Planning & Zoning Commission

December 8, 2025
Town Hall
2121 Cross Timbers Road
Flower Mound, TX 75028

6:30 p.m.

Comments regarding any agenda item can be sent to the Planning Department at planning@flowermound.gov or by calling 972.874.6350 and leaving a message.

AGENDA

A. CALL TO ORDER

B. INVOCATION

C. PLEDGE OF ALLEGIANCE TO THE UNITED STATES FLAG

D. PUBLIC COMMENT

The purpose of this item is to allow the public an opportunity to address the Board/Commission regarding any item on this agenda that is not a "Public Hearing." Issues regarding daily operational or administrative matters should first be dealt with by calling Town Hall at 972.874.6000 during business hours.

In accordance with the Texas Open Meetings Act, the Board/Commission is restricted from discussing or acting on items not listed on the agenda.

To speak during public comment, fill out a green comment form. Note:

- Limited to three (3) minutes, a tone will sound at 30 seconds left and when time has expired, and times may be adjusted by the Chair
- Direct comments to the Board/Commission
- State your name and the municipality where you reside

E. COORDINATION OF CALENDARS

1. December 22, 2025 - Meeting Canceled
2. January 12, 2026

F. FUTURE AGENDA ITEM(S)

The purpose of this item is to allow the members an opportunity to bring forward items they wish to discuss at a future meeting.

G. STAFF/DIRECTOR REPORT

1. Happy Holidays

H. CONSENT ITEM(S)

This part of the agenda consists of non-controversial, or “housekeeping” items required by law. Items may be removed from Consent by any Commissioner by making such request prior to a motion and vote.

1. Minutes of November 10, 2025 - Consider approval of the minutes from November 10, 2025.

I. REGULAR ITEM(S)

This part of the agenda consists of discretionary items either relating to zoning or a requested variation from the Town’s development standards. If a public hearing is required, it will be noted in the item caption on the agenda. Typically, the Planning & Zoning Commission will make a recommendation to Town Council on these types of projects.

1. CSP25-0002 - Argyle ISD High School Stadium - Public Hearing to consider a request for a Comprehensive Sign Package (CSP25-0002- Argyle ISD High School Stadium) to allow two additional signs and two larger wall signs on the building. The property is generally located south of Canyon Falls Drive between Denton Creek Boulevard and Stonecrest Road.
2. ZPD25-0007 - Charco Storage - Public hearing to consider an ordinance amending the zoning (ZPD25-0007 – Charco Storage) from Planned Development District-120 (PD-120) with Single-Family District 5 (SF-5) and Retail District-2 (R-2) uses to PD-120 with SF-5 and Commercial District-1 (C-1) uses to modify the conceptual plans, elevations, and development standards for the non-residential portion, with certain modifications, exceptions and waivers to the Code of Ordinances. The property is generally located at the northwest corner of Flower Mound Road and Old Orchard Lane.
3. MPA25-0006 - Water Plan Amendment - Public Hearing to consider an ordinance amending Section 8.0 - Water Plan of the Master Plan (MPA25-0006 - Water Plan Amendment) to adopt amendments and additions to the 2009 Water Master Plan Update as a component of the Master Plan.
4. MPA25-0007 - Wastewater Plan Amendment - Public Hearing to consider an ordinance amending Section 9.0 - Wastewater Plan of the Master Plan (MPA25-0007 - Wastewater Plan Amendment) to adopt amendments and additions to the 2009 Wastewater Master Plan Update as a component of the Master Plan.

J. ADJOURN

Pursuant to Section 551.071 of the Texas Government Code, the Planning and Zoning Commission reserves the right to consult in closed session with its attorney and to receive legal advice regarding any item listed on this agenda.

I do hereby certify that the notice of above meeting for the Town of Flower Mound was posted at Town Hall, Town of Flower Mound, Texas, and on the Town’s website in compliance with Chapter 551, Texas Government Code on December 2, 2025, by 5:00 p.m.

LauriAnn Cash, Staff Liaison

The Flower Mound Town Hall and Jody Smith Hall are wheelchair accessible. Requests for accommodation or interpretive services must be made 48 hours prior to this meeting by contacting Town Hall at 972.874.6000. Additional time limits will be provided for members of the public that need to address the Town Council through a translator.

Planning & Zoning Commission

November 10, 2025
Town Hall
2121 Cross Timbers Road
Flower Mound, TX 75028

6:30 p.m.
(or immediately following the Capital Improvements Advisory Committee meeting)

DRAFT MINUTES

A. CALL TO ORDER

Chair Schultz called the regular meeting to order at 6:30 p.m. with the following members present:

Gregory Schultz, Place 1, Chair
Jason Hobbs, Place 2
Todd Bayuk, Place 3
Scott Langley, Place 5
Donald Gilmore, Place 6
Clare Harris, Place 7
Michelle Jackson, Place 8 Alternate
Deb Fitzpatrick, Place 9 Alternate

with the following member(s) absent:
Ryan Geddie, Place 4

constituting a quorum with the following members of the Town Staff participating:

Rachel Raggio, Town Attorney
Lexin Murphy, Director of Development Services
Poornima Kashyap, Planning Manager
Bob Pegg, Town Engineer
Claire Barnes, Senior Planner
Codie Hay, Planner
LauriAnn Cash, Executive Assistant

B. INVOCATION

C. PLEDGE OF ALLEGIANCE TO THE UNITED STATES FLAG

D. PUBLIC COMMENT

The purpose of this item is to allow the public an opportunity to address the Board/Commission regarding any item on this agenda that is not a “Public Hearing.” Issues regarding daily operational or administrative matters should first be dealt with by calling Town Hall at 972- 874-6000 during business hours. To speak to the Board/Commission during public comment, please fill out a comment form, which is located in the lobby of Town Hall.

In accordance with the Texas Open Meetings Act, the Board/Commission is restricted from discussing or acting on items not listed on the agenda.

- Speakers are limited to 3 minutes; a tone will sound at 30 seconds left and when time has expired, and times may be adjusted by the Chair depending on the number of speakers.
- Speakers must address their comments to the Board/Commission.
- Please state your name and address when speaking.

Names listed below don’t necessarily reflect the order in which each person spoke and all addresses are located in Flower Mound unless otherwise indicated.

Speaker name and address	Subject (as written on the form)
None	

** Indicates person did not wish to speak*

E. COORDINATION OF CALENDARS

1. December 8, 2025

2. January 12, 2026

F. FUTURE AGENDA ITEM(S)

The purpose of this item is to allow the members an opportunity to bring forward items they wish to discuss at a future meeting.

None

G. STAFF/DIRECTOR REPORT

1. Quarterly Update

H. CONSENT ITEM(S)

This part of the agenda consists of non-controversial, or “housekeeping” items required by law. Items may be removed from Consent by any Commissioner by making such request prior to a motion and vote.

ACTION:	Commissioner Gilmore moved to approve H.1 and H.2. as presented in the agenda caption. Vice-Chair Hobbs seconded the motion.
AYES:	Gilmore, Hobbs, Bayuk, Langley, Harris, Jackson
NAYS:	None
RESULT:	6 : 0

1. October 27, 2025 Minutes - Consider approval of the minutes from October 27, 2025.

2. SSP25-0008 - Pine Hill - Consider a request for a Subdivision Site Plan (SSP25-0008 - Pine Hill) to create a residential subdivision. The property is generally located south of Cross Timbers Road and east of Grace Pearl Lane.

I. NON-DISCRETIONARY ITEM(S)

This part of the agenda consists of items that are in compliance with all applicable development standards; are not requesting waivers, exceptions, or deviations, and do not require a Public Hearing.

1. SP24-0015 - Trinity Park - Consider a request for a Site Plan (SP24-0015 – Trinity Park) to develop a warehouse facility. The property is generally located southeast of Lakeside Parkway and north of Enterprise Drive.

STAFF PRESENTATION:
Codie Hay, Planner

APPLICANT PRESENTATION:
Cameron Ehn, Clay Moore Engineering; present for questions, no presentation
Daniel Anderson, Trium Development Partners, LLC; present for questions, no presentation

ACTION:	Commissioner Harris moved to approve I.1. as presented in the agenda caption. Commissioner Bayuk seconded the motion.
AYES:	Gilmore, Hobbs, Bayuk, Langley, Harris, Jackson
NAYS:	None
RESULT:	6 : 0

2. SP25-0005 - ABC Senior Services - Consider a request for a Site Plan (SP25-0005 - ABC Senior Services) to develop a retail-office building. The property is generally located north of Justin Road and east of Jernigan Road along Bryce Lane.

STAFF PRESENTATION:

Claire Barnes, Senior Planner

APPLICANT PRESENTATION:
Mark Brohard, Brohard Architecture; present for questions, no presentation

ACTION:	Commissioner Bayuk moved to approve I.2. as presented in the agenda caption. Commissioner Harris seconded the motion.
AYES:	Gilmore, Hobbs, Bayuk, Langley, Harris, Jackson
NAYS:	None
RESULT:	6 : 0

J. REGULAR ITEM(S)

This part of the agenda consists of discretionary items either relating to zoning or a requested variation from the Town's development standards. If a public hearing is required, it will be noted in the item caption on the agenda. Typically, the Planning & Zoning Commission will make a recommendation to Town Council on these types of projects.

Pursuant to Section 551.071 of the Texas Government Code, the Planning and Zoning Commission convened into closed session at 6:51 p.m.

At 7:11 p.m., the Planning and Zoning Commission reconvened into regular session.

1. ZPD25-0003 - Southgate PD-134 Text Amendment - Public Hearing to consider an ordinance for rezoning (ZPD25-0003 – Southgate PD-134 Text Amendment) to amend Planned Development No. 134 with both non-residential and residential uses, by modifying SG-M1 standards pertaining to block standards, Subsection 3.5, and thoroughfare standards. The property is generally located west of Gerault Road and north of International Parkway. (PZ tabled this item by a vote of 7 to 0 at its October 27, 2025, meeting.)

STAFF PRESENTATION:
Claire Barnes, Senior Planner

APPLICANT PRESENTATION:
Sam Lawrence, Cross Architects

Names listed below don't necessarily reflect the order in which each person spoke and all addresses are located in Flower Mound unless otherwise indicated.

SUPPORT	OPPOSITION	QUESTIONS OR COMMENTS ONLY
None	None	None

** Indicates person did not wish to speak*

ACTION:	Commissioner Harris moved to recommend approval of J.1. as presented in the agenda caption; excluding open space adjacent parking, and that any parking within 60 feet of a corner must meet fire code standards. Vice-Chair Hobbs seconded the motion.
AYES:	Gilmore, Hobbs, Harris, Schultz
NAYS:	Bayuk, Langley, Jackson
RESULT:	4 : 3

2. SSP24-0005 - Montalcino Estates Phase IV - Consider a request for a Subdivision Site Plan (SSP24-0005- Montalcino Estates Phase IV) to create a residential subdivision with certain exceptions, modifications, and waivers to the Code of Ordinances. The property is generally located north of Cross Timbers Road and west and north of Montalcino Boulevard.

STAFF PRESENTATION:
Claire Barnes, Senior Planner

APPLICANT PRESENTATION:
Darren Andrews, McAdams; present for questions, no presentation

ACTION:	Commissioner Gilmore moved to recommend approval of J.2. as presented in the agenda caption. Vice-Chair Hobbs seconded the motion.
AYES:	Gilmore, Hobbs, Langley, Harris, Jackson
NAYS:	Bayuk
RESULT:	5 : 1

3. Z25-0006 - Town Initiated Rezoning [IH to A] - Public Hearing to consider an ordinance amending the zoning (Z25-0006 – Town Initiated Rezoning [IH to A]) from Interim Holding (IH) uses to Agricultural (A) uses. The properties are located throughout the Town.

At 8:57 p.m., Commissioner Bayuk recused himself from the Council Chamber.

STAFF PRESENTATION:
Lexin Murphy, Director of Development Services

Names listed below don't necessarily reflect the order in which each person spoke and all addresses are located in Flower Mound unless otherwise indicated.

	SUPPORT	OPPOSITION	QUESTIONS OR COMMENTS ONLY

1.	James Wallace, 3500 Haynes Road		

** Indicates person did not wish to speak*

ACTION:	Commissioner Langley moved to recommend approval of J.3. as presented in the agenda caption. Commissioner Harris seconded the motion.
AYES:	Gilmore, Hobbs, Langley, Harris, Jackson
NAYS:	None
RECUSED:	Bayuk
RESULT:	5 : 0

Commissioner Bayuk returned to the Council Chambers at 9:15 p.m.

K. ADJOURN

Chair Schultz adjourned the regular meeting at 9:16 p.m.

L. WORK SESSION

Public Comment Guidelines for Work Sessions

- Work Sessions are not Public Hearings; the Commission cannot take action.
- Speakers are limited to 3 minutes; a tone will sound at 30 seconds left and when time expires.
- Times may be adjusted by the Chair depending on the number of speakers.
- Donated time will not be recognized.
- Please state your name and address when speaking; and direct comments to the Commission.

Chair Schultz called the work session to order at 9:26 p.m.

1. ZPD25-0007 - Charco Storage - A Work Session in conjunction with a future Public Hearing for a rezoning (ZPD25-0007 – Charco Storage). The property is located at the northwest corner of Old Orchard Lane and Flower Mound Road.

STAFF PRESENTATION:
Claire Barnes, Senior Planner

APPLICANT PRESENTATION:
O'Neal Gray, Charco Properties, LP
Mark Glover, iMark Commercial

Names listed below don't necessarily reflect the order in which each person spoke and all addresses are located in Flower Mound unless otherwise indicated.

	Speaker name and address	Subject (as written on the form)

1.	Mark Kusman, 118 Liatris Drive	Support of Charco Storage

** Indicates person did not wish to speak*

Chair Schultz adjourned the work session at 10:11 p.m.

TOWN OF FLOWER MOUND, TEXAS

_____

GREG SCHULTZ, CHAIR

ATTEST:

_____

LAURIANN CASH, EXECUTIVE ASSISTANT

PLANNING & ZONING COMMISSION AGENDA I.1. REGULAR ITEM(S)

DATE: December 8, 2025
FROM: Codie Hay, Planner
ITEM: **Public Hearing to consider a request for a Comprehensive Sign Package (CSP25-0002- Argyle ISD High School Stadium) to allow two additional signs and two larger wall signs on the building. The property is generally located south of Canyon Falls Drive between Denton Creek Boulevard and Stonecrest Road.**

BACKGROUND:

I. ITEM SUMMARY

This application has been reviewed by DRC and determined to be ready for consideration by the Planning and Zoning Commission. There are no outstanding issues.

This application will require final action by the Town Council.

II. APPLICATION ANALYSIS

The purpose of the request is to obtain approval of a Comprehensive Sign Package (CSP) to allow installation of two signs to be located on either sides of an entrance fence leading to the stadium, a wall sign on the press box building, and a wall sign on the indoor athletic center that exceeds the size that would normally permitted by the Town Code. The property is zoned Planned Development District No. 98 (PD-98) with Single Family 10 (SF-10) uses.

On July 1, 2024, the Town Council approved a site plan to develop an approximately 47,313 square-foot one-story indoor athletic center, an 11,066 square-foot four-story Press Box, and three one-story concession buildings at 5,182 square feet for each building.

Per the Town's sign ordinance, one primary wall sign and two secondary signs are permitted on the indoor athletic center east façade and on the west façade of the press box building. The current town code does not address the proposed entrance signage on the western fencing.

The applicant has indicated in the letter of intent that the requested signage is an essential component of this facility, serving as a symbol of district identity, brand and community connection. They have also indicated that the proposed sign on the athletic facility is an exact replica of the sign that is located on an AISD Middle School athletic center located within the Town of Argyle.

1. Wall Sign on the Press Box Building:
   The applicant is requesting a wall sign larger than the permitted 300 square feet, with approximately 534 square-foot proposed. Additionally, the maximum height of the sign allowed by the Town Code is 72 inches (6 feet). The request is to allow a 24-foot-tall sign.

2. Wall Sign on the Indoor Athletic Center:

   The applicant is requesting one wall sign that exceeds the permitted sign height of 72 inches (6 feet) and will be 92 inches tall. The sign area will be approximately 122 square feet, which is permitted by the Town Code.

3. Signage on the Stadium Entrance Fence:

   The applicant is requesting two signs to be located on the fence leading to the stadium. This type of signage is not addressed in the Town Code. One sign is 172 square feet in area while the other proposed sign is 122 square feet in area. Both signs are 4 feet tall.

The Town's Sign Code states that the purpose of a Comprehensive Sign Package is to "allow for a specialized review of signs which may have meritorious design and seek to promote a unique quality for an existing or proposed development, but which require special consideration."

BOARD REVIEW/CITIZEN FEEDBACK:

The Town Code requires both public notice in a newspaper of general circulation (Denton Record Chronicle) and notification of the property owners within 200ft of the subject property for all zoning application requests. CSP25-0002 had a total of 56 Property Owner Notifications mailed. At the time this report was written, staff had not received any correspondence regarding this item.

ALTERNATIVES: N/A

FISCAL IMPACT: N/A

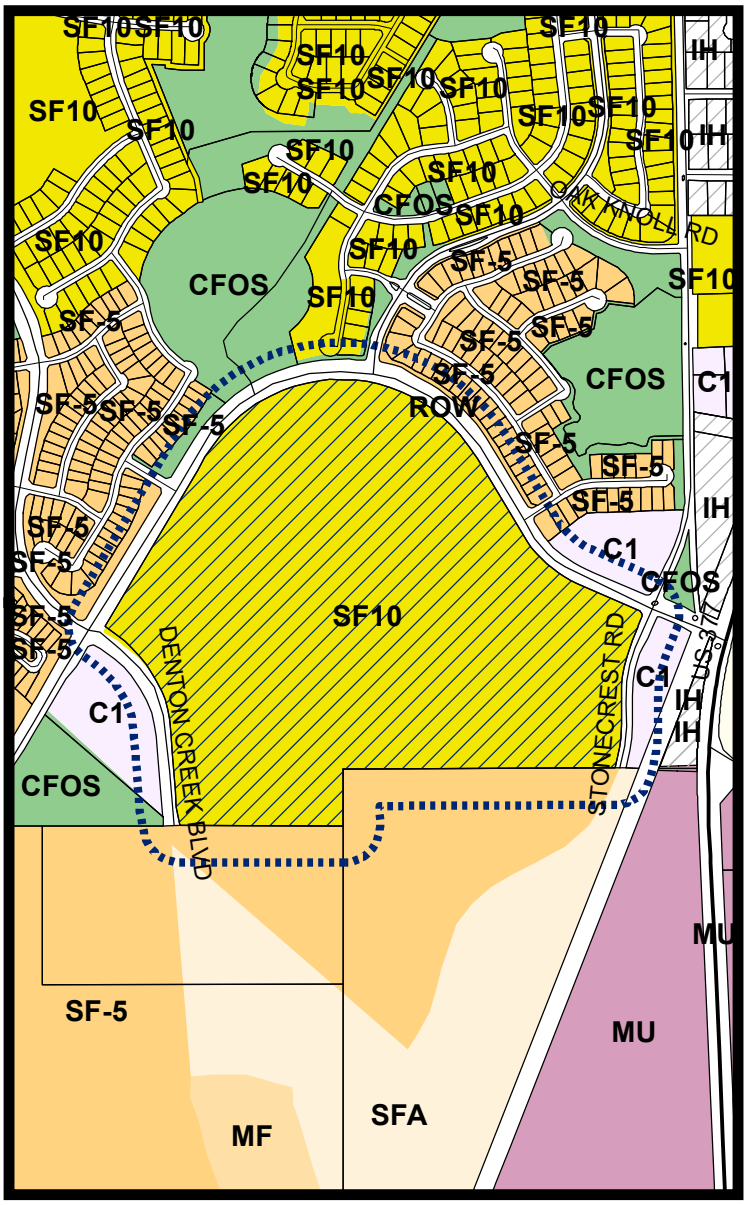
LEGAL REVIEW: N/A

ATTACHMENTS:
1. Zoning & Aerial Map
2. Letter of Intent
3. Comprehensive Sign Package

DRAFT MOTION: Move to approve as presented in the agenda caption.

Vicinity Map

CSP25-0002: Argyle ISD High School Stadium

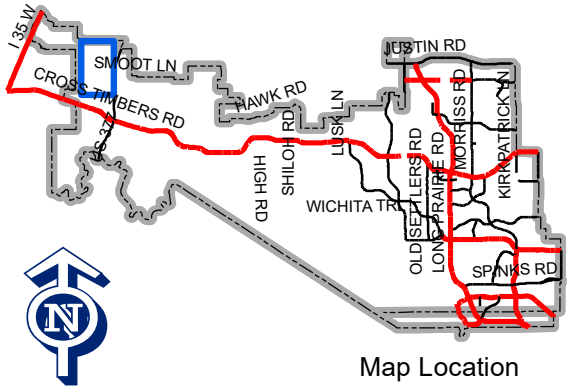


LEGEND

- Canyon Falls Open Space
- Commercial 1
- Interim Holding
- Mixed Use
- Multi-Family
- Single Family 5
- Single Family 10
- Single Family Attached

Subject Property

200 ft Notification Buffer around Property



Map Location

0 750 1,500 3,000 Feet

Visit www.fmdevmap.com to learn more about this project.

Visit https://www.flowermound.gov/notifyme to sign up for text message and/or email alerts for future projects.

VLK | ARCHITECTS

LETTER OF INTENT - COMPREHENSIVE SIGN PACKAGE – 3RD RESUBMISSION

Project: New Stadium & Indoor Activity Center at Argyle HS **Arch. No.:** 23-013.00

DATE: 11/21/2025

CLIENT: Argyle ISD

VLK Office VLK Plano

To Whom It May Concern,

On behalf of Argyle ISD, this letter of intent is to achieve Comprehensive Sign Package approval for the Argyle HS Stadium and IAC, deemed a meritorious design exception, in an effort to start the permitting process for any and all signage associated with the following building permits:

COM24-03562, COM24-03564, COM24-03566, COM24-03567, COM24-03568

Town of Flower Mound:

A. Specify existing zoning district(s) – PD-98 with SF-10 permitted uses.
B. Define acreage of subject property - 106.9220 acres
C. State why the applicant is requesting a CSP for the subject property:
Argyle ISD respectfully requests approval of the CSP for the subject property to support a vital district facility that will serve students, families, and the broader community. This stadium is more than just an athletic venue; it is a central gathering place that allows every AISD student to participate, compete, and excel in academic, fine arts, and athletic programs.

A true "home" venue fosters pride, unity, and tradition across the district. That pride extends beyond our students to their families, supporters, and the wider Flower Mound community. The proposed district stadium will host a variety of significant events, including graduations, fine arts showcases, athletic competitions and community-wide gatherings that benefit residents far beyond the school system.

The accompanying signage is an essential component of this facility, serving as a symbol of district identity, brand and community connection. It reflects the values and traditions that inspire our students and staff.

Approval of this request will allow AISD to provide a high-quality, community-centered venue that supports growth, strengthens local pride, and enhances opportunities for all students and residents.

