wire reinforcement, and dowels in place. Manufacturer bar supports according to CRSI's "Manual of Standard Practice."

2.2 CONCRETE MATERIALS

A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source throughout the Project:
   1. Portland Cement: ASTM C 150, Type I/II, gray.
B. Normal-Weight Aggregates: ASTM C 33, Class 4M coarse aggregate, uniformly graded. Provide aggregates from a single source.
C. Water: ASTM C 94/C 94M.
D. Air-Entraining Admixture: ASTM C 260.
E. Chemical Admixtures: ASTM C 494/C 494M, of type suitable for application, certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material.
F. Asphaltic fiber expansion joint material only. No wood expansion joints will be allowed.

2.3 CURING MATERIALS

A. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth.
B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
C. Water: Potable.
D. Evaporation Retarder: Waterborne, monomolecular film forming; manufactured for application to fresh concrete.
E. Clear Waterborne Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.
F. White Waterborne Membrane-Forming Curing Compound: ASTM C 309, Type 2, Class B.

2.4 RELATED MATERIALS

A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.

2.5 CONCRETE MIXTURES

A. Compressive Strength 28 Days, 3000 psi.
B. Maximum Water-Cementitious Materials Ratio at Point of Placement: 0.45.
C. Slump Limit: 5 inches plus or minus 1 inch.
D. Air Content: 5-1/2 percent plus or minus 1.5 percent.

2.6 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Furnish batch certificates for each batch discharged and used in the Work.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Plate compact prepared base surface below concrete pavements to identify soft pockets and areas of excess yielding.

3.2 EDGE FORMS AND SCREED CONSTRUCTION

A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides for pavement to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.
B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.3 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

3.4 JOINTS

A. General: Form construction, isolation, and contraction joints and tool edgings true to line with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline, unless otherwise indicated.
B. Control Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints per the drawing details.
C. Edging: Tool edges of pavement, gutters, and curbs in concrete after initial floating with an edging tool to a 1/4-inch radius. Repeat tooling of edges after applying surface finishes. Eliminate tool marks on concrete surfaces.

3.5 CONCRETE PLACEMENT

A. Moisten base to provide a uniform dampened condition at time concrete is placed.
B. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.
C. A boom truck may be required to access areas that are to be protected and areas that are difficult to reach.
D. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
E. Screed pavement surfaces with a straightedge and strike off.
F. Commence initial floating using bull floats or darbies to impart an open textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.

3.6 FLATWORK

A. General: Do not add water to concrete surfaces during finishing operations.
B. Float Finish: Begin the second floating operation when bleed-water sheen has disappeared, and concrete surface has stiffened sufficiently to permit operations. Float surface with power-

driven floats, or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.

C. Finishing:
   1. Trowel Finish: Provide smooth surface before applying the salt particles. Hard trowel to densify surface. Do not over-trowel or start troweling late. Hand Trowel: Use steel trowel.
      a. Machine Trowel: Use steel trowel blades. Use steel-reinforced plastic trowel blades such as Poly-Pro from Wagman Metal Products, Inc. (www.wagmanmetal.com).
   2. Medium to Fine textured Broom Finish: Draw a soft bristle broom across float-finished concrete surface perpendicular to line of traffic to provide a uniform, fine-line texture.

3.7 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
B. Comply with ACI 306.1 for cold-weather protection.
C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.
E. Curing Methods: Cure concrete by moisture curing, moisture-retaining-cover curing, curing compound or a combination of these methods.

3.8 PAVEMENT TOLERANCES

A. Comply with tolerances of ACI 117 and as follows:
B. Elevation: 1/4 inch.
   1. Thickness: Plus 3/8 inch, minus 1/4 inch.
   2. Surface: Gap below 10-foot- long, unleveled straightedge not to exceed 1/4 inch.
   3. Joint Spacing: 3 inches.
   4. Contraction Joint Depth: Plus 1/4 inch, no minus.
   5. Expansion Joint Width: Plus 1/8 inch, no minus.

3.9 REPAIRS AND PROTECTION

A. Remove and replace concrete pavement that is broken, damaged, or defective or that does not comply with requirements in this Section.
B. Protect concrete from damage. Exclude traffic from pavement for at least 14 days after placement.
C. Maintain concrete pavement free of stains, discoloration, dirt, and other foreign material. Sweep concrete pavement not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION 32 13 14

SECTION 32 17 23.33

PLASTIC PAVEMENT MARKINGS

PART 1 – GENERAL

This specification is for preformed retroreflective thermoplastic pavement marking materials. The materials can be adhered to asphalt, concrete and Portland Cement Concrete pavements by means of heat fusion.

1.1 MATERIALS

A. The preformed retroreflective marking material shall consist of a resilient polymer thermoplastic with uniformly distributed glass beads throughout its entire cross section.
B. The preformed retroreflective markings shall be fusible to asphalt and Portland Cement Concrete pavements by means of the normal heat of a propane type of torch. Adhesives, primers or sealers are not necessary prior to the preformed retroreflective markings application on asphalt and Portland Cement Concrete pavements.
C. The preformed retroreflective markings shall conform to pavement contours, breaks and faults through the action of traffic at normal pavement temperatures. The markings shall have resealing characteristics and be capable of fusing to itself and previously applied worn hydrocarbon and/or alkyd thermoplastic pavement markings.
D. The preformed retroreflective markings shall be capable of application on new, dense and open graded asphalt concrete wearing courses during the paving operation in accordance with the manufacturer's instructions. After application the markings shall be immediately ready for traffic. The preformed retroreflective markings shall be suitable for use for one year after the date of receipt when stored in accordance with the manufacturer's recommendations.
E. The material shall be available in precut strips and appropriate colors for parking space designation, HC designation, directional indication and other uses.

1.2 SUBMITTALS

The contractor will provide full specifications of the intended for the project, a 6" X 6" sample, and a copy of the manufacturers warranty.

1.3 REQUIREMENTS

A. The markings shall be highly durable retroreflective pliant polymer thermoplastic materials designed for transverse, longitudinal, legend and symbol markings subjected to high urban traffic volumes and particularly severe wear conditions such as repeated shear action from crossover or encroachment on typical configurations such as crosswalks, edge lines and lane lines.
B. The retroreflective pliant rosin ester thermoplastic pavement markings shall consist of a homogeneous mixture of high quality polymeric thermoplastic binders, pigments, fillers and glass beads.
C. To provide the required retroreflectivity, the preapplied factory top coating of glass beads shall meet or exceed AASHTO M247-81 Type 1 beads.
D. The thickness of the supplied material shall have a minimum average thickness of 0.090 inch (2.28mm) (Expressed as 90 mils).
E. The preformed retroreflective thermoplastic material shall have a minimum tensile strength of 150 lb. per square inch of cross section, at 0.090 (2.28 mil) thickness, when tested according to ASTM-D-638-76.
F. The applied markings shall be resistant to deterioration due to exposure to sunlight, water, oil, diesel fuels, gasoline, pavement oil content, salt and adverse weather conditions.
G. When properly applied, in accordance with manufacturer's instructions, the preformed retroreflective pavement markings shall be neat and durable. The markings shall remain skid resistant and show no lifting, shrinkage, tearing, roll back or other signs of poor adhesion.

1.4 MANUFACTURERS

A. The following manufacturers are acceptable:
   1. Stimsonite Corporation, Niles, IL
   2. Premark, flint Trading, Inc. Thomasville, NC
   3. Or Equal

1.5 WARRANTY

A. Any properly applied preformed retroreflective thermoplastic material that shall smear or soften independent of pavement movement within a period of one year from date of application shall be replaced by the supplier.

1.6 INSTALLATION

A. The markings shall be applied in accordance with the manufacturer's recommendations on clean and dry surfaces. New Portland concrete cement surfaces must be sandblasted to entirely remove curing compound. Marking configuration shall be in accordance with the "Manual on Uniform Traffic Control Devices," where applicable.

B The preformed retroreflective thermoplastic material shall be fusible to the pavement by means of a propane torch recommended by the manufacturer.

C. The supplier shall provide technical services as may be required.

END OF SECTION 32 17 23.33

SECTION 328400
PLANTING IRRIGATION

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes piping, valves, sprinklers, specialties, controls, and wiring for automatic control irrigation system for reclaimed water line.

1.2 DEFINITIONS

A. Lateral Piping: Downstream from control valves to sprinklers, specialties, and drain valves. Piping is under pressure during flow.

B. Irrigation Main Piping: Downstream from point of connection to water distribution piping to, and including, control valves. Piping is under water-distribution-system pressure.

1.3 SUBMITTALS

A. Product Data: Include pressure ratings, rated capacities, and settings of selected models for the following:

1. System valves.
2. Specialty valves.
3. Control-valve boxes.
4. Sprinklers.
5. Irrigation specialties.

B. Operation and maintenance data.

1.4 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. As indicated on the drawings.

2.2 PIPES, TUBES, AND FITTINGS

A. PVC Pipe: Main Line: Schedule 40 ASTM D 2466.

B. PVC Pipe: Lateral Lines: Schedule 40 ASTM D 2466.

C. PVC Socket Fittings: Schedule 40 ASTM D 2466.

2.3 GENERAL-DUTY VALVES

A. PVC Ball Valves: MSS SP-122, nonunion type, with full-port ball, socket or threaded detachable end connectors, and pressure rating not less than 150 psig.

2.4 SPECIALTY VALVES

A. Automatic Control Valves: Per plans

1. Manufacturer as indicated on the drawings.

B. Quick-Couplers: Factory-fabricated, bronze or brass, two-piece purple cap assembly. Include coupler water-seal valve; removable upper body with spring-loaded or weighted, rubber-covered cap; hose swivel with ASME B1.20.7, 1-11.5NH threads for garden hose on outlet; and operating key.

1. Manufacturer as indicated on the drawings.

C. Drainage Backfill: Cleaned gravel or crushed stone, graded from 3/4 inch minimum to 1 inch maximum.

2.5 SPRINKLERS

A. Description: Plastic housing and corrosion-resistant interior parts designed for uniform coverage over entire spray area indicated, at available water pressure.

1. Manufacturer as indicated on the drawings.

2.6 AUTOMATIC-CONTROL SYSTEM

A. Manufacturer as indicated on the drawings.

B. Wiring: 12 GA. Direct Burial Wire

PART 3 - EXECUTION

3.1 EARTHWORK

A. Refer to Division 31 "Earthwork" for excavating, trenching, and backfilling.

B. Install piping and wiring in sleeves under sidewalks and paving per the drawings.

C. Provide minimum cover over top of underground piping according to the following:

1. Irrigation Main Piping: Minimum depth of 18 inches.
2. Lateral Piping: 12 inches.

3. Sleeves: 18 inches.

3.2 PIPING APPLICATIONS

A. Underground Irrigation Main Piping: Schedule 40 PVC pipe and socket fittings; and solvent-cemented joints per the drawings.

B. Lateral Piping: Schedule 40 PVC pipe and socket fittings per the drawings and details.

C. Sleeves: Schedule 40 PVC pipe and socket fittings; and solvent-cemented joints.

3.3 VALVE APPLICATIONS

A. Control Valves: Per the drawings.

3.4 INSTALLATION

A. Install piping free of sags and bends.

B. Install groups of pipes parallel to each other, spaced to permit valve servicing.

C. Install fittings for changes in direction and branch connections.

D. Install unions adjacent to valves and to final connections to other components.

E. Lay piping on solid base, uniformly sloped without humps or depressions.

F. Control Valves: Install in control-valve box.

G. Flush circuit piping with full head of water and install sprinklers after hydrostatic test is completed.

H. Locate sprinkler heads to maintain a minimum distance of 2 inches from paved surfaces.

I. Install freestanding controllers on precast concrete bases per the drawing.

J. Install control cable in same trench as irrigation piping and at least 2 inches below or beside piping. Provide conductors of size not smaller than recommended by controller manufacturer. Install cable in separate sleeve under paved areas if irrigation piping is installed in sleeve.

3.5 FIELD QUALITY CONTROL

A. Perform the following field tests and inspections and prepare test reports:

1. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
2. Operational Test: After electrical circuitry has been energized, operate controllers and automatic control valves to confirm proper system operation.
3. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

B. Remove and replace units and re-inspect as specified above.

C. All trenches shall be compacted and refilled/leveled as required throughout the maintenance period.

3.6 ADJUSTING

A. Adjust settings of controllers.

B. Adjust automatic control valves to provide flow rate of rated operating pressure required for each sprinkler circuit.

C. Adjust sprinklers so they will be flush with, or not more than 1/2 inch above, finish grade.

END OF SECTION

SECTION 32 92 00

TURF AND GRASSES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Sod.

1.2 DEFINITIONS

A. Finish Grade: Elevation of finished surface of planting soil.

B. Planting Soil: Native or imported topsoil, manufactured topsoil, or surface soil modified to become topsoil; mixed with soil amendments.

C. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill immediately beneath planting soil.

D. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Product certificates.

C. Planting Schedule: Indicating anticipated planting dates for each type of planting.

1.4 QUALITY ASSURANCE

A. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when planting is in progress.

1.5 MAINTENANCE SERVICE

A. Initial Lawn Maintenance Service: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in Part 3. Begin maintenance immediately after each area is planted and continue until acceptable lawn is established, but for not less than the following periods:

1. Sodded Lawns: 30 days from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 SOD

A. Solid sod where indicated on drawings.

2.2 TOPSOIL

A. Topsoil: On site soil, stripped prior to mass grading.

1. Topsoil Source: Reuse surface soil stockpiled on-site. Clean surface soil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful to plant growth.

2.3 ORGANIC SOIL AMENDMENTS

A. Compost: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 1/2-inch sieve; soluble salt content of 5 to 10 decisiemens/m, Living Earth or approved equal.

2.4 FERTILIZER

A. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:

1. Composition: 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.

PART 3 - EXECUTION

3.1 LAWN PREPARATION

A. Newly Graded Topsoil: Finish grade by removing stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.

B. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit finish grading to areas that can be planted in the immediate future.

C. Moisten prepared lawn areas before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

D. Before planting, restore areas if eroded or otherwise disturbed after finish grading.

3.2 SOD INSTALLATION

A. Sod: Roll sod over the areas identified on the plans with staggered joints. Use a manual roller drum following first watering. Use fine sand to fill joints and re-roll after the first week of watering.

3.3 LAWN MAINTENANCE

A. Maintain and establish lawn by watering, fertilizing, weeding, mowing, trimming, replanting, and other operations. Roll, re-grade, and replant bare or eroded areas and re-mulch to produce a uniformly smooth lawn. Provide materials and installation the same as those used in the original installation.

B. Mow only the Bermuda and St. Augustine Sod areas for maintenance. Other areas are to be cared for until established without mowing. For those areas mowed, mow lawn as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than 1/3 of grass height. Remove no more than 1/3 of grass-leaf growth in initial or subsequent mowings.

3.4 SATISFACTORY TURF

A. Satisfactory Sod: Fully rooted, evenly colored sod without visible sod joints that has been mowed at least twice.

B. Use specified materials to reestablish lawns that do not comply with requirements and continue maintenance until lawns are satisfactory.

END OF SECTION 329200

SECTION 32 93 00

PLANTS

PART 1 - GENERAL

1.01 SUMMARY
- A. Section Includes:
  1. Trees.
  2. Shrubs
  3. Ground Covers

1.02 DEFINITIONS
- A. Backfill: The earth used to replace or the act of replacing earth in an excavation.
- B. Finish Grade: Elevation of finished surface of planting soil.
- C. Planting Soil: Native or imported topsoil, manufactured topsoil, or surface soil modified to become topsoil; mixed with soil amendments.
- D. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill, before placing planting soil.
- E. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.

1.03 SUBMITTALS
- A. Product Data: For each type of product indicated, including:
  1. Digital photos - indicating plant size, condition, color and container size.
  2. Nursery name, location and contact.
  3. 1 gallon ziplock bag samples of mulch and compost.
- B. Product certificates.

1.04 QUALITY ASSURANCE
- A. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when planting is in progress.
- B. Provide quality, size, genus, species, and variety of exterior plants indicated, complying with applicable requirements in ANSI Z60.1, "American Standard for Nursery Stock."

1.05 DELIVERY, STORAGE, AND HANDLING
- A. Do not prune trees before delivery. Protect bark, branches, and root systems from sun scald, drying, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of exterior plants during delivery. Do not drop exterior plants during delivery and handling.
- B. Handle planting stock by root ball/container.
- C. Deliver exterior plants after preparations for planting have been completed and install immediately. If planting is delayed more than six hours after delivery, set exterior plants and trees in shade, protect from weather and mechanical damage, and keep roots moist.

1.06 WARRANTY
- A. Special Warranty: Installer's standard form in which Installer agrees to repair or replace plantings that fail in materials, workmanship, or growth within specified warranty period.
  1. Failures include, but are not limited to, the following:
     a. Death and unsatisfactory growth, except for defects resulting from lack of adequate maintenance, neglect, abuse by Owner, or incidents that are beyond Contractor's control.
     b. Structural failures including plantings falling or blowing over.
  2. Warranty Periods from Date of Substantial Completion:
  3. Trees and Plants: One year.

1.07 MAINTENANCE SERVICE

A. Initial Maintenance Service: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in Part 3. Begin maintenance immediately after each area is planted and continue until plantings are acceptably healthy and well established, but for not less than maintenance period below.
   1. Maintenance Period for Trees and Plants: Three months from date of substantial planting completion.

PART 2 - PRODUCTS

2.01 TREE AND PLANT MATERIAL

A. General: Furnish nursery-grown trees and shrubs complying with ANSI Z60.1, with healthy root systems developed by transplanting or root pruning. Provide well-shaped, fully branched, healthy, vigorous stock free of disease, insects, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.

B. Root-Ball Depth: Furnish trees and shrubs with root balls measured from top of root ball, which shall begin at root flare according to ANSI Z60.1. Root flare shall be visible before planting.

C. Plant sizes indicated on Drawings are sizes after pruning.

2.02 TOPSOIL

A. Topsoil:
   1. Topsoil Source: Reuse surface soil stockpiled on-site. Verify suitability of stockpiled surface soil to produce topsoil. Clean surface soil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful to plant growth.

2.03 ORGANIC SOIL AMENDMENTS

A. Compost: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 1-inch sieve; soluble salt content of 5 to 10 decisiemens/m, Living Earth, or approved equal.

2.04 FERTILIZER

A. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:
   1. Composition: 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.

2.05 MULCHES

A. Organic Mulch: Ground or shredded native tree trimmings.

2.06 PLANTING SOIL MIX

A. Planting Soil Mix: Mix topsoil with the following soil amendments in the following quantities:
   1. Install 3" of loose compost, then till into 6" of topsoil for a total prepared soil depth of 9".

PART 3 - EXECUTION

3.01 PLANTING BED ESTABLISHMENT

A. Per 2.6A. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.

B. Finish Grading: Grade planting beds to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.

3.02 TREES AND PLANTS

A. Excavation of Pits and Trenches: Excavate circular pits with sides sloped inward. Trim base leaving center area raised slightly to support root ball and assist in drainage. Do not further disturb base. Scarify sides of plant pit smeared or smoothed during excavation.

B. Before planting, verify that root flare is visible at top of root ball according to ANSI Z60.1.

C. Container Grown: Carefully remove root ball from container without damaging root ball or plant. Set trees and plants plumb and in center of pit or trench with top of root ball 2 inches above adjacent finish grades.
D. Organic Mulching: Apply 2-inch average thickness of organic mulch. Do not place mulch within 3 inches of trunks or stems.

3.03 TREE PRUNING
A. Remove only dead, dying, or broken branches. Do not prune for shape.

3.04 PLANTING BED MULCHING
A. Mulch surfaces of planting beds and other areas indicated.

3.05 PLANT MAINTENANCE
A. Tree and Plant Maintenance: Maintain plantings by pruning, cultivating, watering, weeding, fertilizing and resetting to proper grades or vertical position, as required to establish healthy, viable plantings. Spray or treat as required to keep and plants free of insects and disease.
B. Ground Cover and Plant Maintenance: Maintain and establish plantings by watering, weeding, fertilizing, mulching, and other operations as required to establish healthy, viable plantings.
C. Protect exterior plants from damage due to landscape operations, operations by other contractors and trades, and others. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged plantings.

END OF SECTION 32 93 00

SECTION 33 10 00

WATER UTILITIES

PART 1 - GENERAL

1.1 System Performance Requirements: Except where otherwise indicated, the following are minimum pressure requirements for water system piping.
A. Underground Piping: 150 psig.

PART 2 - PRODUCTS

2.1 Pipes and Tubes: The applications of the following pipe and tube materials are indicated in the "Piping Applications" paragraph.
A. Polyvinyl Chloride (PVC) Pipe: AWWA C900; Class 150 or 200 psig as noted; with bell end and ASTM F 447 elastomeric seal gasket, and plain end for PVC elastomeric gasket fittings. Include NSF 14 pipe marking "NSF-pvc cto only."

2.2 Joining Materials: The applications of the following joining materials are indicated in the "Piping Applications" paragraph.
A. Ductile-Iron Fittings: The following materials apply:
1. Push-On Joints: AWWA C111 rubber gaskets and lubricant.
2. Mechanical Joints: AWWA C111 ductile-iron or gray-iron glands, high-strength steel bolts and nuts, and rubber gaskets.
3. Mechanical Restrained Joint: AWWA C111.
B. Solder Filler Metal: ASTM B 32, Alloys Sn95, Sn94, or E.

2.3 Nonrising Stem Gate Valves, 2 Inches and Smaller: MSS SP-80; body and screw bonnet of ASTM B 62 cast bronze; with Class 125 threaded ends, solid wedge, nonrising copper-silicon alloy stem, brass packing gland, polytetrafluoroethylene (PTFE)-impregnated packing, and malleable-iron handwheel.

2.4 Valve Boxes: Cast-iron box having top section and cover with lettering "WATER," bottom section with base of size to fit over valve and barrel approximately 5 inches in diameter, and adjustable cast-iron extension of length required for depth of bury of valve.
A. Provide a steel tee-handle operating wrench with each valve box.

2.5 Indicator Posts: UL 789, FM-approved, vertical type, cast-iron body with operating wrench, extension rod, and adjustable cast-iron barrel of length required for depth of bury of valve.

2.6 Curb Stops: Bronze body, ground key plug or ball, and wide tee head, with inlet and outlet to match service piping material.

2.7 Service Boxes for Curb Stops: Cast-iron box with telescoping top section of length required for depth of bury of valve. Include cover having lettering "WATER," and bottom section with base of size to fit over curb stop and barrel approximately 3 inches in diameter.
A. Provide steel tee-handle shutoff rod with each service box.

2.8 Service Clamps and Corporation Stops: Complete assembly, including service clamp, corporation stop, and bolts and nuts. Use service clamp and stop compatible with drilling machine.

2.9 Water Meter in accordance with Local City Standards.

2.10 Meter Box: Cast-iron body, cast-iron cover having lettering "WATER METER," and base section of length to fit over service piping. Base section is open at bottom, slotted, and may be cast iron, polyvinyl chloride (PVC), or piece of clay or other pipe.

PART 3 - EXECUTION

3.1 Excavation, trenching, and backfilling are specified in Division 2 Section "Earthwork."

3.2 Extend water system piping and connect to water supply source and building water distribution and fire protection systems.

3.3 Install restrained joints for buried piping within 5 feet (1.5 m) of building. Use restrained-joint pipe and fittings, thrust blocks, anchors, tie-rods and clamps, and other supports at vertical and horizontal offsets.

3.4 Piping Applications: Refer to "Products" article for detailed specifications for pipe and fittings products listed below. Use pipe, tube, fittings, and joining methods according to the following applications.
A. Use pipe, tube, fittings, and joining methods according to following applications.
1. 3 Inches and Smaller: Copper tube, Type L (Type B), copper tube fittings, and soldered joints.
2. 4 Inches to 8 Inches: Class 200, ductile-iron pipe, ductile-iron or gray-iron fittings, and push-on or mechanical joints.
3. 4 Inches to 8 Inches: AWWA C900, Class 200 polyvinyl chloride (PVC) plastic pipe, AWWA C900 PVC fittings, and gasketed joints.

3.5 Drawings indicate valve types to be used. Where specific valve types are not indicated, the following requirements apply:
A. Buried Valves 3 Inches and Larger: AWWA, gate valves, nonrising stem, with valve box.
B. Buried Valves 4 Inches and Larger: UL/FM, gate valves, nonrising stem, with indicator post.
C. Meter Box Installation, Valves 2 Inches and Smaller: MSS, nonrising stem gate valves.

3.6 Construct joints according to the following:
A. Ductile-Iron Piping Gasketed Joints: Construct joints according to AWWA C600.
B. Threaded Joints: Apply tape or joint compound and apply wrench to valve ends into which pipes are being threaded.
C. Copper Tube and Fittings, Soldered Joints: Construct joints according to AWS "Soldering Manual," Chapter "The Soldering of Pipe and Tube."
D. AWWA Polyvinyl Chloride (PVC) Piping Gasketed Joints: Use AWWA C900 joining materials. Construct joints with elastomeric seals and lubricant according to ASTM D 2774 or ASTM D 3139 and pipe manufacturer's written instructions.