D. Special Considerations
   a. District Logo mounted to exterior face of the press box building.
      Town Ordinance 86-68 – Wall signs.
      i. We understand that the district logo is 534 sq feet in size, which exceeds the 300 square foot limit stated in subsection (a)(4).
      ii. We are requesting special consideration due to the nature of the project. The sign will be ~1,000 feet from Denton Creek Blvd. (closest right-of-way) and ~1,750 feet from Canyon Falls (north public right-of-way), so the size request helps serve as a directional tool for visitors. Additionally, it is also related to the overall height and of the structure. The ordinance allows for a 6 foot (72") tall wall sign. On a 20' tall, one-story building, that is roughly 30% of the size of the building. Our building tops out at 105'-2", making our

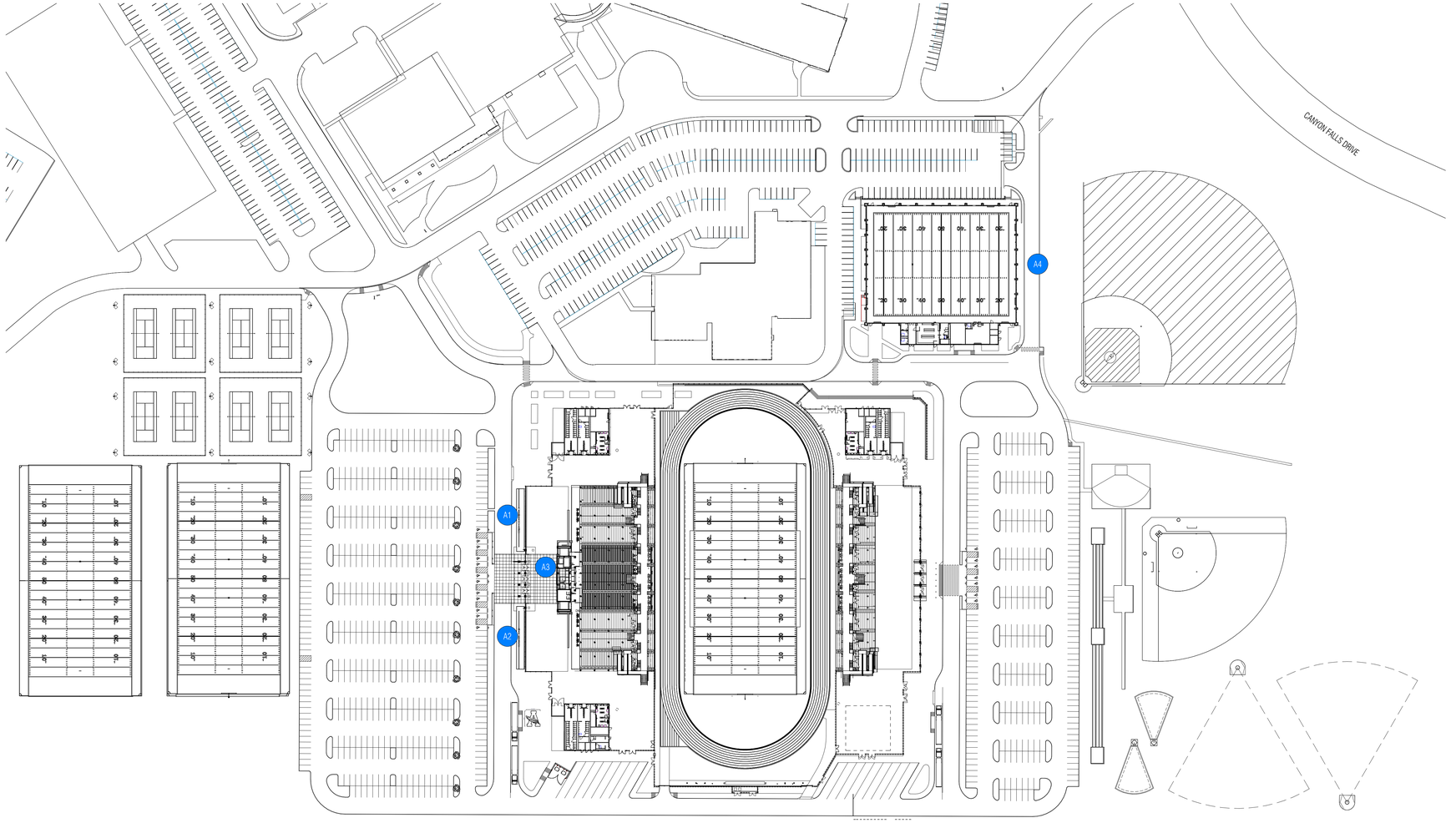
proposed sign 22% of the overall height, a smaller proportion compared to the ordinance. Due to the nature of the district logo (A), we feel this does not clutter the façade of the building, while meeting the sign width allowance, and is appropriate for the scale of the project.

b. School mascot on the Indoor Athletic Center
   Town Ordinance 86-68 – Wall signs.
   i. We understand that the IAC logo is 92", which exceed the 72" limit stated in the table in (a)(6).
   ii. We are requesting special consideration regarding this sign based on the overall height of the building at 54 feet. This sign would be only 13% of the overall height compared to nearly 30% of the height allowed by code with a 72" tall sign on a 20' building. Additionally, the sign is an exact replica of one that is on the middle school IAC building, located in Argyle, TX, and would create equality amongst the district's campuses. We feel this does not clutter the façade of the building, while meeting the sign width and square footage allowance, and is appropriate for the scale of the project.
c. Front entrance signage.
   i. We understand that the Front Entrance Signage is not being considered a canopy nor a wall sign and therefore does not currently fall under any sign type listed in the Town ordinance.
   ii. We are requesting special consideration because these signs act as a statement piece to the complex. It architecturally marks a prominent front entrance and lets people passing by on the main road know what district it belongs to. It is a unique condition, since there is no sign type in the ordinance and is an essential component of the project.
   iii. The sign will be ~1,360.00 ft from a residential property off Canyon Falls Drive that has the closest visible line of sight, and ~1,000 feet from Denton Creek Blvd. (closest right-of-way), so the size request helps serve as a directional tool for visitors and is appropriate for the scale of the project.
d. Proposed square footage of sign:
   i. Front Entrance Wall #1 – 172 sq ftpermit
   ii. Front Entrance Wall #2 - 122 sq feet
   iii. Press box district logo – 534 sq feet
   iv. IAC Logo - 122.67 sq feet

-Refer to subsequent sheets for revised drawings and structural calculations required for CSP approval.

Prepared by:

Braxton Boothe
Project Coordinator | Architecture



N
TRUE NORTH

1 SITE PLAN
SCALE: 1" = 80'-0"

SIGN LEGEND

REQUESTED SIGNS

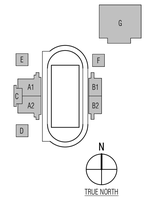
VLK | ARCHITECTS

ARCHITECT

VLK Architects, Inc.
5801 Tennyson Pkwy, Suite 100
Plano, Texas 75024
Main Phone: 972.265.1885
www.vlkarchitects.com

Argyle ISD
Flower Mound, TX.

New Stadium & Indoor Activity Center at Argyle HS



REGISTERED ARCHITECT
MARTY SIMS
30226
STATE OF TEXAS

11/21/2025

ISSUED: 04/05/2024

REVISIONS

Revision No.	Revision Date

Director	Drawn By
Approver	Author
Designer	Quality Control
Designer	
Proj. Arch.	
Checker	

PROJECT NO.

23-013.00

SHEET TITLE

SITE PLAN

SHEET NO.

CSP-1

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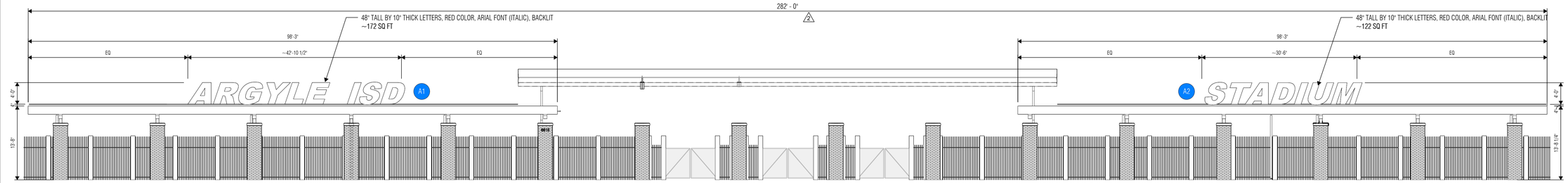
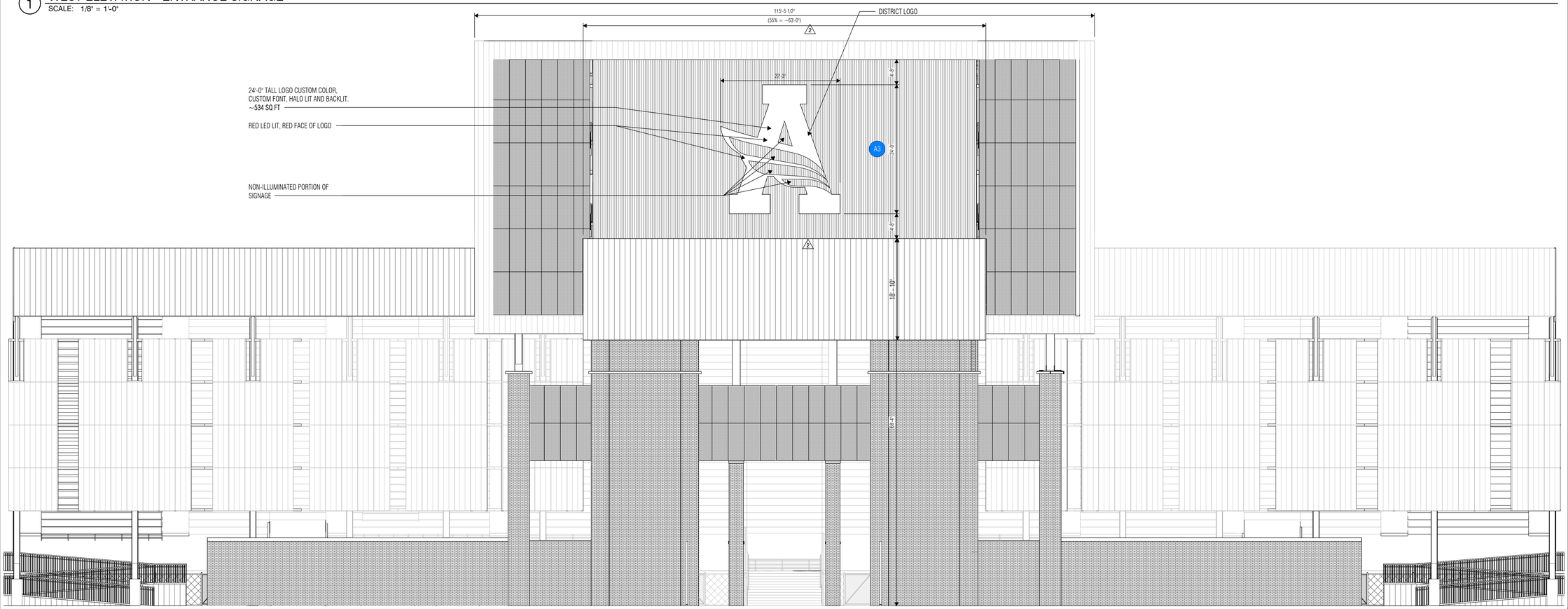


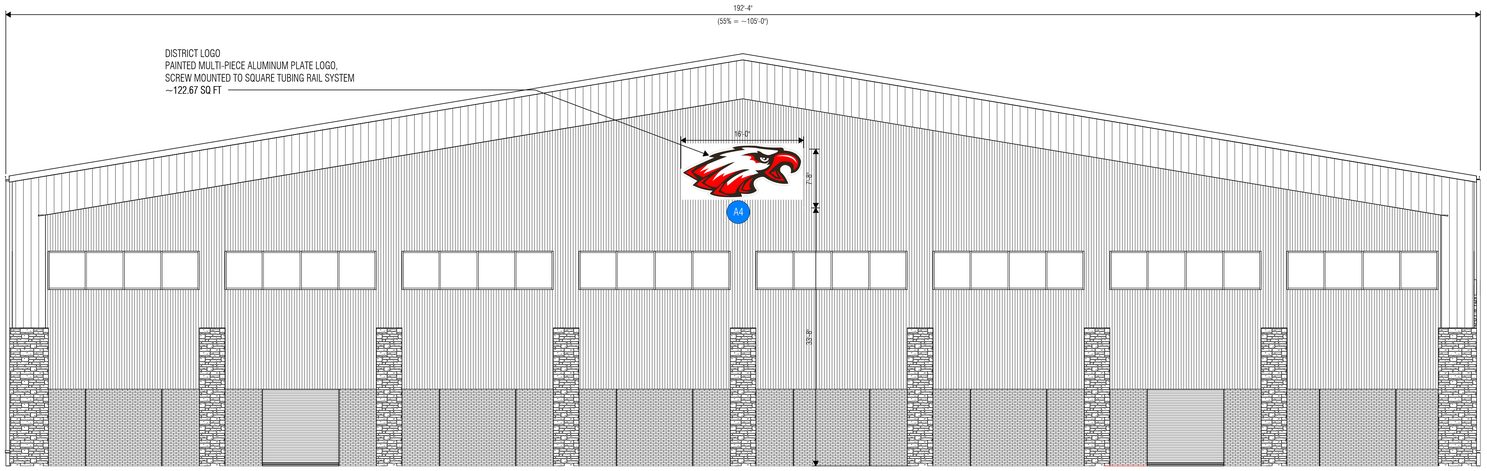
1 WEST ELEVATION - ENTRANCE SIGNAGE

SCALE: 1/8" = 1'-0"



2 WEST PRESS BOX ELEVATION - SIGNAGE

SCALE: 1/8" = 1'-0"



3 EAST IAC ELEVATION - SIGNAGE

SCALE: 1/8" = 1'-0"

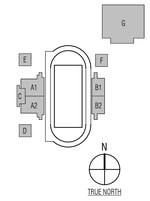
VLK | ARCHITECTS

ARCHITECT

VLK Architects, Inc.
5801 Tennyson Pkwy, Suite 100
Plano, Texas 75024
Main Phone: 972.265.1885
www.vlkarchitects.com

Argyle ISD
Flower Mound, TX.

New Stadium & Indoor Activity Center at Argyle HS



REGISTERED ARCHITECT
MARK A. KLIMEK
80226
STATE OF TEXAS

11/21/2025

ISSUED: 04/05/2024

REVISIONS

Revision No.	Revision Date
1 PR 095	08/05/2025
2 CSP	08/18/2025

Director	Drawn By
Approver	Author
Designer	Quality Control
Designer	
Proj. Arch.	
Checker	

PROJECT NO.

23-013.00

SHEET TITLE

EXTERIOR ELEVATIONS - COMPREHENSIVE SIGN PACKAGE

SHEET NO.

CSP-2

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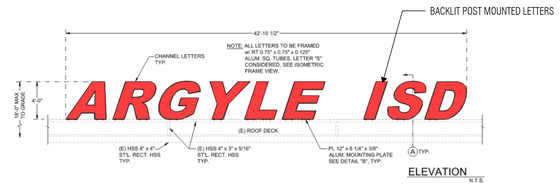
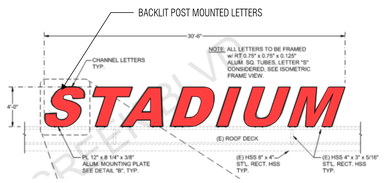


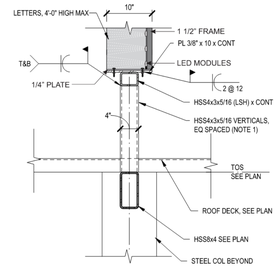
A1 ENTRANCE SIGNAGE

SCALE: 1/2" = 1'-0"



A2 ENTRANCE SIGNAGE

SCALE: 1/2" = 1'-0"

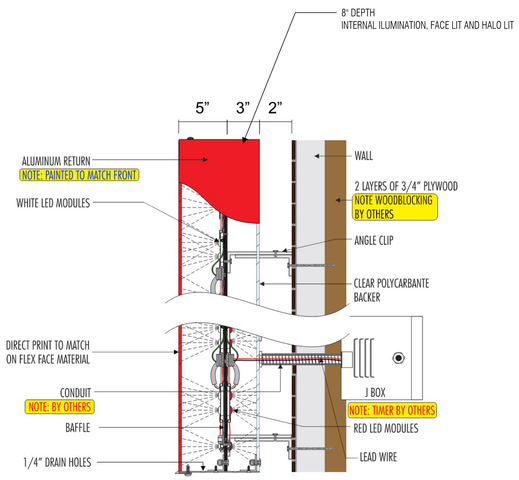


A1 & A2 - WALL SIGNAGE DETAIL

SCALE: 1/4" = 1'-0"

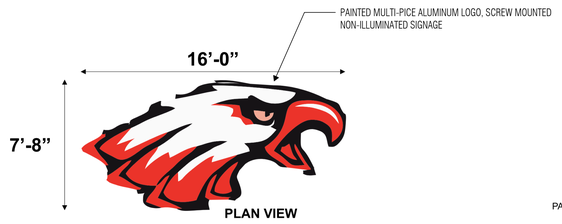
A3.1 DISTRICT "A" LOGO

SCALE: 1/2" = 1'-0"



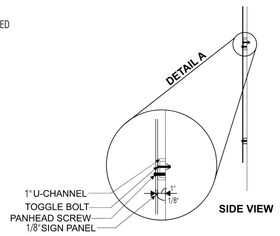
A3.2 DISTRICT "A" LOGO DETAIL

SCALE: 1/2" = 1'-0"



A4.1 IAC LOGO

SCALE: 1/2" = 1'-0"



A4.2 IAC LOGO DETAIL

SCALE: 1/2" = 1'-0"

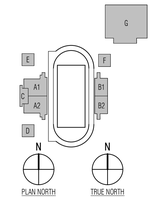
VLK | ARCHITECTS

ARCHITECT

VLK Architects, Inc.
5801 Tennyson Pkwy, Suite 100
Plano, Texas 75024
Main Phone: 972.265.1885
www.vlkarchitects.com

Argyle ISD
Flower Mound, TX.

New Stadium & Indoor Activity Center at Argyle HS



REGISTERED ARCHITECT
MARK D. SIMMONS
80226
STATE OF TEXAS

11/21/2025

ISSUED: 04/05/2024

REVISIONS

Revision No.	Revision Date

Director	Drawn By
Approver	Author
Designer	Quality Control
Designer	
Proj. Arch.	
Checker	

PROJECT NO.

23-013.00

SHEET TITLE

SIGNAGE DETAILS

SHEET NO.

CSP-3

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PLANNING & ZONING COMMISSION AGENDA I.2. REGULAR ITEM(S)

DATE: December 8, 2025
FROM: Claire Barnes, Senior Planner
ITEM: **Public hearing to consider an ordinance amending the zoning (ZPD25-0007 – Charco Storage) from Planned Development District-120 (PD-120) with Single-Family District 5 (SF-5) and Retail District-2 (R-2) uses to PD-120 with SF-5 and Commercial District-1 (C-1) uses to modify the conceptual plans, elevations, and development standards for the non-residential portion, with certain modifications, exceptions and waivers to the Code of Ordinances. The property is generally located at the northwest corner of Flower Mound Road and Old Orchard Lane.**

BACKGROUND:

I. ITEM SUMMARY

This application has been reviewed by DRC and determined to be ready for consideration by the Planning and Zoning Commission. There are exception requests to the Town's regulations which necessitate special consideration by the Commission (see Analysis below).

This application will require final action by the Town Council.

II. APPLICATION ANALYSIS

On April 16, 2012, the Town Council approved an ordinance establishing Planned Development District-120 (PD-120) for Orchard Flower for Single Family District-5 (SF-5) and Retail District-2 (R-2) uses. Since then, PD-120 has been amended on several occasions to make modifications to the concept plans and/or development standards.

The purpose of this PD amendment is to change the zoning on approximately 2.734 acres of the non-residential portion of the Orchard Flower development from Retail-2 (R-2) uses to Commercial-1 (C-1) uses and to allow a mini warehouse use by right within the C-1 zoning district. The project area is platted as Lot 1 and Lot 2, Block A of the Goddard School at Flower Mound Addition. The applicant is proposing to develop a 118,206 square foot (39,402 footprint) mini-warehouse facility. The structure would be two stories above ground with a third story basement.

As mentioned above, the proposed use would require the base zoning of the property to change to Commercial District-1 (C-1), which is intended for application in areas designated Retail and Commercial/Industrial on the land use map. As the property is designated for Retail on the Town's Master Plan, this project does not require a Master Plan Amendment. Mini-warehouse facilities are permitted through a Specific Use Permit in C-1; however, the applicant can request to make the use a permitted use by right through PD-120. The applicant is also requesting certain exceptions, modifications, and waivers to the Town standards as described in Section III of this report.

The most recently approved concept plan depicted two retail buildings (approximately 10,885 and

11,651 square feet respectively) on the subject site. The current proposal is to allow a 118,206 square-foot mini-warehouse to be permitted by right on this lot, which would replace the previously approved buildings. The applicant has provided updated concept plans and elevations for the proposed mini-warehouse.

Access to the development will come from entrances on Flower Mound Road and Old Orchard Lane. An additional access point is via a mutual access easement on the west side of the property extending from a residential x-lot. A Town Entryway Monument Easement is dedicated on the southeast corner of the site.

The concept plan depicts the required parking. Mini-warehouses require 1 space per 75 units. The applicant is proposing 799 units, which requires 11 spaces. The plan depicts 12 spaces, as permitted by the Town's allowed 20% deviation.

The concept landscape plan depicts the necessary street buffer, street yard, and parking lot trees that comply with Town and PD-120 requirements.

The proposed facades utilize predominantly brick, stone, and stucco, in conformance with the Town's Urban Design Plan.

III. EXCEPTIONS, MODIFICATIONS AND WAIVERS:

A. Use

A mini-warehouse facility requires approval of a specific use permit within the C-1 zoning district. As a part of the PD amendment, the applicant is requesting to allow a mini-warehouse to be permitted by right.

B. Compatibility Setback

Section 82-303 of the Town Code requires that non-residential buildings adjacent to or separated only by an alley from developed residential property or vacant land zoned or designated on the comprehensive master plan for residential use provide an appropriate building setback from the property line. For buildings two stories or greater, a setback of five feet for every one foot of building height must be provided. The applicant is requesting a minimum 60' setback. Based on the conceptual plans, the building would typically require a setback of 160'.

C. Comprehensive Sign Package

The applicant is requesting a Comprehensive Sign Package to allow wall murals as depicted on the concept elevations.

D. Modifications to PD-120 standards

In addition to the above listed exceptions and waivers, the applicant is requesting to modify certain PD-120 development standards.

- Inclusion of specific operating and architectural standards for a mini-warehouse
- Removal of the amenity area originally planned between the two retail buildings
- Expansion of the compatibility buffer from 5' to 23.5' (including dumpster area and concrete pads) and to increase the height of the masonry wall from 6' to 8' in height. PD-120 established a split compatibility buffer shared by the residential and retail properties. 20 feet of

the buffer was included as an x-lot in the residential portion, and 5 feet was required on the retail side. Ord. No. 12-12 required a 6' wrought iron fence between the residential and retail portions with 90' linear feet of a 6' masonry wall extending from Old Orchard along the divide. Plantings were required along both sides of the fence. Ord. No. 27-18 established a masonry wall along the western half (Area A) of the site due to the daycare use. Additional 8' shrub screening was required along Area A. The buffer also required 11 mitigation trees (5 of which were required to be evergreen). Ord No. 25-22 amended the entire length of perimeter fencing between the retail and residential to a 6' masonry wall. The Charco applicant is proposing 1 tree per 400 square feet in alignment with the Town's typical compatibility standard, in addition to nine required mitigation trees, two parking trees, and additional evergreen trees. The applicant has requested to remove the evergreen shrub requirement. Additionally, references to retail in the exception language of the ordinance are proposed to be changed to non-residential.

- PD-120 standards currently require (per Ord. No. 27-18) dumpster enclosures in close proximity to the northern property line to have 6' tall evergreen shrubs. This standard was established when the concept plan showed the dumpster south of the wrought-iron fencing. The applicant is proposing typical dumpster screening.
- Removal of western cross-access to residential property (access between residential and non-residential is typically not allowed per Town code).

BOARD REVIEW/CITIZEN FEEDBACK:
The Town Code requires both public notice in a newspaper of general circulation (Denton Record Chronicle) and notification of the property owners within 200ft of the subject property for all zoning application requests. ZPD25-0007 had a total of 36 Property Owner Notifications mailed. At the time this report was written, staff had received no items of correspondence in support, 6 items of correspondence in opposition, and one item of correspondence with questions.

ALTERNATIVES: N/A

FISCAL IMPACT: N/A

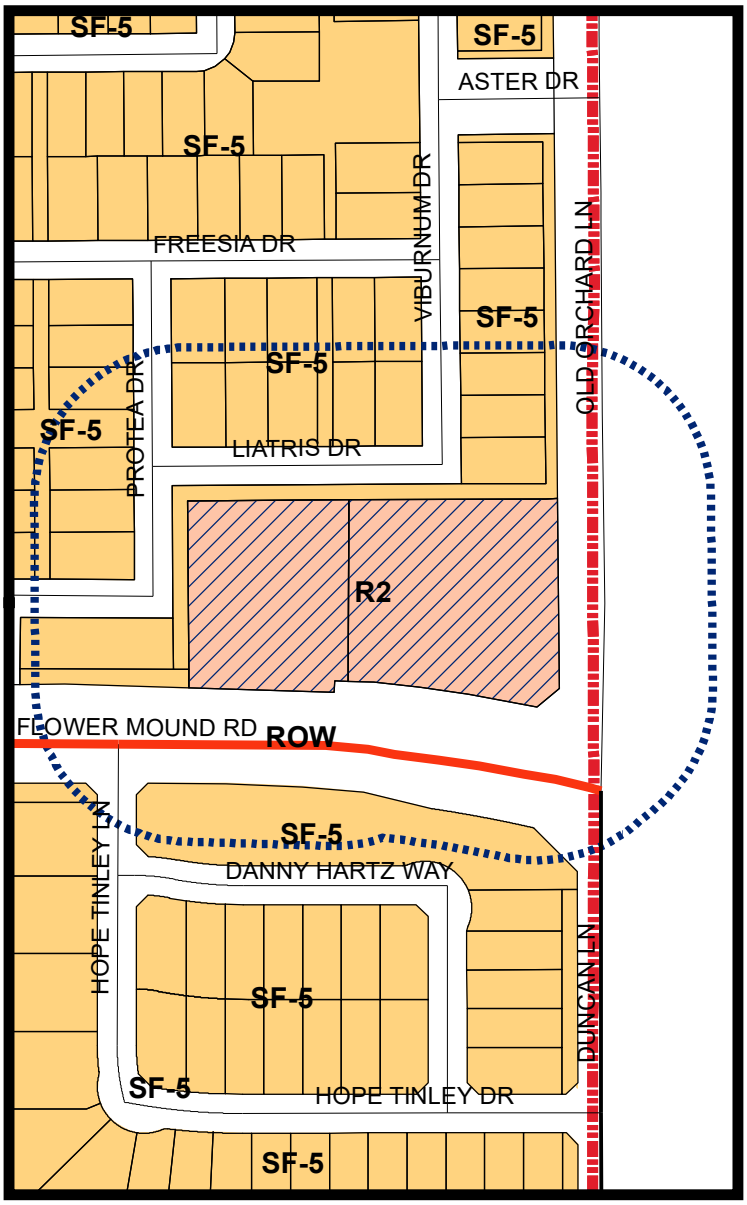
LEGAL REVIEW: Rachel Raggio, of Taylor, Olson, Adkins, Sralla, & Elam L.L.P., will review this ordinance as to form and legality.

ATTACHMENTS:
1. Zoning & Aerial Map
2. Letter of Intent
3. Planned Development Package
4. DRAFT Development Standards

DRAFT MOTION: Move to approve as presented in the agenda caption.

Vicinity Map

ZPD25-0007: Charco Storage

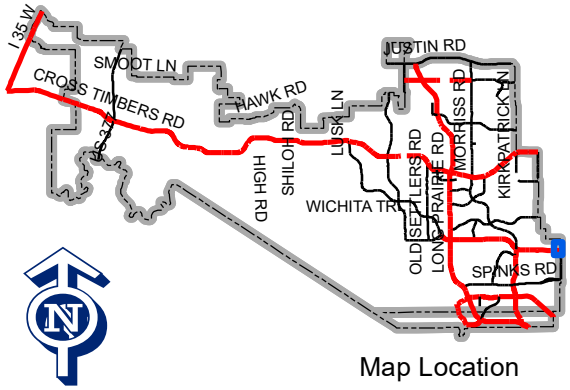


LEGEND

Retail 2 **Single Family 5**

Subject Property

200 ft Notification Buffer around Property



Map Location

0 187.5 375 750 Feet

Visit www.fmdevmap.com to learn more about this project.

Visit https://www.flowermound.gov/notifyme to sign up for text message and/or email alerts for future projects.

LETTER OF INTENT

Town of Flower Mound

Date: December 4th, 2025

To: Town of Flower Mound Planning & Development Department

From: Charco Properties, LP

Subject: Zoning Planned Development (ZPD) Application - Modification of PD-120, Lots 1 and 2, Block A, The Goddard School at Flower Mound

A. PURPOSE OF REZONING REQUEST

The applicant respectfully requests approval of a Zoning Planned Development (ZPD) application to modify Planned Development District No. 120 (PD-120) to change the permitted uses on the subject property from Retail District-2 (R-2) to Commercial District-1 (C-1) with mini-warehouse (self-service storage facility) as a permitted use. All C-1 uses are permitted except: alcoholic beverage establishment, animal control facility, mortuary or funeral home, pet store, restaurant fast food, and theater. This ZPD application is proposed for the following reasons:

- **Market Demand:** The Flower Mound area has demonstrated strong demand for quality self-storage facilities, while the retail market has become increasingly saturated along the FM 3040 corridor.
- **Reduced Impact:** The proposed mini-storage use will generate significantly less traffic (approximately 30-40 trips per day) compared to the previously approved retail uses (which would generate 200+ trips per day), resulting in minimal impact on adjacent residential neighborhoods.
- **Community Benefit:** The facility will provide needed storage services to area residents while maintaining a high-quality aesthetic through enhanced architectural design and public art integration.
- **Compatible Development:** With the proposed conditions, including limited operating hours (6:00 AM - 10:00 PM), all storage units fully enclosed within buildings, and enhanced screening through masonry walls and landscaping, the use will be more compatible with adjacent residential properties than typical retail development.

B. EXISTING ZONING

The subject property is currently zoned Planned Development District No. 120 (PD-120) with the following underlying districts:

Retail District-2 (R-2) for the commercial portion (Lots 1 and 2, Block A)

The property was originally zoned through Ordinance No. 12-12 and subsequently amended by Ordinance Nos. 52-14, 27-18, and 25-22.

C. PROPERTY ACREAGE

The subject property consists of 2.734 acres comprising all of Lots 1 and 2, Block A of The Goddard School at Flower Mound subdivision, located at the northwest corner of FM 3040 (Flower Mound Road) and Old Orchard Lane.

D. PHASING PLAN

The proposed mini-storage development will be constructed in one phase. All site improvements, including the building, landscaping, screening wall, and required

infrastructure, will be completed as a single construction project. No phasing is anticipated or requested.

E. SPECIAL CONSIDERATIONS AND REQUESTED MODIFICATIONS

1. Specific Use Permit (SUP) Integration

This PD amendment will serve as the required Specific Use Permit for mini-warehouse use in the C-1 district, incorporating all necessary conditions to ensure compatibility.

2. Exception to Compatibility Setback Standards (Section 82-303)

Requested Exception: We respectfully request an exception to the compatibility setback requirements outlined in Section 82-303 of the Town of Flower Mound Code of Ordinances, which requires non-residential buildings to be set back 5 feet for every 1 foot of building height when adjacent to residential uses.

Applicable Standard: Under current regulations, a two-story building with a height of 32 feet would require a setback of 160 feet (32 ft × 5 = 160 ft) from the property line adjacent to residential uses.

Proposed Alternative: We propose to maintain a 60-foot setback from the residential property lines to the north and west, which represents the standard one-story setback requirement while providing substantial compatibility measures for adjacent residential properties.

Justification:

a. Distinct Use Profile: Self-storage facilities differ fundamentally from typical non-residential and multi-family uses that the 5:1 slope requirement was designed to address:

- Minimal traffic generation (approximately 30-40 trips per day vs. 200+ trips for retail or multi-family)
- Limited operating hours (6:00 AM - 10:00 PM/ Gate Hours)
- No permanent occupancy or intensive outdoor activity
- Climate-controlled, fully enclosed operations with no exterior merchandise or storage
- Quiet operation with no manufacturing, assembly, or high-traffic commercial activities

b. Enhanced Compatibility Measures Beyond Code Requirements:

- **Enhanced Screening:** Masonry walls with upgraded architectural finish along residential property lines
- **Premium Landscape Buffer:** Minimum eight-foot masonry screening wall along all residential property lines (north and west), supplemented with substantial tree plantings (minimum 3" caliper)
- **Superior Architecture:** High-quality building materials and design consistent with adjacent commercial developments, exceeding mini-warehouse industry standards
- **Equipment Screening:** All mechanical equipment fully screened and building-mounted, eliminating visual and noise impacts

c. Functional Building Design: The proposed 32-foot building height (at its tallest point) accommodates:

- Climate-controlled, two-story interior storage
- Modern facility design serving demonstrated market demand
- Efficient use of land while maintaining substantial setbacks

d. Comparative Impact Analysis:

- **Standard Retail (C-1):** Would generate 200+ vehicle trips per day with a 60-foot one-story setback
- **Proposed Self-Storage:** Generates 30-40 vehicle trips per day with same 60-foot setback
- The reduced operational intensity more than compensates for the building's two-story configuration

3. Decorative Mural Panels - Illumination

The decorative laser-cut steel panels depicting floral motifs will be incorporated on street-facing building elevations (FM 3040, Old Orchard Lane, and the southwestern corner). A total of 10 mural panels measuring approximately 3'-4" W × 21'-4" H each will be installed as follows:

- East elevation: 2 murals
- West elevation: 2 murals
- South elevation: 6 murals (primary street-facing façade)

These architectural features may include subtle internal backlighting to enhance visual interest and architectural character during evening hours, creating an attractive streetscape presence at this prominent gateway location.

We understand Building & Inspections' concerns regarding light nuisance and disability glare for motorists and have structured the PD requirements to address these concerns:

Location Restrictions

No backlit panels will be located on the north elevation or the northwestern portion of the west elevation directly adjacent to residential properties, ensuring that decorative lighting is oriented toward public roadways and not toward neighboring homes. Backlit mural panels are permitted at the southwestern corner area as specified above.

Design and Safety Controls

All backlighting will be designed with safety and compatibility in mind:

- Maximum 15 watts per fixture (as required for non-full cutoff fixtures per Section 98-1125(1) & (4)). Multiple fixtures may be used per mural panel as needed to achieve uniform illumination.
- Low-intensity LED fixtures designed to prevent disability glare for motorists
- Fixtures fully recessed behind panels so direct light sources are not visible
- Light passes through decorative laser-cut openings creating diffused, artistic patterns rather than bright points of light
- Dimmable lighting system providing operational flexibility
- Building Official may impose operational hour restrictions if needed
- Photometric study will demonstrate compliance with Town lighting standards

Architectural Purpose

These panels are purely decorative architectural features that break up large facade surfaces and add human scale and visual interest to the building. The floral motifs complement the "Orchard Flower" development theme and enhance the building's design quality at this prominent gateway corner.

Modern LED technology allows us to achieve subtle, controlled architectural accent lighting that was not feasible when the original PD was approved. This lighting will be significantly less intense than typical commercial signage and is designed to complement rather than dominate the streetscape.

Approval Process

We are committed to working collaboratively with the Building Official during site plan review to finalize lighting design, intensity levels, and operational parameters that meet Town safety

standards while achieving the desired architectural effect. The photometric study will provide objective data to ensure the design prevents disability glare and minimizes off-site impacts. This approach provides appropriate safeguards while maintaining design flexibility to achieve high-quality architectural lighting that enhances the FM 3040 corridor.

CONCLUSION

This amendment represents a significant reduction in potential impacts compared to the currently approved retail uses while providing a needed community service. The enhanced design standards, operational restrictions, and superior screening measures ensure the development will be an asset to the community and compatible with surrounding uses.

All building setbacks maintain the full 60-foot requirement, building height complies with the 35-foot maximum, and the development meets all other Town standards with only the exceptions noted above, each of which is justified by site-specific conditions and enhanced mitigation measures.

This amendment applies solely to the commercial portion of PD-120 (Lots 1 and 2, Block A, comprising approximately 2.734 acres) and does not modify or remove any existing residential standards established in Ordinance 12-12 (as amended by Ordinance 52-14, 27-18, and 25-22). All Single-Family Residential District-5 (SF-5) standards shall remain in full force and effect.

We respectfully request your favorable consideration of this application and look forward to working with Town staff, the Planning & Zoning Commission, and Town Council throughout the review process.

Respectfully submitted,
Robert O'Neal Gray

Robert O'Neal Gray II
Charco Properties, LP
Applicant
Date: December 4th, 2025

CONTACT INFORMATION

Applicant:

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2@sfrcinc.com
www.sfrcinc.com

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Homeyer Engineering
972-906-9985
shomeyer@hei.us.com

Architect:

Jose Labastida
JL Building Systems, LLC
4700 Kemble St.
Fort Worth, TX 76103

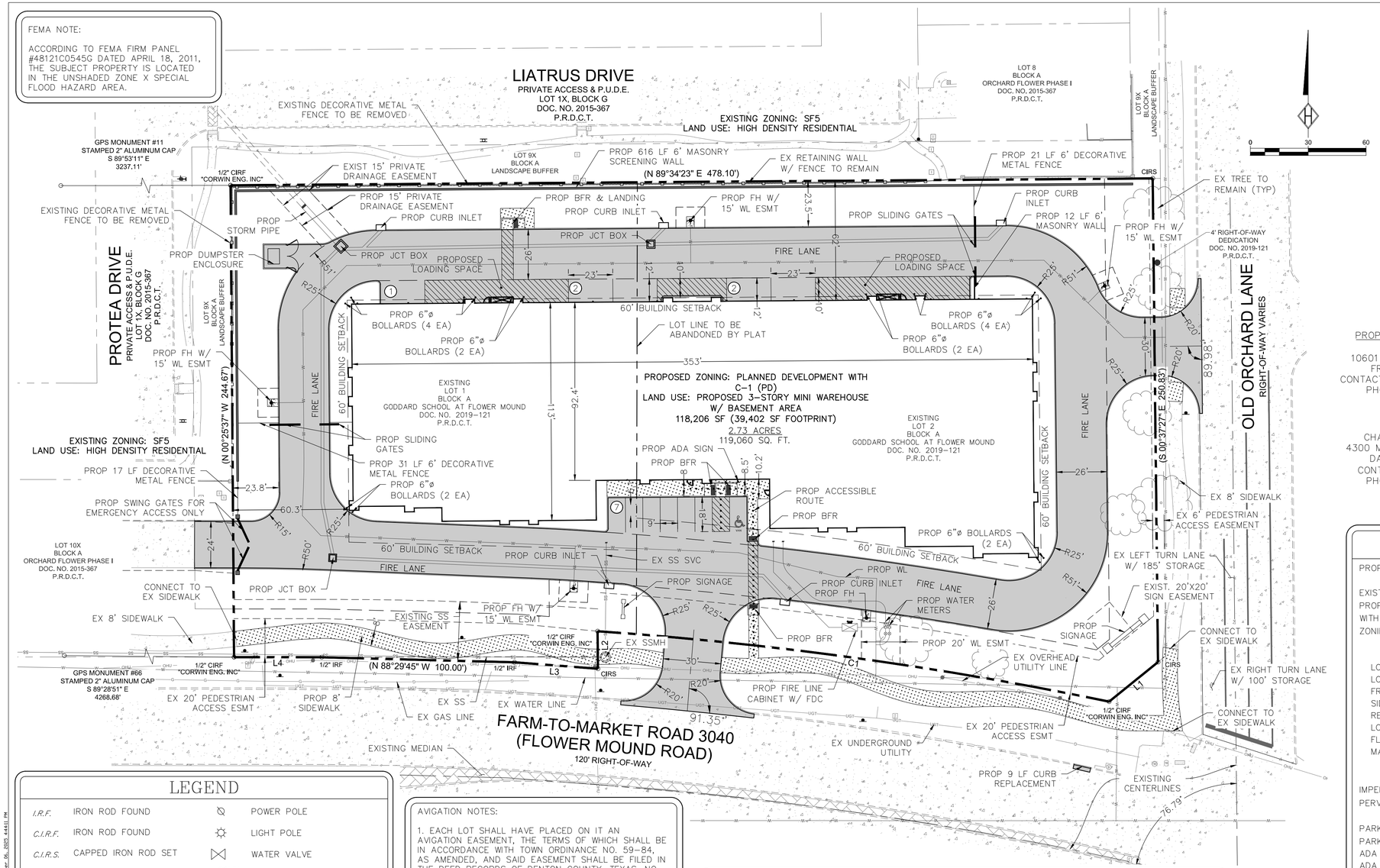
817-534-6579
jose@jlbuildsys.com
www.jlbuildsys.com

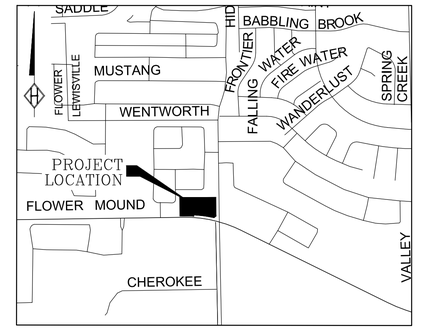
Consultant:

Mark Glover, Principal
iMark Commercial
469-993-9392
mark@imarkcommercial.com
www.iMarkCommercial.com

FEMA NOTE:

ACCORDING TO FEMA FIRM PANEL #48121C0545G DATED APRIL 18, 2011, THE SUBJECT PROPERTY IS LOCATED IN THE UNSHADED ZONE X SPECIAL FLOOD HAZARD AREA.





VICINITY MAP
SCALE 1"=1000'

LEGEND

I.R.F.	IRON ROD FOUND		POWER POLE
C.I.R.F.	IRON ROD FOUND		LIGHT POLE
C.I.R.S.	CAPPED IRON ROD SET		WATER VALVE
"X"	CUT X IN CONCRETE	SSMH	SANITARY SEWER MANHOLE
F.C.P.	FENCE CORNER POST		FIRE HYDRANT
///	ASPHALT	WM	WATER METER
T	TELEPHONE MANHOLE		BOUNDARY MONUMENT
P.R.D.C.T.	PLAT RECORDS DENTON COUNTY, TEXAS	D.R.D.C.T.	DEED RECORDS DENTON COUNTY, TEXAS
	PROPOSED PAVEMENT		PROPOSED SIDEWALK

AVIGATION NOTES:

1. EACH LOT SHALL HAVE PLACED ON IT AN AVIGATION EASEMENT, THE TERMS OF WHICH SHALL BE IN ACCORDANCE WITH TOWN ORDINANCE NO. 59-84, AS AMENDED, AND SAID EASEMENT SHALL BE FILED IN THE DEED RECORDS OF DENTON COUNTY, TEXAS. NO BUILDING PERMIT SHALL BE ISSUED FOR ANY LOT IN THE PROJECT UNTIL SUCH TIME AS DEVELOPER PROVIDES WRITTEN DOCUMENTATION THAT AN AVIGATION EASEMENT AS REFERENCED HEREIN HAS BEEN PLACED ON EACH LOT AND HAS SO ENCUMBERED EACH LOT WITH SUCH EASEMENT.

2. THE AVIGATION EASEMENT AND RELEASE SHALL APPEAR ON THE FACE OF ALL APPROVED SUBDIVISION PLATS AND SHALL CONSTITUTE A COVENANT RUNNING WITH THE LAND. A COPY OF THE EASEMENT AND RELEASE THAT WILL NEED TO BE ON THE PLAT IS ATTACHED.

MASTER PLAN FEATURES

LAND USE PLAN	RETAIL USE – MINI WAREHOUSE
URBAN DESIGN PLAN	LONG PRAIRIE DISTRICT
PARKS AND TRAILS	NOT APPLICABLE
OPEN SPACE PLAN	NOT IN A CONSERVATION DEVELOPMENT
THOROUGHFARE PLAN	FM 3040 (FLOWER MOUND ROAD) – URBAN MAJOR ARTERIAL
WATER PLAN	12 INCH WATER LINE LOCATED ALONG FLOWER MOUND ROAD & OLD ORCHARD LANE
WASTEWATER PLAN	10 INCH SANITARY SEWER LINE LOCATED ALONG FLOWER MOUND ROAD

TOWN OF FLOWER MOUND NOTES:

1. ALL RETAINING/DETAINING WALLS, TURN-DOWN CURBS, TREE RETAINING WALLS SHALL BE CLAD IN A MATERIAL TO MATCH THE MATERIALS ON THE MAIN BUILDING.
2. OR ALL RETAINING/DETAINING WALLS, TURN-DOWN CURBS, TREE RETAINING WALLS SHALL BE CLAD IN A MATERIAL TO COMPLEMENT THE MATERIALS AND COLORS WITHIN THIS DEVELOPMENT.
3. ALL GROUND BASED HVAC SHALL BE SCREENED WITH LIVE SCREENING OR MASONRY ENCLOSURE. MASONRY ENCLOSURE SHALL BE CLAD IN THE SAME MATERIAL AS THE MAIN BUILDING.
4. ALL ROOF-MOUNTED MECHANICAL UNITS AND/OR EQUIPMENT SHALL BE SCREENED FROM VIEW.
5. DUMPSTER SCREENING WALL SHALL BE CLAD IN A MATERIAL TO MATCH THE MATERIALS ON THE MAIN BUILDING.
6. DUMPSTER SCREENING WALL REQUIRES A SEPARATE BUILDING PERMIT.
7. SIGNS REQUIRE A SEPARATE BUILDING PERMIT. ANY SIGNS DEPICTED ON THE SUBJECT SITE PLAN/ELEVATIONS ARE NOT APPROVED AS A PART OF THIS REVIEW AND MUST COMPLY WITH ALL APPLICABLE TOWN REGULATIONS
8. FLAG POLES MUST COMPLY WITH THE REGULATIONS IN SECTION 86-4. – PROHIBITED SIGNS.
9. ANY LIGHTING DEPICTED ON THE SUBJECT SITE PLAN/ELEVATIONS ARE NOT APPROVED AS A PART OF THIS REVIEW AND MUST COMPLY WITH ALL APPLICABLE TOWN REGULATIONS AT THE TIME OF PERMIT REVIEW.
10. NO LUMINAIRE SHALL BE LOCATED WITHIN THE COMPATIBILITY BUFFER AREA.

LINE TABLE

LINE	BEARING	DISTANCE
L1	S 51°02'48" W	32.57'
L2	S 00°23'53" E	19.46'
L3	N 85°35'14" W	43.38'
L4	N 89°56'46" W	45.42'

CURVE TABLE

CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C1	267.87'	1999.86'	7°40'28"	N 82°09'34" W	267.67'

PROPERTY OWNER – LOT #1
NINEADIDEV LLC
10601 CLARENCE DR STE 250
FRISCO, TEXAS 75033
CONTACT: KRISHNA MELLAMARTHY
PHONE: 732-781-8702

PROPERTY OWNER – LOT #2
BEALL LEGACY PARTNERS, LP
5712 COLLEYVILLE BLVD STE 200
COLLEYVILLE, TEXAS 76034
CONTACT: ROBERT BEALL
PHONE: 817-399-1100

DEVELOPER
CHARCO PROPERTIES, LP
4300 MACARTHUR AVE STE 212
DALLAS, TEXAS 75029
CONTACT: O'NEAL GRAYY II
PHONE: 214-724-2020

ENGINEER
HOMEYER ENGINEERING, INC
PO BOX 294527
LEWISVILLE, TEXAS 75029
CONTACT: STEVEN R. HOMEYER, PE
PHONE: 972-906-9985

SITE INFORMATION

PROPOSED LAND USE: MINI-WAREHOUSE

EXISTING ZONING: RETAIL (R2)
PROPOSED ZONING: PLANNED DEVELOPMENT
WITH C-1 (PD) AMENDMENT
ZONING LOT REQUIREMENTS:

	REQUIRED	PROVIDED
LOT AREA:	NONE	119,060 SF
LOT WIDTH:	NONE	456.7 FT
FRONT YARD:	60 FT	60 FT
SIDE YARD:	60 FT	60 FT
REAR YARD:	60 FT	60 FT
LOT COVERAGE:	50% MAX	33.1%
FLOOR AREA:	NONE	118,206 SF
MAXIMUM HEIGHT:	3 STORIES (35 FT)	2 STORIES (32 FT)

IMPERVIOUS AREA: 79,679 SF (66.9%)
PERVIOUS AREA: 39,381 SF (33.1%)

PARKING SPACES REQUIRED (799 UNITS @ 1 SPACE/75 UNITS) = 11 SPACES
PARKING SPACES PROVIDED = 12 SPACES
ADA PARKING SPACES REQUIRED = 1 SPACE
ADA PARKING SPACES PROVIDED = 1 SPACE

SHEET INDEX

C1	Conceptual Site Plan	LP1	Plant Schedule
C2	Preliminary Utility Plan	LP2	Landscape Notes and Specifications
C3	Preliminary Grading Plan	LP3	Landscape Details
C4	Preliminary Storm Plan	TS1	Tree Disposition Plan
C5	Preliminary Existing Drainage Area Map	TS2	Tree Disposition Details & Specifications
C6	Preliminary Proposed Drainage Area Map		
LP0	Conceptual Landscape Planting Plan	ZE	Zoning Exhibit

PREPARATION DATES
07/23/2025
08/29/2025
10/10/2025
11/06/2025

PRELIMINARY PLANS

THIS DOCUMENT IS FOR INTERIM REVIEW AND IS NOT INTENDED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.
STEVEN R. HOMEYER, PE # 86942
DATE: 11/06/2025

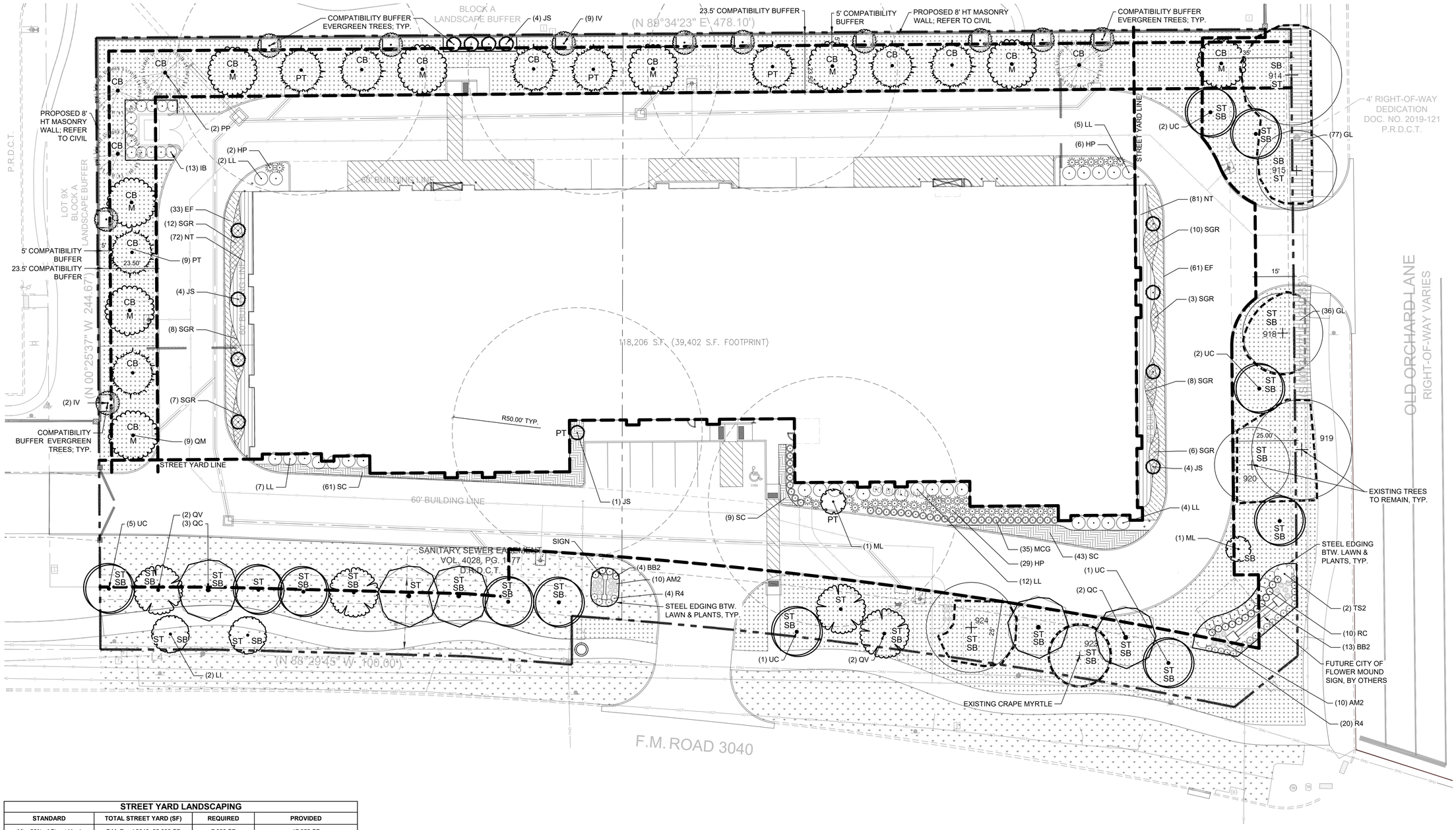
HOMEYER ENGINEERING, INC.
TBPE FIRM REGISTRATION NO. F-8440
P.O. BOX 294527 ♦ LEWISVILLE ♦ TEXAS ♦ 75029
972-906-9985 PHONE ♦ 972-906-9987 FAX
WWW.HEI.US.COM

CHARCO FM STORAGE
2.73 ACRES
TOWN OF FLOWER MOUND
DENTON COUNTY, TEXAS

CONCEPTUAL SITE PLAN

DRAWN: SRH
DATE: 06/19/25
HEI #: 25-0402

SHEET NO: C1



STREET YARD LANDSCAPING			
STANDARD	**TOTAL STREET YARD (SF)**	**REQUIRED**	**PROVIDED**
Min. 20% of Street Yard	F.M. Road 3040=35,000 SF	7,000 SF	17,358 SF
Min. 20% of Street Yard	Old Orchard Lane=12,372 SF	2,474 SF	6,484 SF
STREET YARD TREES			
STANDARD	**TOTAL STREET YARD (SF)**	**REQUIRED**	**PROVIDED**
10,000 - 110,00 SF 10 Trees, + 1 tree per every 2,500 SF above 10,000 SF	F.M. Road 3040 (35,000 SF) + Old Orchard Lane (12,372 SF) = 47,372 SF	25	25 (24 (3" cal.) + 3 Orn.)
STREET BUFFER LANDSCAPING			
	REQUIRED BUFFER WIDTH	**PROVIDED**	
F.M. Road 3040	25'	25'	
Old Orchard Lane	15'	VARIABLE WIDTH (35' - 15')	
STREET BUFFER TREES			
STANDARD	**STREET FRONTAGE (LF)**	**REQUIRED**	**PROVIDED**
1 per 30 LF	F.M. Road 3040=448 LF	15	15 (14 (3" cal.) + 3 Orn. Trees)
1 per 30 LF	Old Orchard Lane=270 LF	9	9 (6 New & 3 existing)

COMPATIBILITY BUFFER			
STANDARD	**REQUIRED BUFFER AREA**	**REQUIRED**	**PROVIDED**
11 (3" cal.) Mitigation Trees (min. 5 Live Oak or similar evergreen trees)	3,239	11	11 (10 proposed (3" cal.) evergreen trees) (located in 23.5' compatibility buffer due to proposed wall & space constraints)
1 Native Tree (3" cal.) per 400 SF (Per PD Requirements)	3,239	8	8 (located in 23.5' compatibility buffer)
Thirteen (13) Evergreen trees shall be installed within the 23.5 foot compatibility buffer for enhanced year-round screening (Per PD requirements)			15 (6' ht. Evergreen Trees) (located in 5' compatibility buffer for enhanced screening)

PARKING AREA LANDSCAPING			
STANDARD	**NO. OF PARKING SPACES**	**REQUIRED**	**PROVIDED**
90 SF per 12 spaces	12	1,080	1,694
PARKING AREA TREES			
STANDARD	**NO. OF PARKING SPACES**	**REQUIRED**	**PROVIDED**
1 per 10 pkg spaces	12	2	5
All parking spaces are located within 50' of a tree			
BUILDING FOUNDATION LANDSCAPE			
STANDARD		**REQUIRED**	**PROVIDED**
Nonresidential buildings of 15,000 square feet or less must install foundation planting areas along the front and side foundation		Foundation planting areas must include a combination of ground covers, shrubs, and ornamental trees.	Yes

SEE SHEET LP-1 FOR PLANT SCHEDULE

GRAPHIC SCALE
20 0 10 20 40
1 inch = 20 ft.