3.7 Install fittings for changes in direction and branch connections.

3.8 Install unions, in piping 2 inches (50 mm) and smaller, adjacent to each valve.

3.9 Install piping according to the following:

A. Water Main Connection: Tap water main with size and in location as indicated according to requirements of water utility.
   1. Install stainless steel tapping sleeve and tapping valve according to manufacturer's installation instructions.
   2. Install tapping sleeve on pipe to be tapped. Position flanged outlet for gate valve.
   3. Install gate valve onto tapping sleeve. Comply with AWWA C600. Install valve with stem pointing up and with cast-iron valve box.
   4. Use tapping machine compatible with valve and tapping sleeve; cut hole in main. Remove tapping machine and connect water service piping.
   5. Install service clamps and corporation stops in size, quantity, and arrangement required by utility company standards and according to manufacturer's installation instructions.
   6. Install service clamps on pipe to be tapped. Position outlet for corporation stop.
   7. Install corporation stops into service clamps. Install valve with stem pointing up and with cast-iron valve box.
   8. Install curb stop in service piping with head pointing up and with cast-iron service box.
   9. Use drilling machine compatible with service clamp and corporate stop. Drill hole in main. Remove drilling machine and connect water service piping.

B. Comply with requirements of NFPA 24 for materials and installation.

C. Install ductile-iron pipe and ductile-iron and cast-iron fittings according to AWWA C600.

D. Install copper tube and wrought-copper fittings according to CDA No. 404/0 "Copper Tube Handbook."

E. Install AWWA polyvinyl chloride (PVC) plastic pipe according to AWWA M23.

F. Bury piping at minimum depth of 36 inches below finished grade and not less than 18 inches below average local frost depth.

3.10 Anchorages: Install anchorages for tees, plugs and caps, bends, crosses, valves, and hydrant branches.

A. Gasketed-Joint, Ductile-Iron Piping: According to AWWA C600.

B. Gasketed-Joint, Polyvinyl Chloride (PVC) Piping: According to AWWA M23.

C. Fire Service Piping: According to NFPA 24.

D. Apply full coat of corrosion-retarding material to surfaces of installed ferrous anchorage devices.

3.11 Valve Applications: Use mechanical-joint-end valves for 3-inch and larger buried installation. Use threaded- and flanged-end valves for installation in pits and inside building. Use nonrising stem UL/FM gate valves for installation with indicator posts. Use bronze corporation stops and valves, with ends compatible with piping, for 2-inch and smaller installation.

A. AWWA-Type Gate Valves: Comply with AWWA C600. Install buried valves with stem pointing up and with cast-iron valve box.

B. UL/FM-Type Gate Valves: Comply with NFPA 24.
   1. Install buried valves with stem pointing up and with vertical cast-iron indicator post.

C. Bronze Corporation Stops and Curb Stops: Comply with manufacturer's installation instructions. Install buried curb stops with head pointed up and with cast-iron curb box.

3.12 Install water meters, piping, and specialties according to the specified requirements.

A. Water Meter: Install displacement (disc)-type water meters 2-inch size and smaller in meter boxes with shutoff valve on meter inlet. Include valve on meter outlet and valved bypass around meter when indicated.

B. Install continuous tracer wire during back-filling of trench for underground water piping. Locate 12-inches above pipe directly over piping.

END OF SECTION 33 10 00

SECTION 33 30 00

SANITARY SEWERAGE UTILITIES

PART 1 - GENERAL

1.1 Submittals: Submit the following:
- A. Product data for drainage piping specialties.
- B. If applicable, shop drawings for precast concrete sanitary manholes, including frames and covers.
- C. If applicable, shop drawings for cast-in-place concrete or field erected masonry sanitary manholes, including frames and covers.

1.2 Environmental Compliance: Comply with applicable portions of local Environmental Agency regulations pertaining to sanitary sewerage.

1.3 Utility Compliance: Comply with local utility regulations and standards pertaining to sanitary sewerage.

PART 2 - PRODUCTS

2.1 Pipe and Fittings: Provide pipe and pipe fitting materials compatible with each other. Where more than one type of materials or products is indicated, selection is Installer's option.

2.2 PVC (Polyvinyl Chloride) Sewer Pipe and Fittings: ASTM D 3034, SDR 35, for solvent cement or elastomeric gasket joints.
- A. Solvent Cement: ASTM D 2564.
- B. Gaskets: ASTM F 477, elastomeric seal.

2.3 Dissimilar-Pipe Couplings: Rubber or elastomeric sleeve and stainless steel band assembly fabricated to match outside diameters of pipes to be joined.
- A. Sleeves: ASTM C 425, rubber for vitrified clay pipe; ASTM C 443, rubber for concrete pipe; ASTM C 564, rubber for cast iron soil pipe; and ASTM F 477, elastomeric seal for plastic pipe. Sleeves for dissimilar or other pipe materials shall be compatible with pipe materials being joined.
- B. Bands: Stainless steel, one at each pipe insert.

2.4 Dissimilar-Pipe Reducer Couplings: Rubber or elastomeric compression gasket, made to match pipe inside diameter or hub, and adjoining pipe outside diameter.
- A. Gaskets: ASTM C 425, rubber for vitrified clay pipe; ASTM C 443, rubber for concrete pipe; ASTM C 564, rubber for cast iron soil pipe; and ASTM F 477, elastomeric seal for plastic pipe. Gaskets for dissimilar or other pipe materials shall be compatible with pipe materials being joined.

2.5 Precast Concrete Manholes: ASTM C 478, precast reinforced concrete, of depth indicated with provision for rubber gasket joints.
- A. Base Section: 6-inches minimum thickness for floor slab and 4-inches minimum thickness for walls and base riser section, and having a separate base slab or base section with integral floor.
- B. Riser Sections: 4-inches minimum thickness; 48-inches diameter and lengths to provide depth indicated.
- C. Top Section: Eccentric cone type, unless concentric cone or flat slab top type is indicated. Top of cone to match grade rings.

D. Grade Rings: Provide 2 or 3 reinforced concrete rings, of 6 to 9 inches total thickness and match 24-inches diameter frame and cover.
E. Gaskets: ASTM C 443, rubber.
F. Pipe Connectors: ASTM C 923, resilient, of size required, for each pipe connecting to base section.
G. Channel and Bench: Concrete.

2.6 Cast-in-Place Manholes: Reinforced concrete of dimensions and with appurtenances indicated.
A. Bottom, Walls, and Top: Reinforced concrete.
B. Channel and Bench: Concrete.

2.7 Concrete: Portland cement mix, 3,000 psi.
A. Cement: ASTM C 150, Type II.
B. Fine Aggregate: ASTM C 33, sand.
C. Coarse Aggregate: ASTM C 33, crushed gravel.
D. Water: Potable.

2.8 Reinforcement: Steel conforming to the following:
A. Reinforcement Bars: ASTM A 615, Grade 60, deformed.

2.9 Manhole Frames and Covers: ASTM A 536, Grade 60-40-18, heavy-duty, ductile-iron, 24-inch inside diameter by 7- to 9-inch riser with 4-inch minimum width flange, and 26-inch diameter cover, indented top design, with lettering "SANITARY SEWER" cast into cover.

2.10 Cleanouts: Provide cast-iron ferrule and countersunk brass cleanout plug, with round cast iron access frame and heavy duty, secured, scoriated cast iron cover.

2.11 Plastic Underground Warning Tapes: Polyethylene plastic tape, 6 inches wide by 4 mils thick, solid green in color with continuously-printed caption in black letters "CAUTION - SEWER LINE BURIED BELOW."

PART 3 - EXECUTION

3.1 Prepare Foundation for Buried Sanitary Sewerage Piping as Follows:
A. Grade trench bottom to provide a smooth, firm, stable, and rock free foundation, throughout the length of the pipe.
B. Remove unstable, soft, and unsuitable materials at the surface upon which pipes are to be laid and backfill with clean sand or pea gravel to indicated level.
C. Shape bottom of trench to fit bottom of pipe. Fill unevenness with tamped sand backfill. Dig bell holes at each pipe joint to relieve the bells of all loads, and to ensure continuous bearing of the pipe barrel on the foundation.

3.2 Install piping beginning at low point of systems, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings in accordance with manufacturer's recommendations for use of lubricants, cements, and other installation requirements. Maintain swab or drag in line and pull past each joint as it is completed.

3.3 Use manholes for changes in direction.

3.4 Reduction of the size of piping in the direction of flow is prohibited

3.5 Install piping pitched down in direction of flow, at minimum slope of 2 percent, except where indicated otherwise.

3.6 Extend sanitary sewerage piping to connect to building sanitary drains, of sizes and in locations indicated.

3.7 Tunneling: Install pipe under streets or other obstructions that cannot be disturbed, by tunneling, jacking, or a combination of both.

3.8 Join and install PVC Pipe as follows:
A. Solvent cement joint pipe and fittings, joining with solvent cement in accordance with ASTM D 2855 and ASTM F 402.
B. Pipe and gasketed fittings, joining with elastomeric seals in accordance with ASTM D 3212.
C. Installation in accordance with ASTM D 2321.

3.9 Join different types of pipe with standard manufactured couplings and fittings intended for that purpose.

3.10 Install manholes complete with accessories as indicated. Form continuous concrete or split pipe section channels and benches between inlets and outlet. Set tops of frames and covers flush with finish surface where manholes occur in pavements. Elsewhere, set tops 3 inches above finish surface, unless otherwise indicated.

3.11 Place precast concrete manhole sections as indicated, and install in accordance with ASTM C 891.

3.12 Construct cast-in-place manholes as indicated.

3.13 Provide rubber joint gasket complying with ASTM C 443 at joints of sections.

3.14 Apply bituminous mastic coating at joints of sections.

3.15 Install cleanouts and extension from sewer pipe to cleanout at grade as indicated. Set cleanout frame and cover in concrete block 18 by 18 by 12 inches deep, except where location is in concrete paving. Set top of cleanout 1 inch above surrounding earth grade, or flush with grade when installed in paving.

3.16 Make connections to existing piping and underground structures, so that finished work will conform as nearly as practicable to the requirements specified for new work.

3.17 Protect existing piping and structures to prevent concrete or debris from entering while making tap connections. Remove debris, concrete, or other extraneous material which may accumulate.

3.18 Abandoned Piping: Close open ends of abandoned underground piping which is indicated to remain in place. Provide sufficiently strong closures to withstand hydro-static or earth pressure which may result after ends of abandoned utilities have been closed.
A. Close open ends of concrete or masonry utilities with not less than 8-inch thick brick masonry bulkheads.
B. Close open ends of piping with threaded metal caps, plastic plugs, or other acceptable methods suitable for size and type of material being closed. Wood plugs are not acceptable.

3.19 Abandoned Structures: Remove structure and close open ends of the remaining piping; or remove top of structure down to not less than 3 feet below final grade, fill structure with stone, ruble, gravel, or compacted dirt, to within 1 foot of top of structure remaining, and fill with concrete.

3.20 Testing: Perform testing of completed piping in accordance with TCEQ requirements.

3.21 Cleaning: Clear interior of piping and structures of dirt and other superfluous material as work progresses. Maintain swab or drag in piping and pull past each joint as it is completed.

A. Place plugs in ends of uncompleted pipe at end of day or whenever work stops.
B. Flush piping between manholes, if required by local authority, to remove collected debris.

3.22 Interior Inspection: Inspect piping to determine whether line displacement or other damage has occurred.

A. Make inspections after pipe between manholes, and manhole locations, has been installed and approximately 2 feet of backfill is in place, and again at completion of project.
B. If inspection indicates poor alignment, debris, displaced pipe, infiltration or other defects, correct such defects, and reinspect.

END OF SECTION 33 30 00

SECTION 33 40 00

STORM DRAINAGE UTILITIES

PART 1 - GENERAL

1.1 BASE SPECIFICATION
- A. Reference Specification for Storm Sewerage and related products shall be the "Texas Standard Specifications", latest edition as published by Texas Department of Transportation (TxDOT).

1.2 Submittals: Submit the following:
- A. Product data for drainage piping specialties.
- B. If applicable, shop drawings for precast concrete storm drainage manholes and catch basins, including frames, covers, and grates.
- C. If applicable, shop drawings for cast-in-place concrete or field erected masonry storm drainage manholes and catch basins, including frames and covers.

1.3 Reinforced Concrete Sewer Pipe and Fittings: ASTM C 76, Class III, Wall B, for rubber gasket joints.
- A. Gaskets: ASTM C 443, rubber.

1.4 Precast Concrete Manholes: ASTM C 478, precast reinforced concrete, of depth indicated with provision for rubber gasket joints.
- A. Base Section: 6-inches minimum thickness for floor slab and 4-inches minimum thickness for walls and base riser section, and having a separate base slab or base section with integral floor.
- B. Riser Sections: 4-inches minimum thickness; 48-inches diameter and lengths to provide depth indicated.
- C. Top Section: Eccentric cone type, unless concentric cone or flat slab top type is indicated. Top of cone to match grade rings.
- D. Grade Rings: Provide 2 or 3 reinforced concrete rings, of 6 to 9 inches total thickness and match 24-inch diameter frame and cover.
- E. Gaskets: ASTM C 443, rubber.
- F. Pipe Connectors: ASTM C 923, resilient, of size required, for each pipe connecting to base section.
- G. Channel and Bench: Concrete.

1.5 Cast-in-Place Manholes: Reinforced concrete of dimensions and with appurtenances indicated.
- A. Bottom, Walls, and Top: Reinforced concrete.
- B. Channel and Bench: Concrete.

1.6 Manhole Frames and Covers: ASTM A 536, Grade 60-40-18, heavy-duty, ductile-iron, 24-inch inside diameter by 7 to 9-inch riser with 4-inch minimum width flange, and 26-inch diameter cover, indented top design, with lettering "STORM SEWER" cast into cover.

1.7 Precast Concrete Catch Basins: ASTM C 478 or ASTM C 858, precast reinforced concrete, of depth indicated. Sections shall have provision for rubber gasket joints. Base section slab shall have minimum thickness of 6 inches, riser sections shall have minimum thickness of 4 inches and be 48 inches inside diameter, and top section and grade rings shall match 24-inch frame and grate, unless otherwise indicated.
- A. Base Section: Base riser section and separate base slab, or base riser section with integral floor.
- B. Riser Sections: Sections shall be of lengths to provide depth indicated.
- C. Top Section: Flat slab type with opening to match grade rings.
- D. Grade Rings: Provide 2 or 3 reinforced concrete rings, of 6 to 9 inches total thickness.
- E. Gaskets: ASTM C 443, rubber.

F. Steps: Cast into riser sidewall at 12 to 16-inch intervals.
G. Pipe Connectors: ASTM C 923, resilient, of size required, for each pipe connecting to base section.
H. Channel and Bench: Concrete.

1.8 Cast-in-Place Catch Basins: Reinforced concrete of dimensions and with appurtenances indicated.
A. Bottom, Walls, and Top: Reinforced concrete.
B. Channel and Bench: Concrete.

1.9 Catch Basin Frames and Grates: ASTM A 536 Grade 60-40-18, heavy-duty, ductile-iron, 24-inch inside diameter by 7- to 9-inch riser with 4-inch minimum width flange, and 26-inch diameter flat grate having small square or short slotted drainage openings.

1.10 Curb Inlets: Precast concrete, brick, or other materials, and of dimensions conforming to utility standards.

1.11 Outfalls: Construct of cast-in-place reinforced concrete with pipe, head wall, apron, tapered sides, and with rip rap, as indicated.
A. Rip Rap: Broken stone, irregular size and shape, weighing 15 to 50 pounds each.

1.12 Concrete: Portland cement mix, 3,000 psi.
A. Cement: ASTM C 150, Type II.
B. Fine Aggregate: ASTM C 33, sand.
C. Coarse Aggregate: ASTM C 33, crushed gravel.
D. Water: Potable.

1.13 Reinforcement: Steel conforming to the following:
A. Reinforcement Bars: ASTM A 615, Grade 60, deformed.

PART 2 - EXECUTION

2.1 Prepare Foundation for Buried Storm Sewerage Piping as Follows:
A. Grade trench bottom to provide a smooth, firm, stable, and rock free foundation, throughout the length of the pipe.
B. Remove unstable, soft, and unsuitable materials at the surface upon which pipes are to be laid and backfill with clean sand or pea gravel to indicated level.
C. Shape bottom of trench to fit bottom of pipe. Fill unevenness with tamped sand backfill. Dig bell holes at each pipe joint to relieve the bells of all loads, and to ensure continuous bearing of the pipe barrel on the foundation.
D. Install crushed limestone bedding per detail City of Willow Park standards.

2.2 Install piping beginning at low point of systems, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings in accordance with manufacturer's recommendations for use of lubricants, cements, and other installation requirements. Maintain swab or drag in line and pull past each joint as it is completed.

2.3 Use manholes or catch basins for changes in direction.

2.4 Reduction of the size of piping in the direction of flow is prohibited.

2.5 Install piping pitched down in direction of flow, at minimum slope of 1 percent, except where indicated otherwise.

2.6 Extend storm sewerage system piping to connect to building storm drains, of sizes and in locations indicated.

2.7 Tunneling: Install pipe under streets or other obstructions that cannot be disturbed, by tunneling, jacking, or a combination of both.

2.8 Join concrete pipe and fittings with rubber gaskets in accordance with ASTM C 443 and install piping in accordance with applicable provisions of ACPA "Concrete Pipe Installation Manual."

2.9 Joint wrapping: Each joint of pipe is to be wrapped with Mirafi fabric.

2.10 Install manholes complete with accessories as indicated. Form continuous concrete or split pipe section channel and benches between inlets and outlet. Set tops of frames and covers flush with finish surface where manholes occur in pavements. Elsewhere, set tops 3 inches above finish surface, unless otherwise indicated.

2.11 Place precast concrete manhole sections as indicated, and install in accordance with ASTM C 891.

2.12 Construct cast-in-place manholes as indicated.

2.13 Provide rubber joint gasket complying with ASTM C 443 at joints of sections.

2.14 Apply bituminous mastic coating at joints of sections.

2.15 Construct catch basins to sizes and shapes indicated.

2.16 Set frames and grates to elevations indicated.

2.17 Construct outfalls of reinforced concrete which will attain 28-day compressive strength of not less than 3000 psi.

2.18 Testing: Perform testing of completed piping in accordance with TCEQ requirements.

2.19 Cleaning: Clear interior of piping and structures of dirt and other superfluous material as work progresses. Maintain swab or drag in piping and pull past each joint as it is completed.
A. Place plugs in ends of uncompleted pipe at end of day or whenever work stops.
B. Flush piping between manholes, if required by local authority, to remove collected debris.

2.20 Interior Inspection: Inspect piping to determine whether line displacement or other damage has occurred.
A. Make inspections after pipe between manholes, and manhole locations, has been installed and approximately 2 feet of backfill is in place, and again at completion of project.
B. If inspection indicates poor alignment, debris, displaced pipe, infiltration or other defects, correct such defects, and reinspect.

END OF SECTION 33 40 00

ECS Southwest, LLP

Geotechnical Engineering Report

Willow Park Playground and Trail at Community Park

SWC Ranch House Road and Stagecoach Trail
Willow Park, Texas

ECS Project Number 63:1268

March 16, 2020

March 16, 2020

Ms. Amber M. Davis, PLA
Project Manager II
Pacheco Koch
4060 Bryant Irvin Road
Fort Worth, Texas 76109

ECS Project No. **63:1268**

Reference: Proposal for Subsurface Exploration and Geotechnical Engineering
Willow Park Playground and Trail at Community Park
SWC Ranch House Road and Stagecoach Trail
Willow Park, Texas

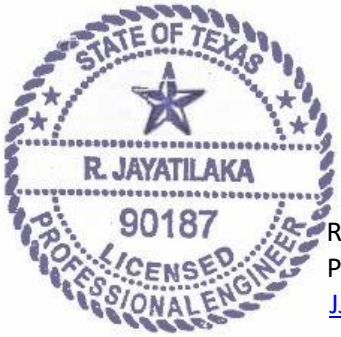
Dear Ms. Davis:

ECS Southwest (ECS) has completed the subsurface exploration, laboratory testing, and geotechnical engineering analyses for the referenced project. Our services were performed in general accordance with ECS Proposal No. 63:1336-GP, dated January 23, 2020. This report presents our understanding of the geotechnical aspects of the project along with the results of the field exploration and laboratory testing conducted. The report also contains our findings and recommendations for design and construction.

It has been our pleasure to be of service to you during the design phase of this project. We would appreciate the opportunity to remain involved during the continuation of the design phase, and we would like to provide our services during construction phase operations as well to verify the assumptions of subsurface conditions made for this report. Should you have any questions concerning the information contained in this report, or if we can be of further assistance to you, please contact us.

Respectfully submitted,

ECS Southwest, LLP



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The electronic seal on this document was authorized by Jay Jayatilaka, PhD, P.E. No. 90187, on March 16, 2020

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EXECUTIVE SUMMARY

The following summarizes the main findings of the exploration, particularly those that may have a cost impact on the planned development. Further, our principal foundation recommendations are summarized. Information gleaned from the executive summary should not be utilized in lieu of reading the entire geotechnical report.

- The geotechnical exploration performed for this study consisted of a total of four (4) borings drilled to depths of approximately 10 to 20 feet below the existing site grades.

- The borings encountered Sandy Lean Clay (CL) and Clayey Sand (SC) native soils extended to depths of about 2 to 3 feet below existing grade. Tan limestone was encountered below the surficial soil and extended to depths of about 6 to 7 feet below existing grade. Gray Limestone was encountered below the tan limestone and extended to the termination depths of about 10 to 20 below the exiting site grades.

- Groundwater seepage was encountered in Borings B-2 at a depth of about 11 feet while drilling and was measured at a depth of 10 feet at the completion of drilling. Seepage was not encountered in the other borings during drilling and those borings were observed to be dry at the completion of drilling.

- Moderately expansive clay soils are present at this site. Potential movement of floor slabs placed on these soils is estimated to be about 1 inch. The proposed park building and pedestrian bridge can be supported by straight drilled shafts in the gray Limestone. Alternatively, the park building, pedestrian crossing bridge and small park structures can be can be supported on shallow footings bearing in the tan limestone.

- In conjunction with straight drilled shafts or footings for the building, the building can be supported on grade if movements of about 1 inch can be tolerated in the floor slabs. Specific details on addressing these expansive clay soils are presented in the body of the report.

- Both asphalt and concrete pavement sections can be used for parking lots and drives. If asphalt pavement is used, the subgrade should be stabilized with cement. Concrete pavements may be placed on either cement stabilized subgrade or compacted soil subgrade.

1.0 INTRODUCTION

1.1 GENERAL

The purpose of this study was to provide geotechnical information for the design of foundation for the proposed park building, pedestrian bridge and surface parking and drives which are to be located at the southwest corner of Ranch House Road and Stagecoach Trail in Willow Park, Texas.

The recommendations developed for this report are based on project information provided by the client. This report contains the results of our subsurface explorations and geotechnical laboratory testing programs, site characterization, engineering analyses, and recommendations for the design and construction of the planned development.

1.2 SCOPE OF SERVICES

To obtain the necessary geotechnical information required for evaluation of subsurface soil conditions, four (4) borings were drilled to depths of approximately 10 to 20 feet below the existing site grades. A laboratory-testing program was also implemented to characterize the physical and geotechnical engineering properties of the subsurface soils.

This report discusses our exploratory and testing procedures, presents our findings and evaluations and includes the following:

- A brief review and description of our field and laboratory test procedures and the results of testing conducted.
- A review of surface topographical features and site conditions.
- A review of area and site geologic conditions.
- A review of subsurface soil stratigraphy with pertinent available physical properties.
- A final copy of our soil test borings.
- Recommended foundation types.
- Recommendations for floor slabs.
- Recommendations for pavements.
- Recommendations for site retaining walls.
- Recommendations for site preparation and construction of compacted fills, including an evaluation of on-site soils for use as compacted fills.

1.3 AUTHORIZATION

Our services were provided in accordance with ECS Proposal No. 63:1336-GP, dated January 23, 2020 and approved by the client on January 28, 2020.

2.0 PROJECT INFORMATION

2.1 PROJECT LOCATION

The project site is located at the southwest corner of Ranch House Road and Stagecoach Trail in Willow Park, Texas. (GPS: 32.7450 N, 97.6370 W). The location is depicted in Figure 2.1.1 as shown below.

Figure 2.1.1 Site Location

2.2 CURRENT SITE CONDITIONS

The project site is currently vacant and is covered with grass and scattered trees. A building present at the site has been demolished recently. The site slopes down from east and west to a creek present at the middle of the site.