TREE MITIGATION CALCULATIONS

MITIGATION TREES REQUIRED:	9 TREES
PRESERVED TREE CREDITS:	5
REPLACEMENT TREES PROVIDED:	9 TREES

LEGEND

ST - STREET YARD TREE
SB - STREET BUFFER TREE
CB - COMPATIBILITY BUFFER TREE
PT - PARKING LOT TREE

HOMEYER ENGINEERING, INC.
TBPE FIRM REGISTRATION NO. F-8440
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CHARCO FM STORAGE
2.73 ACRES
TOWN OF FLOWER MOUND
DENTON COUNTY, TEXAS

CONCEPTUAL LANDSCAPE PLANTING PLAN

REGISTERED LANDSCAPE ARCHITECT STEPHEN W. SALES 3470 STATE OF TEXAS

12/04/25

DRAWN: JML

DATE: 12/04/25

HEI #: 25-0402

SHEET NO: LP-0

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LANDSCAPE ARCHITECTURE
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PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL / COMMON NAME	SIZE	CONTAINER	QTY
EVERGREEN TREES					
	IV	Ilex vomitoria / Yaupon Holly Compatibility Buffer Tree	6` Ht.	Cont. or B&B	11
	JS	Juniperus chinensis 'Spartan' / Spartan Juniper Foundation Tree / Compatibility Buffer Tree	6` Ht.	Cont. or B&B	13
	PP	Pinus ponderosa / Ponderosa Pine Compatibility Buffer Tree	3" Cal.	Cont. or B&B	4
	PT	Pinus taeda / Loblolly Pine Compatibility Buffer Tree	3" Cal.	Cont. or B&B	9
LARGE TREES					
M	QM	Quercus macrocarpa / Burr Oak Mitigation Tree	3" Cal.	Cont. or B&B	9
	QC	Quercus muehlenbergii / Chinkapin Oak Street Buffer Tree / Street Yard Tree	3" Cal.	Cont. or B&B	5
	QV	Quercus virginiana / Southern Live Oak Street Buffer Tree / Street Yard Tree	3" Cal.	Cont. or B&B	4
	UC	Ulmus crassifolia / Cedar Elm Street Buffer Tree / Street Yard Tree	3" Cal.	Cont. or B&B	11
SMALL/ ORNAMENTAL TREES					
	LI	Lagerstroemia indica x fauriei 'Tuscarora' / Tuscarora Crape Myrtle Street Buffer Tree / Street Yard Tree	3" Cal.	Cont. or B&B	2
	ML	Magnolia grandiflora 'Little Gem' / Little Gem Dwarf Southern Magnolia Street Buffer Tree / Street Yard Tree	3" Cal.	Cont. or B&B	2
SHRUBS					
	HP	Hesperaloe parviflora / Red Yucca Min. 18" Ht.	5 gal.	Cont.	37
	IB	Ilex cornuta `Burfordii Nana` / Dwarf Burford Holly	5 gal.	Cont.	13
	LL	Leucophyllum langmaniae 'Lynn's Legacy' / Lynn's Legacy Langman's Sage Min. 18" Ht.	5 gal.	Cont.	30
	RC	Rhaphiolepis indica 'Clara' / Clara Indian Hawthorn Min. 18" Ht.	5 gal.	Cont.	10
	R4	Rosa x 'Meidrifora' / Coral Drift® Groundcover Rose	5 gal.	Cont.	24
	TS2	Tecoma stans / Dwarf Esperanza Min. 18" Ht.	5 gal.	Cont.	2
GRASSES					
	BB2	Bouteloua gracilis 'Blonde Ambition' / Blonde Ambition Blue Grama Min. 18" Ht.	5 gal.	Cont.	17
	MCG	Muhlenbergia capillaris / Pink Muhly Grass Min 18" Ht.	5 gal.	Cont.	35
PERENNIALS					
	AM2	Achillea x 'Moonshine' / Moonshine Yarrow	1 gal.	Cont.	21

SYMBOL	CODE	BOTANICAL / COMMON NAME	SIZE	CONTAINER	SPACING	QTY
GROUND COVERS						
	EF	Euonymus fortunei / Wintercreeper	1 gal.	Cont.	36" o.c.	94
	GL	Genista lydia / Lydia Broom	1 gal.	Cont.	36" o.c.	113
	NT	Nassella tenuissima / Mexican Feather Grass	1 gal.	Cont.	36" o.c.	153
	SGR	Salvia greggii 'Furmans Red` / Autumn Sage	1 gal.	Cont.	36" o.c.	54
	SC	Santolina chamaecyparissus / Lavender Cotton	1 gal.	Cont.	36" o.c.	113
SOD/SEED						
	SM	Blackland Prairie Seed Mix / Native American Seed (Seedsource.com)	Hydroseed			26,181 sf
	TRF	Cynodon dactylon x transvaalensis `DT-1` / TifTuf™ Bermudagrass solid sod, staggered joints, thick and green, no gaps between sod pieces	sod			15,363 sf

BIO DIVERSITY CALCULATIONS

COMMON NAME	#TREES	SPECIES	%	GENUS	%
SPARTAN JUNIPER	13	CHINENSIS	16.9%	JUNIPERUS	16.9%
PONDEROSA PINE	4	PONDEROSA	5.2%	PINUS	16.88%
LOBLOLLY PINE	9	TAEDA	11.7%		
BURR OAK	9	MACROCARPA	11.7%	QUERCUS	31.17%
LIVE OAK	10	VIRGINIANA	13.0%		
CHINKAPIN OAK	5	CHINKAPIN	6.5%		
CEDAR ELM	11	CRASSIFOLIA	14.3%	ULMUS	14.3%
CRAPE MYRTLE	3	LAGERSTROEMIA	3.9%	INDICA	3.9%
LITTLE GEM	2	GRANDIFLORA	2.6%	MAGNOLIA	2.6%
YAUPON HOLLY	11	VOMITORIA	14.3%	ILEX	14.3%
Total	**77**		**86%**		**86%**

NOTE: *INCLUDES EXISTING & PROPOSED TREES. REFER TO TD PLANS FOR EXISTING TREE INVENTORY.*

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PLANT SCHEDULE

REGISTERED LANDSCAPE ARCHITECT
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PLANTING SPECIFICATIONS

GENERAL

A. QUALIFICATIONS OF LANDSCAPE CONTRACTOR
   1. ALL LANDSCAPE WORK SHOWN ON THESE PLANS SHALL BE PERFORMED BY A SINGLE FIRM SPECIALIZING IN LANDSCAPE PLANTING.
   2. A LIST OF SUCCESSFULLY COMPLETED PROJECTS OF THIS TYPE, SIZE AND NATURE MAY BE REQUESTED BY THE OWNER FOR FURTHER QUALIFICATION MEASURES.
   3. THE LANDSCAPE CONTRACTOR SHALL HOLD A VALID NURSERY AND FLORAL CERTIFICATE ISSUED BY THE TEXAS DEPARTMENT OF AGRICULTURE, AS WELL AS OPERATE UNDER A COMMERCIAL PESTICIDE APPLICATOR LICENSE ISSUED BY EITHER THE TEXAS DEPARTMENT OF AGRICULTURE OR THE TEXAS STRUCTURAL PEST CONTROL BOARD.

B. SCOPE OF WORK
   1. WORK COVERED BY THESE SECTIONS INCLUDES THE FURNISHING AND PAYMENT OF ALL MATERIALS, LABOR, SERVICES, EQUIPMENT, LICENSES, TAXES AND ANY OTHER ITEMS THAT ARE NECESSARY FOR THE EXECUTION, INSTALLATION AND COMPLETION OF ALL WORK, SPECIFIED HEREIN AND / OR SHOWN ON THE LANDSCAPE PLANS, NOTES, AND DETAILS.
   2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES AND REGULATIONS REQUIRED BY AUTHORITIES HAVING JURISDICTION OVER SUCH WORK, INCLUDING ALL INSPECTIONS AND PERMITS REQUIRED BY FEDERAL, STATE AND LOCAL AUTHORITIES IN SUPPLY, TRANSPORTATION AND INSTALLATION OF MATERIALS.
   3. THE LANDSCAPE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITY LINES (WATER, SEWER, ELECTRICAL, TELEPHONE, GAS, CABLE, TELEVISION, ETC.) PRIOR TO THE START OF ANY WORK.

PRODUCTS

A. ALL MANUFACTURED PRODUCTS SHALL BE NEW.
B. CONTAINER AND BALLED-AND-BURLAPPED PLANTS:
   1. FURNISH NURSERY-GROWN PLANTS COMPLYING WITH ANSI Z60.1-2014. 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. ALL PLANTS WITHIN A SPECIES SHALL HAVE SIMILAR SIZE, AND SHALL BE OF A FORM TYPICAL FOR THE SPECIES. ALL TREES SHALL BE OBTAINED FROM SOURCES WITHIN 200 MILES OF THE PROJECT SITE, AND WITH SIMILAR CLIMACTIC CONDITIONS.
   2. ROOT SYSTEMS SHALL BE HEALTHY, DENSELY BRANCHED ROOT SYSTEMS, NON-POT-BOUND, FREE FROM ENCIRCLING AND/OR GIRDLING ROOTS, AND FREE FROM ANY OTHER ROOT DEFECTS (SUCH AS J-SHAPED ROOTS).
   3. TREES MAY BE PLANTED FROM CONTAINERS OR BALLED-AND-BURLAPPED (B&B), UNLESS SPECIFIED ON THE PLANTING LEGEND. BARE-ROOT TREES ARE NOT ACCEPTABLE.
   4. ANY PLANT DEEMED UNACCEPTABLE BY THE LANDSCAPE ARCHITECT OR OWNER SHALL BE IMMEDIATELY REMOVED FROM THE SITE AND SHALL BE REPLACED WITH AN ACCEPTBLE PLANT OF LIKE TYPE AND SIZE AT THE CONTRACTOR'S OWN EXPENSE. ANY PLANTS APPEARING TO BE UNHEALTHY, EVEN IF DETERMINED TO STILL BE ALIVE, SHALL NOT BE ACCEPTED. THE LANDSCAPE ARCHITECT AND OWNER SHALL BE THE SOLE JUDGES AS TO THE ACCEPTABILITY OF PLANT MATERIAL.
   5. ALL TREES SHALL BE STANDARD IN FORM, UNLESS OTHERWISE SPECIFIED. TREES WITH CENTRAL LEADERS WILL NOT BE ACCEPTED IF LEADER IS DAMAGED OR REMOVED. PRUNE ALL DAMAGED TWIGS AFTER PLANTING.
   6. CALIPER MEASUREMENTS FOR STANDARD (SINGLE TRUNK) TREES SHALL BE AS FOLLOWS: SIX INCHES ABOVE THE ROOT FLARE FOR TREES UP TO AND INCLUDING FOUR INCHES IN CALIPER, AND TWELVE INCHES ABOVE THE ROOT FLARE FOR TREES EXCEEDING FOUR INCHES IN CALIPER.
   7. MULTI-TRUNK TREES SHALL BE MEASURED BY THEIR OVERALL HEIGHT, MEASURED FROM THE TOP OF THE ROOT BALL. WHERE CALIPER MEASUREMENTS ARE USED, THE CALIPER SHALL BE CALCULATED AS ONE-HALF OF THE SUM OF THE CALIPER OF THE THREE LARGEST TRUNKS.
   8. ANY TREE OR SHRUB SHOWN TO HAVE EXCESS SOIL PLACED ON TOP OF THE ROOT BALL, SO THAT THE ROOT FLARE HAS BEEN COMPLETELY COVERED, SHALL BE REJECTED.
C. SOD: PROVIDE WELL-ROOTED SOD OF THE VARIETY NOTED ON THE PLANS. SOD SHALL BE CUT FROM HEALTHY, MATURE TURF WITH SOIL THICKNESS OF 3/4" TO 1". EACH PALLET OF SOD SHALL BE ACCOMPANIED BY A CERTIFICATE FROM SUPPLIER STATING THE COMPOSITION OF THE SOD.
D. SEED: PROVIDE BLEND OF SPECIES AND VARIETIES AS NOTED ON THE PLANS, WITH MAXIMUM PERCENTAGES OF PURITY, GERMINATION, AND MINIMUM PERCENTAGE OF WEED SEED AS INDICATED ON PLANS. EACH BAG OF SEED SHALL BE ACCOMPANIED BY A TAG FROM THE SUPPLIER INDICATING THE COMPOSITION OF THE SEED.
E. TOPSOIL: SANDY TO CLAY LOAM TOPSOIL, FREE OF STONES LARGER THAN ½ INCH, FOREIGN MATTER, PLANTS, ROOTS, AND SEEDS.
F. 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 3/4-INCH SIEVE; SOLUBLE SALT CONTENT OF 5 TO 10 DECISIEMENS/M; NOT EXCEEDING 0.5 PERCENT INERT CONTAMINANTS AND FREE OF SUBSTANCES TOXIC TO PLANTINGS. NO MANURE OR ANIMAL-BASED PRODUCTS SHALL BE USED.
G. FERTILIZER: GRANULAR FERTILIZER CONSISTING OF NITROGEN, PHOSPHORUS, POTASSIUM, AND OTHER NUTRIENTS IN PROPORTIONS, AMOUNTS, AND RELEASE RATES RECOMMENDED IN A SOIL REPORT FROM A QUALIFIED SOIL-TESTING AGENCY (SEE BELOW).
H. MULCH: SIZE AND TYPE AS INDICATED ON PLANS, FREE FROM DELETERIOUS MATERIALS AND SUITABLE AS A TOP DRESSING OF TREES AND SHRUBS.
I. TREE STAKING AND GUYING
   1. STAKES: 6' LONG GREEN METAL T-POSTS.
   2. GUY AND TIE WIRE: ASTM A 641, CLASS 1, GALVANIZED-STEEL WIRE, 2-STRAND, TWISTED, 0.106 INCH DIAMETER.
   3. STRAP CHAFING GUARD: REINFORCED NYLON OR CANVAS AT LEAST 1-1/2 INCH WIDE, WITH GROMMETS TO PROTECT TREE TRUNKS FROM DAMAGE.
J. STEEL EDGING: PROFESSIONAL STEEL EDGING, 14 GAUGE THICK X 4 INCHES WIDE, FACTORY PAINTED DARK GREEN. ACCEPTABLE MANUFACTURERS INCLUDE COL-MET OR APPROVED EQUAL.
K. PRE-EMERGENT HERBICIDES: ANY GRANULAR, NON-STAINING PRE-EMERGENT HERBICIDE THAT IS LABELED FOR THE SPECIFIC ORNAMENTALS OR TURF ON WHICH IT WILL BE UTILIZED. PRE-EMERGENT HERBICIDES SHALL BE APPLIED PER THE MANUFACTURER'S LABELED RATES.

METHODS

A. SOIL PREPARATION
   1. BEFORE STARTING WORK, THE LANDSCAPE CONTRACTOR SHALL VERIFY THAT THE GRADE OF ALL LANDSCAPE AREAS ARE WITHIN +-0.1' OF FINISH GRADE. THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY SHOULD ANY DISCREPANCIES EXIST.
   2. SOIL TESTING:
      a. AFTER FINISH GRADES HAVE BEEN ESTABLISHED, CONTRACTOR SHALL HAVE SOIL SAMPLES FROM THE PROJECT'S LANDSCAPE AREAS TESTED BY AN ESTABLISHED SOIL TESTING LABORATORY. EACH SAMPLE SUBMITTED TO THE LAB SHALL CONTAIN NO LESS THAN ONE QUART OF SOIL, TAKEN FROM BETWEEN THE SOIL SURFACE AND 6" DEPTH. IF NO SAMPLE LOCATIONS ARE INDICATED ON THE PLANS, THE CONTRACTOR SHALL TAKE A MINIMUM OF THREE SAMPLES FROM VARIOUS REPRESENTATIVE LOCATIONS FOR TESTING.
      b. THE CONTRACTOR SHALL HAVE THE SOIL TESTING LABORATORY PROVIDE RESULTS FOR THE FOLLOWING: SOIL TEXTURAL CLASS, GENERAL SOIL FERTILITY, pH, ORGANIC MATTER CONTENT, SALT (CEC), LIME, SODIUM ADSORPTION RATIO (SAR) AND BORON CONTENT.
      c. THE CONTRACTOR SHALL ALSO SUBMIT THE PROJECT'S PLANT LIST TO THE LABORATORY ALONG WITH THE SOIL SAMPLES.
      d. THE SOIL REPORT PRODUCED BY THE LABORATORY SHALL CONTAIN RECOMMENDATIONS FOR THE FOLLOWING (AS APPROPRIATE): SEPARATE SOIL PREPARATION AND BACKFILL MIX RECOMMENDATIONS FOR GENERAL ORNAMENTAL PLANTS, XERIC PLANTS, TURF, AND NATIVE SEED, AS WELL AS PRE-PLANT FERTILIZER APPLICATIONS AND RECOMMENDATIONS FOR ANY OTHER SOIL RELATED ISSUES. THE REPORT SHALL ALSO PROVIDE A FERTILIZER PROGRAM FOR THE ESTABLISHMENT PERIOD AND FOR LONG-TERM MAINTENANCE.
   3. THE CONTRACTOR SHALL INSTALL SOIL AMENDMENTS AND FERTILIZERS PER THE SOILS REPORT RECOMMENDATIONS. ANY CHANGE IN COST DUE TO THE SOIL REPORT RECOMMENDATIONS, EITHER INCREASE OR DECREASE, SHALL BE SUBMITTED TO THE OWNER WITH THE REPORT.
   4. FOR BIDDING PURPOSES ONLY, THE SOIL PREPARATION SHALL CONSIST OF THE FOLLOWING:
      a. TURF: INCORPORATE THE FOLLOWING AMENDMENTS INTO THE TOP 8" OF SOIL BY MEANS OF ROTOTILLING AFTER CROSS-RIPPING:
      i. NITROGEN STABILIZED ORGANIC AMENDMENT - 4 CU. YDS. PER 1,000 S.F.
      ii. PREPLANT TURF FERTILIZER (10-20-10 OR SIMILAR, SLOW RELEASE, ORGANIC) - 15 LBS PER 1,000 S.F.
      iii. "CLAY BUSTER" OR ¾" LANDSCAPERS COMPOST - USE MANUFACTURER'S RECOMMENDED RATE
      b. TREES, SHRUBS, AND PERENNIALS: INCORPORATE THE FOLLOWING AMENDMENTS INTO THE TOP 8" OF SOIL BY MEANS OF ROTOTILLING AFTER CROSS-RIPPING:
      i. NITROGEN STABILIZED ORGANIC AMENDMENT - 4 CU. YDS. PER 1,000 S.F.
      ii. 12-12-12 FERTILIZER (OR SIMILAR, ORGANIC, SLOW RELEASE) - 10 LBS. PER CU. YD.
      iii. "CLAY BUSTER" OR ¾" LANDSCAPERS COMPOST - USE MANUFACTURER'S RECOMMENDED RATE
      iv. IRON SULPHATE - 2 LBS. PER CU. YD.
   5. IN THE CONTEXT OF THESE PLANS, NOTES, AND SPECIFICATIONS, "FINISH GRADE" REFERS TO THE FINAL ELEVATION OF THE SOIL SURFACE (NOT TOP OF MULCH) AS INDICATED ON THE GRADING PLANS.
      a. BEFORE STARTING WORK, THE LANDSCAPE CONTRACTOR SHALL VERIFY THAT THE ROUGH GRADES OF ALL LANDSCAPE AREAS ARE WITHIN +-0.1' OF FINISH GRADE. SEE SPECIFICATIONS FOR MORE DETAILED INSTRUCTION ON TURF AREA AND PLANTING BED PREPARATION.
      b. CONSTRUCT AND MAINTAIN FINISH GRADES AS SHOWN ON GRADING PLANS, AND CONSTRUCT AND MAINTAIN SLOPES AS RECOMMENDED BY THE GEOTECHNICAL REPORT. ALL LANDSCAPE AREAS SHALL HAVE POSITIVE DRAINAGE AWAY FROM STRUCTURES AT THE MINIMUM SLOPE SPECIFIED IN THE REPORT AND ON THE GRADING PLANS, AND AREAS OF POTENTIAL PONDING SHALL BE REGRADED TO BLEND IN WITH THE SURROUNDING GRADES AND ELIMINATE PONDING POTENTIAL.
      c. THE LANDSCAPE CONTRACTOR SHALL DETERMINE WHETHER OR NOT THE EXPORT OF ANY SOIL WILL BE NEEDED, TAKING INTO ACCOUNT THE ROUGH GRADE PROVIDED, THE AMOUNT OF SOIL AMENDMENTS TO BE ADDED (BASED ON A SOIL TEST, PER SPECIFICATIONS), AND THE FINISH GRADES TO BE ESTABLISHED.
      d. AFTER INSTALLING SOIL AMENDMENTS IN SHRUB AREAS, AND IN ORDER TO ALLOW FOR PROPER MULCH DEPTH, ENSURE THAT THE FINISH GRADE IMMEDIATELY ADJACENT TO WALKS AND OTHER WALKING SURFACES IS 3" BELOW FINISH GRADE, TAPERING TO MEET FINISH GRADE AT APPROXIMATELY 18" AWAY FROM THE SURFACE.
      e. AFTER INSTALLING SOIL AMENDMENTS IN TURF AREAS, ENSURE THAT THE FINISH GRADE IN TURF AREAS IMMEDIATELY ADJACENT TO WALKS AND OTHER WALKING SURFACES IS 1" BELOW FINISH GRADE, TAPERING TO MEET FINISH GRADE AT APPROXIMATELY 18" AWAY FROM THE SURFACE.
      f. SHOULD ANY CONFLICTS AND/OR DISCREPANCIES ARISE BETWEEN THE GRADING PLANS, GEOTECHNICAL REPORT, THESE NOTES AND PLANS, AND ACTUAL CONDITIONS, THE CONTRACTOR SHALL IMMEDIATELY BRING SUCH ITEMS TO THE ATTENTION OF THE LANDSCAPE ARCHITECT, GENERAL CONTRACTOR, AND OWNER.
   6. ONCE SOIL PREPARATION IS COMPLETE, THE LANDSCAPE CONTRACTOR SHALL ENSURE THAT THERE ARE NO DEBRIS, TRASH, OR STONES LARGER THAN 1" REMAINING IN THE TOP 6" OF SOIL.