2.3 PROPOSED CONSTRUCTION

We understand that this project will consist of the design and construction of park building housing bathrooms, a pedestrian crossing bridge, small park structures and surface parking and drives. Maximum foundation loads in the building foundation are assumed to be 100 kips. While grading plans were not available at the time of this report, we have assumed the proposed building will have a finished floor elevation within 2 feet of existing site grades. The recommendations provided below should be reviewed by our office once the site grading plan is available.

3.0 FIELD EXPLORATION

3.1 FIELD EXPLORATION PROGRAM

The field exploration was planned with the objective of characterizing the project site in general geotechnical and geological terms and to evaluate subsequent field and laboratory data to assist in the determination of geotechnical recommendations.

The subsurface conditions were explored by drilling a total of four (4) borings drilled to depths of approximately 10 to 20 feet below the existing site grades. A truck mounted drill rig with continuous flight augers was utilized to drill the borings.

The boring locations were determined by and identified in the field by ECS personnel using the supplied diagram. The approximate as-drilled boring locations are shown on the Boring Location Diagram in Appendix A. The ground surface elevations noted in this report were obtained from NCTCOG topographical maps (www.dfwmaps.com), which provided elevation contours in 2 foot intervals.

Representative soil samples were obtained by means of the split-barrel and Shelby tube sampling procedures in accordance with ASTM Specifications D-1586 and D-1587, respectively. In the split-barrel sampling procedure, a 2-inch O.D., split-barrel sampler is driven into the soil a distance of 18 inches by means of a 140-pound hammer falling 30 inches. The number of blows required to drive the sampler through a 12-inch interval is termed the Standard Penetration Test (SPT) value and is indicated for each sample on the boring logs. In the Shelby tube sampling procedure, a thin walled, steel seamless tube with sharp cutting edges is pushed hydraulically into the soil, and a relatively undisturbed sample is obtained.

Texas Cone Penetrometer tests were performed to evaluate the load carrying capacity of the limestone encountered. These tests were performed in general accordance with test method Tex-132-E in the Texas Department of Transportation (TxDOT) Manual of Testing Procedures. The results of these tests are shown on the attached boring logs at the depths of occurrence.

Field logs of the soils encountered in the borings were maintained by the drill crew. After recovery, each geotechnical soil sample was removed from the sampler and visually classified. Representative portions of each soil sample was then wrapped in plastic and transported to our laboratory for further visual examination and laboratory testing. After completion of the drilling operations, the boreholes were backfilled with auger cuttings to the existing ground surface.

3.2 REGIONAL GEOLOGY

The regional parent geologic mapping indicates that the site is underlain by the Goodland Limestone Formation (Kgl) geologic formation. The Goodland Limestone is more coarsely nodular, contains fewer and thinner clay beds, and massive resistant limestone beds are more numerous.

The location of the site on the geologic map is provided below on Figure 3.2.1.

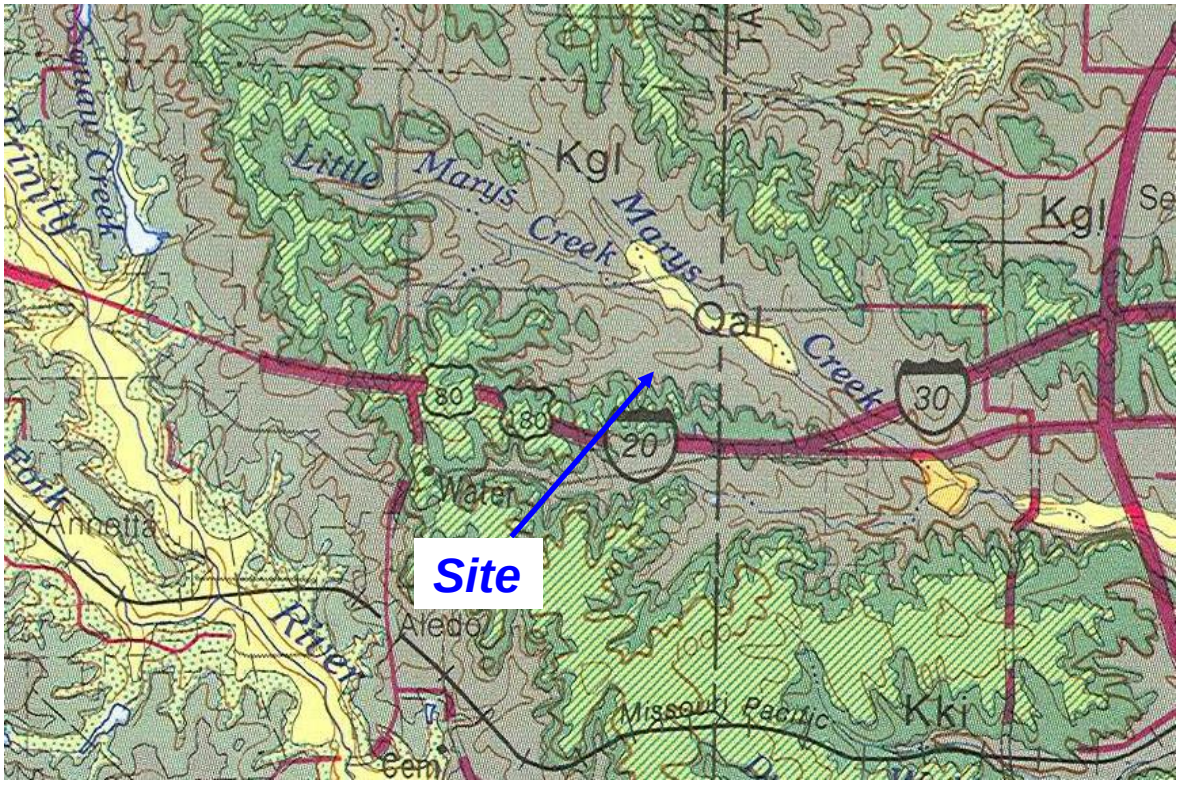

Figure 3.2.1
Geologic map for Figure 3.2.1 obtained from the Geologic Atlas of Texas, Dallas Sheet, 1987

3.3 SUBSURFACE CHARACTERIZATION

The subsurface conditions encountered were generally consistent with published geological mapping. The following sections provide generalized characterizations of the soil strata encountered during our subsurface exploration. For specific information, refer to the Boring Logs in Appendix B.

Table 3.3.1 Subsurface Stratigraphy

Approximate Depth to Bottom of Strata Below Grade (feet)	Material Description	Consistency
2 to 3[1]	SANDY LEAN CLAY (CL), brown, light brown with calcareous nodules and limestone fragments	Very Stiff to Hard
2 to 3[2]	CLAYEY SAND (SC), brown, light brown with calcareous nodules and limestone fragments	Very Stiff to Hard
6 to 7	LIMESTONE, tan, with clay seams	Weak Rock
10 to 20	LIMESTONE, gray	Rock

Notes:
1. Encountered in borings B-1 and B-4
2. Encountered in borings B-2 and B-3

The soils encountered in the borings exhibited Liquid Limits (LL) ranging from 38 to 48 and Plasticity Index (PI) ranging from 21 to 24.

Please refer to the attached boring logs and laboratory data summary for this field exploration for a more detailed description of the subsurface conditions encountered in the borings as the stratification descriptions above are generalized for presentation purposes.

3.4 GROUNDWATER OBSERVATIONS

Groundwater level observations were made in the borings during drilling operations. In auger drilling operations, water is not introduced into the borehole and the groundwater level can often be determined by observing water flowing into the excavation. Furthermore, visual observation of soil samples retrieved can often be used in evaluating the groundwater conditions. Groundwater seepage was encountered in Borings B-2 at a depth of about 11 feet while drilling and was measured at a depth of 10 feet at the completion of drilling. Seepage was not encountered in the other borings during drilling and those borings were observed to be dry at the completion of drilling.

The highest groundwater observations are normally encountered in the late winter and early spring. Fluctuation in the location of the long-term water table may occur as a result of changes in precipitation, evaporation, surface water runoff and other factors not immediately apparent at the time of his investigation. The possibility of groundwater level fluctuation should be considered when developing the design and construction plans for the project.

4.0 LABORATORY TESTING

The laboratory testing was performed by ECS on selected samples obtained during our field exploration operations. Classification and index property tests were performed on representative soil samples obtained from the test borings in order to aid in classifying soils according to the Unified Soil Classification System (USCS) and to quantify and correlate engineering properties. The soil samples were tested for moisture content, Atterberg limits and gradation.

An experienced geotechnical engineer visually classified each soil sample from the test borings on the basis of texture and plasticity in accordance with the USCS and ASTM D-2488 (Description and Identification of Soils-Visual/Manual Procedures). After classification, the geotechnical engineer grouped the various soil types into the major zones noted on the boring logs in Appendix B. The group symbols for each soil type are indicated in parentheses following the soil descriptions on the boring logs. The stratification lines designating the interfaces between earth materials on the boring logs are approximate; in situ, the transitions may be gradual.

The soil samples will be retained in our laboratory for a period of 60 days, after which, they will be discarded unless other instructions are received as to their disposition.

5.0 DESIGN RECOMMENDATIONS

The following recommendations have been developed on the basis of the previously described project characteristics and subsurface conditions. If there are any changes to the project characteristics or if different subsurface conditions are encountered during construction, ECS should be consulted so that the recommendations of this report can be reviewed. Site grading information was not available at the time of preparing this report; however, we have assumed that the building finished floor will be within 2 feet of existing grade. The recommendations provided below should be reviewed by our office once the site grading plan is available.

Moderately expansive clay soils are present at this site. Potential movements of floor slabs placed on these soils are estimated to be about 1 inch. The planned park building and pedestrian bridge can be supported by drilled straight shafts bearing in gray Limestone. The gray Limestone was encountered in the building area Boring B-2 and pedestrian crossing bridge area Boring B-4 at depths of about 6 feet and 7 feet, respectively below existing grade.

Alternatively, the planned park building and pedestrian bridge may be supported on shallow footings. In addition, small park structures such as playground equipment, fountains, etc. may be involved with this project. These small structures that can also be supported on shallow footings.

In conjunction with straight drilled shafts or footings, the building can be supported on grade if movements of about 1 inch can be tolerated in the floor slabs. If movements cannot be tolerated in the floor slab, the floor slab should be structurally suspended in conjunction with a straight drilled shaft foundation system.

Both asphalt pavement and Portland cement concrete pavement are suitable for this site. If asphalt pavement is used, the subgrade should be stabilized with cement. Portland concrete pavements may be placed on with or without cement stabilization. In lieu of cement stabilization, flexible base can also be used below the pavement.

Geotechnical recommendations for foundations, floor slabs, pavements and earthwork are presented in the following report sections.

5.1 POTENTIAL VERTICAL MOVEMENTS

The clay soils encountered at this site are moderately expansive. These soils are susceptible to shrink and swell tendencies that will cause seasonal movements throughout the life of the structure.

Based on test method TEX-124-E in the Texas Department of Transportation (TxDOT) Manual of Testing Procedures, laboratory swell tests, and our experience with similar soils, we estimate that the potential vertical soil movements (PVM) of floor slabs placed on grade at this site are about 1 inch. The actual movements could be greater if poor drainage, ponded water, and/or other unusual sources of moisture are allowed to saturate the soils beneath the structure after construction. The building subgrade should be prepared as discussed below to reduce movements to tolerable levels.

5.2 SUBGRADE IMPROVEMENTS

If movements of about 1 inch can be tolerated, the floor slabs can be supported on grade. For slab-on-grade construction, the building subgrade should be prepared as below.

The existing subgrade should be scarified to a depth of one foot below existing grade. The subgrade should then be compacted to at least 94% of the Maximum Dry Density at a minimum of 3 percentage points above optimum moisture content as obtained using the Standard Proctor Method (ASTM D-698). If additional fills are placed to raise grade, these fill should also be compacted to at least 94% of the Maximum Dry Density at a minimum of 3 percentage points above optimum moisture content. The subgrade should not be allowed to dry until floor slab is placed.

5.3 FOUNDATIONS

Based on the conditions encountered in the borings, the planned park building and pedestrian crossing bridge can be supported by straight drilled shafts in the gray limestone. Design parameters for these systems are presented below.

5.3.1 Straight Drilled Shaft Foundations – Axial Design Parameters

Axial design parameters for straight drilled shafts are presented in the following table.

Table 5.3.1.1 Axial Design Parameters for Straight Shafts

Parameter	Recommendations
Bearing stratum	Gray Limestone
Minimum penetration into gray Limestone	2 feet
Net allowable end bearing capacity [1]	60,000 psf
Allowable skin friction in compression [2]	8,000 psf
Allowable skin friction in tension [2]	6,000 psf
Reduction in skin friction due to two closely located shafts	No reduction is required for straight drilled shafts with center-to-center spacing of 2.5 times diameter of larger shaft. For closely spaced shafts, the design skin friction vary linearly from the full value at 2.5 times diameters to 50% of the design value at 1.0 times shaft diameter.
Groups of 3 or more shafts spaced closer than 2.5 times shaft diameter	Should be evaluated by ECS. Alternative installation sequences will be required to allow for a minimum of 48 hours of concrete curing time, prior to installation of adjacent shafts.

Parameter	Recommendations
Soil induced uplift[3]	1,200 psf acting over the shaft perimeter for a depth to tan limestone for a structural slab. The soil induced uplift load can be reduced to 600 psf acting over the shaft perimeter to the depth to tan limestone for a slab-on-grade.
Settlement[4]	Less than ½ inch.
Minimum shaft diameter	18 inches.
Minimum shaft length	3 times shaft diameter or 7 feet, whichever is greater.

Notes:

1. *A minimum penetration of 2 feet or one shaft diameter, whichever is greater, into bearing stratum is required to develop the end bearing.*
2. *The skin friction should be applied to that portion of the drilled shafts in direct contact with the bedrock below any temporary casing or the top of gray limestone, whichever is deeper.*
3. *The drilled shafts will be subject to uplift due to swelling of the expansive clays in contact with the drilled shafts. The drilled shafts must be designed with adequate embedment depth resist uplift forces and should be reinforced with sufficient, full-depth, vertical reinforcing steel to resist uplift forces.*
4. *Settlement will primarily be within the elastic range with a portion of settlement occurring during construction.*

5.3.2 Drilled Shafts - Lateral Design Parameters

Drilled shafts may be subject to lateral loads. Lateral design parameters for drilled shafts are presented in the following tables for use in LPILE 2016 computer program, developed by Ensoft, Inc.

Table 5.3.2.1 LPILE Design Parameters for Soil

Soil Description	LPile Material Type	Unit Weight, (pcf)	Undrained Shear Strength, (psf)	Friction Angle, (degrees)	E_{50}
Overburden soils	Soft Clay	120	750	-	0.01

Table 5.3.2.2 LPILE Design Parameters for Gray Limestone

Soil Description	LPile Material Type	Unit Weight, (pcf)	Uniaxial Compressive Strength, (psi)	Elastic Modulus, E_r (psi)	RQD (%)	Krm
Tan Limestone	Weak Rock (Reese)	130	150	15,000	50	0.0005

Soil Description	LPile Material Type	Unit Weight, (pcf)	Uniaxial Compressive Strength, (psi)	Elastic Modulus, E_r (psi)	RQD (%)	Krm
Gray Limestone	Weak Rock (Reese)	135	500	50,000	80	0.0005

5.3.3 Drilled Shafts - Construction Considerations

The drilled shafts should be installed in accordance with American Concrete Institute's "Standard Specification for the Construction of Drilled Piers" (ACI 336). Recommendations provided in this report are based on proper construction procedures including maintaining a dry shaft excavation. We recommend that all drilled shafts be observed by qualified geotechnical personnel, to verify proper shaft installation. Observations should include:

1. identification of the bearing stratum;
2. minimum penetration depth;
3. removal of all smear zones and cuttings;
4. correct handling of groundwater seepage;
5. shafts are within acceptable vertical tolerance; and
6. other related items

Groundwater was encountered in one of the borings and could be encountered during shaft installation and could be encountered during installation of the straight shafts, particularly during wet periods of the year. Rapid placement of steel and concrete may permit shaft installation to proceed; however, if significant seepage is encountered, the use of temporary casing for installation of the straight shafts may be required. The casing must be installed to a sufficient depth to ensure that an adequate seal is obtained. Typically, a casing penetration of 1 to 2 feet into the gray limestone will provide a satisfactory seal.

After the satisfactory installation of the temporary casing, water and loose material should be removed prior to beginning the design penetration. The required penetration into the bearing material can then be excavated through the casing. The design penetration should be measured from the bottom of temporary casing or the top of gray limestone, whichever is deeper. Reinforcing steel and concrete should be placed immediately after the excavation has been completed, cleaned and observed.

The concrete should have a slump between 5 and 7 inches and should be placed in a manner that prevents it from striking the reinforcing steel and sides of the excavation. Concrete placed in an excavation in excess of 10 feet should be placed in such a manner (using a tremie, centralizing chute, or by similar means) to prevent segregation of aggregates or to prevent concrete from striking the reinforcing steel. The concrete in the upper five feet of the shaft should be mechanically consolidated. Straight drilled shafts should be completed within 8 hours after design penetration into gray limestone has begun.

Care should be taken to avoid creating an oversized cap ("mushroom") near the ground surface. A "mushroom" at the top of the drilled shaft could be lifted by expansive soils. Pier caps extending

outside the nominal pier diameter (if used) should be constructed over void forms to reduce the potential for additional uplift forces.

Gray limestone is relatively hard. We recommend the drilling equipment be equipped with suitable rock drilling teeth and it should have sufficient torque and weight to drill through the rock strata. A contractor experienced with drilling hard bedrock should be retained for this project.

5.3.4 Grade Beams/ Pier Caps

All grade beams should be supported by the drilled shafts and formed with a nominal 4-inch void beneath the beam over prepared subgrades. This void is provided to isolate the grade beams from the underlying active clays. Cardboard carton forms can be used to create this void. A soil retainer should be provided to help prevent "in fill" of this void.

Cardboard void forms must have sufficient strength to support the weight of the grade beam during construction. The excavation in which the void box lays must remain dry. Care must be exercised during construction to prevent collapse of these cartons. Backfill material must not be allowed to enter the void carton area below the grade beams, since this reduces the void space in which the underlying soils need to swell.

Soils placed along the exterior of the grade beams should be on-site clay soils placed and compacted to at least 94% of the Maximum Dry Density at a minimum of 3 percentage points above optimum moisture content as obtained using the Standard Proctor Method (ASTM D-698). The purpose of this clay backfill is to reduce the opportunity for surface or subsurface water infiltration beneath the structure.

5.3.5 Shallow Footings – Design Parameters

The planned building, pedestrian bridge crossing and small park structures such as playground equipment, fountains, etc. can be supported on shallow footings. The design parameters shallow footings are presented in the following table.

Table 5.3.5.1: Shallow Footing Design Parameters

Parameter	Recommendation
Bearing stratum[1]	Tan Limestone
Net allowable bearing capacity- continuous footings[1]	4,000 psf
Net allowable bearing capacity- individual footings[1]	5,000 psf
Minimum embedment	6 inches in tan limestone
Minimum dimension – continuous footings	12 inches
Minimum dimension – individual footings	24 inches

Parameter	Recommendation
Ultimate passive pressure (triangular distribution)[2, 3]	260 psf/ ft
Ultimate coefficient of sliding[3]	0.4
Approximate Foundation movement	Less than 1 inch

Notes:

1. *The net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base elevation. No footing should be founded within a 45 degree plane from the base of the adjacent footing or excavation.*
2. *The side of the excavation for footings must be nearly vertical and concrete should be placed against these vertical faces. The upper 1-foot of the passive earth pressure should be neglected. In addition, the passive pressure should be ignored if the material in front of the wall will be excavated at any time in the future.*
3. *A minimum factor of safety of 1.5 is recommended against sliding.*

5.3.6 Shallow Footings - Construction Considerations

Footing excavations should be protected from standing water or desiccation. The base of all foundation excavations should be free of water and loose soil and rock prior to placing concrete. Complete construction of a spread footing or a section of wall footing, including excavation, placement of steel and concrete, and backfilling should be completed in a reasonably continuous manner, preferably within 72 hours of excavation to reduce the disturbance to foundation bearing material. A seal slab of footing strength concrete should be provided at the bottom of any footing which will remain open for more than 72 hours or if rain events are expected before footings are constructed.

Backfilling of footings should be accomplished using excavated material for footings and as soon as possible to reduce disturbance of foundation soils. Backfill should be compacted to at least 94% of the Maximum Dry Density at a minimum of 3 percentage points above optimum moisture content as obtained using the Standard Proctor Method (ASTM D-698). Construction of footings should be inspected by a qualified geotechnical engineer to verify the bearing materials and to perform related observations and testing.

5.4 FLOOR SLAB SYSTEMS

Potential vertical movement for floor slabs placed at existing grade is estimated to be about 1 inch. A structural (suspended) floor system in conjunction with drilled shafts is recommended, if the building floor slab cannot tolerate movements. If the floor slab is designed to tolerate movements of about 1 inch, it can be supported on grade provided the subgrade is prepared as discussed in ***Section 5.2 Subgrade Improvements***.

5.4.1 Structural Floor Slabs

Two methods are available for constructing a suspended floor slab system:

1. cardboard carton forms to create a void; and,
2. raising the floor slab above the underlying soils with a crawl space.

Cardboard carton forms should be at least 8 inches thick. If these forms are used, care must be taken to preserve their structural integrity and ability to create a consistent void. A rigid material layer (such as Masonite) should be placed directly on the forms to prevent puncture by personnel during placement of concrete. This rigid layer would also help reduce the potential for concrete to leak down between the cardboard forms.

If crawl space is utilized we recommend that the floor slab be suspended at least 12 inches above final subgrade elevations. If utility lines are suspended beneath the slab, the crawl space clearance should be increased to a minimum of 2 feet to provide access to these lines.

The subgrade beneath the crawl space must be graded to remove water from beneath the structure. If gravity drainage cannot adequately remove the water from beneath the structure, it may be necessary to direct the underfloor drainage ditches to a sump pump. Construction must also contain sufficient ventilation to limit corrosion of the metal components.

5.4.2 Slab-On-Grade/ Flatwork on Prepared Subgrade

In lieu of suspended slab and with some additional risk towards future movement, the building may be designed to be supported by drilled shafts or shallow footings and a conventional slab on grade. In order to use a slab on grade, the building pad subgrade must be prepared as recommended in ***Section 5.2 Subgrade Improvements***.

We recommend that a modulus of subgrade reaction (ks) of 100 pci be used for the design of the slab-on-grade. Adequate construction joints, contraction joints and isolation joints should also be provided in the slab to reduce the impacts of cracking and shrinkage. Please refer to ACI 302.1R96 Guide for Concrete Floor and Slab Construction for additional information regarding concrete slab joint design.

If floor treatments that are sensitive to moisture will be used, a vapor retarder of polyethylene sheeting or similar material should be placed beneath the slab to minimize moisture migration through the slab. If a vapor retarder is considered to provide moisture protection, special attention should be given to the surface curing of the slabs to minimize uneven drying of the slabs and associated cracking and/or slab curling. Please refer to ACI 302.1R96 Guide for Concrete Floor and Slab Construction and ASTM E 1643 Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs for additional guidance on this issue.

5.4.3 Perimeter Conditions

Soils placed along the exterior of the buildings should be on-site clay soils placed and compacted to at least 94% of the Maximum Dry Density at a minimum of 3 percentage points above optimum moisture content as obtained using the Standard Proctor Method (ASTM D-698). The purpose of this clay backfill is to reduce the opportunity for surface or subsurface water infiltration beneath the structure. Additionally, where penetrations into the structure occur, a clay plug (or suitable

synthetic alternative) should be placed at the building lines to reduce the opportunity for infiltrating water, regardless of the backfill material. A typical clay plug detail is provided in Appendix A of the report.

Positive drainage away from the structures should also be provided. Additionally, irrigation of lawn and landscaped areas should be moderate, with no excessive wetting or drying of soils around the perimeter of the structures allowed. Trees and bushes/shrubs planted near the perimeter of the structures can withdraw large amounts of water from the soils and should be planted at least their anticipated mature height away from the buildings.

Where flatwork is placed against or near the structure, a positive seal must be installed and adequately maintained to minimize water intrusion. Down spouts and gutters should be used to collect and distribute water away from the structure.

Routine maintenance is required to ensure that the recommendations contained in this report are followed and maintained. Greater potential movements could occur with extreme wetting or drying of the soils due to poor drainage, ponding of water, plumbing leaks, lack of irrigation, and/or lack of routine maintenance, etc.

5.5 SEISMIC DESIGN CONSIDERATIONS

Seismic Site Classification: The International Building Code (IBC) 2012/2015 requires site classification for seismic design based on the upper 100 feet of a soil profile. The methods are utilized in classifying sites, namely the shear wave velocity (v_s) method; the unconfined compressive strength (s_u) method; and the Standard Penetration Resistance (N-value) method. The unconfined compressive strength (s_u) method was used in classifying this site.

The seismic site class definitions for the weighted average of shear wave velocity, SPT N-value or unconfined compressive strength (s_u) in the upper 100 feet of the soil profile are shown in the following table:

Table 5.5.1: Seismic Site Classification

Site Class	Soil Profile Name	Shear Wave Velocity, V_s, (ft./s)	Standard Penetration Resistance, N	Soil Undrained Shear Strength, s_u (psf)
A	Hard Rock	Vs > 5,000 fps	N/A	N/A
B	Rock	2,500 < Vs ≤ 5,000	N/A	N/A
C	Very dense soil and soft rock	1,200 < Vs ≤ 2,500	N >50	$s_u \geq$ 2,000
D	Stiff Soil Profile	600 ≤ Vs ≤ 1,200	15 ≤ N ≤ 50	1,000 ≤ s_u ≤ 2000
E	Soft Soil Profile	Vs < 600	N <15	s_u < 1000

Based on the 2012/2015 International Building Code (IBC) Site Class Definitions, in our opinion the site soil and rock can be characterized as Site Class C. Site Class C is described as Stiff Soil for the top 100 feet of the site soil profile.

The Mapped Spectral Response Acceleration at Short Periods and 1-Second Periods, S_s and S_1, respectively, are as follows for the project site. The approximate S_s and S_1 values, as shown below, are calculated through the United States Geological Survey's (USGS) Seismic Hazard Curves and Uniform Hazard Response Spectra program according to the 2012/2015 IBC.

Table 5.5.2: Mapped Spectral Response Acceleration

Short Periods, S_s	1-Second Periods, S_1
0.09 g	0.049 g

The Site Class definition should not be confused with the Seismic Design Category designation, which the Structural Engineer typically assesses.

5.6 SITE RETAINING WALLS

Site retaining walls may be required. Walls associated with the structures should be supported on drilled shafts or shallow footings as discussed in ***Section 5.3 Foundations*** of this report. Cast-in-place concrete cantilever retaining walls supported on continuous footings in clay soils can be used for site retaining walls. Recommendations for site retaining walls are provided below.

5.6.1 Design Parameters for Bearing and Sliding

The design parameters for bearing and sliding are provided below.

Table 5.6.1.1: Design Parameters for Bearing and Sliding

Parameter	Recommendation
Bearing stratum [1]	On site clay or properly placed and compacted fill
Net allowable end bearing capacity	2,500 psf
Minimum embedment	2 feet below lowest adjacent final grade
Minimum dimension	18 inches
Ultimate Passive pressure (triangular distribution)[2, 3]	260 psf/ ft
Coefficient of sliding[3]	0.4

Notes:

1. *Retaining walls should be placed on a slope no steeper than 3H:1V and no higher than 5 feet, as defined from the exterior lower footing edge, down to the limit of the slope upon which the retaining wall is built.*
2. *The side of the excavation for footings must be nearly vertical and concrete should be placed against these vertical faces. The upper 1-foot of the passive earth pressure should be neglected. In addition, the passive pressure should be ignored if the material in front of the wall will be excavated at any time in the future.*
3. *A minimum factor of safety of 1.5 is recommended against sliding.*

5.6.2 Lateral Earth Pressure

The lateral pressure acting on the walls will depend on the backfill material type, the amount of wall movement and drainage conditions behind the walls. Recommended lateral design parameters are provided in Table 5.6.2.1 below. The values in the table that follows under "Active Conditions" pertain to retaining walls free to tilt outward as a result of lateral earth pressures. For rigid, non-yielding walls (such as below grade walls) which are not allowed to rotate, the values under "At-Rest Conditions" should be used.

Table 5.6.2.1 Lateral Earth Pressure Design Values

Backfill Type (Level Backfill)	Total Unit Weight (pcf)	Active Condition		At Rest Condition	
		Earth Pressure Coefficient, k_a	Equivalent Fluid Pressure (psf/ ft)	Earth Pressure Coefficient, k_o	Equivalent Fluid Pressure (psf/ft)
On Site Clay/ Imported Clay Fill	125	0.45	56	0.63	79
Select Fill	125	0.36	45	0.53	67
Granular Fill	120	0.28	34	0.44	53

The lateral pressure design values presented above are for a drained condition behind the wall. Drainage should be provided behind the walls as discussed in Section ***5.6.3 Wall Drainage***.

Properties of backfill materials are provided in Section ***6.3 Material Specifications***. The Select fill or granular backfill limits should extend outward at least 2 feet from the base of the wall footing and then upward on a 1H:1V slope. For narrower backfill widths of select or granular fill, the equivalent fluid pressures for on-site soils should be used.

The values presented above assume the surface of the backfill materials to be level. Sloping the surface of the backfill materials will increase the earth pressures acting on the retaining wall and can be evaluated if required. The above values also do not include the effect of surcharge loads such as construction equipment, vehicular loads, or future buildings or paving near the walls. Surcharge loads should be considered if they apply at the surface above the wall within an angle of 45° extending up from the base of the wall footing.

5.6.3 Wall Drainage

The lateral pressure design values presented above assume a drained condition behind the wall. Hydrostatic pressures resulting from groundwater seepage entering and ponding within the backfill materials should be considered in the design if proper drainage is not provided.

For walls with a height of 4 feet or less, weep holes can be used for drainage. For walls with a height greater than 4 feet, a vertical wall drain consisting of a composite geosynthetic drainage medium is recommended if select fill or on-site soil is chosen as backfill. The vertical drain should be located immediately behind the wall system and extend from the level of longitudinal drains, upward to

not higher than 2 feet below the top of the wall. The vertical drains should transport water to the longitudinal drains and then to a storm water line. Composite geosynthetic drainage systems are typically proprietary systems. They are available in different sizes and with different flow rates. The manufacturer should be consulted for installation and spacing guidelines.

If free-draining granular backfill is used, a vertical wall drain would not be necessary. The granular backfill should transport water to longitudinal drains and then to a storm water line. However, in this case, we recommend that a 2-foot thickness of well-compacted, impervious clay cover be placed over the backfill surface to reduce infiltration in areas that are not covered by pavement. A geotextile filter fabric should be placed between the aggregate backfill and the clay cover materials and between the aggregate backfill and the backslope of the native material to minimize infiltration of fines into the backfill.

5.6.4 Backfill Settlement

Backfill placed behind the walls should be well compacted. Special care must be exercised to "tie in" the backfill with adjacent undisturbed, firm, natural soils by providing deep benches into the firm natural soil during placement of each fill lift. All loose materials and "slope wash" that may accumulate in the wall excavation during construction should be completely removed prior to placement of the backfill materials.

Some post-construction settlement of the backfill surface should be anticipated. This is typically on the order of one percent of the backfill height, even if satisfactory compaction of the backfill materials is achieved. This will lead to potential differential settlement. Therefore, it is recommended that special consideration be given to the design of any foundation elements, floor slabs, and pavements that may extend over this backfill as a result of the potential for differential settlements introduced by this condition.

5.7 PAVEMENT SECTIONS – PRIVATE DRIVES AND PARKING

All proposed paved areas should be proof rolled with heavy compaction equipment to attempt to locate any soft or undesirable soils so they can be removed and replaced with properly placed and compacted soils. Any new fill may consist of on-site soils or similar. These materials should be compacted to at least 95% of the Maximum Dry Density at or above optimum moisture content as obtained using the Standard Proctor Method (ASTM D-698). Care should be taken to verify and preserve the specified moisture levels in the reworked clays prior to placement of the pavements.

Cement stabilization is recommended beneath asphaltic concrete pavements. Portland cement concrete pavement may be placed on cement stabilized subgrade or compacted clay subgrade without cement stabilization. In lieu of cement stabilization, flexible base can also be used below the pavement.

For cement stabilization, an application rate of 5% cement by dry weight of soil can be used. The cement stabilization should conform TxDOT Item 275. The cement stabilized soil should be compacted to at least 95% of the Maximum Dry Density at or above optimum as obtained using the Standard Proctor Method (ASTM D-698).

Cement treatment should extend at least 1 foot beyond exposed pavement edges to reduce the effects of shrinkage and associated loss of subgrade support. Density tests should be performed at a frequency of 1 test per 5,000 square feet of pavement.

Traffic patterns and anticipated loading conditions were not available at the time of this report. Typical pavement sections are provided in this report. If the pavements are subject to different traffic counts than the assumed values, this office should be notified and provided with the information so that we may review these pavement sections and make revisions if necessary.

We assume that Standard Duty and Medium Duty ESAL for the design life will be approximately 45,000 and 100,000, respectively. The Light Duty pavement is intended for passenger car and pickup trucks. The Medium Duty pavement is intended for passenger car, pickup trucks, small delivery trucks, fire trucks, garbage trucks and occasional semi-trucks. Recommended pavement sections are provided below.

Table 5.7.1: Pavement Sections – Private Drives and Parking

Material Description	Asphaltic Concrete Pavement		Portland Cement Concrete (PCC) Pavement		
	Standard Duty	Medium Duty	Standard Duty	Medium Duty	Dumpster Area
Asphalt Surface Course	2 inches	2 inches	--	--	--
Asphalt Binder Course[1]	3 inches	4 inches	--	--	--
Portland Cement Concrete	--	--	5 inches	6 inches	7 inches
Subgrade[2]	6 inches Cement Stabilized	6 inches Cement Stabilized	6 inch Compacted Soil	6 inch Compacted Soil	6 inch Compacted Soil

Notes:

1. *Flexible base material may be substituted for the asphalt binder using a substitute ratio of three inches of flexible base for each inch of asphalt binder.*
2. *Flexible base materials may be substituted with the cement stabilization at an equivalent thickness substitution*

An important consideration with the design and construction of pavements is surface and subsurface drainage. Where standing water develops, either on the pavement surface or within the base course layer, softening of the subgrade and other problems related to the deterioration of the pavement can be expected. Furthermore, good drainage should reduce the possibility of the subgrade materials becoming saturated during the normal service period of the pavement.

Please note, the recommended pavement sections provided above are considered the minimum necessary to provide satisfactory performance based on the provided traffic loading. In some cases, jurisdictional minimum standards for pavement section construction may exceed those provided above.

Pavement should be specified, constructed and tested to meet the following requirements:

1. Reinforcing steel may consist of #3 reinforcing steel bars placed at 18 inches on center each way. The reinforcing steel should be placed at mid-point of the pavement section.

2. Hot Mix Asphaltic Concrete: Item 340 of the TxDOT Standard Specifications, Type A or B Base Course (binder), Type D Surface Course. The coarse aggregate in the surface course should be crushed limestone rather than gravel.

3. Portland Cement Concrete: Minimum compressive strength of 3,600 lbs per sq inch at 28 days. Concrete should be designed with 3 to 6 percent entrained air.

4. Flexible Base Material: Item 247 of the TxDOT Standard Specifications, Type D, Grade 1 or 2. The material should be compacted to a minimum 95 percent of standard Proctor maximum dry density (ASTM D 698) and within three percentage points of the material's optimum moisture content.

Proper joint placement and design is critical to pavement performance. Load transfer at all joints and maintenance of watertight joints should be accomplished by use of proper joint seals and dowels. Control joints in new pavement should be sawed as soon as practical and preferably within 5 to 12 hours after placing concrete in order to control the location of cracks which form as the concrete cures. Longitudinal and transverse control joints should be sawed at about 15-foot spacing. Joints should be properly cleaned and sealed as soon as possible to avoid infiltration of water, small gravel, etc.

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6.0 SITE CONSTRUCTION RECOMMENDATIONS

6.1 SUBGRADE PREPARATION

In a dry and undisturbed state, the upper 1-foot of the majority of the soil at the site will provide good subgrade support for fill placement and construction operations. However, these soils contain fines which are considered moderately erodible and are moisture and disturbance sensitive. Therefore, good site drainage should be maintained during earthwork operations, which would help maintain the integrity of the soil. We recommend that an attempt be made to enhance the natural drainage without interrupting its pattern. All erosion and sedimentation should be controlled in accordance with sound engineering practice and current jurisdictional requirements.

The site should be stripped. Piles of fill material on site if used in this construction should be tested before placement. After stripping, cutting to the proposed grade, and prior to the placement of any structural fill, the exposed subgrade should be examined by the Geotechnical Engineer or authorized representative. The exposed subgrade should be thoroughly proofrolled with previously approved construction equipment having a minimum axle load of 15 tons (e.g. fully loaded tandem-axle dump truck). The areas subject to proofrolling should be traversed by the equipment in two perpendicular (orthogonal) directions with overlapping passes of the vehicle under the observation of the Geotechnical Engineer or authorized representative. This procedure is intended to assist in identifying any localized yielding materials.

In the event that unstable or “pumping” subgrade is identified by the proofrolling, those areas should be marked for repair prior to the placement of any subsequent structural fill or other construction materials. Methods of repair of unstable subgrade, such as undercutting or moisture conditioning or chemical stabilization, should be discussed with the Geotechnical Engineer to determine the appropriate procedure with regard to the existing conditions causing the instability.

6.2 EARTHWORK OPERATIONS

Prior to placement of any new general fill, all subgrades should be scarified to a minimum depth of 6 inches, compacted to at least 95% of Maximum Dry Density as obtained by the Standard Proctor Method (ASTM D-698) and moisture conditioned above the optimum value. All fills should be benched into the existing soils.

Imported soil used for general fill should not have a Plasticity Index (PI) of greater than the material encountered onsite. All general fill material, outside of the building subgrade improvements, should be placed at or above optimum moisture content and compacted to at least 95% of the Maximum Dry Density as obtained by the Standard Proctor Method (ASTM D-698). All fill soils should be placed in 8 inch loose lifts for mass grading operations and 4 inches for trench type excavations where walk behind or “jumping jack” compaction equipment is used.

Upon completion of the filling operations, care should be taken to maintain the soil moisture content prior to construction of floor slabs and pavements. Soil moisture levels can be preserved by various methods that can include covering with plastic, watering, etc. If the soil becomes desiccated, the affected material should be removed and replaced, or these materials should be scarified, moisture conditioned and recompacted.

Utility cuts should not be left open for extended periods of time and should be properly backfilled. Backfilling should be accomplished with properly compacted on-site soils, rather than granular materials. The clay plug detail provided in Appendix A is a suitable method for the utility trench cut-off.

Field density and moisture tests should be performed on each lift as necessary to verify that adequate compaction is achieved. As a guide, one test per 2,500 square feet per lift is recommended in the building and paving areas (two tests minimum per lift). Utility trench backfill should be tested at a rate of one test per lift per each 150 linear feet of trench (two tests minimum per lift). Certain jurisdictional requirements may require testing in addition to that noted previously. Therefore, these specifications should be reviewed and the more stringent specifications should be followed.

6.2.1 Rock Excavation Considerations

Shallow rock was encountered during our subsurface exploration and rock excavation techniques may be necessary for this project. It has been our experience that single-tooth rippers can usually rip to depths on the order of two (2) to three (3) feet below the top of the tan limestone in large, open, excavations. Below that, or in small excavations, more extensive efforts are required. If excavations are advanced deeper than 1 to 2 feet below the top of the tan limestone, excavation or ripping can be achieved only with great difficulty, and other means are normally required in order to facilitate removal of the rock.

For purposes of contract terms, we recommend that “rock” be defined as follows:

“Rock shall be defined as those natural materials which cannot be excavated in an open excavation with a Caterpillar Model No. D-8, heavy duty tract type-tractor, weighted at not less than 285 hp (flywheel power) and equipped with a single-shank hydraulic ripper, capable of exerting not less than 45,000 lbs. breakout force, or equivalent machinery. For footings, utility trenches and pits, rock shall be defined as those materials that cannot be excavated with a Caterpillar Model No. 215D LC tract-type hydraulic excavator, equipped with a 42-inch wide short-tip radius rock bucket, rated at not less than 120 hp flywheel power with bucket-curling force of not less than 25,000 lbs. and stick-crowd force of not less than 18,000 lbs.”

Depending on the excavation methods, the rock at this site will typically excavate in relatively large, blocky and platy pieces, which are difficult to compact for suitable long-term performance. Also, these materials experience rapid degradation due to weathering over relatively short periods of time, once exposed to air and water conditions. Therefore, these larger pieces, which break up as rock-like fragments in the initial excavation, must be compacted with sufficient compaction energy to substantially break them down into soil size particles during construction.

Excavated tan limestone may be suitable for fill within the building and paving limits. For the purposes of this report, all rock materials excavated at the site will be considered nondurable. Nondurable rock materials removed during excavations may be used as fill if suitably decomposed by mechanical effort. Durability is the term used to describe the ability of a rock or rock-like material to withstand long term chemical and mechanical weathering without size degradation. Any rock excavated from the site and used as earthwork fill should have a well-graded grain size distribution with rock and soil particles ranging from clay or silt size particles to a maximum size of 4 inches in

diameter with 2 inch thick plates. Particles larger than this should be decomposed by mechanical compaction equipment to achieve the desired grain size distribution.

Once appropriately broken down, this material may then be placed and compacted at workable moisture contents above the optimum moisture content and compacted to at least 95% of the Maximum Dry Density as obtain using the Standard Proctor Method (ASTM D-698).

6.3 MATERIAL SPECIFICATIONS

Material specifications recommended for this project are provided below.

6.3.1 Select Fill

For the purposes of this report, Select Fill may consist of onsite or imported material that is free of debris and organic matter and have a Plasticity Index (PI) of 5 to 15, and contain 40 to 70 percent passing the No. 200 sieve.

This material should be placed and compacted at workable moisture contents at or above the optimum moisture content and compacted to at least 95% of the Maximum Dry Density as obtained using the Standard Proctor Method (ASTM D-698).

6.3.2 Flexible Base

Flexible base should meet the requirements of TxDOT Item 247, Type D, Grade 1 or 2. Recycled concrete meeting the gradation requirements of flexible base is also acceptable for use. The flexible base and recycled concrete should be compacted to 95% of maximum dry density at or above the optimum moisture content as obtained using the Standard Proctor Method (ASTM D-698).

6.3.3 Granular Fill

Granular backfill should meet the requirements of ASTM C33 Size #56, #57 or #467 Stone. The fine materials in the granular fill should be non-plastic. The granular fill should be compacted to 95% of maximum dry density at or above the optimum moisture content as obtained using the Standard Proctor Method (ASTM D-698).

7.0 CLOSING

ECS has prepared this report of findings, evaluations, and recommendations to guide geotechnical-related design and construction aspects of the project.

The description of the proposed project is based on information provided to ECS by the client. If any of this information is inaccurate, either due to our interpretation of the documents provided or site or design changes that may occur later, ECS should be contacted immediately in order that we can review the report in light of the changes and provide additional or alternate recommendations as may be required to reflect the proposed construction.

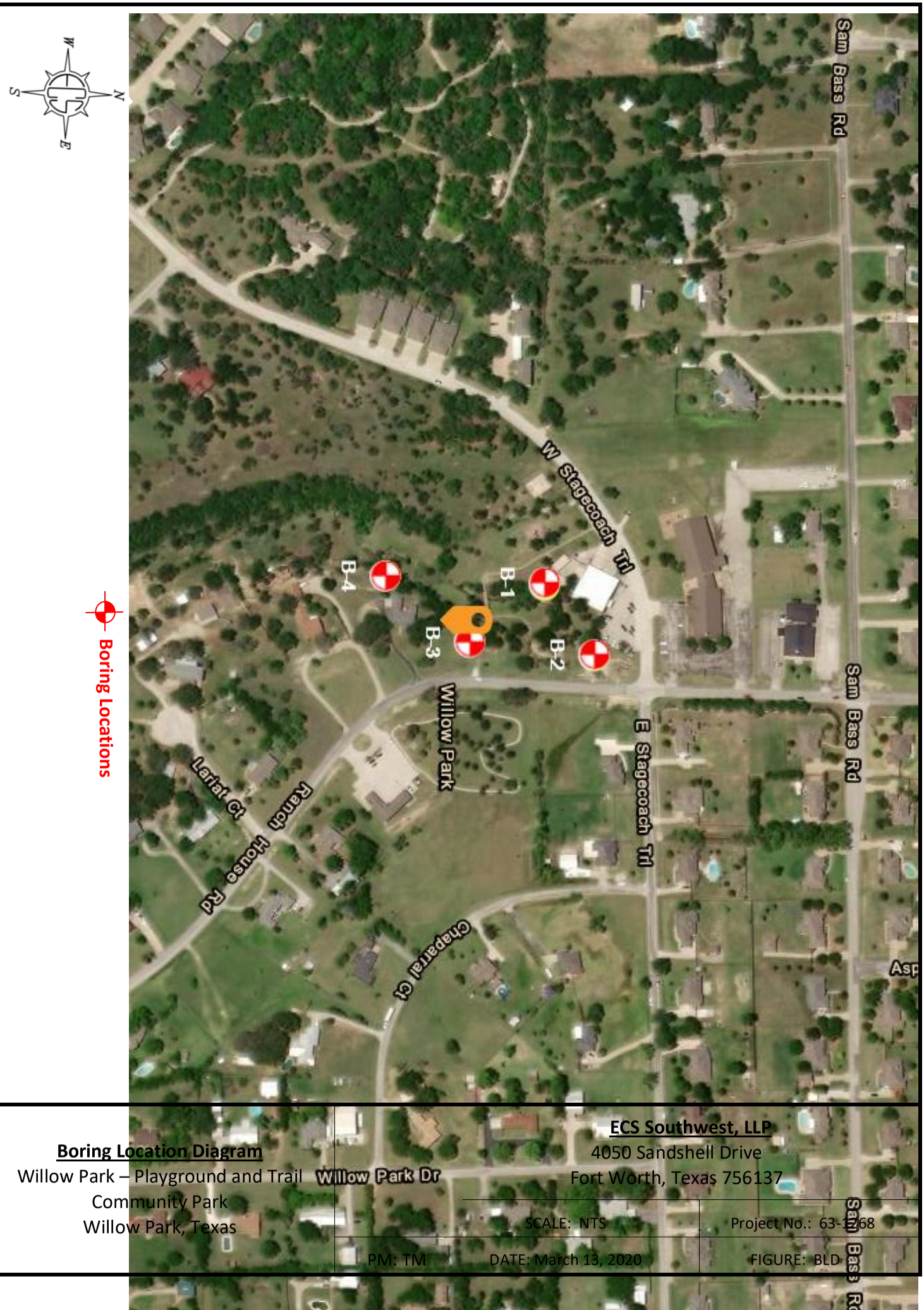
We recommend that ECS be allowed to review the project's plans and specifications pertaining to our work so that we may ascertain consistency of those plans/specifications with the intent of the geotechnical report.

Field observations, monitoring, and quality assurance testing during earthwork and foundation installation are an extension of and integral to the geotechnical design recommendation. We recommend that the owner retain these quality assurance services and that ECS be allowed to continue our involvement throughout these critical phases of construction to provide general consultation as issues arise. ECS is not responsible for the conclusions, opinions, or recommendations of others based on the data in this report.

The analysis and recommendations submitted in this report are based upon the data obtained from the soil borings and tests performed at the locations as indicated on the Boring Location Diagram and other information referenced in this report. This report does not reflect any variations, which may occur between the borings. In the performance of the subsurface exploration, specific information is obtained at specific locations at specific times. However, it is a well-known fact that variations in subsurface conditions exist on most sites between boring locations and also such situations as groundwater levels vary from time to time. The nature and extent of variations may not become evident until the course of construction. If variations then appear evident, after performing on-site observations during the construction period and noting characteristics and variations, a reevaluation of the recommendations for this report will be necessary.