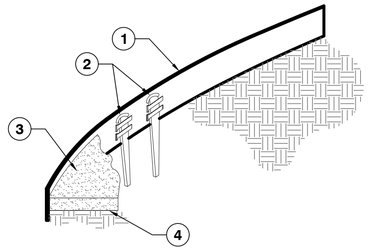
B. SUBMITTALS
   1. THE CONTRACTOR SHALL PROVIDE SUBMITTALS AND SAMPLES, IF REQUIRED, TO THE LANDSCAPE ARCHITECT, AND RECEIVE APPROVAL IN WRITING FOR SUCH SUBMITTALS BEFORE WORK COMMENCES.
   2. SUBMITTALS SHALL INCLUDE PHOTOS OF PLANTS WITH A RULER OR MEASURING STICK FOR SCALE, PHOTOS OR SAMPLES OF ANY REQUIRED MULCHES, AND SOIL TEST RESULTS AND PREPARATION RECOMMENDATIONS FROM THE TESTING LAB (INCLUDING COMPOST AND FERTILIZER RATES AND TYPES, AND OTHER AMENDMENTS FOR TREE/SHRUB, TURF, AND SEED AREAS AS MAY BE APPROPRIATE).
   3. SUBMITTALS SHALL ALSO INCLUDE MANUFACTURER CUT SHEETS FOR PLANTING ACCESSORIES SUCH AS TREE STAKES AND TIES, EDGING, AND LANDSCAPE FABRICS (IF ANY).
   4. WHERE MULTIPLE ITEMS ARE SHOWN ON A PAGE, THE CONTRACTOR SHALL CLEARLY INDICATE THE ITEM BEING CONSIDERED.
C. GENERAL PLANTING
   1. REMOVE ALL NURSERY TAGS AND STAKES FROM PLANTS.
   2. EXCEPT IN AREAS TO BE PLANTED WITH ORNAMENTAL GRASSES, APPLY PRE-EMERGENT HERBICIDES AT THE MANUFACTURERS RECOMMENDED RATE.
   3. TRENCHING NEAR EXISTING TREES:
      a. CONTRACTOR SHALL NOT DISTURB ROOTS 1-1/2" AND LARGER IN DIAMETER WITHIN THE CRITICAL ROOT ZONE (CRZ) OF EXISTING TREES, AND SHALL EXERCISE ALL POSSIBLE CARE AND PRECAUTIONS TO AVOID INJURY TO TREE ROOTS, TRUNKS, AND BRANCHES. THE CRZ IS DEFINED AS A CIRCULAR AREA EXTENDING OUTWARD FROM THE TREE TRUNK, WITH A RADIUS EQUAL TO 1' FOR EVERY 1" OF TRUNK DIAMETER-AT-BREAST-HEIGHT (4.5' ABOVE THE AVERAGE GRADE AT THE TRUNK).
      b. ALL EXCAVATION WITHIN THE CRZ SHALL BE PERFORMED USING HAND TOOLS. NO MACHINE EXCAVATION OR TRENCHING OF ANY KIND SHALL BE ALLOWED WITHIN THE CRZ.
      c. ALTER ALIGNMENT OF PIPE TO AVOID TREE ROOTS 1-1/2" AND LARGER IN DIAMETER. WHERE TREE ROOTS 1-1/2" AND LARGER IN DIAMETER ARE ENCOUNTERED IN THE FIELD, TUNNEL UNDER SUCH ROOTS. WRAP EXPOSED ROOTS WITH SEVERAL LAYERS OF BURLAP AND KEEP MOIST. CLOSE ALL TRENCHES WITHIN THE CANOPY DRIP LINES WITHIN 24 HOURS.
      d. ALL SEVERED ROOTS SHALL BE HAND PRUNED WITH SHARP TOOLS AND ALLOWED TO AIR-DRY. DO NOT USE ANY SORT OF SEALERS OR WOUND PAINTS UNLESS IF LOCAL JURISDICTION REQUIRES OR OAK TREES LOCATED IN OAK WILT SUSCEPTIBLE AREAS.
D. TREE PLANTING
   1. TREE PLANTING HOLES SHALL BE EXCAVATED TO MINIMUM WIDTH OF TWO TIMES THE WIDTH OF THE ROOTBALL, AND TO A DEPTH EQUAL TO THE DEPTH OF THE ROOTBALL LESS TWO TO FOUR INCHES.
   2. SCARIFY THE SIDES AND BOTTOM OF THE PLANTING HOLE PRIOR TO THE PLACEMENT OF THE TREE. REMOVE ANY GLAZING THAT MAY HAVE BEEN CAUSED DURING THE EXCAVATION OF THE HOLE.
   3. FOR CONTAINER AND BOX TREES, TO REMOVE ANY POTENTIALLY GIRDLING ROOTS AND OTHER ROOT DEFECTS, THE CONTRACTOR SHALL SHAVE A 1" LAYER OFF OF THE SIDES AND BOTTOM OF THE ROOTBALL OF ALL TREES JUST BEFORE PLACING INTO THE PLANTING PIT. DO NOT "TEASE" ROOTS OUT FROM THE ROOTBALL.
   4. INSTALL THE TREE ON UNDISTURBED SUBGRADE SO THAT THE TOP OF THE ROOTBALL IS TWO TO FOUR INCHES ABOVE THE SURROUNDING GRADE.
   5. BACKFILL THE TREE HOLE UTILIZING THE EXISTING TOPSOIL FROM ON-SITE. ROCKS LARGER THAN 1" DIA. AND ALL OTHER DEBRIS SHALL BE REMOVED FROM THE SOIL PRIOR TO THE BACKFILL. SHOULD ADDITIONAL SOIL BE REQUIRED TO ACCOMPLISH THIS TASK, USE STORED TOPSOIL FROM ON-SITE OR IMPORT ADDITIONAL TOPSOIL FROM OFF-SITE AT NO ADDITIONAL COST TO THE OWNER. IMPORTED TOPSOIL SHALL BE OF SIMILAR TEXTURAL CLASS AND COMPOSITION IN THE ON-SITE SOIL.
   6. TREES SHALL NOT BE STAKED UNLESS LOCAL CONDITIONS (SUCH AS HEAVY WINDS OR SLOPES) REQUIRE STAKES TO KEEP TREES UPRIGHT. SHOULD STAKING BE REQUIRED, THE FOLLOWING NUMBER OF TREE STAKES (BEYOND THE MINIMUMS LISTED BELOW) WILL BE LEFT TO THE LANDSCAPE CONTRACTOR'S DISCRETION. SHOULD ANY TREES FALL OR LEAN, THE LANDSCAPE CONTRACTOR SHALL STRAIGHTEN THE TREE, OR REPLACE IT SHOULD IT BECOME DAMAGED. TREE STAKING SHALL ADHERE TO THE FOLLOWING GUIDELINES:

a.	1"-2" TREES	TWO STAKES PER TREE
b.	2-1/2"-4" TREES	THREE STAKES PER TREE
c.	TREES OVER 4" CALIPER	GUY AS NEEDED
d.	MULTI-TRUNK TREES	THREE STAKES PER TREE MINIMUM, QUANTITY AND POSITIONS AS NEEDED TO STABILIZE THE TREE

   7. UPON COMPLETION OF PLANTING, CONSTRUCT AN EARTH WATERING BASIN AROUND THE TREE. COVER THE INTERIOR OF THE TREE RING WITH MULCH (TYPE AND DEPTH PER PLANS). UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR PLACE MULCH WITHIN 6" OF THE TRUNK.
D. SHRUB, PERENNIAL, AND GROUNDCOVER PLANTING
   1. DIG THE PLANTING HOLES TWICE AS WIDE AND 2" LESS DEEP THAN EACH PLANT'S ROOTBALL. INSTALL THE PLANT IN THE HOLE. BACKFILL AROUND THE PLANT WITH SOIL AMENDED PER SOIL TEST RECOMMENDATIONS.
   2. INSTALL THE WEED BARRIER CLOTH, OVERLAPPING IT AT THE ENDS. UTILIZE STEEL STAPLES TO KEEP THE WEED BARRIER CLOTH IN PLACE.
   3. WHEN PLANTING IS COMPLETE, INSTALL MULCH (TYPE AND DEPTH PER PLANS) OVER ALL PLANTING AREAS (EXCEPT FOR SODDED AND SEEDED AREAS), LEAVING NO EXPOSED GROUND.
E. SODDING
   1. SOD VARIETY TO BE AS SPECIFIED ON THE LANDSCAPE PLAN.
   2. LAY SOD WITHIN 24 HOURS FROM THE TIME OF STRIPPING. DO NOT LAY IF THE GROUND IS FROZEN.
   3. LAY THE SOD TO FORM A SOLID MASS WITH TIGHTLY FITTED JOINTS. BUTT ENDS AND SIDES OF SOD STRIPS - DO NOT OVERLAP. STAGGER STRIPS TO OFFSET JOINTS IN ADJACENT COURSES.
   4. ROLL THE SOD TO ENSURE GOOD CONTACT OF THE SOD'S ROOT SYSTEM WITH THE SOIL UNDERNEATH.
   5. WATER THE SOD THOROUGHLY WITH A FINE SPRAY IMMEDIATELY AFTER PLANTING TO OBTAIN AT LEAST SIX INCHES OF PENETRATION INTO THE SOIL BELOW THE SOD.
F. HYDROMULCHING
   1. TURF HYDROMULCH MIX (PER 1,000 SF) SHALL BE AS FOLLOWS:
      a. WINTER MIX (OCTOBER 1 - MARCH 31)
         50# CELLULOSE FIBER MULCH
         2# UNHULLED BERMUDA SEED
         2# ANNUAL RYE SEED
         15# 15-15-15 WATER SOLUBLE FERTILIZER
      b. SUMMER MIX (APRIL 1 - SEPTEMBER 30)
         50# CELLULOSE FIBER MULCH
         2# HULLED BERMUDA SEED
         15# 15-15-15 WATER SOLUBLE FERTILIZER
   2. SEED HYDROMULCH MIX (PER 1,000 SF) SHALL BE AS FOLLOWS:
      a. GENERAL
         50# CELLULOSE FIBER MULCH
         15# 15-15-15 WATER SOLUBLE FERTILIZER
         SEED RATE PER LEGEND
G. MULCH
   1. INSTALL MULCH TOPDRESSING, TYPE AND DEPTH PER MULCH NOTE, IN ALL PLANTING AREAS AND TREE RINGS.
   2. DO NOT INSTALL MULCH WITHIN 6" OF TREE ROOT FLARE AND WITHIN 24" OF HABITABLE STRUCTURES, EXCEPT AS MAY BE NOTED ON THESE PLANS. MULCH COVER WITHIN 6" OF CONCRETE WALKS AND CURBS SHALL NOT PROTRUDE ABOVE THE FINISH SURFACE OF THE WALKS AND CURBS. MULCH COVER WITHIN 12" OF WALLS SHALL BE AT LEAST 3" LOWER THAN THE TOP OF WALL.
H. CLEAN UP
   1. DURING LANDSCAPE PREPARATION AND PLANTING, KEEP ALL PAVEMENT CLEAN AND ALL WORK AREAS IN A NEAT, ORDERLY CONDITION.
   2. DISPOSED LEGALLY OF ALL EXCAVATED MATERIALS OFF THE PROJECT SITE.
I. INSPECTION AND ACCEPTANCE
   1. UPON COMPLETION OF THE WORK, THE LANDSCAPE CONTRACTOR SHALL PROVIDE THE SITE CLEAN, FREE OF DEBRIS AND TRASH, AND SUITABLE FOR USE AS INTENDED. THE LANDSCAPE CONTRACTOR SHALL THEN REQUEST AN INSPECTION BY THE OWNER TO DETERMINE FINAL ACCEPTABILITY.
   2. WHEN THE INSPECTED PLANTING WORK DOES NOT COMPLY WITH THE CONTRACT DOCUMENTS, THE LANDSCAPE CONTRACTOR SHALL REPLACE AND/OR REPAIR THE REJECTED WORK TO THE OWNER'S SATISFACTION WITHIN 24 HOURS.
   3. THE LANDSCAPE MAINTENANCE PERIOD WILL NOT COMMENCE UNTIL THE LANDSCAPE WORK HAS BEEN RE-INSPECTED BY THE OWNER AND FOUND TO BE ACCEPTABLE. AT THAT TIME, A WRITTEN NOTICE OF FINAL ACCEPTANCE WILL BE ISSUED BY THE OWNER, AND THE MAINTENANCE AND GUARANTEE PERIODS WILL COMMENCE.
J. LANDSCAPE MAINTENANCE
   1. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL WORK SHOWN ON THESE PLANS FOR 90 DAYS BEYOND FINAL ACCEPTANCE OF ALL LANDSCAPE WORK BY THE OWNER. LANDSCAPE MAINTENANCE SHALL INCLUDE WEEKLY SITE VISITS FOR THE FOLLOWING ACTIONS (AS APPROPRIATE): PROPER PRUNING, RESTAKING OF TREES, RESETTING OF PLANTS THAT HAVE SETTLED, MOWING AND AERATION OF LAWNS, WEEDING, RESEEDING AREAS WHICH HAVE NOT GERMINATED WELL, TREATING FOR INSECTS AND DISEASES,REPLACEMENT OF MULCH, REMOVAL OF LITTER, REPAIRS TO THE IRRIGATION SYSTEM DUE TO FAULTY PARTS AND/OR WORKMANSHIP, AND THE APPROPRIATE WATERING OF ALL PLANTINGS. THE LANDSCAPE CONTRACTOR SHALL MAINTAIN THE IRRIGATION SYSTEM IN PROPER WORKING ORDER, WITH SCHEDULING ADJUSTMENTS BY SEASON TO MAXIMIZE WATER CONSERVATION.
   2. SHOULD SEEDED AND/OR SODDED AREAS NOT BE COVERED BY AN AUTOMATIC IRRIGATION SYSTEM, THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING THESE AREAS AND OBTAINING A FULL, HEALTHY STAND OF PLANTS AT NO ADDITIONAL COST TO THE OWNER.
   3. TO ACHIEVE FINAL ACCEPTANCE AT THE END OF THE MAINTENANCE PERIOD, ALL OF THE FOLLOWING CONDITIONS MUST OCCUR:
      a. THE LANDSCAPE SHALL SHOW ACTIVE, HEALTHY GROWTH (WITH EXCEPTIONS MADE FOR SEASONAL DORMANCY). ALL PLANTS NOT MEETING THIS CONDITION SHALL BE REJECTED AND REPLACED BY HEALTHY PLANT MATERIAL PRIOR TO FINAL ACCEPTANCE.
      b. ALL HARDSCAPE SHALL BE CLEANED PRIOR TO FINAL ACCEPTANCE.
      c. SODDED AREAS MUST BE ACTIVELY GROWING AND MUST REACH A MINIMUM HEIGHT OF 1 1/2 INCHES BEFORE FIRST MOWING. HYDROMULCHED AREAS SHALL SHOW ACTIVE, HEALTHY GROWTH. BARE AREAS LARGER THAN TWELVE SQUARE INCHES MUST BE RESODDED OR RESEEDED (AS APPROPRIATE) PRIOR TO FINAL ACCEPTANCE. ALL SODDED TURF SHALL BE NEATLY MOWED.
K. WARRANTY PERIOD, PLANT GUARANTEE AND REPLACEMENTS
   1. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL TREES, SHRUBS, PERENNIALS, SOD, SEEDED/HYDROMULCHED AREAS, AND IRRIGATION SYSTEMS FOR A PERIOD OF ONE YEAR FROM THE DATE OF THE OWNER'S FINAL ACCEPTANCE (90 DAYS FOR ANNUAL PLANTS). THE CONTRACTOR SHALL REPLACE, AT HIS OWN EXPENSE AND TO THE SATISFACTION OF THE OWNER, ANY PLANTS WHICH DIE IN THAT TIME, OR REPAIR ANY PORTIONS OF THE IRRIGATION SYSTEM WHICH OPERATE IMPROPERLY.
   2. AFTER THE INITIAL MAINTENANCE PERIOD AND DURING THE GUARANTEE PERIOD, THE LANDSCAPE CONTRACTOR SHALL ONLY BE RESPONSIBLE FOR REPLACEMENT OF PLANTS WHEN PLANT DEATH CANNOT BE ATTRIBUTED DIRECTLY TO OVERWATERING OR OTHER DAMAGE BY HUMAN ACTIONS.
L. PROVIDE A MINIMUM OF (2) COPIES OF RECORD DRAWINGS TO THE OWNER UPON COMPLETION OF WORK. A RECORD DRAWING IS A RECORD OF ALL CHANGES THAT OCCURRED IN THE FIELD AND THAT ARE DOCUMENTED THROUGH CHANGE ORDERS, ADDENDA, OR CONTRACTOR/CONSULTANT DRAWING MARKUPS.

GENERAL GRADING AND PLANTING NOTES

1. BY SUBMITTING A PROPOSAL FOR THE LANDSCAPE PLANTING SCOPE OF WORK, THE CONTRACTOR CONFIRMS THAT HE HAS READ, AND WILL COMPLY WITH, THE ASSOCIATED NOTES, SPECIFICATIONS, AND DETAILS WITH THIS PROJECT.
2. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL EXISTING VEGETATION (EXCEPT WHERE NOTED TO REMAIN).
3. IN THE CONTEXT OF THESE PLANS, NOTES, AND SPECIFICATIONS, "FINISH GRADE" REFERS TO THE FINAL ELEVATION OF THE SOIL SURFACE (NOT TOP OF MULCH) AS INDICATED ON THE GRADING PLANS.
   a. BEFORE STARTING WORK, THE LANDSCAPE CONTRACTOR SHALL VERIFY THAT THE ROUGH GRADES OF ALL LANDSCAPE AREAS ARE WITHIN +-0.1' OF FINISH GRADE. SEE SPECIFICATIONS FOR MORE DETAILED INSTRUCTION ON TURF AREA AND PLANTING BED PREPARATION.
   b. CONSTRUCT AND MAINTAIN FINISH GRADES AS SHOWN ON GRADING PLANS, AND CONSTRUCT AND MAINTAIN SLOPES AS RECOMMENDED BY THE GEOTECHNICAL REPORT. ALL LANDSCAPE AREAS SHALL HAVE POSITIVE DRAINAGE AWAY FROM STRUCTURES AT THE MINIMUM SLOPE SPECIFIED IN THE REPORT AND ON THE GRADING PLANS, AND AREAS OF POTENTIAL PONDING SHALL BE REGRADED TO BLEND IN WITH THE SURROUNDING GRADES AND ELIMINATE PONDING POTENTIAL.
   c. THE LANDSCAPE CONTRACTOR SHALL DETERMINE WHETHER OR NOT THE EXPORT OF ANY SOIL WILL BE NEEDED, TAKING INTO ACCOUNT THE ROUGH GRADE PROVIDED, THE AMOUNT OF SOIL AMENDMENTS TO BE ADDED (**BASED ON A SOIL TEST**, PER SPECIFICATIONS), AND THE FINISH GRADES TO BE ESTABLISHED.
   d. ENSURE THAT THE FINISH GRADE IN SHRUB AREAS IMMEDIATELY ADJACENT TO WALKS AND OTHER WALKING SURFACES, AFTER INSTALLING SOIL AMENDMENTS, IS 3" BELOW THE ADJACENT FINISH SURFACE, IN ORDER TO ALLOW FOR PROPER MULCH DEPTH. TAPER THE SOIL SURFACE TO MEET FINISH GRADE, AS SPECIFIED ON THE GRADING PLANS, AT APPROXIMATELY 18" AWAY FROM THE WALKS.
   e. ENSURE THAT THE FINISH GRADE IN TURF AREAS IMMEDIATELY ADJACENT TO WALKS AND OTHER WALKING SURFACES, AFTER INSTALLING SOIL AMENDMENTS, IS 1" BELOW THE FINISH SURFACE OF THE WALKS. TAPER THE SOIL SURFACE TO MEET FINISH GRADE, AS SPECIFIED ON THE GRADING PLANS, AT APPROXIMATELY 18" AWAY FROM THE WALKS.
   f. SHOULD ANY CONFLICTS AND/OR DISCREPANCIES ARISE BETWEEN THE GRADING PLANS, GEOTECHNICAL REPORT, THESE NOTES AND PLANS, AND ACTUAL CONDITIONS, THE CONTRACTOR SHALL IMMEDIATELY BRING SUCH ITEMS TO THE ATTENTION OF THE LANDSCAPE ARCHITECT, GENERAL CONTRACTOR, AND OWNER.
4. ALL PLANT LOCATIONS ARE DIAGRAMMATIC. ACTUAL LOCATIONS SHALL BE VERIFIED WITH THE LANDSCAPE ARCHITECT OR DESIGNER PRIOR TO PLANTING. THE LANDSCAPE CONTRACTOR SHALL ENSURE THAT ALL REQUIREMENTS OF THE PERMITTING AUTHORITY ARE MET (I.E., MINIMUM PLANT QUANTITIES, PLANTING METHODS, TREE PROTECTION METHODS, ETC.).
   a. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR DETERMINING PLANT QUANTITIES. PLANT QUANTITIES SHOWN ON LEGENDS AND CALLOUTS ARE FOR GENERAL INFORMATION ONLY. IN THE EVENT OF A DISCREPANCY BETWEEN THE PLAN AND THE PLANT LEGEND, THE PLANT QUANTITY AS SHOWN ON THE PLAN (FOR INDIVIDUAL SYMBOLS) OR CALLOUT (FOR GROUNDCOVER PATTERNS) SHALL TAKE PRECEDENCE.
   **b. NO SUB



1. STEEL EDGING PER PLANS.
2. TAPERED STEEL STAKES.
3. MULCH, TYPE AND DEPTH PER PLANS.
4. FINISH GRADE.

NOTES:
1. INSTALL EDGING SO THAT STAKES WILL BE ON INSIDE OF PLANTING BED.
2. BOTTOM OF EDGING SHALL BE BURIED A MINIMUM OF 1" BELOW FINISH GRADE.
3. TOP OF MULCH SHALL BE 1" LOWER THAN TOP OF EDGING.
4. STEEL EDGING SHOULD BE SMOOTH & CONSISTENT AT CURVES & SHOULD JOIN AT 90 DEGREE ANGLES UNLESS OTHERWISE NOTED.

A STEEL EDGING

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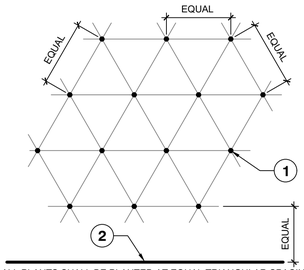

1. PLANT CENTER, TYP.
2. EDGE OF PLANTING AREA

NOTE: ALL PLANTS SHALL BE PLANTED AT EQUAL TRIANGULAR SPACING (EXCEPT WHERE SHOWN ON PLANS AS INFORMAL GROUPINGS). REFER TO PLANT LEGEND FOR SPACING DISTANCE BETWEEN PLANTS.

1) STEP 1: DETERMINE TOTAL PLANTS FOR THE AREA WITH THE FOLLOWING FORMULA:
TOTAL AREA / AREA DIVIDER = TOTAL PLANTS

PLANT SPACING	AREA DIVIDER	PLANT SPACING	AREA DIVIDER
6"	0.22	18"	1.95
8"	0.39	24"	3.46
10"	0.60	30"	5.41
12"	0.87	36"	7.79
15"	1.35		

2) STEP 2: SUBTRACT THE ROW (S) OF PLANTS THAT WOULD OCCUR AT THE EDGE OF THE PLANTED AREA WITH THE FOLLOWING FORMULA: TOTAL PERIMETER LENGTH / PLANT SPACING = TOTAL PLANT SUBTRACTION

EXAMPLE: PLANTS AT 18" O.C. IN 100 SF PLANTING AREA, 40 LF PERIMETER
STEP 1: 100 SF/1.95 = 51 PLANTS
STEP 2: 51 PLANTS - (40 LF / 1.95 = 21 PLANTS) = 30 PLANTS TOTAL

B TRIANGULAR PLANT SPACING

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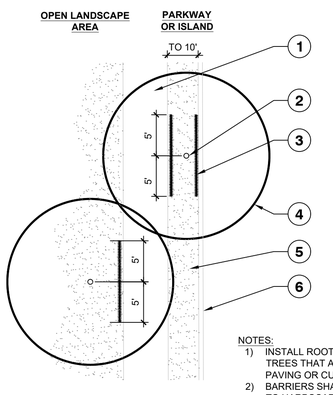

1. TYPICAL WALKWAY OR PAVING.
2. TREE TRUNK.
3. LINEAR ROOT BARRIER MATERIAL. SEE PLANTING NOTES FOR TYPE AND MANUFACTURER. INSTALL PER MANUFACTURER'S SPECIFICATIONS.
4. TREE CANOPY.
5. TYPICAL PLANTING AREA.
6. TYPICAL CURB AND GUTTER.

NOTES:
1) INSTALL ROOT BARRIERS NEAR ALL NEWLY-PLANTED TREES THAT ARE LOCATED WITHIN FIVE (5) FEET OF PAVING OR CURBS.
2) BARRIERS SHALL BE LOCATED IMMEDIATELY ADJACENT TO HARDSCAPE. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR USE ROOT BARRIERS OF A TYPE THAT COMPLETELY ENCIRCLE THE ROOTBALL.

C ROOT BARRIER - PLAN VIEW

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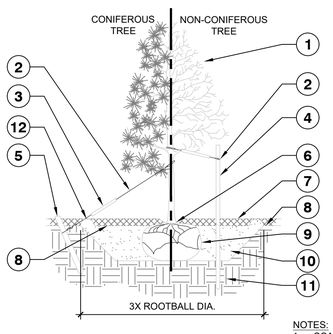
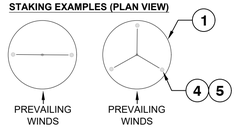


1. TREE CANOPY.
2. CINCH-TIES (24" BOX/2" CAL. TREES AND SMALLER) OR 12 GAUGE GALVANIZED WIRE WITH NYLON TREE STRAPS AT TREE AND STAKE (36" BOX/2.5" CAL. TREES AND LARGER). SECURE TIES OR STRAPS TO TRUNK JUST ABOVE LOWEST MAJOR BRANCHES.
3. 24" X 3/4" P.V.C. MARKERS OVER WIRES.
4. GREEN STEEL T-POSTS. EXTEND POSTS 12" MIN. INTO UNDISTURBED SOIL.
5. PRESSURE-TREATED WOOD DEADMAN, TWO PER TREE (MIN.). BURY OUTSIDE OF PLANTING PIT AND 18" MIN. INTO UNDISTURBED SOIL.
6. TRUNK FLARE.
7. MULCH, TYPE AND DEPTH PER PLANS. DO NOT PLACE MULCH WITHIN 6" OF TRUNK.
8. FINISH GRADE.
9. ROOT BALL.
10. BACKFILL. AMEND AND FERTILIZE ONLY AS RECOMMENDED IN SOIL FERTILITY ANALYSIS.
11. UNDISTURBED NATIVE SOIL.
12. 4" HIGH EARTHEN WATERING BASIN.