APPENDIX A – Figures

Boring Location Diagram
Clay Plug Detail



Boring Location Diagram

Willow Park – Playground and Trail
Community Park
Willow Park, Texas

ECS Southwest, LLP
4050 Sandshell Drive
Fort Worth, Texas 756137

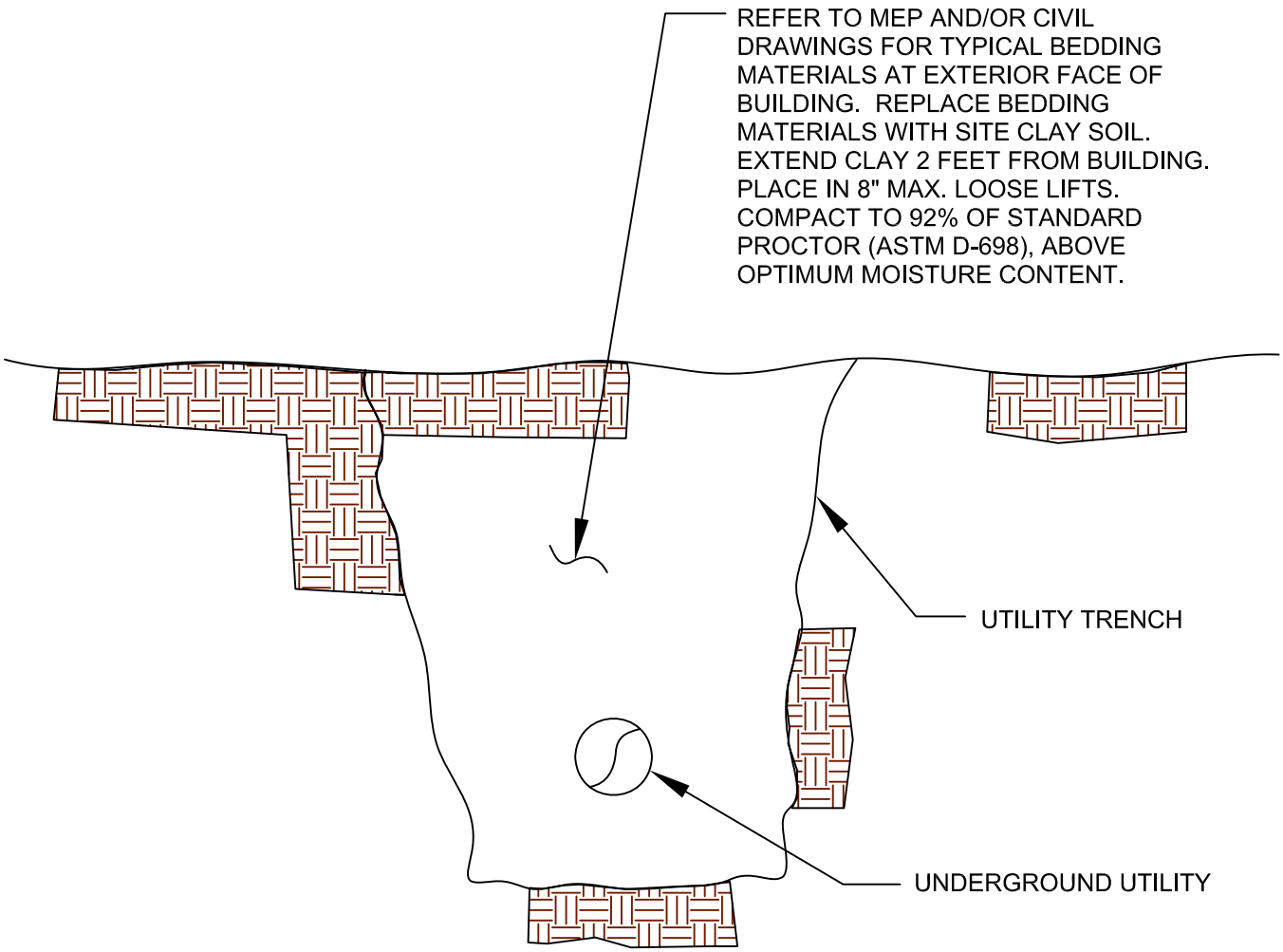
	SCALE: NTS	Project No.: 63-1168
PM: TM	DATE: March 13, 2020	FIGURE: BLD

Boring Location Plan

Playground and Trail Community Park
SWC Ranch House Rd & Stagecoach Trl.
Willow Park, Texas

ECS Southwest, LLP
4020 Sandshell Drive
Fort Worth, Texas 76137

	SCALE: NTS	Project No.: 63:1268
PM: TM	DATE: March 13, 2020	FIGURE: BLD



TYPICAL DETAIL DIAGRAM		**CLAY PLUG AT UTILITY TRENCH**	ENGINEER	SCALE NTS
			DRAFTSMAN CLL	PROJECT NO.
			REVISIONS	SHEET 1 OF 1
				DATE 11/7/08

APPENDIX B – Field Operations

Reference Notes for Boring Logs
Boring Logs B-1 through B-4

REFERENCE NOTES FOR BORING LOGS

MATERIAL[1,2]	
	ASPHALT
	CONCRETE
	GRAVEL
	TOPSOIL
	VOID
	Limestone
	AGGREGATE BASE COURSE
	FILL[3] MAN-PLACED SOILS
GW	**WELL-GRADED GRAVEL** gravel-sand mixtures, little or no fines
GP	**POORLY-GRADED GRAVEL** gravel-sand mixtures, little or no fines
GM	**SILTY GRAVEL** gravel-sand-silt mixtures
GC	**CLAYEY GRAVEL** gravel-sand-clay mixtures
SW	**WELL-GRADED SAND** gravelly sand, little or no fines
SP	**POORLY-GRADED SAND** gravelly sand, little or no fines
SM	**SILTY SAND** sand-silt mixtures
SC	**CLAYEY SAND** sand-clay mixtures
ML	**SILT** non-plastic to medium plasticity
MH	**ELASTIC SILT** high plasticity
CL	**LEAN CLAY** low to medium plasticity
CH	**FAT CLAY** high plasticity
OL	**ORGANIC SILT or CLAY** non-plastic to low plasticity
OH	**ORGANIC SILT or CLAY** high plasticity
PT	**PEAT** highly organic soils

DRILLING SAMPLING SYMBOLS & ABBREVIATIONS			
SS	Split Spoon Sampler	PM	Pressuremeter Test
ST	Shelby Tube Sampler	RD	Rock Bit Drilling
WS	Wash Sample	RC	Rock Core, NX, BX, AX
BS	Bulk Sample of Cuttings	REC	Rock Sample Recovery %
PA	Power Auger (no sample)	RQD	Rock Quality Designation %
HSA	Hollow Stem Auger	CFA	Continuous Flight Auger

PARTICLE SIZE IDENTIFICATION		
DESIGNATION		**PARTICLE SIZES**
Boulders		12 inches (300 mm) or larger
Cobbles		3 inches to 12 inches (75 mm to 300 mm)
Gravel:	Coarse	¾ inch to 3 inches (19 mm to 75 mm)
	Fine	4.75 mm to 19 mm (No. 4 sieve to ¾ inch)
Sand:	Coarse	2.00 mm to 4.75 mm (No. 10 to No. 4 sieve)
	Medium	0.425 mm to 2.00 mm (No. 40 to No. 10 sieve)
	Fine	0.074 mm to 0.425 mm (No. 200 to No. 40 sieve)
Silt & Clay ("Fines")		<0.074 mm (smaller than a No. 200 sieve)

COHESIVE SILTS & CLAYS		
UNCONFINED COMPRESSIVE STRENGTH, Q_P[4]	**SPT[5] (BPF)**	**CONSISTENCY[7] (COHESIVE)**
<0.25	<3	Very Soft
0.25 - <0.50	3 - 4	Soft
0.50 - <1.00	5 - 8	Medium Stiff
1.00 - <2.00	9 - 15	Stiff
2.00 - <4.00	16 - 30	Very Stiff
4.00 - 8.00	31 - 50	Hard
>8.00	>50	Very Hard

GRAVELS, SANDS & NON-COHESIVE SILTS	
SPT[5]	**DENSITY**
<5	Very Loose
5 - 10	Loose
11 - 30	Medium Dense
31 - 50	Dense
>50	Very Dense

RELATIVE AMOUNT[7]	COARSE GRAINED (%)[8]	FINE GRAINED (%)[8]
Trace	≤5	≤5
Dual Symbol *(ex: SW-SM)*	10	10
With	15 - 20	15 - 25
Adjective *(ex: "Silty")*	≥25	≥30

WATER LEVELS[6]		
	WL	Water Level (WS)(WD) (WS) While Sampling (WD) While Drilling
	SHW	Seasonal High WT
	ACR	After Casing Removal
	WL	Water Level at Drilling Completion

[1] *Classifications and symbols per ASTM D 2488-09 (Visual-Manual Procedure) unless noted otherwise.*

[2] *To be consistent with general practice, "POORLY GRADED" has been removed from GP, GP-GM, GP-GC, SP, SP-SM, SP-SC soil types on the boring logs.*

[3] *Non-ASTM designations are included in soil descriptions and symbols along with ASTM symbol [Ex: (SM-**FILL**)].*

[4] *Typically estimated via pocket penetrometer or Torvane shear test and expressed in tons per square foot (tsf).*

[5] *Standard Penetration Test (SPT) refers to the number of hammer blows (blow count) of a 140 lb. hammer falling 30 inches on a 2 inch OD split spoon sampler required to drive the sampler 12 inches (ASTM D 1586). "N-value" is another term for "blow count" and is expressed in blows per foot (bpf).*

[6] *The water levels are those levels actually measured in the borehole at the times indicated by the symbol. The measurements are relatively reliable when augering, without adding fluids, in granular soils. In clay and cohesive silts, the determination of water levels may require several days for the water level to stabilize. In such cases, additional methods of measurement are generally employed.*

[7] *Minor deviation from ASTM D 2488-09 Note 16.*

[8] *Percentages are estimated to the nearest 5% per ASTM D 2488-09.*

BORING LOG

PROJECT NO.:	63: 1268	**BORING NO:**	B-1
OWNER:	Pacheco Koch	**SHEET:**	1
PROJECT NAME:	Willow Park Playground & Trail at Community Park		
LOCATION:	Ranch House Rd & Stagecoach Trl, Willow Park, TX	**SURF. ELEV (FT):**	916
DRILLING METHOD:	Continuous Flight Auger	**DRILLER:**	Total Depth
BORING STARTED:	3/3/2020	**BORING COMPLETED:**	3/3/2020

ELEV. (FEET)	DEPTH (FEET)	SAMPLE	DESCRIPTION OF MATERIALS (CLASSIFICATION)	N (bpf)	NOTES
915		1	(CL) SANDY LEAN CLAY, brown, light brown, moist, hard, with calcareous nodules and limestone fragments		P = 4.5 tsf
914	2				
913		2	LIMESTONE, tan, with clay seams	67	
912	4				
911					
910	6	3			TCP = 100/1.25"
909			LIMESTONE, gray		
908	8				
907					
906	10	4			TCP = 100/0.5"
905			END OF BORING @ 10'		
904					
903					
902					
901	15				
900					
899					
898					
897					
896	20				
895					
894					
893					
892					
891	25				
890					
889					
888					
887					
886	30				

WATER DEPTH AFTER DRILLING:	N/A	**CAVE-IN DEPTH:**	N/A

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES.

THE STANDARD PENETRATION RESISTANCE (N-VALUE) IS THE SUM OF THE 2nd and 3rd SET OF BLOWS (6" INCREMENTS) REQUIRED TO DRIVE A 2" O.D. (1.375" I.D.) SPLIT-SPOON SAMPLER A DISTANCE OF 18" OR 24", USING A 140 LB HAMMER DROPPING 30".

BORING LOG

PROJECT NO.:	63: 1268	**BORING NO:**	B-2
OWNER:	Pacheco Koch	**SHEET:**	1
PROJECT NAME:	Willow Park Playground & Trail at Community Park		
LOCATION:	Ranch House Rd & Stagecoach Trl, Willow Park, TX	**SURF. ELEV (FT):**	916
DRILLING METHOD:	Continuous Flight Auger	**DRILLER:**	Total Depth
BORING STARTED:	3/3/2020	**BORING COMPLETED:**	3/3/2020

ELEV. (FEET)	DEPTH (FEET)	SAMPLE	DESCRIPTION OF MATERIALS (CLASSIFICATION)	N (bpf)	NOTES
915		1	(SC) CLAYEY SAND, brown, light brown, moist, very stiff, with calcareous nodules and limestone fragments		P = 3.0 tsf
914	2				
913		2			P = 3.5 tsf
912	4		LIMESTONE, tan, with clay seams		
911		3		75	
910	6	4			TCP = 100/1.5"
909			LIMESTONE, gray		
908	8				
907					
906	10	5			TCP = 100/0.75"
905					
904					
903					
902					
901	15	6			TCP = 100/0.5"
900			END OF BORING @ 15'		
899					
898					
897					
896	20				
895					
894					
893					
892					
891	25				
890					
889					
888					
887					
886	30				

WATER DEPTH AFTER DRILLING:	10'. Seepage @11' during drilling	**CAVE-IN DEPTH:**	N/A

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES.

THE STANDARD PENETRATION RESISTANCE (N-VALUE) IS THE SUM OF THE 2nd and 3rd SET OF BLOWS (6" INCREMENTS) REQUIRED TO DRIVE A 2" O.D. (1.375" I.D.) SPLIT-SPOON SAMPLER A DISTANCE OF 18" OR 24", USING A 140 LB HAMMER DROPPING 30".

BORING LOG

PROJECT NO.:	63: 1268	**BORING NO:**	B-3
OWNER:	Pacheco Koch	**SHEET:**	1
PROJECT NAME:	Willow Park Playground & Trail at Community Park		
LOCATION:	Ranch House Rd & Stagecoach Trl, Willow Park, TX	**SURF. ELEV (FT):**	914
DRILLING METHOD:	Continuous Flight Auger	**DRILLER:**	Total Depth
BORING STARTED:	3/3/2020	**BORING COMPLETED:**	3/3/2020

ELEV. (FEET)	DEPTH (FEET)	SAMPLE	DESCRIPTION OF MATERIALS (CLASSIFICATION)	N (bpf)	NOTES
913		1	(SC) CLAYEY SAND, brown, light brown, moist, hard, with calcareous nodules and limestone fragments		P = 4.5 tsf
912	2				
911		2	LIMESTONE, tan, with clay seams		
910	4			86	
909					
908	6				
907		3			TCP = 100/1.75"
906	8		LIMESTONE, gray		
905					
904	10	4			TCP = 100/0.75"
903			END OF BORING @ 10'		
902					
901					
900					
899	15				
898					
897					
896					
895					
894	20				
893					
892					
891					
890					
889	25				
888					
887					
886					
885					
884	30				

WATER DEPTH AFTER DRILLING:	N/A	**CAVE-IN DEPTH:**	N/A

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES.

THE STANDARD PENETRATION RESISTANCE (N-VALUE) IS THE SUM OF THE 2nd and 3rd SET OF BLOWS (6" INCREMENTS) REQUIRED TO DRIVE A 2" O.D. (1.375" I.D.) SPLIT-SPOON SAMPLER A DISTANCE OF 18" OR 24", USING A 140 LB HAMMER DROPPING 30".

BORING LOG

PROJECT NO.:	63: 1268	**BORING NO:**	B-4
OWNER:	Pacheco Koch	**SHEET:**	1
PROJECT NAME:	Willow Park Playground & Trail at Community Park		
LOCATION:	Ranch House Rd & Stagecoach Trl, Willow Park, TX	**SURF. ELEV (FT):**	910
DRILLING METHOD:	Continuous Flight Auger	**DRILLER:**	Total Depth
BORING STARTED:	3/3/2020	**BORING COMPLETED:**	3/3/2020

ELEV. (FEET)	DEPTH (FEET)	SAMPLE	DESCRIPTION OF MATERIALS (CLASSIFICATION)	N (bpf)	NOTES
909		1	(CL) SANDY LEAN CLAY, brown, light brown, moist, very stiff, with calcareous nodules		P = 2.5 tsf
908	2				
907		2	with limestone fragments at 2 feet		P = 3.25 tsf
906	4		LIMESTONE, tan, with clay seams		
905		3		50	
904	6				
903		4			TCP = 100/2.0"
902	8		LIMESTONE, gray		
901					
900	10	5			TCP = 100/1.25"
899					
898					
897					
896					
895	15	6			TCP = 100/0.75"
894					
893					
892					
891					
890	20	7			TCP = 100/0.5"
889			END OF BORING @ 20'		
888					
887					
886					
885	25				
884					
883					
882					
881					
880	30				

WATER DEPTH AFTER DRILLING:	N/A	**CAVE-IN DEPTH:**	N/A

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES.

THE STANDARD PENETRATION RESISTANCE (N-VALUE) IS THE SUM OF THE 2nd and 3rd SET OF BLOWS (6" INCREMENTS) REQUIRED TO DRIVE A 2" O.D. (1.375" I.D.) SPLIT-SPOON SAMPLER A DISTANCE OF 18" OR 24", USING A 140 LB HAMMER DROPPING 30".

APPENDIX C – Laboratory Testing

Laboratory Testing Summary

ECS Southwest, LLP
Fort Worth, Texas
Laboratory Testing Summary

Date: 3/16/2020

Project Number: 63-1268 **Project Name:** Willow Park - Playground and Trail Community Park

Project Engineer: TM **Principal Engineer:** RJ **Summary By:** TM

Boring Number	Sample Number	Depth (feet)	MC[1] (%)	Soil Type[2]	Atterberg Limits[3]			Percent Passing No. 200 Sieve[5]	Dry Unit Weight (pcf)	One-Dimensional Swell[6]			Unconfined Compressive Strength (tsf)
					LL	PL	PI			Final Moisture (%)	Overburden (psf)	Swell (%)	
B-1													
	S-1	0 - 2	19.1	CL	38	17	21	55.0					
B-2													
	S-1	0 - 2	14.0	SC	42	20	22	35.5					
	S-2	2 - 4	14.7										
B-3													
	S-1	0 - 2	10.7	SC	43	19	24	27.3					
B-4													
	S-1	0 - 2	21.7	CL	48	25	23	59.3					
	S-2	2 - 4	11.7										

Notes: 1. ASTM D 2216, 2. ASTM D 2487, 3. ASTM D 4318, 4. ASTM D 7260, 5. ASTM D 1140, 6. ASTM D 4546

Definitions: MC: Moisture Content, Soil Type: USCS (Unified Soil Classification System), LL: Liquid Limit, PL: Plastic Limit, PI: Plasticity Index, NP: Non Plastic

CITY COUNCIL AGENDA ITEM BRIEFING SHEET

Council Date:	Department:	Presented By:
September 08, 2020	Administrative	B. Grimes

To consider and act on Resolution 2020-08, a Resolution of adopting the Texas Coalition for Affordable Power's (TCA P) professional services agreement and Gexa Energy's commercial electric service agreement for power to be provided on and after January 1, 2021.

BACKGROUND:

In order to receive the best electricity rates possible, The City belongs to the Texas Coalition for Affordable Power's (TCAP), which is a co-operative of many government organizations. Every two years TCAP negotiates our electric rates to receive the best possible rates and plans.

This Resolution is our agreement to be a part of the upcoming negotiations.

STAFF/BOARD/COMMISSION RECOMMENDATION:

Approval of Resolution

EXHIBITS:

Attachments A,B, C, D and E

Exhibits 1, 2, 3

ADDITIONAL INFO:	FINANCIAL INFO:	
	Cost	TBD
	Source of Funding	TBD

RESOLUTION NO. 2020-08

RESOLUTION OF THE CITY OF WILLOW PARK, TEXAS ADOPTING TCAP'S PROFESSIONAL SERVICES AGREEMENT AND GEXA ENERGY'S COMMERCIAL ELECTRIC SERVICE AGREEMENT FOR POWER TO BE PROVIDED ON AND AFTER JANUARY 1, 2023

WHEREAS, the City of Willow Park is a member of Texas Coalition For Affordable Power, Inc. ("TCAP"), a non-profit, political subdivision corporation of the State of Texas; and

WHEREAS, TCAP has previously arranged for the City to purchase power through Gexa Energy with a contract set to expire December 31, 2022; and

WHEREAS, TCAP has designed a new procurement strategy that will involve TCAP initially committing to purchase power two years in advance of delivery on behalf of its members who desire participation in a Strategic Hedging Program ("SHP") that will involve a series of monthly competitive auctions; and

WHEREAS, TCAP has prepared a Professional Services Agreement ("PSA"), attached as Exhibit A, that, in addition to enumerating services and benefits to members of TCAP, provides TCAP with specific authority to procure power in the wholesale market on behalf of members who choose to participate in the SHP; and

WHEREAS, approval of the PSA is a necessary, but not sufficient, prerequisite to participation in the SHP; and

WHEREAS, the PSA is a relational contract that defines services provided by TCAP to members regardless of whether a member decides to commit to the SHP; and

WHEREAS, the industry-standard retail contract is a Commercial Electric Service Agreement ("CESA") offered by a Retail Electric Provider ("REP"); and

WHEREAS, TCAP has negotiated modifications to the current CESA between the City and Gexa Energy to reflect participation in the SHP; and

WHEREAS, the CESA that will facilitate participation in the SHP effective for power deliveries in and beyond 2023 (attached as Exhibit B) will need to be approved and signed prior to October 1, 2020; and

WHEREAS, the City desires to participate in the SHP.

THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF WILLOW PARK, TEXAS:

SECTION 1. That the City Manager is authorized to sign Exhibit A, TCAP's Professional Services Agreement, and Exhibit B, Gexa Energy's CESA, and send the agreements to TCAP, 15455 Dallas Parkway, Ste 600, Addison, TX 75001.

PASSED AND APPROVED this 8TH day of September, 2020.

_____
Doyle Moss, Mayor

ATTEST:

_____
Alicia Smith, City Secretary

APPROVED AS TO FORM:

_____
Pat Chesser, City Attorney

USER'S GUIDE TO TCAP'S PROFESSIONAL SERVICES AGREEMENT ("PSA") AND GEXA'S 2019 VERSION OF ITS COMMERCIAL ELECTRIC SERVICE AGREEMENT ("CESA")

Necessary Documents For Participation In TCAP's Strategic Hedging Program

If a TCAP member desires to participate in the Strategic Hedging Program ("SHP") approval of both the PSA and CESA by the member's governing body are necessary prior to October 1, 2020, because purchases in the wholesale market on behalf of SHP participants will commence in January 2021.

Note: The SHP is a default procurement strategy for all TCAP members. It is a fixed-price program, but with a shorter term for the fixed price designed to procure energy when it is cheaper. If a long-term fixed-price, fixed-term contract similar to a member's current contract is preferred over participation in the SHP, the member will need to submit an Authorized Election Form to TCAP. See CESA Section 2.1 (a). There currently is no deadline for such submission, but submission should be completed no later than January 31, 2022, for TCAP to arrange a contract consistent with the best market terms and price.

Brief Summary of SHP

In the fall of 2020, TCAP and its current wholesale supplier and future Energy Manager, NextEra, will tabulate the cumulative load of members desiring participation in the SHP and preliminarily arrange monthly 2021 auctions for one-twelfth of that load. Any scheduled auction may be adjusted, deferred or cancelled in recognition of prevailing market conditions. The auction process will attempt to avoid soliciting competitive bids when market prices are trending up. By the end of 2021, energy sufficient to match the 2023 anticipated SHP load should be under contract. The auction results will be communicated to SHP participants as a price per kWh Energy at least nine months prior to the effective date of such price, so member can estimate future energy expenditures for budgeting and planning purposes. TCAP will retain the right to audit auction results. See PSA, Section 5. B.7.

Necessary Contract Provisions/CESA Revisions for SHP Implementation

1. TCAP Must Be Authorized As An Wholesale Energy Procurer By Each SHP Participant. Since its creation via the merger of CAPP and STAP effective January 1, 2011, TCAP has functioned as its members' agent in arranging energy contracts and services provider. TCAP has always had the legal authority to procure power in the wholesale market, but until the design of the SHP there was never a need to request that members authorize TCAP to commit to wholesale power purchases. Because of SHP, TCAP will need to assure its Energy Manager that it has the right and responsibility to commit participating members to purchases of wholesale power through a series of auctions. See CESA Section 1.3 and PSA Section 5.A.2.

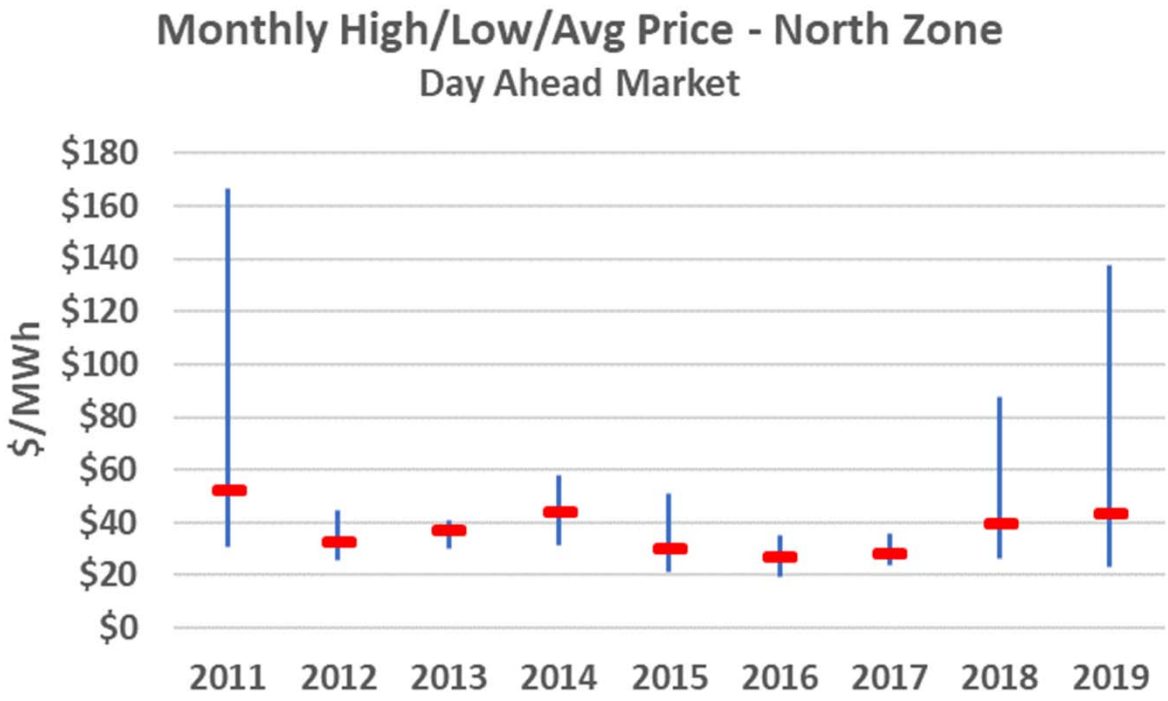
2. The Role of Energy Manager Must Be Created. Prior to creation of SHP, the role of Energy Manager did not exist. The CESA defines "Energy Manger" as "the wholesale market

participant designated by TCAP to perform the services described in the PSA." CESA Section 7.1.6. The PSA supplements that definition when it states that the Energy Manager will "conduct SHP procurements at TCAP's direction, in accordance with Section 5A and Section 5.B.7 of this Agreement." PSA Section 10. Pursuant to PSA Section 3 a member "authorizes TCAP to contract for the purchase of energy for member in the wholesale market from an energy manager selected by TCAP." With regard to SHP, PSA Section 5.A.2 states: "TCAP will function as member's electric energy procurer. As such, TCAP will (i) oversee the Energy Manager, (ii) will direct the Energy Manager to solicit wholesale energy market quotes, (iii) will cause the Energy Manager to transact at the most favorable executable market quotes and (iv)will negotiate and develop the Energy Price in member's CESA."