STAKING EXAMPLES (PLAN VIEW)



NOTES:
1. SCARIFY SIDES OF PLANTING PIT PRIOR TO SETTING TREE.
2. REMOVE EXCESS SOIL APPLIED ON TOP OF THE ROOTBALL THAT COVERS THE ROOT FLARE. THE PLANTING HOLE DEPTH SHALL BE SUCH THAT THE ROOTBALL RESTS ON UNDISTURBED SOIL, AND THE ROOT FLARE IS 2"-4" ABOVE FINISH GRADE.
3. FOR B&B TREES, CUT OFF BOTTOM 1/3 OF WIRE BASKET BEFORE PLACING TREE IN HOLE, CUT OFF AND REMOVE REMAINDER OF BASKET AFTER TREE IS SET IN HOLE. REMOVE ALL NYLON TIES, TWINE, ROPE, AND OTHER PACKING MATERIAL. REMOVE AS MUCH BURLAP FROM AROUND ROOTBALL AS IS PRACTICAL.
4. REMOVE ALL NURSERY STAKES AFTER PLANTING.
5. TREES SHALL NOT BE STAKED UNLESS LOCAL CONDITIONS REQUIRE STAKES TO KEEP TREES UPRIGHT. STAKING SHALL BE TIGHT ENOUGH TO PREVENT TRUNK FROM BENDING, BUT LOOSE ENOUGH TO ALLOW SOME TRUNK MOVEMENT IN WIND.
6. FOR TREES 36" BOX/2.5" CAL. AND LARGER, USE THREE STAKES OR DEADMEN (AS APPROPRIATE), SPACED EVENLY AROUND TREE.

D TREE PLANTING

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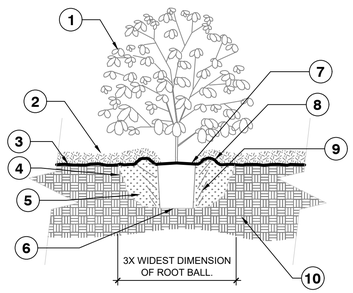

SECTION VIEW

NOTES:
1. SHRUBS SHALL BE OF QUALITY PRESCRIBED IN THE ROOT OBSERVATIONS DETAIL AND SPECIFICATIONS.
2. SEE SPECIFICATIONS FOR FURTHER REQUIREMENTS RELATED TO THIS DETAIL.

1. SHRUB.
2. MULCH TYPE & DEPTH PER PLANS. NO MORE THAN 1" OF MULCH ON TOP OF ROOT BALL. (SEE SPECS FOR MULCH).
3. FINISHED GRADE.
4. SLOPE SIDES OF LOOSENED SOIL.
5. LOOSENED SOIL. DIG AN TURN THE SOIL TO REDUCE THE COMPACTION TO THE AREA AND DEPTH SHOWN.
6. ROOT BALL RESTS ON EXISTING OR RECOMPACTED SOIL.
7. ROOT BALL.
8. 4" HIGH X 8" WIDE ROUND - TOPPED SOIL BERM ABOVE ROOT BALL SURFACE SHALL BE CONSTRUCTED AROUND THE ROOT BALL. BERM SHALL BEGIN AT ROOT BALL PERIPHERY.
9. PRIOR TO MULCHING, LIGHTLY TAMP SOIL AROUND THE ROOT BALL IN 6" LIFTS TO PLACE SHRUB. DO NOT OVER COMPACT. WHEN THE PLANTING HOLE HAS BEEN BACKFILLED, POUR WATER AROUND THE ROOT BALL TO SETTLE THE SOIL.
10. EXISTING SOIL.

E SHRUB PLANTING

NTS 000-PL-02

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12/04/25

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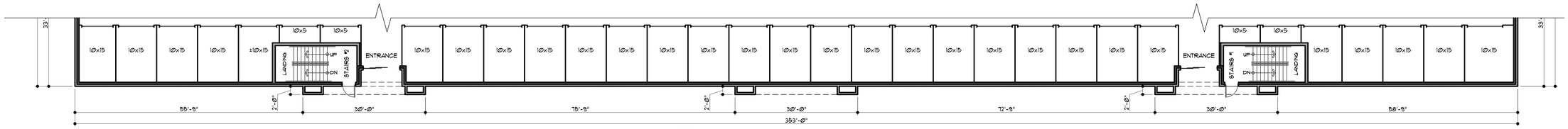
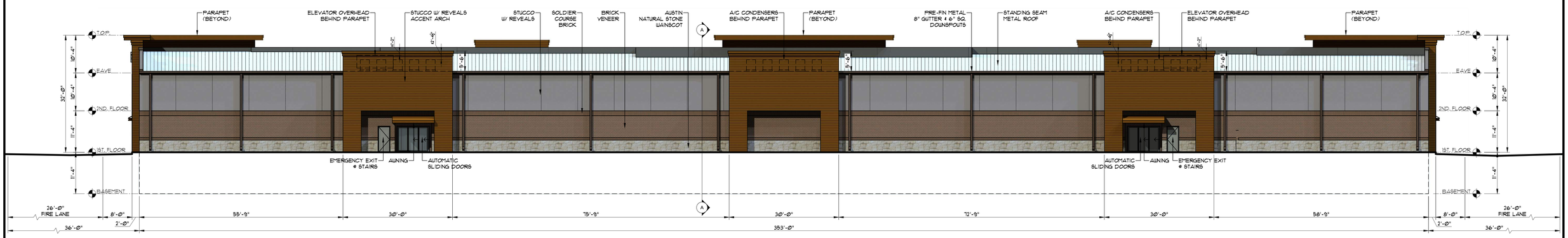


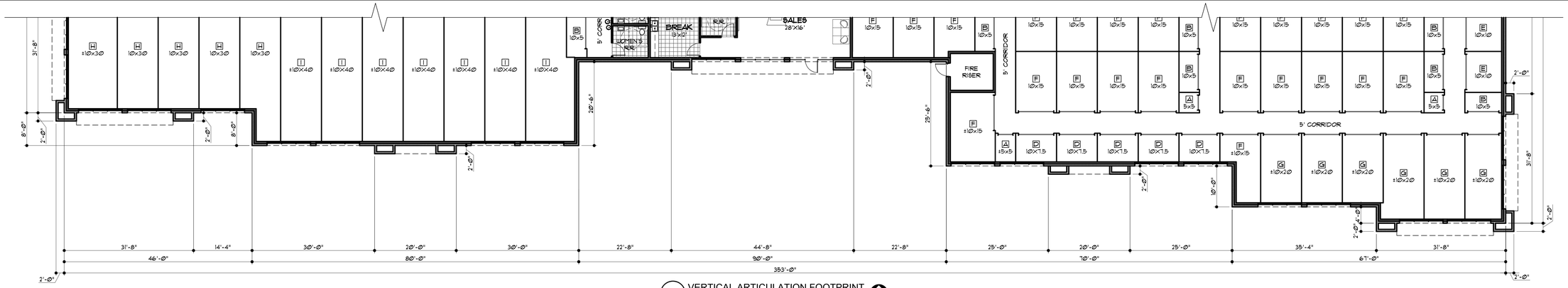
1A VERTICAL ARTICULATION FOOTPRINT
3/32" = 1'-0"



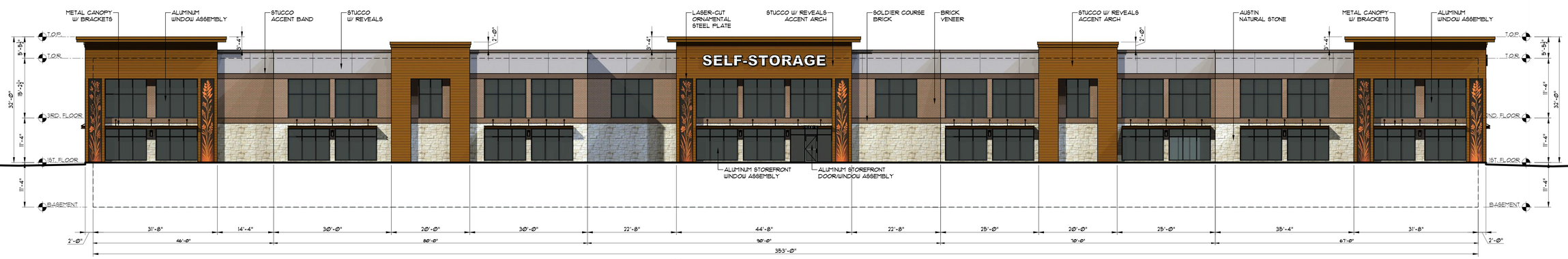
1B NORTH ELEVATION (REAR)
3/32" = 1'-0"

MATERIAL COVERAGE - NORTH ELEVATION		
ITEM	AREA S.F.	PERCENT.
ELEVATION AREA	8,448	
DOORS & WINDOWS (DED.)	177	
ACCOUNTABLE AREA	8271	100%
STUCCO (3-STAGE, ARCHES INCL.)	4,787	58%
BRICK (FIRED-CLAY)	2,489	30%
STONE (AUSTIN NATURAL)	995	12%

NOTE:
ANY EXTERNAL ELECTRICAL PANELS SHALL BE PAINTED TO MATCH MATERIAL AND COLOR OF BUILDING.



2A VERTICAL ARTICULATION FOOTPRINT
3/32" = 1'-0"



2B SOUTH ELEVATION (FM 3040)
3/32" = 1'-0"

MATERIAL COVERAGE - SOUTH ELEVATION		
ITEM	AREA S.F.	PERCENT.
ELEVATION AREA	10,688	
DOORS & WINDOWS (DED.)	3,661	
ACCOUNTABLE AREA	7,027	100%
STUCCO (3-STAGE, ARCHES INCL.)	4,138	59%
BRICK (FIRED-CLAY)	1,333	19%
STONE (AUSTIN NATURAL)	1556	22%

NO.	REVISION	NO.	REVISION

JL BUILDING SYSTEMS, LLC

ARCHITECTURAL:
JL BUILDING SYSTEMS, LLC
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4700 KEMBLE ST.
FORT WORTH, TX 76103
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PROPOSED NEW SELF-STORAGE BUILDING FOR:

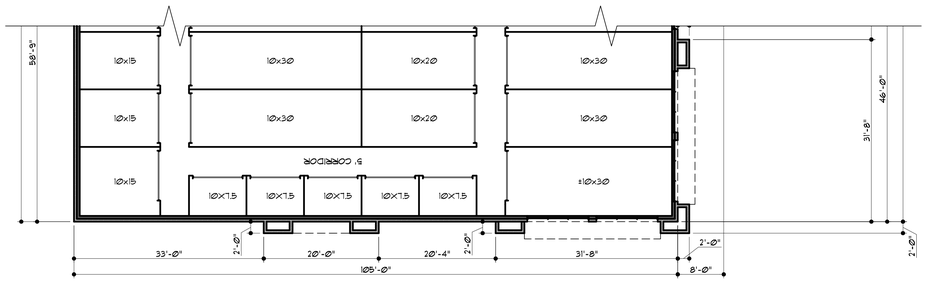
ORCHARD STORAGE

F.M. 3040 & OLD ORCHARD LANE
FLOWER MOUND, TX 75028

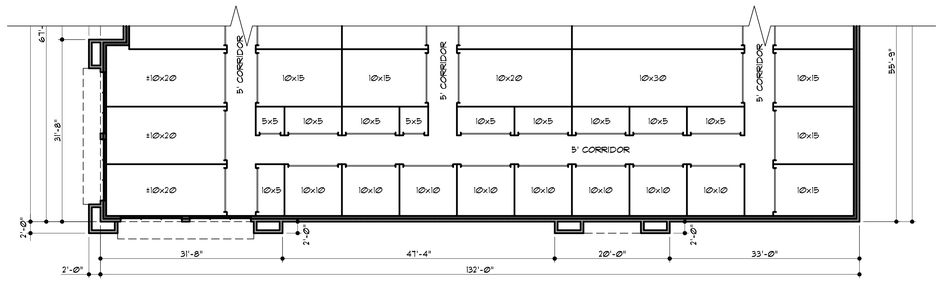
Date	10-15-2025
Scale	As Noted
Drawn	JLL
Job	25007

CONCEPTUAL BUILDING ELEVATIONS

Sheet: A2.1b

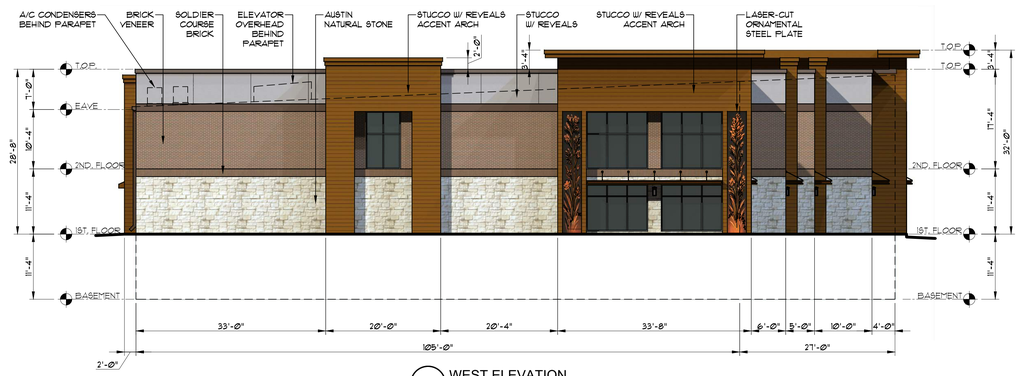


1A VERTICAL ARTICULATION FOOTPRINT
3/32" = 1'-0"

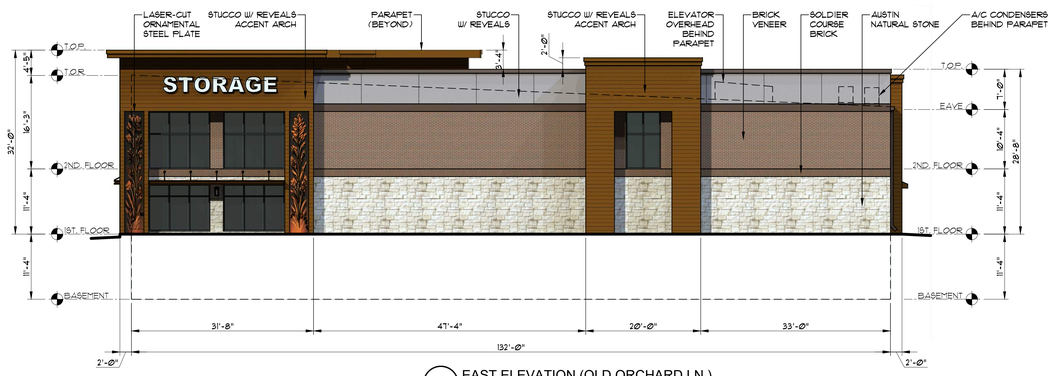


2A VERTICAL ARTICULATION FOOTPRINT
3/32" = 1'-0"

NOTE:
ANY EXTERNAL ELECTRICAL PANELS SHALL BE PAINTED TO MATCH MATERIAL AND COLOR OF BUILDING.



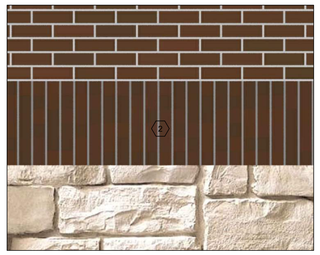
1B WEST ELEVATION
3/32" = 1'-0"



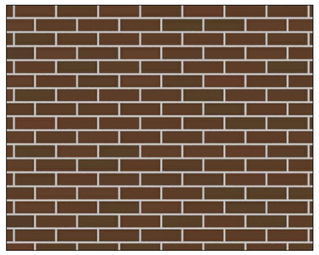
2B EAST ELEVATION (OLD ORCHARD LN.)
3/32" = 1'-0"

EXTERIOR BUILDING MATERIALS

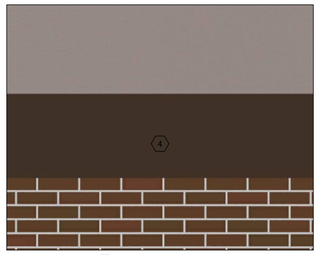
1 'AUSTIN' NATURAL STONE



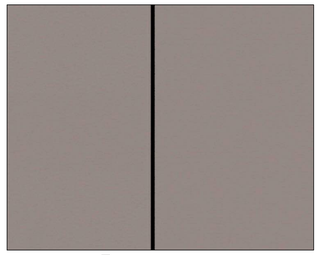
2 SOLDIER COURSE BRICK
BRAND: ACME
COLOR: CANYON BROWN



3 BRICK VENEER
BRAND: ACME
COLOR: CANYON BROWN



4 STUCCO BAND
BRAND: OMEGA
COLOR: COBBLESTONE PATH



5 STUCCO W/ REVEALS
BRAND: OMEGA
COLOR: ROYAL TAUPE

6 STUCCO W/ REVEALS
BRAND: OMEGA
COLOR: COBBLESTONE PATH

7 LASER CUT STEEL
BRAND: CORTEN
COLOR: DARK RUST & ORANGE

8 METAL AWNING
BRAND: CUSTOM MADE
COLOR: COBBLESTONE PATH

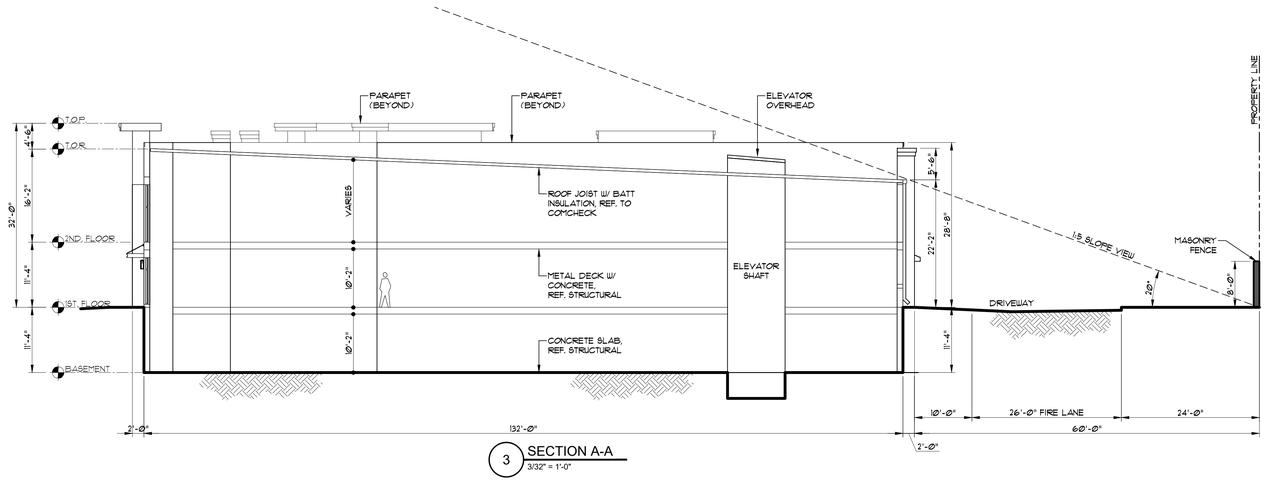
PARTIAL SOUTH ELEVATION

EXTERIOR MATERIALS LEGEND:

1. 'AUSTIN' NATURAL STONE
2. SOLDIER COURSE BRICK - 'ACME' CANYON BROWN
3. BRICK VENEER - 'ACME' CANYON BROWN
4. STUCCO BAND - 'OMEGA' COBBLESTONE PATH
5. STUCCO W/ REVEALS - 'OMEGA' ROYAL TAUPE
6. STUCCO W/ REVEALS - 'OMEGA' COBBLESTONE PATH
7. LASER CUT ORNAMENTAL STEEL PLATE
8. METAL AWNING

MATERIAL COVERAGE - WEST ELEVATION		
ITEM	AREA S.F.	PERCENT.
ELEVATION AREA	4,099	
DOORS & WINDOWS (DED.)	448	
ACCOUNTABLE AREA	3,611	100%
STUCCO (3-STAGE, ARCHES INCL.)	1,853	51%
BRICK (FIRED-CLAY)	852	24%
STONE (AUSTIN NATURAL)	906	25%

MATERIAL COVERAGE - EAST ELEVATION		
ITEM	AREA S.F.	PERCENT.
ELEVATION AREA	4,049	
DOORS & WINDOWS (DED.)	448	
ACCOUNTABLE AREA	3,601	100%
STUCCO (3-STAGE, ARCHES INCL.)	1,617	45%
BRICK (FIRED-CLAY)	1,019	28%
STONE (AUSTIN NATURAL)	965	27%



3 SECTION A-A
3/32" = 1'-0"

NO.	REVISION	NO.	REVISION

ARCHITECTURAL:
JL BUILDING SYSTEMS, LLC
CONTACT: JOSE LABASTIDA
4700 KEMBLE ST.
FORT WORTH, TX 76103
PH: 817-534-6579
EMAIL: JOSE@JLBUILDSYS.COM

PROPOSED NEW SELF-STORAGE BUILDING FOR:

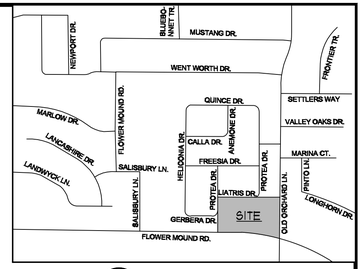
ORCHARD STORAGE

F.M. 3040 & OLD ORCHARD LANE
FLOWER MOUND, TX 75028

Date	10-15-2025
Scale	As Noted
Drawn	JLL
Job	25007

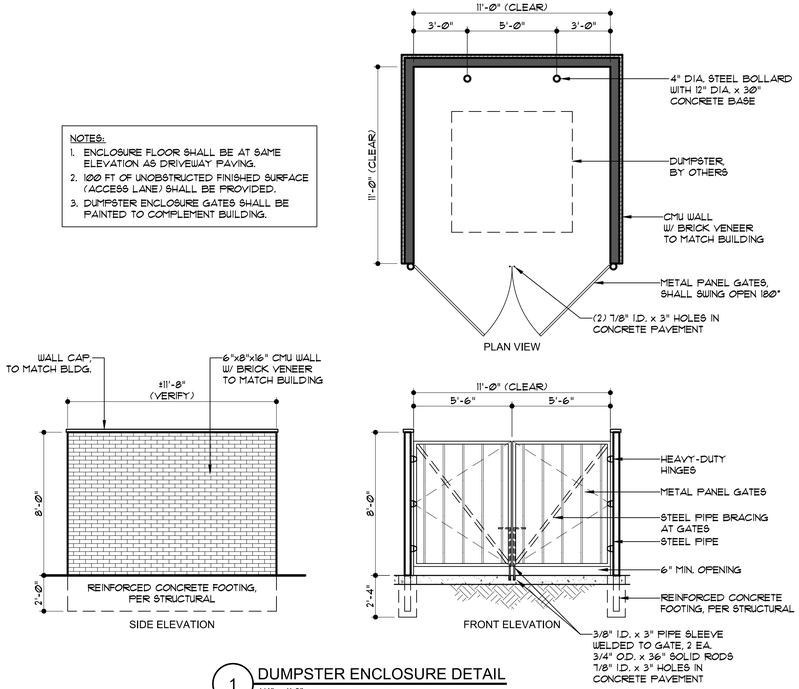
CONCEPTUAL BUILDING ELEVATIONS

Sheet: A2.2b

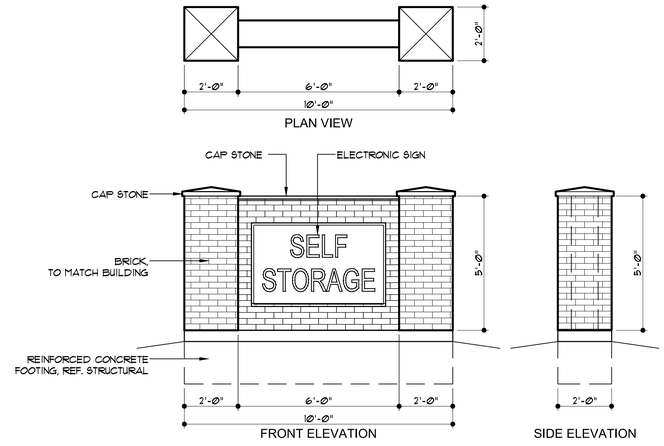


0 VICINITY MAP
NOT TO SCALE

NOTES:
1. ENCLOSURE FLOOR SHALL BE AT SAME ELEVATION AS DRIVEWAY PAVING.
2. 100 FT OF UNOBSTRUCTED FINISHED SURFACE (ACCESS LANE) SHALL BE PROVIDED.
3. DUMPSTER ENCLOSURE GATES SHALL BE PAINTED TO COMPLEMENT BUILDING.