3. Recognition of various Procurement Options. As referenced earlier in this document, SPH will become the default procurement policy, but each member will have an alternative to remain as a fixed-price, fixed-term customer by executing an Authorized Election Form. CESA Section 2.1. That form will be distributed as an attachment to the PSA. Members participating in SHP will have occasional opportunities to convert to a fixed-price, fixed-term contract, if they so desire. Additionally, members will have opportunities to participate in Power Purchase Agreements (i.e., solar projects for a portion of member's load) by exercising a Power Addendum. See CESA 1.3 and PSA 5.A.2.

4. Refinement of Contract Term. SHP May be viewed as a series of two-year commitments, with the CESA establishing a not-to-exceed termination date of December 31, 2037. See CESA 1.4 and PSA Section 5.B.7. Theoretically, subject to City Charter or other length of contract constraints, a member content with SHP could remain under the same CESA for 14 years. However, once a participant in SHP, a member may terminate participation and switch to a fixed-price, fixed-term contract at discrete option points or exit TCAP altogether, subject to contractual commitments associated with any wholesale power auctions in which member's load participated. One of the great advantages of SHP is that it maximizes member control over length of term.

SHP - The Average Is Much More Stable



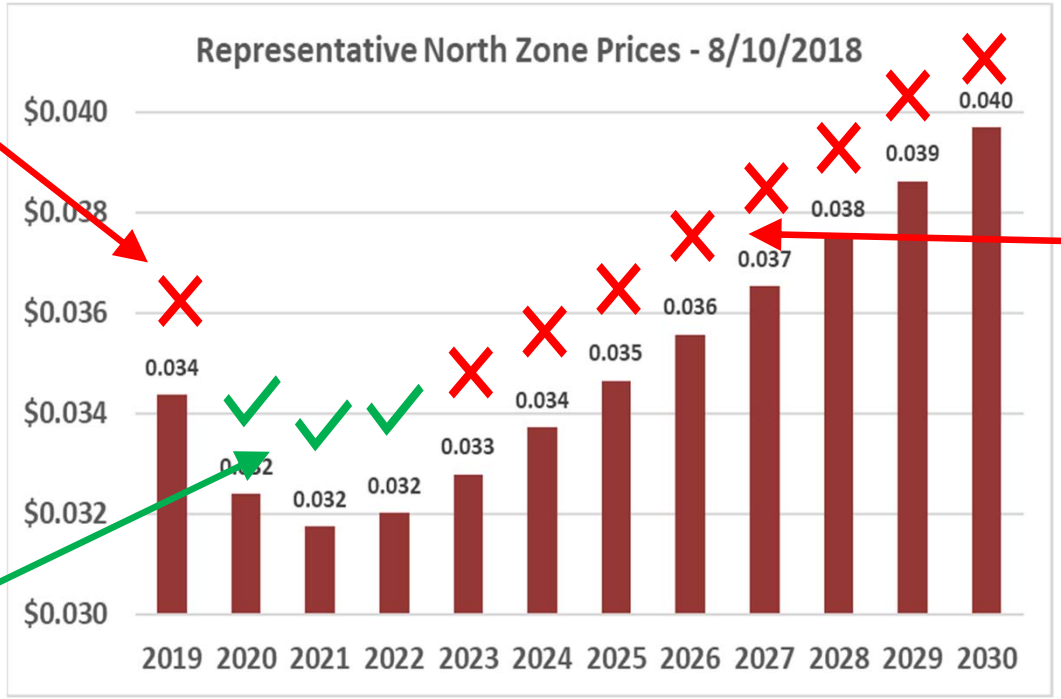
Price Range Varies Greatly by Year

But Average Pricing is Much Less Volatile

ERCOT Pricing Pattern Dynamics

Why Does Price Change Over Time?

Prices Often Higher in Immediate Next Year Reflecting Uncertainty Created by Current Market Problems and Issues

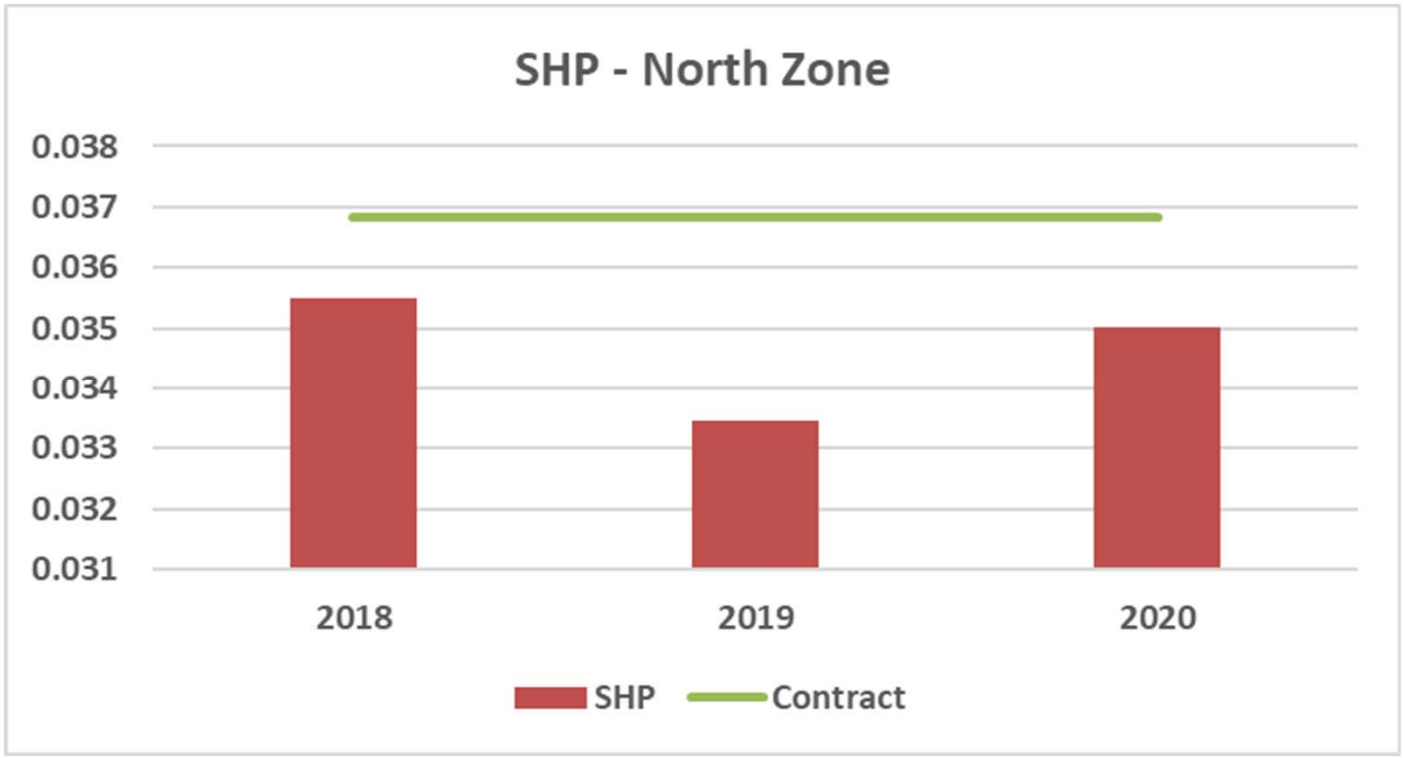


Market Feels Short Term Problems will be Resolved and Carrying Charges and Market Premium are Low. All Else Being Equal, a **Good Time to Buy**.

Prices Increase Over Time Reflecting Carrying Costs of Procurement for Future Needs and Risk Premiums for future market uncertainty

This Pattern Has Been in Place for at Least the Last Four Years and Reflects a Well Supplied Market

Analysis Shows SHP Works



Long Range Lookback Shows Savings From 2% (Worst Case) to 32% Over Fixed Price Option

Recent Market Quotes Suggest Pricing May Be Significantly Lower For Next Renewal Period.

Exhibit A

PROFESSIONAL SERVICES AGREEMENT BETWEEN

WILLOW PARK, TEXAS AND TEXAS COALITION FOR AFFORDABLE POWER, INC.

This Professional Services Agreement ("AGREEMENT") is made and entered by and between Texas Coalition for Affordable Power, Inc. ("TCAP"), a non-profit, political subdivision corporation, and Willow Park, Texas ("MEMBER"), a TCAP member.

SECTION 1 DURATION:
This AGREEMENT becomes effective as of signing by MEMBER and shall remain effective as long as MEMBER is being served by TCAP and MEMBER's electric load included in a current TCAP procurement.

SECTION 2 PURPOSE OF AGREEMENT:
The purpose of this AGREEMENT is to define services and obligations of TCAP to MEMBER and obligations of MEMBER to TCAP and other members. In furtherance of this AGREEMENT, MEMBER will enter into a Commercial Electric Service Agreement ("CESA") with a retail electric provider ("REP") selected by TCAP pursuant to the terms set forth herein; provided that nothing in this AGREEMENT is intended to alter the price or other terms of MEMBER's current CESA in effect through December 31, 2022.

SECTION 3 OBLIGATIONS OF TCAP TO MEMBER:
MEMBER authorizes TCAP to contract for the purchase of energy for MEMBER in the wholesale market from an energy manager selected by TCAP ("Energy Manager") and to select an acceptable, cost-beneficial REP to serve MEMBER's electric accounts. TCAP shall provide procurement services, which services shall consist of securing wholesale power for MEMBER through an alternative procurement strategy, such as TCAP's Strategic Hedging Program ("SHP"), as may be authorized and defined by TCAP's Board of Directors. MEMBER may elect to consider fixed-price, fixed-term offers for wholesale power supply, such election to be communicated to TCAP separately in writing by providing an Authorized Election Form to TCAP, the form of which has been attached to this AGREEMENT as Exhibit A. If MEMBER has provided to TCAP an Authorized Election Form, TCAP's procurement services to MEMBER shall also consist of arranging fixed-price, fixed-term offers to MEMBER following solicitation of competitive offers. TCAP consultants and attorneys will negotiate terms and conditions of all contracts, monitor performance of Energy Managers and REPs, work to avoid and remedy problems that may be encountered by MEMBER where possible, assist MEMBER with wires company issues, and represent MEMBER in energy related matters before State agencies, the courts or legislature. TCAP will provide additonal customer services to MEMBER that are defined in SECTION 5.

SECTION 4 OBLIGATIONS AND RIGHTS OF MEMBER:
MEMBER will honor the terms of its CESA and promptly pay or promptly dispute invoices from its REP. MEMBER will comply with the confidentiality and non-disclosure obligations contained in its CESA and Section 7 of this AGREEMENT. MEMBER will designate one or more individuals to receive notices and updates from TCAP and will promptly update contact information. MEMBER will pay aggregation fees to support the non-profit functions of TCAP assessed annually by the TCAP Board of Directors and recovered as part of the energy charges paid to REP. Also, MEMBER will pay or receive refunds equal to the Quarterly Adjustment and the Annual Adjustment mutually agreed upon by TCAP and the Energy Manager to address certain variable costs and charges, including costs imposed by ERCOT, such payment or receipt of funds subject to the reserve account as further described herein. TCAP members will fund, and TCAP will maintain and administer, a reserve account to facilitate the reconciliation of any Quarterly Adjustments or Annual Adjustments by collecting any excess amounts paid and/or paying any deficient amounts incurred (as possible). The reserve account balance will be maintained at a minimum level to cover anticipated future needs for up to two (2) years. The TCAP Board may vote to refund to members amounts in excess of future anticipated needs. Any monies remaining in the reserve account at the dissolution of TCAP will be refunded to current membership at the time of dissolution. TCAP is owned and controlled by its members and is governed by a Board of Directors consisting of employees or elected officials of members. Consistent with TCAP's Bylaws, each MEMBER has a right to nominate its representative to serve on the Board of Directors and has a right to vote in annual elections of Board members. MEMBER has a right to attend or monitor each Board meeting. TCAP has a financial audit performed each year and MEMBER has a right to a copy of the annual audit upon request.

SECTION 5 TCAP SERVICES TO MEMBER:

A. Procurement of Energy Supplies and REP Services

1. TCAP Procurement Services and Capabilities

TCAP will assist prospective members in reviewing market conditions and in estimating the most price opportune time to contract for energy supplies. TCAP will work with MEMBER to achieve a competitive price that balances supply security and risk tolerance while maintaining superior billing and customer services. As a political subdivision corporation, offering electricity procurement to political subdivisions, TCAP has the ability to procure wholesale energy supplies and REP services separately to secure the most effective combination of competitively priced energy supplies and superior billing and customer services. TCAP may utilize either wholesale or retail sources of power, or some combination of both. TCAP may utilize multiple suppliers with different generation resources. TCAP will solicit bids from multiple sources for energy supplies. TCAP aggregates the load of all members to maximize clout in negotiating contract terms. TCAP's objective in negotiations with suppliers is to continue obtaining favorable terms

regarding band widths for annual usage based on total load of all members (rather than based on MEMBER's individual load) and to minimize fees for adding or deleting accounts. TCAP will monitor the wholesale and retail markets for favorable hedging opportunities. TCAP will also monitor, evaluate and issue requests for proposals for power development opportunities beneficial to its MEMBERS, including renewable projects (each, a "Power Project").

2. MEMBER Procurement Options

If MEMBER elects a fixed-price contract for a fixed period by submitting an Authorized Election Form, TCAP will function as MEMBER'S agent in the wholesale energy marketplace in soliciting, evaluating and negotiating each such fixed-price contract. Absent an election, MEMBER shall participate in other procurement strategy options offered by TCAP, such as TCAP's SHP, and TCAP will function as MEMBER's electric energy procurer. As such, TCAP will (i) oversee the Energy Manager, (ii) will direct the Energy Manager to solicit wholesale energy market quotes, (iii) will cause the Energy Manager to transact at the most favorable executable market quotes and (iv) will negotiate and develop the Energy Price in MEMBER'S CESA (the "CESA Energy Price"). The CESA Energy Price shall be developed and agreed upon by TCAP, the Energy Manager and the REP and shall include the wholesale energy market transactions as well as Energy Manager's estimate of any non-fixed charges, including zonal congestion charges, ancillaries service charges, and other charges in connection with MEMBER'S load. If MEMBER elects to purchase power from a Power Project solicited and chosen by TCAP via a competitive RFP process (or other similar process), TCAP will function as MEMBER'S electric energy procurer, and will direct the Energy Manager to include the value of the power procured from such projects in the development of MEMBER'S CESA price.

B. Customer and Billing Services Provided by TCAP

1. REP Portal

TCAP consultants oversee the development and presentation of the REP's portal for TCAP members; the REP will be responsible for operation of the portal. TCAP provides training and assistance regarding portal use.

2. REP Customer Service

TCAP negotiates with the REP regarding service standards and annually reviews REP performance. TCAP maintains a right to replace a REP for unsatisfactory performance without affecting the price of wholesale power, so long as the replacement REP has a credit rating acceptable to the Energy Manager. TCAP continuously monitors customer billings and will alert both the REP and MEMBER, when appropriate, of any billing errors and the adjustments needed to ensure accurate and reliable billings to MEMBER. TCAP will advocate on behalf of MEMBER when needed to resolve billing or customer service issues.

TCAP will review customer billings and make MEMBER aware of inactive accounts that MEMBER may be able to disconnect to save monthly charges.

3. TCAP Assistance with Budgets and Required Filings and Assistance with TDSP Issues

TCAP monitors Public Utility Commission ("PUC") and ERCOT activity and will provide MEMBER a forecast of changes in non-by passable charges that may impact MEMBER's annual budget estimates. TCAP will prepare an annual electricity cost estimate for MEMBER. TCAP will assist MEMBER in preparation of energy related reports that may be necessary for MEMBER to file in response to legislative or agency mandates. TCAP will assist MEMBER in understanding non-bypassable charges included in REP invoices, and assist in resolving issues caused by errors of MEMBER'S Transmission and Distribution Service Provider ("TDSP" aka "wires company").

4. Information Services

TCAP maintains a member web site, www.tcaptx.com. In addition to regular blog postings on energy news relevant to MEMBER, TCAP has prepared and posted major reports on the history of deregulation in Texas and a history of ERCOT. TCAP consultants continuously monitor the Nymex gas market, ERCOT energy market, and economic conditions that may affect MEMBER, as well as activities at the PUC and ERCOT. Important trends are noted in consultant reports to the Board of Directors and are attached to Board Minutes. TCAP's Executive Director prepares and distributes a monthly newsletter and coordinates TCAP activities with various city coalitions and Texas Municipal League ("TML"). The Executive Director monthly newsletters will also include important or trending issues in the energy markets.

5. Demand Response, Distributed Generation and Cost Savings Strategy

TCAP will work with relevant service providers to make available to MEMBER competitive demand reduction programs that facilitate MEMBER's participation in TDSP and ERCOT cost reduction strategies approved by the PUC. Upon request, TCAP will monitor and evaluate demand reduction program performance metrics. TCAP will assist MEMBER in reviewing, analyzing and developing distributed generation programs that can reduce wires and energy costs and/or provide backup power to specific facilities. TCAP will assist MEMBER in meeting renewable energy goals established by MEMBER, including behind-the-meter solar projects and local wind projects.

6. Regulatory and Legislative Representation

TCAP will provide representation and advocacy services on energy issues relevant to MEMBER in regulatory and legislative areas including, but not limited to, ERCOT stakeholder meetings, PUC projects and dockets, and legislative actions.

7. Strategic Hedging

To the extent that there is sufficient interest and commitment of load of TCAP members within an ERCOT zone, and to the extent MEMBER has not elected a fixed-price contract for a fixed period, MEMBER will perpetually (subject to potential charter or ordinance constraints on length of contracts) commit to two-year participation obligations. MEMBER may terminate participation in the SHP, without energy price penalties and with minimal other termination fees, by providing sufficient notice as set forth herein (Section 6). A SHP price will be determined at least 9 months prior to the effective date of the price by averaging the winning bids from periodic competitive auctions that occur throughout the 24 months preceding the effective date. TCAP will direct Energy Manager to conduct the periodic competitive auctions. TCAP will have the right to audit the auction results. The auction process will be designed to identify competitively priced energy supplies from a variety of creditworthy suppliers, resulting in prices that are rarely, if ever, significantly above prevailing market prices and that should generally be less than pricing for long-term fixed priced contracts (when evaluated from a common contract start date and term). Designed to take advantage of the characteristics of the nation's well supplied energy markets, the SHP will also be flexible enough to respond to market changes when and if they occur in the future. Participation in the SHP may be viewed as a series of 24 -month forward year-to-year contracts for as long as desired by MEMBER. If MEMBER participates in the SHP, MEMBER agrees that TCAP is authorized to direct Energy Manager to procure electric energy in the wholesale market on MEMBER's behalf and that TCAP is authorized to commit MEMBER's load to periodic competitive auctions.

SECTION 6 MEMBER RIGHT OF TERMINATION:
A. Fixed-Term, Fixed-Price Contract

MEMBER may terminate a CESA prior to the end-of-term specified in a contract subject to payment of "Liquidated Damages" prescribed in MEMBER's CESA. If MEMBER commits to a fixed multi-year term, fixed-price contract and wants to terminate the agreement prior to the end of the fixed multi-year term, liquidated damages will be based on the differential in the price of electric energy futures contracts used to support the fixed-price agreement and the price of comparable electric energy contracts at time of termination and shall also include damages prescribed herein and in the CESA, as applicable. If electric energy prices are lower at the point of termination than they were at time of contracting, MEMBER should expect to pay energy price damages upon early termination. In any event, any termination payment will be calculated and assessed in accordance with MEMBER's CESA.

B. Strategic Hedging Program

Since the SHP is based on a series of one-year term contracts, MEMBER is entitled to exit the program so long as notice of termination can be given prior to inclusion of MEMBER's load in the competitive auction process for a future year's price. TCAP will periodically notify MEMBER of expected procurement schedules and provide no less than 90 days

prior notice of any upcoming solicitiation, and MEMBER may notify TCAP that it wants to exclude its load from the competitive auction process by giving notice at least 60 days prior to the next procurement date. Termination of involvement in SHP without appropriate notice will require calculation of damages as prescribed by CESA under Edison Electric Institute ("EEI") principles with the intent of making the REP and Energy Manager whole for the termination. Liquidated damages will be based on the differential in the price of electric energy futures contracts used to support the SHP price and the price of comparable electric energy contracts at time of termination and shall also include damages prescribed herein and in the CESA, as applicable. If electric energy prices are lower at the point of termination than they were at time of contracting, MEMBER should expect to pay energy price damages upon early termination. In any event, any termination payment will be calculated and assessed in accordance with MEMBER's CESA.

C. Participation in Power Projects

If MEMBER has chosen to purchase power from a Power Project through TCAP, in accordance with a signed Project Addendum attached to MEMBER'S CESA, MEMBER's termination rights with respect to its commitment to purchase power from the Power Project shall be contained in the Project Addendum.

SECTION 7 CONFIDENTIALITY:

MEMBER is a governmental body subject to public information laws, including Chapter 552 of the Texas Government Code. If MEMBER receives a valid request under applicable public information laws for information related to this AGREEMENT or its CESA, it shall provide TCAP notice of the request including a description the information sought prior to MEMBER's release of information so that TCAP has the opportunity to determine whether such information is subject to an exception as trade secret, competitive, comercial, or financial information. With the exception of the preceding disclosures pursuant to public information laws, a Party (that party, the "Receiving Party") shall keep confidential and not disclose to third parties any information related this AGREEMENT, except for disclosures to Authorized Parties or as otherwise required by law; and provided that MEMBER authorizes TCAP to provide Energy Manager and REP with any relevant information concerning MEMBER's account, usage and billings. The provisions of this Section 7 apply regardless of fault and survive termination, cancellation, suspension, completion or expiration of this AGREEMENT for a period of two (2) years. "Authorized Parties" means those respective officers, directors, employees, agents, representatives and professional consultants of MEMBER and TCAP and each of their respective affiliates that have a need to know the confidential information for the purpose of evaluating, performing or administering this AGREEMENT.

SECTION 8 PARAGRAPH HEADINGS:

The paragraph headings contained in this AGREEMENT are for convenience only and shall is no way enlarge or limit the scope or meaning of the various and several paragraphs.

SECTION 9 COUNTERPARTS:
This AGREEMENT may be executed in multiple counterparts, each of which shall be deemed an original, and all of which shall constitute but one and the same instrument.

SECTION 10 DEFINITIONS:

"Annual Adjustment" shall mean either a credit to MEMBER for the over-collection of funds, or a charge to MEMBER for under-collection of funds, related to Power Project settlements, if applicable. For those MEMBERS that participate in SHP, the Annual Adjustment shall also include (i) adjustments related to the loss factor for each specific ERCOT zone and (ii) adjustments related to load reconciliation as determined by TCAP, the Energy Manager and the REP.

"Energy Manager" means the wholesale market participant selected by TCAP to conduct SHP procurements at TCAP's direction, in accordance with Section 5A and Section 7 of this Agreement. The Energy Manager may sell all or a portion of the required wholesale energy to TCAP or TCAP's REP.

"Power Project" means a power generation project identified by TCAP to supply electric energy to one or more TCAP Members.

"Project Addendum" means the Addendum for a Power Project, if any, signed and attached as an Exhibit to MEMBER'S CESA.

"QSE Services Fee" means the QSE Services Fee in affect during the Delivery Term, as agreed between TCAP and Energy Manager.

"Quarterly Adjustment" shall mean either a credit to MEMBER for the over-collection of funds, or a charge to MEMBER for under-collection of funds, related to (i) ERCOT zonal congestion charges and (ii) ancillary services charges and other charges imposed by governmental agencies or ERCOT upon wholesale suppliers or REPs under statutes, regulations or courts for services within ERCOT zones. Said charges or refunds will be proportional to MEMBER's relative contribution to TCAP load within specific ERCOT zones.