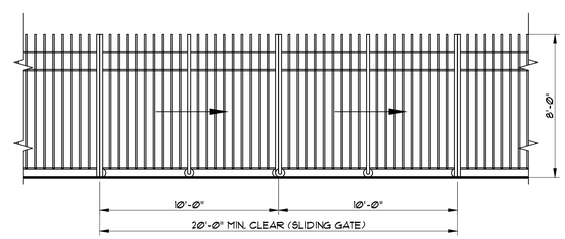


1 DUMPSTER ENCLOSURE DETAIL
1/4" = 1'-0"



2 MONUMENT SIGN
3/8" = 1'-0"

METAL FENCE AND GATE (EAST & WEST)
SHALL BE CONSTRUCTED OF SHEET METAL
W/ STEEL FRAME AND PAINTED TO COMPLEMENT THE BUILDING.



3 METAL FENCE / GATE
1/4" = 1'-0"

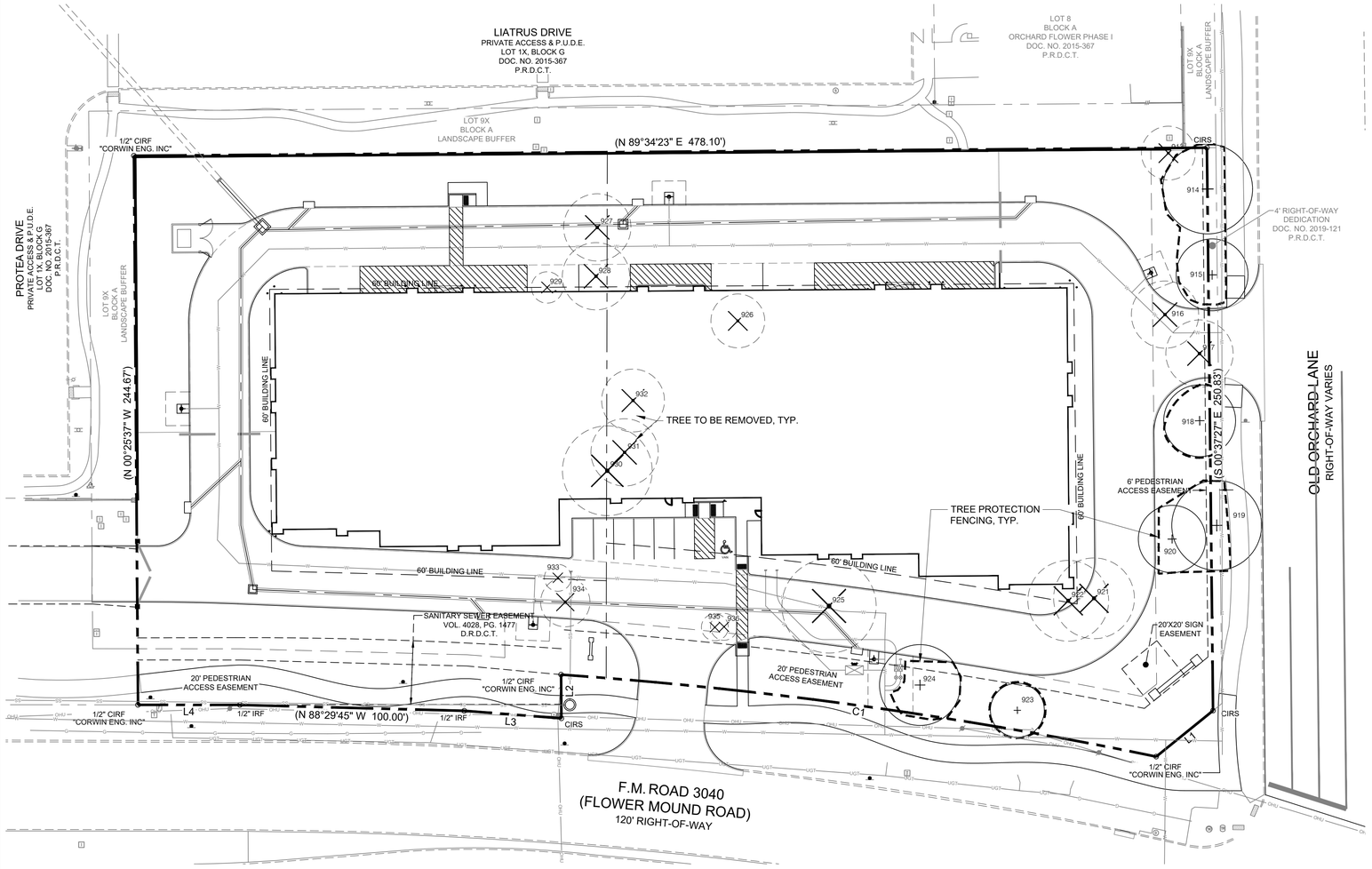
NO.	REVISION

PROPOSED NEW BUILDING FOR:
ORCHARD STORAGE
F.M. 3040 & OLD ORCHARD LANE
FLOWER MOUND, TX 75028

4700 KEMBLE ST.
FORT WORTH, TX 76103
PH: 817-534-6579
FAX: 817-386-5365
WWW.JLBUILDSYS.COM
JL BUILDING SYSTEMS, LLC

SITE DETAILS

Date	10-15-2025
Scale	As Noted
Drawn	JLL
Job	25007
Sheet	A0.2



TREE PROTECTION GENERAL NOTES

(A) PRIOR TO THE LAND CLEARING STAGE OF DEVELOPMENT, THE CONTRACTOR SHALL CLEARLY MARK ALL PROTECTED TREES FOR WHICH A TREE REMOVAL PERMIT HAS NOT BEEN ISSUED AND SHALL ERECT BARRIERS FOR THE PROTECTION OF THE TREES ACCORDING TO THE FOLLOWING:
(1) AROUND AN AREA AT OR GREATER THAN A SIX-FOOT RADIUS OF ALL SPECIES OF MANGROVES AND PROTECTED CABBAGE PALMS;
(2) AROUND AN AREA AT OR GREATER THAN THE FULL DRIPLINE OF ALL PROTECTED NATIVE PINES;
(3) AROUND AN AREA AT OR GREATER THAN TWO-THIRDS OF THE DRIPLINE OF ALL OTHER PROTECTED SPECIES.

(B) NO PERSON SHALL ATTACH ANY SIGN, NOTICE OR OTHER OBJECT TO ANY PROTECTED TREE OR FASTEN ANY WIRES, CABLES, NAILS OR SCREWS TO ANY PROTECTED TREE IN ANY MANNER THAT COULD PROVE HARMFUL TO THE PROTECTED TREE, EXCEPT AS NECESSARY IN CONJUNCTION WITH ACTIVITIES IN THE PUBLIC INTEREST.

(C) DURING THE CONSTRUCTION STAGE OF DEVELOPMENT, THE CONTRACTOR SHALL NOT CAUSE OR PERMIT THE CLEANING OF EQUIPMENT OR MATERIAL WITHIN THE OUTSIDE PERIMETER OF THE CROWN (DRIPLINE) OR ON THE NEARBY GROUND OF ANY TREE OR GROUP OF TREES WHICH IS TO BE PRESERVED. WITHIN THE OUTSIDE PERIMETER OF THE CROWN (DRIPLINE) OF ANY TREE OR ON NEARBY GROUND, THE CONTRACTOR SHALL NOT CAUSE OR PERMIT STORAGE OF BUILDING MATERIAL AND/OR EQUIPMENT, OR DISPOSAL OF WASTE MATERIAL SUCH AS PAINTS, OIL, SOLVENTS, ASPHALT, CONCRETE, MORTAR OR ANY OTHER MATERIAL HARMFUL TO THE LIFE OF THE TREE.

(D) NO PERSON SHALL PERMIT ANY UNNECESSARY FIRE OR BURNING WITHIN 30 FEET OF THE DRIPLINE OF A PROTECTED TREE.

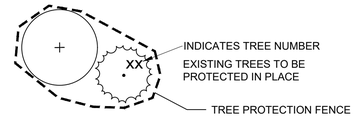
(E) ANY LANDSCAPING ACTIVITIES WITHIN THE BARRIER AREA SHALL BE ACCOMPLISHED WITH HAND LABOR.

(F) PRIOR TO ISSUING A CERTIFICATE OF OCCUPANCY OR COMPLIANCE FOR ANY DEVELOPMENT, BUILDING OR STRUCTURE, ALL TREES DESIGNATED TO BE PRESERVED THAT WERE DESTROYED DURING CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR WITH TREES OF EQUIVALENT DIAMETER AT BREAST HEIGHT TREE CALIPER AND OF THE SAME SPECIES AS SPECIFIED BY THE COUNTY ADMINISTRATOR, BEFORE OCCUPANCY OR USE, UNLESS APPROVAL FOR THEIR REMOVAL HAS BEEN GRANTED UNDER PERMIT.

(G) THE COUNTY ADMINISTRATOR MAY CONDUCT PERIODIC INSPECTIONS OF THE SITE DURING LAND CLEARANCE AND CONSTRUCTION.

(H) IF, IN THE OPINION OF THE COUNTY ADMINISTRATOR, DEVELOPMENT ACTIVITIES WILL SO SEVERELY STRESS SLASH PINES OR ANY OTHER PROTECTED TREE SUCH THAT THEY ARE MADE SUSCEPTIBLE TO INSECT ATTACK, PREVENTATIVE SPRAYING OF THESE TREES BY THE CONTRACTOR MAY BE REQUIRED.

LEGEND



NOTE: TREE PROTECTION FOR ANY PRESERVED OR RELOCATED TREES MUST BE PROVIDED PER DETAILS AND SPECIFICATIONS ON SHEET TD-2. THESE MUST BE UP PRIOR TO THE COMMENCEMENT OF ANY WORK AND MAINTAINED THROUGHOUT CONSTRUCTION.

NOTE: ALL TREE TRIMMING MUST BE APPROVED BY THE OWNER AND LOCAL JURISDICTION PRIOR TO COMMENCEMENT OF WORK. ALL TREE TRIMMING MUST BE DONE BY AN ISA CERTIFIED ARBORIST IN ACCORDANCE WITH LOCAL TREE PRESERVATION ORDINANCE.

TREE DISPOSITION CHART

TAG#	SPECIES	DBH	CONDITION	STATUS	CONDITION	MITIGATION	TREE CREDIT	EASTING	NORTHING
913	LACEBARK ELM, ULMUS PARVIFOLIA	12	GOOD	UNPROTECTED	REMOVE	0		2419728.248	7053814.34
914	LIVE OAK, QUERCUS VIRGINIANA	20	GOOD	PROTECTED	REMAIN		1	2419748.153	7053799.48
915	LIVE OAK, QUERCUS VIRGINIANA	16	GOOD	PROTECTED / OFFSITE	REMAIN		0	2419736.537	7053775.303
916	LACEBARK ELM, ULMUS PARVIFOLIA	15	GOOD	UNPROTECTED	REMOVE	0		2419707.617	7053738.877
917	LIVE OAK, QUERCUS VIRGINIANA	15	FAIR	PROTECTED	REMOVE	YES		2419761.121	7053705.424
918	LIVE OAK, QUERCUS VIRGINIANA	16	GOOD	PROTECTED	REMAIN		1	2419735.406	7053702.881
919	LIVE OAK, QUERCUS VIRGINIANA	20	GOOD	PROTECTED	REMAIN		1	2419742.811	7053655.684
920	LIVE OAK, QUERCUS VIRGINIANA	15	GOOD	PROTECTED	REMAIN		1	2419718.971	7053650.62
921	LIVE OAK, QUERCUS VIRGINIANA	18	GOOD	PROTECTED	REMOVE	YES		2419690.302	7053618.2
922	LIVE OAK, QUERCUS VIRGINIANA	18	GOOD	PROTECTED	REMOVE	YES		2419669.981	7053624.464
923	CRAPEMYRTLE, LAGERSTROEMIA INDICA	12	GOOD	UNPROTECTED	REMAIN		0	2419655.768	7053566.777
924	LIVE OAK, QUERCUS VIRGINIANA	18	GOOD	PROTECTED	REMAIN		1	2419606.187	7053582.819
925	PINE (ELDARICA), PINUS ELDARICA	21	POOR	PROTECTED	REMOVE	YES		2419570.348	7053624.524
926	LACEBARK ELM, ULMUS PARVIFOLIA	12	GOOD	UNPROTECTED	REMOVE	0		2419529.322	7053752.024
927	AMERICAN ELM,	15	FAIR	PROTECTED	REMOVE	YES		2419465.679	7053787.154
928	LIVE OAK, QUERCUS VIRGINIANA	15	GOOD	PROTECTED	REMOVE	YES		2419469.458	7053758.099
929	PEAR, PYRUS CALLERYANA	7	GOOD	UNPROTECTED	REMOVE	0		2419441.255	7053758.068
930	LIVE OAK, QUERCUS VIRGINIANA	20	GOOD	PROTECTED	REMOVE	YES		2419470.784	7053685.347
931	LIVE OAK, QUERCUS VIRGINIANA	15	GOOD	PROTECTED	REMOVE	YES		2419490.323	7053691.079
932	LIVE OAK, QUERCUS VIRGINIANA	14	GOOD	PROTECTED	REMOVE	YES		2419492.199	7053710.389
933	HACKBERRY, CELTIS SP	6	FAIR	UNPROTECTED	REMOVE	0		2419450.635	7053635.582
934	TALLOW, TRIADICA SEBIFERA	11	FAIR	UNPROTECTED	REMOVE	0		2419454.139	7053626.171
935	HACKBERRY, CELTIS SP	6	FAIR	UNPROTECTED	REMOVE	0		2419512.598	7053610.98
936	WILLOW, SALIX NIGRA	6	FAIR	UNPROTECTED	REMOVE	0		2419522.973	7053614.4

TOTAL PROTECTED TREES REMOVED: 9
TOTAL REPLACEMENT TREES REQUIRED: 9 TREES
TOTAL TREE CREDITS: 5

GRAPHIC SCALE
30 0 15 30 60
1 inch = 30 ft.

HOMEYER ENGINEERING, INC.
TBPE FIRM REGISTRATION NO. F-8440
P.O. BOX 294527 • LEWISVILLE • TEXAS • 75029
972-906-9985 PHONE • 972-906-9987 FAX
WWW.HEI.US.COM

CHARCO FM STORAGE
2.73 ACRES
TOWN OF FLOWER MOUND
DENTON COUNTY, TEXAS

TREE DISPOSITION PLAN

REGISTERED LANDSCAPE ARCHITECT
STEPHEN W. SALES
3470
STATE OF TEXAS
12/04/25

DRAWN: JML
DATE: 12/04/25
HEI #: 25-0402

SHEET NO:
TD-1

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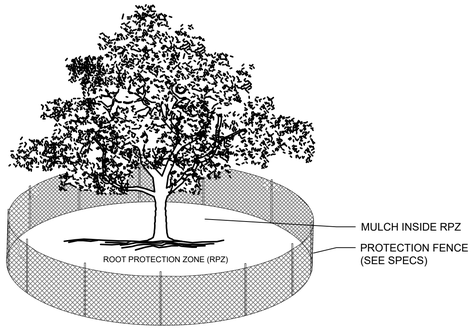
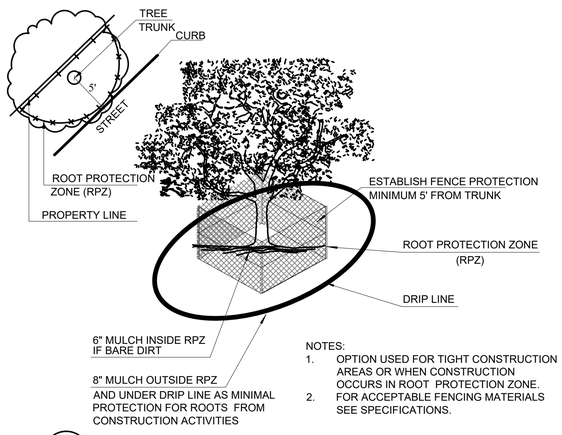


NOTES:
1. THE FENCING LOCATION SHOWN ABOVE IS DIAGRAMMATIC ONLY AND WILL CONFORM TO THE DRIP LINE AND BE LIMITED TO PROJECT BOUNDARY. WHERE MULTIPLE ADJACENT TREES WILL BE ENCLOSED BY FENCING, THE FENCING SHALL BE CONTINUOUS AROUND ALL TREES.
2. FOR ACCEPTABLE FENCING MATERIALS SEE SPECIFICATIONS.

A TREE PROTECTION FENCE
SCALE: NOT TO SCALE

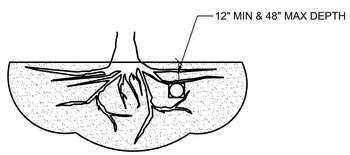


NOTES:
1. OPTION USED FOR TIGHT CONSTRUCTION AREAS OR WHEN CONSTRUCTION OCCURS IN ROOT PROTECTION ZONE.
2. FOR ACCEPTABLE FENCING MATERIALS SEE SPECIFICATIONS.

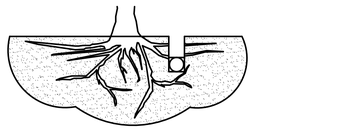
B TREE PROTECTION FENCE - TIGHT CONSTRUCTION
SCALE: NOT TO SCALE

TREES THAT ARE MARKED TO BE PRESERVED ON A SITE PLAN AND FOR WHICH UTILITIES MUST PASS TROUGH THEIR ROOT PROTECTION ZONES MAY REQUIRE TUNNELING AS OPPOSED TO OPEN TRENCHES. THE DECISION TO TUNNEL WILL BE DETERMINED ON A CASE BY CASE BASIS BY THE ENGINEER.

TUNNELS SHALL BE DUG THROUGH THE ROOT PROTECTION ZONE IN ORDER TO MINIMIZE ROOT DAMAGE.



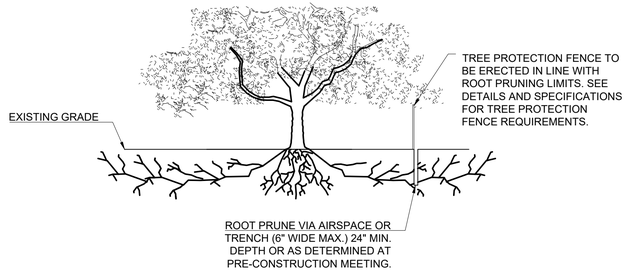
TUNNEL TO MINIMIZE ROOT DAMAGE (TOP) AS OPPOSED TO SURFACE-DUG TRENCHES IN ROOT PROTECTION ZONE WHEN THE 5' MINIMUM DISTANCE FROM TRUNK CAN NOT BE ACHIEVED.



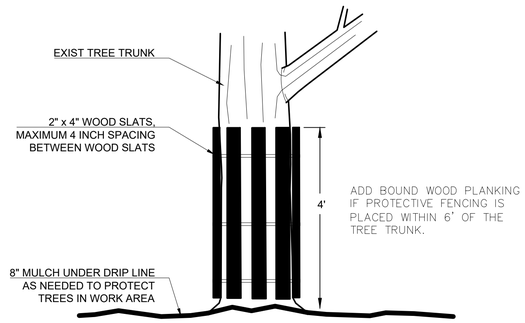
OPEN TRENCHING MAY BE USED IF EXPOSED TREE ROOTS DO NOT EXCEED 3" OR ROOTS CAN BE BENT BACK.

C BORING THROUGH ROOT PROTECTION ZONE
SCALE: NOT TO SCALE

NOTES
1. RETENTION AREAS WILL BE SET AS PART OF THE REVIEW PROCESS AND PRE-CONSTRUCTION MEETING.
2. BOUNDARIES OF RETENTION AREAS MUST BE STAKED AT THE PRE-CONSTRUCTION MEETING AND FLAGGED PRIOR TO ROOT PRUNING.
3. EXACT LOCATION OF ROOT PRUNING SHALL BE DETERMINED IN THE FIELD IN COORDINATION WITH THE FORESTRY INSPECTOR .
4. TRENCH SHOULD BE IMMEDIATELY BACKFILLED WITH EXCAVATED SOIL OR OTHER ORGANIC SOIL AS SPECIFIED PER PLAN OR BY THE FORESTRY INSPECTOR.
5. ROOTS SHALL BE CLEANLY CUT USING VIBRATORY KNIFE OR OTHER ACCEPTABLE EQUIPMENT. ROT PRUNING METHODS AND MEANS MUST BE IN ACCORDANCE WITH ANSI STANDARD A3000.
6. ALL PRUNING MUST BE EXECUTED AT LOD SHOWN ON PLANS OR AS AUTHORIZED IN WRITING BY THE FORESTRY INSPECTOR.
7. SUPPLEMENTAL WATERING MAY BE REQUIRED FOR ROOT PRUNED TREES THROUGHOUT THE GROWING SEASON DURING CONSTRUCTION AND SUBSEQUENT WARRANTY AND MAINTENANCE PERIOD.



D ROOT PRUNING DETAIL
SCALE: NOT TO SCALE



NOTE
IN SITUATIONS WHERE A PRESERVED TREE REMAINS IN IMMEDIATE AREA OF INTENDED CONSTRUCTION AND THE CITY FORESTER DETERMINES THE TREE BARK TO BE IN DANGER OF DAMAGE BY DEVELOPMENT ACTIVITIES, THE CONTRACTOR OR SUBCONTRACTOR SHALL PROTECT THE TREE BY WRAPPING TREE TRUNK WITH 2" x 4" STUDS AND ROPE OR BAND IN PLACE AS NEEDED TO PROTECT TREE BARK IN WORK AREAS.

E TREE BARK PROTECTION
SCALE: NOT TO SCALE

TREE PROTECTION SPECIFICATIONS

MATERIALS
1. FABRIC: 4 FOOT HIGH ORANGE PLASTIC FENCING AS SHOWN ON THE PLANS AND SHALL BE WOVEN WITH 2 INCH MESH OPENINGS SUCH THAT IN A VERTICAL DIMENSION OF 23 INCHES ALONG THE DIAGONALS OF THE OPENINGS THERE SHALL BE AT LEAST 7 MESHES.
2. POSTS: POSTS SHALL BE A MINIMUM OF 72 INCHES LONG AND STEEL 'T' SHAPED WITH A MINIMUM WEIGHT OF 1.3 POUNDS PER LINEAR FOOT.
3. TIE WIRE: WIRE FOR ATTACHING THE FABRIC TO THE T-POSTS SHALL BE NOT LESS THAN NO. 12 GAUGE GALVANIZED WIRE,
4. USED MATERIALS: PREVIOUSLY-USED MATERIALS, MEETING THE ABOVE REQUIREMENTS AND WHEN APPROVED BY THE OWNER, MAY BE USED.

CONSTRUCTION METHODS
1. ALL TREES AND SHRUBS SHOWN TO REMAIN WITHIN THE PROXIMITY OF THE CONSTRUCTION SITE SHALL BE PROTECTED PRIOR TO BEGINNING ANY DEVELOPMENT ACTIVITY.
2. EMPLOY THE SERVICES OF AN ISA (INTERNATIONAL SOCIETY OF ARBORICULTURE) CERTIFIED ARBORIST AND OBTAIN ALL REQUIRED PERMITS TO PRUNE THE EXISTING TREES FOR CLEANING, RAISING AND THINNING, AS MAY BE REQUIRED.
3. PROTECTIVE FENCING SHALL BE ERECTED OUTSIDE THE CRITICAL ROOT ZONE (CRZ, EQUAL TO 1' FROM THE TRUNK FOR EVERY 1" OF DBH) AT LOCATIONS SHOWN IN THE PLANS OR AS DIRECTED BY THE LANDSCAPE CONSULTANT AND/OR CITY ARBORIST, AND IN ACCORDANCE WITH THE DETAILS SHOWN ON THE PLANS. FENCING SHALL BE MAINTAINED AND REPAIRED BY THE CONTRACTOR DURING SITE CONSTRUCTION. TREES IN CLOSE PROXIMITY SHALL BE FENCED TOGETHER, RATHER THAN INDIVIDUALLY.
4. PROTECTIVE FENCE LOCATIONS IN CLOSE PROXIMITY TO STREET INTERSECTIONS OR DRIVES SHALL ADHERE TO THE APPLICABLE JURISDICTION'S SIGHT DISTANCE CRITERIA.
5. THE PROTECTIVE FENCING SHALL BE ERECTED BEFORE SITE WORK COMMENCES AND SHALL REMAIN IN PLACE DURING THE ENTIRE CONSTRUCTION PHASE.
6. THE INSTALLATION POSTS SHALL BE PLACED EVERY 6 FEET ON CENTER AND EMBEDDED TO 18 INCHES DEEP. MESH FABRIC SHALL BE ATTACHED TO THE INSTALLATION POSTS BY THE USE OF SUFFICIENT WIRE TIES TO SECURELY FASTEN THE FABRIC TO THE T-POSTS TO HOLD THE FABRIC IN A STABLE AND UPRIGHT POSITION.
7. WITHIN THE CRZ:
   a. DO NOT CLEAR, FILL OR GRADE IN THE CRZ OF ANY TREE.
   b. DO NOT STORE, STOCKPILE OR DUMP ANY JOB MATERIAL, SOIL OR RUBBISH UNDER THE SPREAD OF THE TREE BRANCHES.
   c. DO NOT PARK OR STORE ANY EQUIPMENT OR SUPPLIES UNDER THE TREE CANOPY.
   d. DO NOT SET UP ANY CONSTRUCTION OPERATIONS UNDER THE TREE CANOPY (SUCH AS PIPE CUTTING AND THREADING, MORTAR MIXING, PAINTING OR LUMBER CUTTING).
   e. DO NOT NAIL OR ATTACH TEMPORARY SIGNS METERS, SWITCHES, WIRES, BRACING OR ANY OTHER ITEM TO THE TREES.
   f. DO NOT PERMIT RUNOFF FROM WASTE MATERIALS INCLUDING SOLVENTS, CONCRETE WASHOUTS, ASPHALT TACK COATS (MC-30 OIL), ETC. TO ENTER THE CRZ. BARRIERS ARE TO BE PROVIDED TO PREVENT SUCH RUNOFF SUBSTANCES FROM ENTERING THE CRZ WHENEVER POSSIBLE, INCLUDING IN AN AREA WHERE RAIN OR SURFACE WATER COULD CARRY SUCH MATERIALS TO THE ROOT SYSTEM OF THE TREE.
8. ROUTE UNDERGROUND UTILITIES TO AVOID THE CRZ. IF DIGGING IS UNAVOIDABLE, BORE UNDER THE ROOTS, OR HAND DIG TO AVOID SEVERING THEM.
9. WHERE EXCAVATION IN THE VICINITY OF TREES MUST OCCUR, SUCH AS FOR IRRIGATION INSTALLATION, PROCEED WITH CAUTION, AND USING HAND TOOLS ONLY.
10. THE CONTRACTOR SHALL NOT CUT ROOTS LARGER THAN ONE INCH IN DIAMETER WHEN EXCAVATION OCCURS NEAR EXISTING TREES. ALL ROOTS LARGER THAN ONE INCH IN DIAMETER ARE TO BE CUT CLEANLY. FOR OAKS ONLY, ALL WOUNDS SHALL BE PAINTED WITH WOUND SEALER WITHIN 30 MINUTES
11. REMOVE ALL TREES, SHRUBS OR BUSHES TO BE CLEARED FROM PROTECTED ROOT ZONE AREAS BY HAND.
12. TREES DAMAGED OR KILLED DUE TO CONTRACTOR'S NEGLIGENCE DURING CONSTRUCTION SHALL BE MITIGATED AT THE CONTRACTOR'S EXPENSE AND TO THE PROJECT OWNER'S AND LOCAL JURISDICTION'S SATISFACTION.
13. ANY TREE REMOVAL SHALL BE APPROVED BY THE OWNER AND LOCAL JURISDICTION PRIOR TO ITS REMOVAL, AND THE CONTRACTOR SHALL HAVE ALL REQUIRED PERMITS FOR SUCH ACTIVITIES.
14. COVER EXPOSED ROOTS AT THE END OF EACH DAY WITH SOIL, MULCH OR WET BURLAP.
15. IN CRITICAL ROOT ZONE AREAS THAT CANNOT BE PROTECTED DUING CONSTRUCTION AND WHERE HEAVY TRAFFIC IS ANTICIPATED, COVER THE SOIL WITH EIGHT INCHES OF ORGANIC MULCH TO MINIMIZE SOIL COMPACTION. THIS EIGHT INCH DEPTH OF MULCH SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
16. WATER ALL TREES IMPACTED BY CONSTRUCTION ACTIVITIES, DEEPLY ONCE A WEEK DURING PERIODS OF HOT DRY WEATHER. SPRAY TREE CROWNS WITH WATER PERIODICALLY TO REDUCE DUST ACCUMULATION ON THE LEAVES.
17. WHEN INSTALLING CONCRETE ADJACENT TO THE ROOT ZONE OF A TREE, USE A PLASTIC VAPOR BARRIER BEHIND THE CONCRETE TO PROHIBIT LEACHING OF LIME INTO THE SOIL.
18. CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL TREE PROTECTION FENCING WHEN ALL THREATS TO THE EXISTING TREES FROM CONSTRUCTION-RELATED ACTIVITIES HAVE BEEN REMOVED.