"**Retail Electric Provider" or "REP"** means the Retail Electric Provider that is party to (i) the REP Services Agreement with TCAP and (ii) the CESA between itself and MEMBER for the provision of retail electric service.

"Strategic Hedging Program" or "SHP" means an energy procurement strategy approved by TCAP's Board of Directors, overseen by TCAP's designated consultants, and administered by TCAP's appointed Energy Manager, whereby wholesale energy is solicited and procured at agreed upon intervals, as directed by TCAP.

EXECUTED on this the 8th day of September, 2020

MEMBER:

By: _____

Printed Name: _____

Title: _____

TCAP:

By: _____

Printed Name: _____

Title: _____

EXHIBIT A

MEMBER'S AUTHORIZED ELECTION FORM

MEMBER hereby grants TCAP Authorization to solicit, evaluate, and select fixed-price, fixed-term power supply offers for the purpose of fixing all or a portion of MEMBER'S Energy Price for all or a portion of MEMBER'S CESA Term, in accordance with the terms below:

Fixed Price Term Start Date: _____

Fixed Price Term End Date: _____

Fixed Price not to exceed $_____ / MWh

Upon TCAP's selection of a winning fixed-price, fixed-term offer, MEMBER authorizes TCAP to set the Energy Price for MEMBER'S CESA in accordance with MEMBER's CESA and as agreed upon by TCAP, TCAP's Energy Manager, and the REP.

Authorized on this the day of , 20 .

MEMBER:

By: _____

Printed Name: _____

Title: _____

COMMERCIAL ELECTRICITY SERVICE AGREEMENT

This Commercial Electricity Service Agreement, including all of the Attachments, Schedules, and Exhibits, which are attached and incorporated (collectively, the "**Agreement**"), is entered into between Gexa Energy, LP ("**Gexa**"), a Texas limited partnership, and Willow Park, Texas ("**Customer**"). Gexa and Customer may be referred to individually as a "**Party**" or collectively as the "**Parties**".

SECTION 1: RETAIL ELECTRIC SALES AND SERVICES

1.1 Appointment and Scope. Customer appoints Gexa as its Retail Electric Provider ("**REP**") for the ESI ID(s) served under this Agreement. Customer authorizes Gexa to: (i) act as Customer's REP for all purposes; and (ii) provide the services required of a REP including, without limitation, the procurement, scheduling and delivery of electricity throughout the Term to each of the ESI ID(s) in accordance with the terms set forth in this Agreement, including the Terms and Conditions of Service set forth in Attachment A. Customer's appointment imposes no other duties on Gexa other than those specified in this Agreement and the REP Services Agreement.

1.2 Agreement to Purchase. Customer shall purchase its electricity requirements from Gexa throughout the Term for each of the ESI ID(s) except as otherwise provided. The electricity and services Customer receives from Gexa is for Customer's exclusive proprietary use. Customer alone shall pay for electricity and services provided and for electricity and services Customer fails to take pursuant to its contractual obligations. If Gexa fails to deliver sufficient quantities of electricity to the TDSP for delivery to Customer or fails to schedule the delivery of sufficient quantities of electricity (collectively, a "**Scheduling Failure**") the TDSP is obligated by law and by its tariff to deliver sufficient electricity to satisfy Customer's needs. If a Scheduling Failure occurs, Gexa shall financially settle, at no additional cost or expense to Customer, with its Qualified Scheduling Entity (as defined by ERCOT) for the purchase of electricity necessary to cover the Scheduling Failure.

1.3 Membership in TCAP. Customer is a current member of the Texas Coalition for Affordable Power, Inc. ("**TCAP**"), and has entered into the Professional Services Agreement (the "PSA") authorizing the purchase of wholesale energy on behalf of the Customer by TCAP and/or TCAP's Energy Manager. Such wholesale energy purchases will affect the calculation of the Energy Price throughout the Term of this Agreement as described in Section 2. If, at any time during the Term, Customer elects to participate in a Power Purchase Agreement with a project to be developed for TCAP's members, and executes the Project Addendum for such project, then the Project Addendum will be attached hereto as Schedule I. Notwithstanding Customer's TCAP membership status, Customer agrees to fulfill all of its obligations under this Agreement, the PSA and, if applicable, the Project Addendum throughout the Term of this Agreement.

1.4 Term.

(a) Effective Date and Termination Date. Gexa shall provide retail electric service under this Agreement to each ESI ID beginning on the Effective Date and Terminating on the Termination Date, as further defined in this Section 1.4(a) (such period, the "**Term**"). The Effective Date will occur either (i) on the date occurring on or after the Expected Start Date stated in Attachment B on which each such ESI ID is enrolled with Gexa's service for any new customer, or (ii) if Customer is an existing customer then the Expected Start Date is the meter read date following the expiration of the Customer's prior Agreement with Gexa. Gexa shall continue to provide retail electric service to each ESI ID unless or until the Customer gives notice to TCAP and Gexa of its intent to terminate its membership with TCAP ("Termination Notice"). The Termination Date will occur on each respective ESI ID meter read date during the last month of the calendar year for which electricity has been purchased on Customer's behalf by either TCAP or the Energy Manager in accordance with the PSA prior to the Termination Notice, except that in no event will the Term exceed beyond December 31, 2037. For avoidance of doubt, the Termination Date for each respective ESI ID shall be the sooner to occur of (i) the meter read date occurring in the last month of the calendar year for which electricity has been purchased by either TCAP or the Energy Manager on behalf of the Customer prior to the Termination Notice or (ii) the meter read date occurring in December 2037. As a result of variations in the timing of the Effective Date described in this Section 1.3 the Term may include a partial calendar month in addition to the number of months set forth in Attachment B, if any.

(b) Delayed Effective Date. Gexa shall use commercially reasonable efforts to cause the Effective Date for each ESI ID to occur on the Expected Start Date. If the Effective Date for an ESI ID occurs more than 20 days after the Expected Start Date, Customer may provide Gexa with evidence of the amount of electricity purchased by Customer from its current REP in connection with that ESI ID during the period on and after the 21st day after the Expected Start Date until the Effective Date (the "**Delayed Effective Date Period**"), and the total amount paid by Customer to its current REP for the electricity it purchased during the Delayed Effective Date Period (the "**Delayed Effective Date Electricity Amount**"). Upon receipt of evidence from Customer Gexa shall calculate and provide Customer a credit against future purchases under this Agreement equal to the positive amount resulting from the following calculation: (a) the Delayed Effective Date Electricity Amount minus (b) the amount that Customer would have paid to Gexa pursuant to this Agreement during the Delayed Effective Date Period for the same amount of electricity purchased by Customer from its

current REP during that period in connection with the affected ESI ID(s); provided, that Gexa shall not be required to provide a credit with respect to any period during a Delayed Effective Date Period where the delay was caused by an event outside of Gexa's control.

(c) Service After Term. If, for any reason, service continues beyond the Term, it will be on a month-to-month basis, and the Agreement will continue in effect for the ESI ID(s) except that the Energy Price will be the greater of: (i) the Energy Price as set forth in Section 2.1 below, or (ii) the aggregate weighted average of the Market Rate (as defined herein) as determined for all of the ESI ID(s), for as long as service continues. If Customer has not switched from Gexa to another supplier at the expiration of the Term, Gexa shall serve Customer at the rate set forth in this Section for a minimum of 60 days. After those 60 days, Gexa may continue to serve Customer or terminate the Agreement and disconnect Customer.

1.5 Modifications to ESI IDs. Gexa shall work with Customer in good faith during the Term to reasonably accommodate and assist Customer with the management of its electricity needs. If at any time during the Term, Customer wants to i) add or delete one or more ESI IDs, ii) otherwise modify the ESI ID information as a result of a decision by Customer to open, close or sell a facility owned or leased by Customer, iii) expand an existing facility, or iv) increase an existing facility's metered load, then Customer shall provide written notice to Gexa of such change ("ESI ID Change Notice") . If such change to the ESI ID is expected to occur prior to the first month of any calendar year for which the Energy Price has been established as of the date of the ESI ID Change Notice, in accordance with Section 2.1 (a) of this Agreement, such notice shall include Customer's election of the "Special Load Threshold," as defined below, which will apply to such change in load. If, in Gexa's reasonable judgment, i) the addition is a separately metered load which does not exceed the applicable Special Load Threshold; or ii) does not result in a net increase in excess of the applicable Special Load Threshold for an existing facility, Gexa shall use commercially reasonable efforts to promptly implement such changes, including providing required notices to ERCOT. If the addition is a separately metered load which exceeds the applicable Special Load Threshold, or results in a net increase in excess of the applicable Special Load Threshold after consideration of any contemporaneous offsetting load decreases, Gexa shall provide service to that ESI ID and shall determine any incremental charge or credit to provide service to any changed ESI IDs. Gexa shall apply such charge or credit to the affected ESI IDs, after such charges have been reviewed by TCAP. "Special Load Threshold" shall mean additional peak demand that is reasonably expected during the first twelve months following commercial operations to exceed, at Customer's election, either (i) 0.25 MW at any time or an annual average load of 0.125 MW or (ii) 1.0 MW at any time or an annual average load of 0.5 MW. Gexa shall make periodic reports regarding changes to the billing status of any ESI ID(s) available to Customer and TCAP. Amendments that add or remove ESI ID(s) as a result of changes made pursuant to this section are incorporated into this Agreement, and are effective on the Effective Date for each ESI ID(s) added to this Agreement or the date that retail electric service for any removed ESI ID(s) ceases or is transferred to another REP.

SECTION 2: RETAIL ELECTRIC ENERGY SERVICE CHARGES

2.1 Energy Price.

(a) If Customer has elected to fix all or a portion of the Energy Price for a fixed term by providing an Authorized Election Form to TCAP in accordance with the PSA, the Energy Price shall equal the fixed price as determined by TCAP in accordance with the PSA, and the Authorized Election Form. Any portion of the Energy Price that is not fixed shall be noted in the Authorized Election Form, and shall be settled with Customer in accordance with Section 2.2 of this Agreement. If Customer has not made such an election, the Energy Price shall be determined in accordance with the PSA, as follows:

(i) TCAP shall periodically solicit, or direct its designated Energy Manager to solicit, wholesale energy market quotes, and may direct the Energy Manager to transact at the lowest of the market quotes obtained for the purpose of serving customer's load, in accordance with the PSA (each such transacted quote, a "**Wholesale Transaction**").

(ii) Once TCAP has directed its Energy Manager to enter into Wholesale Transactions sufficient to serve Customer's load for a given calendar year, Energy Manager and TCAP shall establish the Energy Price for that Calendar Year in accordance with those procedures outlined in the PSA, which Customer hereby acknowledges it has reviewed and accepted. TCAP shall set the Energy Price for a given Calendar Year no later than nine (9) months prior to the start of such Calendar Year. If Customer elects to participate in a project and executes the Project Addendum, the Energy Price shall include an estimate of the Project Settlement for each month of the Calendar Year in accordance with the Project Addendum.

(b) For the purposes of Section 3 the Energy Price shall be converted to dollars per kWh.

2.2 Energy Price Adjustments.

(a) Energy Manager shall have the right to reconcile the revenues received from the Customer with Energy Manager's Supplier Cost on (i) a quarterly basis, by determining the Quarterly Adjustment in the manner specified in the PSA and (ii) on an annual basis, by determining the Annual Adjustment in the manner specified in the PSA. The Quarterly Adjustment and Annual Adjustment may be either a charge or a credit, and shall be collected from or remitted to Customer, as appropriate, in the manner specified in the PSA.

(b) TCAP and Energy Manager may mutually agree to fix certain component charges comprising Customer's Energy Price for a given Calendar Year, if TCAP determines that fixing these charges is likely to benefit Customer. Charges that are fixed by TCAP and Energy Manager for a given Calendar Year shall not be included in the calculation of either the Quarterly Adjustment or the Annual Adjustment for such Calendar Year, in accordance with the PSA.

2.3 Additional Pass-Through Charges. Gexa shall pass through and identify separately on Customer's bill with no mark-up Delivery Charges, Non-Recurring Charges, or Taxes that are not included in the Energy Price(s). All charges are exclusive of Taxes. Pass-Through charges may include charges related to amounts owed to Gexa and/or Wholesale Supplier in accordance with Section1.3.

2.4 Tax Exempt Status. Customer shall provide Gexa with all required exemption certificates if Customer is exempt from paying any Taxes. Gexa shall not recognize an exemption without the exemption certificates and shall not be required to refund or credit previously paid Taxes unless the taxing entity sends the refund to Gexa. Gexa shall, however, assign to Customer any applicable claims for refund.

SECTION 3: BILLING AND PAYMENT

3.1 Billing and Payment. Gexa shall invoice Customer's accounts on a monthly basis and shall bill Customer on a consolidated basis for all ESI IDs upon Customer's request. Gexa shall provide a summary bill for all accounts and detailed information for each account. Customer shall remit payment within 30 days of receiving the invoice. Gexa shall base the invoice amount on actual data provided by ERCOT and the TDSP. If ERCOT or the TDSP does not provide actual data in a timely manner, Gexa shall use estimated data to calculate the invoice and, upon receipt of actual data, reconcile the charges and adjust them as needed in subsequent invoices.

3.2 Project Settlement Agent Services. Gexa shall remit the total Project Settlement to the Project on a monthly basis, in accordance with the REP Services Agreement.

3.3 Late Penalties, Interest on Overdue Payments, Invoice Disputes. If Customer fails to remit all undisputed amounts on or before the due date, interest will accrue on any due and unpaid amounts from the due date at a rate of one percent per month, or the highest rate permitted by law, whichever is less. If Customer disputes a portion of an invoice it shall provide Gexa a written explanation specifying the amount in dispute and the reason for the dispute within 20 days of the invoice date. If Customer does not provide timely notice, Customer shall owe all amounts by the due date. Notwithstanding the above, if Customer notifies Gexa of a disputed invoice, regardless of whether Customer has already paid the invoice, Gexa shall make records in its possession that are reasonably necessary for Customer to determine the accuracy of the invoice available to Customer during normal business hours; provided, however that neither party may request an adjustment or correction of an invoice unless written notice of such dispute is given within twelve months after the due date of such invoice; provided further, that such twelve month limit does not apply in the case of TDSP meter tampering charges first billed to Gexa that prevent Gexa from reasonably adjusting invoices prior to the twelve month period. In all cases, Gexa and Customer shall use good faith efforts to resolve disputes. In the event the Parties are unable to resolve a dispute within ten days of the notice date, either Party may begin legal proceedings to seek resolution. Any amounts determined owed shall be paid within three days after a decision.

3.4 Aggregator Fees. Pursuant to the REP Services Agreement between Gexa and TCAP, Gexa is obligated to pay TCAP an amount determined by multiplying a TCAP Aggregation Fee by the volume consumed in association with the ESI IDs (the "**Aggregator Fee**"). Customer shall pay the Aggregator Fee. The initial TCAP Aggregation Fee is $0.001 per kWh, however, it may be changed by the TCAP Board of Directors at any time. Gexa shall state the Aggregator Fee as a separate line item on the Customer's bill.

3.5 Billing Guarantee. Gexa shall issue an invoice based on actual or estimated usage to Customer for every ESI ID at least one time per month. If, for reasons other than Force Majeure, Gexa fails to invoice an ESI ID within 120 days of any scheduled meter read, Gexa irrevocably waives its right to invoice Customer for any energy consumed at that ESI ID for the meter read cycle that should have been invoiced, unless not less than 10 days prior to the expiration of such 120 day period, Gexa provides Customer with a written explanation of the circumstances that prevent Gexa from issuing that invoice and the expected time by which an invoice can be issued. In such event, Customer and Gexa shall determine a reasonable extension period, not to exceed 30 days, within which an invoice will be issued. Gexa shall adjust or true-up each invoice no more than twice and Gexa shall issue such adjustments within 210 days of the initial issue date. Notwithstanding the foregoing, Gexa may issue an invoice or partial invoice arising from meter tampering charges without limitation and within a reasonable time after first billed to Gexa by the TDSP.

SECTION 4: CUSTOMER INFORMATION, CREDIT AND DEPOSITS

4.1 Customer Information. By entering into this Agreement and appointing Gexa as Customer's agent for electricity service, Customer authorizes Gexa to obtain certain information that Gexa may need to provide Customer's

electric service, including Customer's address, telephone number, account numbers, historical usage information, and historical payment information from Customer's TDSP, and Customer further authorizes its TDSP to release that information to Gexa.

4.2 Deposits and Other Security. A Party (the "**Requesting Party**") may require the other Party (the "**Providing Party**") to provide a deposit (or additional deposit if an initial deposit was also required), letter of credit, or other form of credit assurance reasonably acceptable to the Requesting Party (collectively, "**Performance Assurance**") during the Term of this Agreement if: (i) the Requesting Party determines in its reasonable discretion that there has been a material adverse change in the Providing Party's or its guarantor's (if applicable) credit status or financial condition (which, if applicable, will mean that its credit or bond rating has dropped lower than BBB- by Standard & Poor's Rating Group or Baa3 by Moody's Investor Services or ceases to be rated by either of these agencies); or (ii) Customer has been delinquent in paying the electric bill by more than seven days more than twice during the past twelve months. Any Performance Assurance, less any outstanding balance owed by Providing Party to the Requesting Party, will be returned to the Providing Party once the Providing Party's or its guarantor's (if applicable) credit or financial condition becomes satisfactory or, if applicable, to a credit or bond rating of BBB- or Baa3 or higher, whichever occurs earlier; or, if the Performance Assurance relates to delinquent payments, the Providing Party has paid all outstanding balances and has made all payments within the dates set forth in this Agreement for a period of six consecutive months.

SECTION 5: EARLY TERMINATION; DAMAGES

5.1 Cancellation by Customer for Insufficient Appropriations. If, during Customer's annual appropriations determination, the applicable governmental authorities do not allocate sufficient funds to allow Customer to continue to perform its obligations under this Agreement (an "**Appropriations Failure**"), then Customer or Gexa shall have the right to terminate this Agreement in full or as to any affected ESI ID upon 30 days advance written notice effective at the end of the period for which appropriations are made; provided, that if appropriations are subsequently allocated for electricity for the ESI IDs covered by this Agreement, then the termination may be revoked at Gexa's option and those appropriations shall continue to apply to this Agreement and shall not be used for an electricity supply agreement with another REP. Upon a termination of this Agreement for Appropriations Failure, in full or as to any ESI ID(s), Customer shall pay all amounts due Gexa under this Agreement, including the Customer Early Termination Damages.

5.2 Customer Early Termination Damages. Except in connection with the closure of a facility associated with an ESI ID pursuant to Section 1.4, in connection with a Force Majeure Event, or as otherwise provided or excused in this Agreement, if Customer cancels this Agreement before the end of the Term and refuses to accept electric supply delivery from Gexa for any ESI ID(s), Gexa may charge Customer early termination damages equal to the sum of (a) the Retail Termination Payment, (b) the QSE Services Termination Payment, (c) the Quarterly and Annual Adjustment Payment, and (d) the Wholesale Transaction Termination Payment, as each of these terms are defined below (the sum total of these, the "**Customer Early Termination Damages**"). The "**Retail Termination Payment**" shall equal the product of (a) the Expected Usage for each ESI ID subject to Customer's cancelation or refusal of electric supply delivery ("**Customer Terminated Usage**") *multiplied by* (b) the sum of (i) the Aggregator Fee and (ii) the REP Services Fee specified in the REP Services Agreement. The "**QSE Services Termination Payment**" shall equal the product of (a) the Customer Terminated Usage grossed up for losses *multiplied by* (b) the QSE Services Fee, as defined in the PSA. The **"Quarterly and Annual Adjustment Payment"** shall be calculated by the Energy Manager in accordance with the PSA, and shall include any Quarterly and Annual Adjustment amounts for electricity provided to the Customer under this Agreement prior to the termination of this Agreement, which have not yet been charged or credited to Customer, as appropriate. For avoidance of doubt, the Quarterly and Annual Adjustment Payment may be either a charge or a credit to Customer, as calculated in accordance with the PSA. If the Customer Early Termination Damages are charged due to an Event of Default by Customer, then the Customer Early Termination Damages will also include Gexa's reasonable costs relating to the determination and collection of Customer Early Termination Damages, including attorney and consultant fees incurred. The provisions in Section 3 related to Billing and Payment apply to the billing, due date, and collection of Customer Early Termination Damages. Customer agrees that Customer Early Termination Damages are a reasonable estimate of the damages due Gexa for failure to accept electric supply, and are not punitive in nature.

5.3 Termination for Wholesale Supply Failure. If, during the Term, the Wholesale Transactions are terminated as a result of a default by the Energy Manager ("**Wholesale Supply Failure**"), then this Agreement will also terminate effective on the date the Wholesale Agreement terminates. In the event of a termination for Wholesale Supply Failure, Gexa shall pay Customer a Wholesale Termination Payment if required by Section 5.5.

5.4 Gexa Early Termination Damages. Except for a Wholesale Supply Failure, a Force Majeure Event, or as otherwise provided or excused in this Agreement, if Gexa cancels this Agreement and refuses to provide electric supply delivery to Customer for any or all ESI ID(s), Customer shall have the right to charge Gexa an early termination penalty equal to the amount determined as follows: the product of (i) the Expected Usage for each ESI ID subject to Gexa's cancellation or refusal of electric supply delivery ("**Gexa Terminated Usage**") *multiplied by* (ii) the REP Services Fee specified in the REP Services Agreement (that result the "**Gexa Early Termination Damages**"). If the Gexa Early Termination Damages are charged due to an Event of Default by Gexa, then the Gexa Early Termination Damages will also include Customer's reasonable costs relating to the determination and collection of Gexa Early Termination

Damages, including attorney and consultant fees incurred. Gexa agrees the Gexa Early Termination Damages are a reasonable estimate of the damages due Customer for failure to deliver electric supply, and are not punitive in nature.

5.5 Wholesale Transaction Termination Payment. If the Wholesale Transactions are terminated then Gexa shall calculate the portion of the termination payment paid under each Wholesale Transaction attributable to Customer's load. The termination payment under each Wholesale Transaction shall be calculated by subtracting the Wholesale Supplier's actual cost for the portion of the Wholesale Transaction still outstanding for the remainder of the Term from the current market value of comparable electric energy futures contracts. Energy Manager, in its sole discretion, shall determine the current market value of a comparable electricity futures contract within three (3) business days of the termination of a Wholesale Transaction, and shall be either (i) the value of the Wholesale Transaction actually sold to a third-party market participant or (ii) a third-party market quote for a comparable electricity energy future contracts. Energy Manager shall sum Customer's prorata share of each termination payment for each Wholesale Transaction attributable to Customer's Load to determine a total Wholesale Transaction Termination Payment under this Agreement (the "**Wholesale Transaction Termination Payment**"). Customer or Gexa shall pay the Wholesale Transaction Termination Payment to the other, as appropriate, in the manner described below and without regard to who is a defaulting party. If the Wholesale Transaction Termination Payment is negative, Customer shall pay Gexa the Wholesale Transaction Termination Payment. If the Wholesale Transaction Termination Payment is positive, Gexa shall pay Customer the Wholesale Transaction Termination Payment. To the extent a termination payment due from Gexa to the Energy Manager is adjusted in Gexa's account to reflect the full benefit of TCAP transacting with a replacement REP, Gexa shall make corresponding adjustments to the Wholesale Transaction Termination Payment on a pro-rata basis. Gexa shall remit a Wholesale Transaction Termination Payment due Customer, within 30 days of Gexa receiving the payment from the Energy Manager. Customer shall remit a Wholesale Transaction Termination Payment due Gexa within 30 days of Gexa's invoice. Gexa shall use commercially reasonable efforts to collect Termination Payments from the Energy Manager that include amounts due Customer.

SECTION 6: NOTICES AND PAYMENT

6.1 General Notice. Except as otherwise required by Applicable Law, all notices are deemed duly delivered if hand delivered or sent by United States, prepaid first class mail, facsimile, or by overnight delivery service. Notice by facsimile or hand delivery is effective on the day actually received, notice by overnight United States mail or courier is effective on the next business day after it is sent, and notice by U.S. Mail is effective on the second day after it is sent. The Parties shall send notices to the addresses below or any other address one Party provides to the other in writing:

a. If to Customer:

_____
_____
_____
_____

b. If to Gexa:
Gexa Energy, LP
20455 State Highway 249, Suite 200
Houston, Texas 77070

6.2 Payments. The Parties shall send payments to the addresses below or any other address one Party provides to the other in writing:

a. If to Customer:

_____
_____
_____
_____

b. If to Gexa:
Gexa Energy, LP
20455 State Highway 249, Suite 200
Houston, Texas 77070

SECTION 7: DEFINITIONS

7.1 Definitions. In addition to terms defined elsewhere in this Agreement, when used with initial capitalization, whether singular or plural, capitalized terms have the meanings set forth in this Section 7.1. All other capitalized terms not otherwise defined shall have the meanings given them in the following documents, with any conflicting definitions contained in those documents applied in the following order: PURA, the PUCT Substantive Rules, and the ERCOT Protocols.

1. "**Actual Usage**" means the actual amount of electric energy (in kWh) used at the ESI ID(s) as determined by the TDSP.

2. "**Delivery Charges**" means those charges or credits from the TDSP pursuant to its tariff, including, but not limited to: Transmission and Distribution Charges, System Benefit Fund Charge, Nuclear Decommissioning Charge, Competitive Transition Charge, Standard Customer Metering Charge, Customer Charge, Merger Savings and Rate Reduction Credit, Excess Mitigation Credit and Utility Imposed Reactive Power Charges.

3. "**EEI Master Agreement**" mean an EEI Master Agreement between Gexa and the Energy Manager governing the Wholesale Transactions entered into by the Energy Manager in accordance with Section 2.1 and transferred by the Energy Manager to Gexa.

4. "**Effective Date**" means the date of the first meter reading of an ESI ID provided to Gexa by the TDSP after the TDSP and ERCOT shall have timely performed any required enrollment and cancellation procedures necessary to switch Customer's REP to such ESI ID to Gexa.

5. "**Electricity Related Charges**" means, unless noted otherwise: Ancillary Services Charge, Congestion, ERCOT Administrative Fee, Delivery Loss Charge, Transmission Loss Charge, Renewable Energy Credit Charge, Residential Energy Credit Charge, Unaccounted For Energy Charge, Qualified Scheduling Entity Charge, Imbalance Settlement Charge.

6. **Energy Manager**" means the wholesale market participant designated by TCAP to perform the services described in the PSA.

7. "**Energy Price(s)**" means the rates per unit of measure specified in Section 2.1 and includes all Electricity Related Charges.

8. "**ERCOT**" means the Electric Reliability Council of Texas.

9. "**ERCOT Protocols**" means the document adopted, published, and amended from time to time by ERCOT, and initially approved by the PUCT, to govern electric transactions in the ERCOT Region, including any attachments or exhibits referenced in the document, that contains the scheduling, operating, planning, reliability, and settlement policies, rules, guidelines, procedures, standards, and criteria of ERCOT, or any successor document thereto.

10. "**ESI ID(s)**" means the Electric Service Identifiers for the property service addresses identified on Attachment B to this Agreement or if Customer is an existing Gexa customer then the list of service addresses currently served by Gexa, as such list may be modified from time to time as provided in Section 1.4.

11. "**Expected Usage**" means either the amount stated in Attachment B calculated for the remaining Term, or if no amounts are stated or Customer is an existing Gexa customer then the average actual monthly Customer energy usage from the comparable month from the previous year (or if an average cannot be computed due to limited service by Gexa or other circumstances, an average monthly usage as is reasonably determined by Gexa) times the number of months remaining in the Term as outlined in Section 1.4.

12. "**kWh**" means kilowatt hour.

13. "**LMP**" or "**Locational Marginal Price**" means the price calculated for the applicable trading hub pursuant to the ERCOT Protocols.

14. "**Market Rate**" means 135% of the load-weighted average of the hourly LMPs at the corresponding load zone, as determined for any delivery period.

15. "**Nodal Market**" means the implementation of wholesale market design by ERCOT with locational marginal pricing for resources.

16. "**Nodal Congestion**" means the positive difference in price between the real-time settlement point price as determined by ERCOT for the trading hub and the real-time settlement point price as determined by ERCOT for the load zone associated with the customer Facilities.

17. "**Non-Recurring Charges**" means any charges imposed by the TDSP or other third parties on a non-recurring basis for services, repairs or additional equipment needed for Customer's electric service.

18. "**PUCT**" means Public Utility Commission of Texas.

19. "**Project Settlement Payment**" means the Project Settlement Payment as defined in the Project Addendum, attached as Schedule I to this Agreement.

20. **"QSE Services Fee"** means the fee owed from Customer to Gexa, and remitted from Gexa to Energy Manager, for QSE Services performed by Energy Manager for the Term, as mutually agreed between TCAP and Energy Manager, the Customer having authorized TCAP to negotiate such fee on behalf of Customer in the PSA. The QSE Services Fee shall be included in the Energy Price for the Term.

21. **"REP Services Agreement"** means the REP Services Agreement currently in effect during the Term, as amended from time to time, between Gexa and TCAP.

22. **"REP Services Fee"** means the fee owed from Customer to Gexa, for REP services rendered during the Term, as mutually agreed between TCAP and Gexa, the Customer having authorized TCAP to negotiate such fee on behalf of Customer in the PSA. The REP Services Fee shall be included in the Energy Price for the Term.

23. "**Taxes**" means all taxes, assessments, levies, duties, charges, fees and withholdings of any kind levied by a duly-constituted taxing authority and all penalties, fines, and additions to tax, and interest thereon that are directly related to the services provided under this Agreement, but does not include the System Benefit Fund fee and fees and charges imposed by ERCOT. By way of example only, Taxes includes: Sales Tax, Miscellaneous Gross Receipts Tax, PUCT Assessment Fees and Franchise Fees.

24. *"***TCAP***"* means Texas Coalition for Affordable Power, an aggregation pool of governmental and other entities organized and administered by TCAP of which Customer is a member for the ESI IDs.

25. **"TDSP"** or **"Transmission and Distribution Service Provider"** means an entity regulated by the State of Texas, which transmits or distributes electric energy.

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Attachments:

Attachment A	Terms and Conditions of Service
Attachment B (for new TCAP Customers only)	Offer Sheet (ESI ID list and Expected Start Date)

CUSTOMER: **__Willow Park, Texas_____**	**GEXA:** **Gexa Energy, LP, By its General Partner Gexa Energy GP, LLC**
By:	By:
Printed:	Printed:
Title:	Title:
Date:	Date:

Terms and Conditions of Service
Attachment A

These Terms and Conditions of Service form an integral part of the Commercial Electricity Service Agreement between Customer and Gexa. In addition to the terms defined elsewhere in this Agreement, when used with initial capitalization, whether singular or plural, capitalized terms have the meanings set forth in Section 7.1 of this Agreement. Customer should thoroughly review the entire Agreement, including these Terms and Conditions of Service, before executing this Agreement.

A. REPRESENTATIONS AND WARRANTIES

A.1 Customer's Representations and Warranties. As a material inducement to entering into this Agreement, Customer represents and warrants to Gexa as follows: (a) it is a duly organized entity and is in good standing under the laws of Texas; (b) the execution and delivery of the Agreement are within its powers, have been duly authorized by all necessary action, and do not violate the terms or conditions of contracts it is party to or laws applicable to it; (c) performance of this Agreement will be duly authorized by all necessary action and will not violate the terms or conditions of contracts it is party to; (d) as of the date sales of electricity by Gexa to Customer under the Agreement start, Customer will have all regulatory authorizations necessary for it to legally perform its operations and such performance will not violate the terms or conditions of contracts it is party to or laws applicable to it; (e) this Agreement is a legal, valid, and binding obligation of Customer enforceable against it in accordance with its terms, subject to bankruptcy, insolvency, reorganization, and other laws affecting creditor's rights generally, and with regard to equitable remedies, subject to the discretion of the court before which proceedings to obtain the same may be pending; (f) there are no bankruptcy, insolvency, reorganization, receivership, or other similar proceedings pending or being contemplated by it, or to its knowledge threatened against it; (g) there are no suits, proceedings, judgments, rulings, or orders by or before any court or any government authority that could materially adversely affect its ability to perform the Agreement; and (h) as of the Effective Date and throughout the Term, there is no other contract for the purchase of electricity by Customer for the ESI ID(s), or, if such a contract presently exists, that it will terminate prior to delivery under this Agreement.

A.2 Gexa's Representations and Warranties. As a material inducement to entering into this Agreement, Gexa represents and warrants to Customer as follows: (a) it is duly organized, validly existing, and in good standing under the laws of the jurisdiction of its formation and is qualified to conduct its business in those jurisdictions necessary to perform the Agreement; (b) the execution and delivery of the Agreement are within its powers, have been duly authorized by all necessary action, and do not violate the terms or conditions of its governing documents or contracts it is party to or any laws applicable to it; (c) performance of the Agreement will be duly authorized by all necessary action and will not violate the terms or conditions of its governing documents or contracts it is party to; (d) as of the date sales of electricity by Gexa to Customer under the Agreement start, Gexa will have all regulatory authorizations necessary for it to legally perform its operations and such performance will not violate the terms or conditions of its governing documents, contracts it is party to, or laws applicable to it; and (e) the Agreement constitutes a legal, valid, and binding obligation of Gexa enforceable against it in accordance with its terms, subject to bankruptcy, insolvency, reorganization, and other laws affecting creditor's rights generally, and with regard to equitable remedies, subject to the discretion of the court before which proceedings to obtain the same may be pending.

A.3 Forward Contract. (i) This Agreement constitutes a forward contract within the meaning of the United States Bankruptcy Code ("**Code**"); (ii) Gexa is a forward contract merchant; and (iii) either Party is entitled to the rights under, and protections afforded by, the Code.

B. DISCLAIMERS OF WARRANTIES; LIMITATION OF LIABILITIES

B.1 LIMITATIONS OF LIABILITY. LIABILITIES NOT EXCUSED BY REASON OF FORCE MAJEURE OR AS OTHERWISE PROVIDED, ARE LIMITED TO DIRECT ACTUAL DAMAGES. GEXA IS NOT LIABLE TO CUSTOMER FOR CONSEQUENTIAL, INCIDENTAL, PUNITIVE, EXEMPLARY OR INDIRECT DAMAGES OR LOSS OF REVENUES OR PROFIT. THESE LIMITATIONS APPLY WITHOUT REGARD TO THE CAUSE OF ANY LIABILITY OR DAMAGE. EXCEPT FOR (a) THE GEXA EARLY TERMINATION DAMAGES DUE IF GEXA DEFAULTS, (b) THE CUSTOMER EARLY TERMINATION DAMAGES DUE IF CUSTOMER DEFAULTS, AND (c) THE WHOLESALE TRANSACTION TERMINATION PAYMENT, THE LIABILITY OF EITHER PARTY TO THE OTHER FOR ANY OBLIGATIONS UNDER THIS AGREEMENT SHALL BE LIMITED TO THE AGGREGATE AMOUNT OF ALL DOLLARS PAID BY CUSTOMER TO GEXA (IF CUSTOMER) OR RECEIVED BY GEXA (IF GEXA) PURSUANT TO THIS AGREEMENT. THERE ARE NO THIRD PARTY BENEFICIARIES TO THIS AGREEMENT.

B.2 Duty to Mitigate. Each Party shall mitigate damages and use commercially reasonable efforts to minimize any damages it may incur as a result of the other Party's performance or non-performance.

B.3 WAIVER OF CUSTOMER PROTECTION RULES AND CONSUMER RIGHTS. THE PARTIES FURTHER ACKNOWLEDGE THAT THE CUSTOMER PROTECTION RULES ADOPTED BY THE PUBLIC UTILITY COMMISSION (AS CONTAINED IN ITS SUBSTANTIVE RULES 25.471 ET SEQ.) ("**CUSTOMER PROTECTION RULES**") THAT PERTAIN TO RETAIL ELECTRIC SERVICE RELATED TO RESCISSION RIGHTS, CUSTOMER DISCLOSURES, DELIVERY OF CUSTOMER CONTRACTS TO CUSTOMERS, RECORDKEEPING, INTEREST PAID ON DEPOSITS AND CUSTOMER NOTICES DO NOT APPLY TO THIS AGREEMENT. EXCEPT AS SET FORTH IN THIS SECTION, CUSTOMER EXPRESSLY WAIVES THE CUSTOMER PROTECTION RULES THAT PERTAIN TO RETAIL ELECTRIC SERVICE RELATED TO RESCISSION RIGHTS, CUSTOMER DISCLOSURES, DELIVERY OF CUSTOMER CONTRACTS TO CUSTOMERS, RECORDKEEPING, INTEREST PAID ON DEPOSITS AND CUSTOMER NOTICES TO THE FULLEST EXTENT ALLOWED BY APPLICABLE LAW. CUSTOMER FURTHER WAIVES ITS RIGHTS UNDER THE DECEPTIVE TRADE PRACTICES--CONSUMER PROTECTION ACT, SECTION 17.41, ET. SEQ., BUSINESS & COMMERCE CODE, A LAW THAT GIVES CONSUMERS

SPECIAL RIGHTS AND PROTECTIONS. CUSTOMER REPRESENTS AND WARRANTS TO GEXA THAT: (a) CUSTOMER IS NOT IN A SIGNIFICANTLY DISPARATE BARGAINING POSITION IN RELATION TO GEXA; (b) CUSTOMER IS REPRESENTED BY LEGAL COUNSEL THAT WAS NEITHER DIRECTLY NOR INDIRECTLY IDENTIFIED, SUGGESTED OR SELECTED BY GEXA; AND (c) CUSTOMER VOLUNTARILY CONSENTS TO THIS WAIVER AFTER CONSULTATION WITH ITS LEGAL COUNSEL.

B.4 UCC/Disclaimer of Warranties. The electricity delivered is a "good" as that term is understood in the Texas B&CC (UCC §2.105). The Parties waive the UCC to the fullest extent allowed by law and the UCC requirements do not apply to this Agreement, unless otherwise provided. If there is a conflict between the UCC and this Agreement, this Agreement controls. Neither Party controls nor physically takes possession of the electric energy prior to delivery to Customer's ESI ID(s). Therefore, neither Party is responsible to the other for any damages associated with failure to deliver the electric energy, nor for damages it may cause prior to delivery to Customer's ESI ID(s). Once the electric energy is delivered to Customer's ESI ID(s) it is deemed in possession and control of Customer. ELECTRICITY SOLD UNDER THIS AGREEMENT WILL MEET THE QUALITY STANDARDS OF THE APPLICABLE LOCAL DISTRIBUTION UTILITY AND WILL BE SUPPLIED FROM A VARIETY OF SOURCES. GEXA MAKES NO REPRESENTATIONS OR WARRANTIES OTHER THAN THOSE EXPRESSLY SET FORTH IN THIS AGREEMENT, AND GEXA EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. GEXA EXPRESSLY NEGATES ALL OTHER REPRESENTATIONS OR WARRANTIES, WRITTEN OR ORAL, EXPRESS OR IMPLIED, INCLUDING ANY REPRESENTATION OF WARRANTY WITH RESPECT TO CONFORMITY, TO MODELS OR SAMPLES, MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE.

B.5 Force Majeure. Gexa shall make commercially reasonable efforts to provide electric service, but does not guarantee a continuous supply of electricity. Gexa does not generate electricity nor does it transmit or distribute electricity. Causes and events out of the control of Gexa and Customer ("**Force Majeure Event(s)**") may result in interruptions in service or the ability to accept electricity. If either Party is unable to perform its obligations, in whole or in part, due to a Force Majeure Event, then the obligations of the affected Party (other than the obligation to pay any amounts owed to Gexa that relate to periods prior to the Force Majeure Event) are suspended to the extent made necessary by such Force Majeure Event. Therefore, neither Party is liable to the other Party for damages caused by Force Majeure Events, including acts of God, acts of, or the failure to act by, any governmental authority (including the PUCT or ERCOT and specifically including failure by ERCOT to make Customer meter read data available), accidents, strikes, labor troubles, required maintenance work, events of "force majeure" or "uncontrollable force" or a similar term as defined under the applicable transmission provider's tariff, inability to access the local distribution utility system, non-performance by the supplier or the local distribution utility, changes in laws, rules, or regulations of any governmental authority (including the PUCT or ERCOT) that would prevent the physical delivery of energy to Customer's facilities, or any cause beyond such Party's control. The Parties agree that Appropriations Failures and Scheduling Failures are not Force Majeure Events.

C. CONFIDENTIALITY AGREEMENT

C.1 Confidentiality. Customer is a governmental body subject to public information laws, including Chapter 552 of the Texas Government Code. If Customer recieves a valid request under applicable public information laws for information related to this Agreement, it shall provide Gexa notice of the request including a description the information sought prior to Customer's release of information so that Gexa has the opportunity to determine whether such information is subject to an exception as trade secret, competitive, comercial, or financial information. With the exception of the preceding disclosures pursuant to public infromation laws, a Party (that party, the "**Receiving Party**") shall keep confidential and not disclose any to third parties Confidential Information which is disclosed to the Receiving Party by the other Party (that party, the "**Disclosing Party**") except for disclosures to Authorized Parties or as required by law. "**Confidential Information**" means information in written or other tangible form which is marked as "Confidential" when it is disclosed to the Receiving Party, except that Confidential Information shall not include information which (i) is available to the public, (ii) becomes available to the public other than as a result of a breach by the Receiving Party of its obligations hereunder, (iii) was known to the Receiving Party prior to its disclosure by the Disclosing Party, or (iv) becomes known to the Receiving Party thereafter other than by disclosure by the Disclosing Party. The provisions of this Section apply regardless of fault and survive termination, cancellation, suspension, completion or expiration of this Agreement for a period of two (2) years. Customer authorizes Gexa to provide TCAP with all information requested by TCAP about Customer's account and billings. "**Authorized Parties**" means those officers, directors, employees, agents, representatives and professional consultants of the Parties, and of the Parties' affiliates, that have a need to know the Confidential Information for the purpose of evaluating and performing this Agreement.

D. DEFAULT AND REMEDIES

D.1 Events of Default. An event of default ("**Event of Default**") means: (a) the failure of Customer to make, when due, any payment required under this Agreement for any undisputed amount if that payment is not made within fifteen (15) business days after receipt of written notice (facsimile or electronic mail are valid forms of notice for this paragraph) from Gexa; or (b) any representation or warranty made by a Party proves to be false or misleading in any material respect; (c) except as provided in clause (a) above or otherwise in this section D.1, the failure of any Party to perform its obligations under this Agreement and that failure is not excused by Force Majeure and remains uncured following 20 business days written notice of the failure; (d) the defaulting Party (i) makes an assignment or any general arrangement for the benefit of creditors; or (ii) files a petition or otherwise commences, authorizes or acquiesces to a bankruptcy proceeding or similar proceeding for the protection of creditors, or has such a petition filed against it and that petition is not withdrawn or dismissed within 20 business days after filing; or (iii) otherwise becomes insolvent; or (iv) is unable to pay its debts when due; or (v) fails to establish, maintain or extend Credit in form and in an amount acceptable to Gexa when required; or (e) the Wholesale Transaction is terminated due to a default by Gexa under CESAs with other TCAP members or due to a default by the Energy Manager under the

Wholesale Transaction. If an Event of Default listed in subsection (d) of this Section occurs, it is deemed to have automatically occurred prior to such event.

D.2 Remedies upon an Event of Default. If an Event of Default occurs and is continuing, upon written notice to the defaulting Party, the non-defaulting Party may (a) commence an action to require the defaulting Party to remedy such default and specifically perform its duties and obligations in accordance with the Agreement; (b) exercise any other rights and remedies it has at equity or at law, subject to the Agreement's Limitations of Liabilities; and/or (c) suspend performance; provided, however, that suspension shall not continue for longer than ten (10) Business Days unless the non-defaulting Party has declared an early termination with proper notice. If Customer is responsible for an Event of Default and fails to cure within ten (10) days of written notice (such additional cure period does not apply to default for non-payment), in addition to its other remedies, Gexa may (i) terminate this Agreement; and (ii) charge Customer the Customer Early Termination Penalty pursuant to Section 5 of this Agreement. Notwithstanding the above, Gexa shall not disconnect or order disconnection of service to Customer unless the following events have all occurred: (1) Customer has an Event of Default for nonpayment under Section D.1(a) above, (2) Gexa gives Customer a ten (10) day written disconnection notice; and (3) Customer does not pay all undisputed outstanding payments owed by the end of the ten (10) day notice period. .

E. MISCELLANEOUS PROVISIONS

E.1 Disclaimer. This Agreement does not constitute, create, or otherwise recognize the existence of a joint venture, association, partnership, or other formal business entity of any kind among the Parties and the rights and obligations of the Parties are limited to those set forth in this Agreement.

E.2 Headings. The descriptive headings of the Articles and Sections of this Agreement are inserted for convenience only and are not intended to affect the meaning, interpretation or construction of this Agreement.

E.3 Waiver. Except as otherwise provided, failure of a Party to comply with an obligation, covenant, agreement, or condition may be waived by the other Party only in a writing signed by the Party granting the waiver, but that waiver does not constitute a waiver of, or estoppel with respect to a subsequent failure of the first Party to comply with that obligation, covenant, agreement, or condition.

E.4 Assignment. Except as provided in the REP Services Agreement, Customer shall not assign this Agreement, in whole or in part, or any of its rights or obligations purusant to the Agreement without Gexa's prior written consent, which shall not be unreasonably withheld. Gexa may withold consent if a proposed assignee fails to be at least as creditworthy as Customer as of the Effective Date. Gexa may: (a) transfer, sell, pledge, encumber or assign the revenues or proceeds of this Agreement in connection with any financing or other financial arrangement; (b) transfer or assign this Agreement to a Gexa affiliate with operating capability and financial condition substantially similar to Gexa; (c) transfer or assign this Agreement to any person or entity succeeding to all or substantially all of the assets of Gexa with an operating capability and financial condition substantially similar to Gexa as of the execution date of this Agreement; and/or (d) transfer or assign this Agreement to a certified REP with an operating capability and financial condition substantially similar to Gexa as of the execution date of this Agreement. In the case of (b), (c), or (d), any such assignee shall agree in writing to be bound by these Terms and Conditions of Service, and upon assignment, Gexa shall have no further obligations under this Agreement. Gexa shall not assign the Agreement to a non-affiliated entity (including its guarantor) that has a credit rating lower than BBB- without the prior written consent of TCAP, which shall not be unreasonably withheld.

E.5 No Third-Party Beneficiaries. This Agreement does not confer any rights or remedies on any person or party other than the Parties, their successors and permitted assigns; except that the Parties recognize that TCAP is entitled to receive the Aggegator Fee .

E.6 Severability. If a provision of this Agreement is held to be unenforceable or invalid by a court or regulatory authority of competent jurisdiction, the validity and enforceability of the remaining provisions are unaffected by that holding, and the Parties shall, to the extent possible, negotiate an equitable adjustment to the provisions of this Agreement in order to preserve the original intent and purpose of this Agreement.

E.7 Entire Agreement; Amendments. This Agreement constitutes the entire understanding between the Parties, and supersedes any and all previous understandings, oral or written, with respect to the subjects it covers. This Agreement may be amended only upon the mutually signed, written agreement of the Parties.

E.8 Further Assurances. The Parties shall promptly execute and deliver, at the expense of the Party requesting such action, any and all other and further instruments and documents which are reasonably requested in order to effectuate the transactions contemplated in this Agreement.

E.9 Emergency, Outage and Wire Service. In the event of an emergency, outage or service need, Customer shall call the TDSP for the service area of the ESI ID experiencing the emergency, outage or service need.

E.10 Customer Care. Customer may contact Gexa Customer Care if Customer has specific comments, questions, disputes, or complaints toll free at 1-866-961-9399, Monday to Friday 7:00 a.m. – 8:00 p.m. CST and Saturday from 8:00 a.m. – 2:00 p.m.. Gexa shall assist and cooperate with Customer regarding communications with a TDSP relating to service to any ESI ID served by Gexa under this Agreement.

E.11 Governing Law.

a. This Agreement is governed by and construed and enforced in accordance with the laws of the State of Texas applicable to contracts made and performed in the State of Texas, without regard to the State of Texas conflict of laws provisions.

b. All disputes between the Parties under this Agreement which are not otherwise settled will be decided by a court of competent jurisdiction in Harris County, Texas, and the Parties submit to the jurisdiction of the courts of the State of Texas and the Federal District Courts in Houston, Harris County, Texas. All disputes are governed under the laws of the State of Texas.

c. Subject to the provisions of E.11.a. above, this Agreement is subject to, and in the performance of their respective obligations under this Agreement the Parties shall comply with, all applicable federal, state and local laws, regulations and requirements (including the rules, regulations and requirements of quasigovernmental and regulatory authorities with jurisdiction over the Parties, including ERCOT) (collectively, "*Applicable Law*").

E.12 No Presumption Against Drafting. Both Parties contributed to the drafting of this Agreement. The rule of construction that any ambiguity is construed against the party who drafted this Agreement does not apply to this Agreement.

E.13 Counterparts; Facsimile Copies. This Agreement may be executed in counterparts, all of which constitute one and the same Agreement and each is deemed an original. A facsimile copy of either Party's signature is considered an original for all purposes, and each Party shall provide its original signature upon request.

E.15 Offer for Electric Service; Refusal of Service. This Agreement, including these Terms and Conditions of Service, constitute an offer for electric service, and is expressly conditioned on acceptance of this Agreement by Gexa. Gexa may refuse to provide electric service to Customer subject to the requirements of Applicable Law.