TREE RELOCATION GUIDELINES

1. TREES SHALL NOT BE UNNECESSARILY DAMAGED DURING REMOVAL, TRANSPORT OR REPLANTING OF THE TREE.
2. IF THE TREE HAS A DORMANT PERIOD, THEY SHOULD BE TRANSPLANTED DURING THAT TIME. TREES SHOULD NOT BE TRANSPLANTED DURING PERIODS OF STRONG WINDS, DRY WINTER WINDS OR DURING DROUGHT.
3. ADEQUATE SPACES FOR ROOT AND CROWN DEVELOPMENT SHALL BE PROVIDED.
4. TREES SHALL BE ROOT AND CANOPY PRUNED IN ACCORDANCE WITH SOUND ARBORICULTURAL STANDARDS PRIOR TO TRANSPLANTING.
5. DURING AND FOLLOWING TRANSPLANTING, THE ROOT BALL AND TRUNK SHALL BE PROTECTED. THE ROOT BALL MUST BE KEPT MOIST AT ALL TIMES.
6. TRANSPLANTED TREES SHALL BE BRACED FOR A MINIMUM OF ONE (1) YEAR.
7. TRANSPLANTED TREES SHALL NOT BE FERTILIZED AT PLANTING TIME, BUT SHALL BE WATERED SUFFICIENTLY UNTIL THE TREE GROWTH IS REESTABLISHED.
8. ALL CROWN PRUNING SHALL BE DONE IN ACCORDANCE WITH "THE AMERICAN NATIONAL STANDARDS INSTITUTE A-300, TREE SHRUB AND OTHER WOODY PLANT MAINTENANCE-STANDARD PRACTICES", AND "Z-133.1 PRUNING, REPAIRING, MAINTAINING AND REMOVING TREES, AND CUTTING BRUSH-SAFETY REQUIREMENTS" OR PALM PRUNING IN ACCORDANCE WITH THE STANDARDS IN, RICHARD HARRIS, "ARBORICULTURE INTEGRATED MANAGEMENT OF LANDSCAPE TREES, SHRUBS AND VINES", AS AMENDED.
9. CONTRACTOR IS RESPONSIBLE FOR REGULAR WATERING AND MAINTENANCE OF TRANSPLANTED TREES DURING STORAGE PERIOD.

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CHARCO FM STORAGE
2.73 ACRES
TOWN OF FLOWER MOUND
DENTON COUNTY, TEXAS

TREE DISPOSITION
DETAILS AND
SPECIFICATIONS

REGISTERED LANDSCAPE ARCHITECT
STEPHEN W. SALTER
3470
STATE OF TEXAS

12/04/25

DRAWN: JML
DATE: 12/04/25
HEI #: 25-0402

SHEET NO:
TD-2

EXHIBIT "B"
Development Standards

Orchard Flower

Planned Development District No. 120 (PD-120)
Single-Family Residential District-5 (SF-5) and
Commercial District-1 (C-1) Uses

The Development depicted in Exhibit "C" shall be in accordance with the Town of Flower Mound's Master Plan and Land Development Regulations as amended, and shall be subject to the following requirements and conditions.

A. Single-Family Residential District-5 (SF-5) uses. Development of the area designated on the Concept Plan, attached hereto as Exhibit "C," for Single-Family Residential District-5 uses, comprising approximately 24.55± acres, shall be in compliance with all regulations applicable to Single-Family Residential District-5 (SF-5) uses contained in the Town's Land Development Regulations as amended, except as otherwise provided in this Ordinance.

1. **Permitted Uses:** Only the following permitted uses may be allowed by right in areas designated on Exhibit "C" as Single-Family Residential District-5 (SF-5) uses:

    a. Dwelling, single-family detached
    b. Model home
    c. Swimming pool, private, subject to section 98-996
    d. Off-street parking, accessory
    e. Accessory use, general, subject to section 98-972

2. **Specific Uses:** No specific uses requiring the issuance of a specific use permit shall be permitted in areas designated on Exhibit "C" as Single-Family Residential District-5 (SF-5) uses.

3. **Temporary Uses:** Only the following temporary uses may be permitted in areas designated on Exhibit "C" as Single-Family Residential District-5 (SF-5) uses subject to approval of a temporary use permit in accordance with the procedures and standards of section 78-87 of the Code, "Temporary Use Permits":

    a. Asphalt/concrete batch plant, temporary, subject to section 98-974
    b. Building material yard and construction office
    c. Field office, temporary

4. Minimum and maximum dimensions.

    a. **Minimum lot area per dwelling.** The minimum lot area per dwelling unit in the area designated for Single-Family Residential District-5 (SF-5) uses shall be 5,000 square feet, subject to section 98-1023.

b. **Minimum lot width.** The minimum lot width for residential uses in the area designated for Single-Family Residential District-5 (SF-5) uses shall be 50 feet, subject to section 98-1024.

c. **Minimum floor area per unit.** The minimum floor area per dwelling unit in the area designated for Single-Family Residential District-5 (SF-5) uses shall be 1,500 square feet, subject to section 98-1025.

d. **Minimum front yard.** The minimum front yard for all uses in the area designated for Single -Family Residential District -5 (SF -5) uses shall be 20 feet, subject to section 98 -1026, except that the minimum front yard setback for front porches shall be 15 feet.

e. **Minimum side yard.** The minimum side yard for residential uses in the area designated for Single-Family Residential District-5 (SF-5) uses shall be five feet, subject to section 98-1027.

f. **Minimum rear yard.** The minimum rear yard in the area designated for Single-Family Residential District-5 (SF-5) uses shall be 20 feet, subject to section 98-1028.

g. **Maximum lot coverage.** The maximum lot coverage in the area designated for Single -Family Residential District -5 (SF -5) uses shall be as designated below, subject to section 98 -1029, except that the 50 percent limitation set forth in section 98- 1029(b) does not apply to single family detached dwellings.

1) The maximum lot coverage for 50- foot -wide lots shall be 53%

2) The maximum lot coverage for lots wider than 50 feet and up to 55 feet wide shall be 54. 5%.

3) The maximum lot coverage for lots wider than 55 feet and up to 60 feet wide shall be 55. 5 %.

4) The maximum lot coverage for lots wider than 60 feet shall be 57%.

h. **Maximum floor area ratio.** There shall be no maximum floor area requirement in the area designated for Single-Family Residential District-5 (SF-5) uses.

i. **Maximum height.** The maximum height of buildings and structures in the area designated for Single-Family Residential District-5 (SF-5) uses shall be three stories or 35 feet, subject to section 98-1031.

B. Commercial District C-1 uses. Development of the commercial area designated on the Concept Plan, attached hereto as Exhibit "C," comprising approximately 2.734 acres (Lots 1 and 2, Block A), shall be in compliance with all regulations applicable to Commercial District-1 (C-1) uses contained in the Town's Land Development Regulations as amended, except as otherwise provided in this Ordinance.

1. **Permitted Uses:** All uses permitted in the C-1 district per Section 98-632 of the Town's Land Development Regulations, except the following prohibited uses:
   a. alcoholic beverage establishment,
   b. animal control facility,
   c. mortuary or funeral home,
   d. pet store,
   e. restaurant fast food
   f. heater;

   The following additional use shall be permitted within Commercial-1 (C-1 District
   a. Mini-warehouse (self-service storage facility) as a permitted use through this PD.with the following conditions:
      1. All storage units shall be fully enclosed within buildings
      2. No outdoor storage of vehicles, boats, RVs, or equipment permitted
      3. No truck or trailer rental operations shall be permitted unless this Planned Development is amended to allow such use.
      4. Customer access through electronic gates shall be limited to 6:00 AM to 10:00 PM daily unless otherwise approved by the Town Manager
      5. The use shall comply with all other conditions set forth in this ordinance

2. Specific Uses:

No other uses requiring an SUP shall be permitted within PD-120

3. Temporary Uses: Only the following temporary uses may be permitted in areas designated on Exhibit “C” as Commercial District- 1 (C-1) uses subject to approval of a temporary use permit in accordance with the procedures and standards of section 78-87 of the Code, “Temporary Use Permits”:

   a. Asphalt/concrete batch plant, temporary, subject to section 98-974
   b. Building material yard and construction office
   c. Field office, temporary

4. Minimum and maximum dimensions.

   a. Minimum front yard: Minimum 60 feet from FM 3040
   b. Minimum side yard (north, adjacent to residential): Minimum 60 feet
   c. Minimum side yard (west): Minimum 60 feet
   d. Minimum side yard (east): Minimum 60 feet
   e. Maximum lot coverage: 50 percent, subject to section 98-1029
   f. Maximum floor area ratio: 1:1

G. Maximum height: Buildings shall not exceed **three (3) stories, including any basement**, and shall not exceed a maximum height of **thirty-two feet (32')**. Building height shall be measured in accordance with Section 98-1031 of the Town's Land Development Regulations.

C. PROHIBITED USES: Any use not indicated within the lists of Permitted Uses, Specific Uses, or Temporary Uses identified in Paragraphs A and/or B, above, shall not be permitted within this Planned Development District.

D. Architectural Standards: Development of non-residential buildings within Planned Development District No. 120 (PD-120) shall be subject to the Town's Urban Design Plan and Chapter 98 Division 8 Exterior Building Material requirements with the following specific building component elements for a mini-warehouse facility:

1. **Mini-warehouse Specific Architectural Standards:**
   a. All building elevations shall comply with the town's Urban Design Plan and Chapter 98 Division 8 Exterior Building Material requirements with the exceptions listed in this ordinance.
   b. Roll-up doors shall be oriented away from public view and substantially screened from adjacent streets and residential areas Doors visible through architectural glazing or integrated into building façades shall be permitted, provided such doors are treated in a manner that maintains consistency with the overall architectural design intent.
   c. Building facades shall include articulation through offsets, pilasters, decorative banding, or changes in material texture/color
   d. Rooftop mechanical equipment shall be completely screened from view per Section 82-273
   e. All exterior lighting shall be full cut-off fixtures with no light spillage onto adjacent residential properties
   f. Unpainted metal, galvanized metal, or metal subject to rusting shall not be used. All exposed metals shall have a factory-applied finish, if available. Exception: Decorative laser-cut steel mural panels as specified in Section H.3 may utilize weathering steel (corten steel) or powder-coated steel finishes as approved with final architectural plans.

E. Landscape Standards

1. Landscaping shall be in accordance with the Town's landscape ordinance as amended, and the Town's Urban Design Plan.

2. Enhanced landscaping at the southeast Gateway corner (intersection of Flower Mound Road and Old Orchard Lane) shall incorporate various elements of the Town's Median and Right of Way Design Guidelines.

F. Dumpster Screening: Dumpster(s) shall be fully enclosed and screened in accordance with Section 82-272 of the Town Code. Dumpster enclosure(s) shall be located on the west side of the property and further screened from adjacent residential properties by the required masonry wall along the western property line. .

G. Miscellaneous Standards:

1. Any use utilizing a drive-through facility shall be subject to Section 82-82 of the Town's Land Development Regulations as amended, at the time of the site plan submittal.

2. Open Space Amenity and Pedestrian connectivity requirements within Planned Development District No. 120 (PD-120) shall incorporate the standards for such space as described by the Town's Urban Design Plan and include the following specific elements:

    a. Town required eight-foot wide trail shall be provided along FM 3040 and Old Orchard Lane.

    b. Internal sidewalks shall be provided that establish connection from the trail to the internal sidewalks within both residential and non-residential portions of the property.

    c. There will be 4-foot wide concrete walking paths that run in the open space areas between the residential lots within the proposed residential development.

    d. Pedestrian open space shall be composed of hardscape and planting materials that offer visual and physical relief from the necessary parking and built environment. The pedestrian open space amenities will act as organizing elements around which structures and parking are placed.

        - Residential open space identified amenities include a central amenity center adjacent to a pool, benches, a small linear pocket park, a water feature/detention pond with easy access to all residents, a small fruit orchard, and nice small open grassed areas for general recreational use.

    e. At least two canopy trees shall be provided on all residential lots adjacent to the internal open space areas with a third canopy tree provided in the open space area adjacent to each such residential lot.

    f. The open space area shall be maintained by the Homeowner's Association for the community.

3. Retention / Detention pond Requirements:

    a. Maintain a minimum of 4 feet of water depth

    b. Pond areas shall meet the minimum requirements of the Town's Design Criteria and Construction Standards.

    c. Retention pond area retaining walls shall utilize stacked stone, stone veneer, cut stone or engineered block walls that complement the material standards and colors for the development.

    d. A private maintenance agreement for the retention pond(s) shall be provided upon submittal of a record plat for the development.

    e. A fountain feature shall be provided in each retention pond.

    f. Any pump equipment for the fountain features that is above ground shall be screened in accordance with section 82-272 "Outdoor storage areas". Such screening shall be designed and constructed of materials that complement the development.

4. Site retaining wall requirements:

    a. All site retaining walls shall utilize stacked stone, stone veneer, cut stone, or faux stone that complements the material standards and colors for the development.

5. Reciprocal Easement requirements:

    a. The development shall be subject to an overall reciprocal easement agreement granting cross-access to and from the property to the west. A copy of said agreement shall be provided to the Town of Flower Mound with the Record Plat for the development.
    b. Specific to Commercial District-1:
        1. A Public and Mutual Access Easement was recorded with Denton County on November 13, 2018 as Instrument No. 132890, providing cross-access to adjacent properties to the west.
        2. As part of the replat process for this development, the applicant will work with the Town to abandon or modify the easement to permit a gated emergency-only access connection to the west, subject to Fire Marshal approval and Town approval.
        3. Public vehicular cross-access through this connection shall not be required.

6. Monument signage at Gateway corner:

   At the time of record plat for the non-residential portion, an easement measuring 20 feet by 20 feet (20' x 20') shall be provided at the southeast corner of the site as depicted on Exhibit "C" (Concept Plan) for a future Town Gateway Monument sign.

7. Fencing standards:

   a. All residential lots adjacent to open space areas, excluding subdivision perimeter fencing, shall have a minimum four foot (4') tall wrought iron fence in accordance with the Town of Flower Mound's Land Development Regulations on the property line that is common to the open space. All other areas of residential lots, not adjacent to open space areas, shall have typical wooden fencing that conforms to the Town's regulations.

   b. A minimum eight-foot (8') tall screening barrier shall be constructed along the north and west property lines where the site abuts existing residential uses. This requirement may be satisfied by an eight-foot (8') masonry screening wall, or by a combination of masonry retaining wall and masonry screening fence that together achieve a minimum of eight feet (8') in total height above adjacent finished grade. Fencing along all other property lines is optional and, if provided, shall comply with Town regulations.

8. Compatibility buffer:

   Appropriate scaled landscape plants shall be installed on both sides of the masonry wall situated between the residential and non-residential areas of the development as outlined in this ordinance.

   Residential portion:

   a. 20 feet of the compatibility landscape buffer shall be provided within the residential portion of the development.
   b. One native shade tree, a minimum of three-inch caliper and of species included in section 94-242 of the Flower Mound Code, Approved tree lists, shall be provided at a ratio of one tree per 600 square feet within the required compatibility buffer area.

   Commercial portion:

   a. A 23.5-foot compatibility landscape buffer shall be provided along the western and northern property lines where the site abuts residential uses
   b. Buffer landscaping shall include:
   c. Native shade trees (minimum 3-inch caliper) at a ratio of one tree per 400 square feet within the buffer area

d. Thirteen (13) evergreen trees shall be installed within the 23.5 foot compatibility buffer for enhanced year-round screening.
e. All plant materials from the Town's approved plant list per Section 94-242
f. Nineteen (19) three-inch caliper trees shall be planted within the twenty-three and one-half foot (23.5') landscape buffer on the non-residential portion of the development. Of the nineteen trees, nine (9) shall be mitigation trees and ten (10) shall be compatibility trees.

9. Phasing requirements:

a. If the development of Planned Development District No. 120 (PD-120) includes phasing of any nature, such phasing shall be detailed in the subsequent development application, be it a Development Plan, Record Plat, or a Site Plan.

b. Notwithstanding the foregoing, the first phase of development shall include the detention reservoirs, fire lanes and median cuts/turn lanes to support the first phase; curb cuts, utilities, amenity area within the first phase; eight-foot wide Town Trail along FM 3040 and Old Orchard for the entire length of the property; and the entry monument and perimeter landscaping for the residential portion. A Certificate of Occupancy shall not be issued for the first building until all of the above improvements are complete.

H. EXCEPTIONS AND VARIANCES:

The following exceptions shall be granted with the approval of Planned Development District No. 120 (PD-120):

1. An exception to Section 90-311, Street design standards, as authorized by Section 90-301, Exception to street standards, of the Code of Ordinances to allow for a reduced driveway spacing that permits the eastern-most road into the development to be placed two hundred eighty feet (280’) away from the intersection of Old Orchard Road and Flower Mound Road.

2. An exception to Sec 82-302(2), requirement for a 25-foot landscape buffer within the non-residential portion of this development to allow for the screening and fencing set forth herein-above.

3. An exception to Sec 82-302(2), requirement for a continuous dense six-foot understory plants, and native shade trees, a minimum of three-inch caliper, at a ratio of one tree per 400 square feet of the buffer area between the residential and non-residential portion within this development to allow for the screening and fencing set forth herein-above.

I. SIGNAGE STANDARDS

1. All signage shall comply with Chapter 86 of the Town Code, with the following provisions:
   a. Maximum two monument signs permitted - one on FM 3040 and one on Old Orchard Lane. The Town Gateway Monument sign to be located in the easement provided per Section F.5 shall not count against this limitation.
   b. No wall signage on building elevations facing residential properties (north and west), except decorative mural panels as specified in Section H.3 below.

2. Decorative laser-cut steel panels: The project shall incorporate decorative laser-cut steel mural panels depicting floral motifs on exterior facades as shown on approved elevations. These panels may incorporate internal backlighting on street-facing elevations (south, east, and southwestern corner), subject to the following:

   a. Mural Specifications:
      1. 10 total murals measuring approximately 3'-4" W × 21'-4" H each
      2. East elevation: 2 murals
      3. West elevation: 2 murals
      4. South elevation: 6 murals (primary street-facing façade)

   b. No backlit panels shall be located on the north elevation or the northwestern portion of the west elevation directly adjacent to residential properties. Backlit mural panels are permitted at the southwestern corner area as specified in the Mural Specifications above.

   c. Backlighting design and intensity shall comply with Section 98-1125(1) & (4) and shall:
      1. Not exceed 15 watts per fixture (as non-full cutoff fixtures). Multiple fixtures may be used per mural panel as needed to achieve uniform illumination.
      2. Utilize low-intensity LED fixtures that prevent disability glare
      3. Be fully recessed behind panels and not directly visible
      4. Minimize off-site light spillage
      5. Include dimming capability

   d. A photometric study shall be submitted with the site plan application demonstrating compliance with Town lighting standards

PLANNING & ZONING COMMISSION AGENDA I.3. REGULAR ITEM(S)

DATE: December 8, 2025
FROM: Leandro Rodriguez, CIP Manager
ITEM: **Public Hearing to consider an ordinance amending Section 8.0 - Water Plan of the Master Plan (MPA25-0006 - Water Plan Amendment) to adopt amendments and additions to the 2009 Water Master Plan Update as a component of the Master Plan.**

BACKGROUND:

The Town periodically provides updates to its Master Plans. Growth trends and population distribution, along with collected field data, are reflected in the update to the Town's Water Model. (See Attachment for proposed amendments). The updated model helps the Town determine priorities for upcoming Capital Projects and is used to determine updated impact fees. The water model has been updated and, as a result, staff is recommending approval of the amendment to the Water Plan component of the Master Plan.

A public hearing and final consideration by Town Council for a Master Plan Amendment to amend Section 8.0 Water Plan is scheduled for the December 15, 2025, Town Council Meeting. The impact fee update process will follow the approval of the amendment.

BOARD REVIEW/CITIZEN FEEDBACK: The Town Code requires notice in a newspaper of general circulation (Denton Record Chronicle). At the time this report was written, staff had not received any correspondence regarding this item.

ALTERNATIVES: N/A

FISCAL IMPACT: N/A

LEGAL REVIEW: Brennan Lafferty, of Taylor, Olson, Adkins, Sralla, & Elam L.L.P., will review the ordinance as to form and legality.

ATTACHMENTS:
1. 2025 Water Master Plan Amendments

DRAFT MOTION: Move to approve as presented in the agenda caption.

Kimley»Horn

Technical Memorandum

11/13/25

Prepared for: Town of Flower Mound

Prepared by: Kimley-Horn and Associates, Inc.

Date: November 13, 2025

WATER MASTER PLAN AMENDMENTS

This memo amends the Water System Master Plan Update prepared by Kellogg Brown & Root (KBR) in 2009. Sections of this memo are designated with the corresponding section number from the 2009 document.

1.1.A Background Supplemental

The Town of Flower Mound (Town) has retained Kimley-Horn to update the Town's water model and Water Master Plan for the year 2025. Kimley-Horn utilized the model prepared by KBR in 2009 and subsequently updated by Kimley-Horn in 2015 and in 2020. The 2025 master plan updated the 2020 model based on current water demands, demographics, future land uses and growth projections. For the 2025 update, Kimley-Horn has upgraded the water modeling software to InfoWater Pro, an updated version of the previous InfoWater software used in 2020.

1.2 Study Area

Replace first paragraph.

The Town encompasses approximately 44 square miles of land area. Of this area, approximately 32 square miles are developable with the remainder consisting of Grapevine Lake, floodplain, and roads. Of this developable area, approximately 74% of this land is developed and 26% is either undeveloped or planned to be redeveloped in the future. The future undeveloped/redeveloped areas were evaluated to determine future densities of population and non-residential developments. Projected buildout water demands were estimated by working with the Town's Planning Department.

1.3.2 Master Planning Scenarios

The water system was analyzed for existing and future scenarios. Existing demands for each meter were provided by the Town and assigned to each meter in the model to represent actual

demand for each meter. The analysis included an extended period simulation using InfoWater Pro software which models the system demands and performance over a 24-hour period. A diurnal curve generated from the five max demand days from 2020-2024 was loaded into the model to capture peak hour demand. Future scenarios were modeled for years 2030, 2035 and buildout. Growth projections for future scenarios were derived by evaluating historic data and coordinating with the Town's Planning Department.

1.4.2 Hydraulic Analysis Criteria

Replace first paragraph.

The Town currently operates several ground storage tanks at water supply points. One 10 million gallon (MG) tank is located at the Stonehill pump station (Upper Trinity Regional Water District (UTRWD) supply), one 5 MG tank is located at Stonecrest pump station (UTRWD supply), and three tanks (3 MG, 2 MG, and 1 MG) are located at the Pintail pump station (City of Dallas Water Utilities Department (DWU) supply).

2.1 Water Supplies

The Town of Flower Mound receives their treated water from UTRWD and DWU. Water is supplied from the UTRWD at the Stonehill Pump Station and Stonecrest Pump Station for a total of 30 million gallons per day (MGD). Water is supplied from DWU at the Pintail Pump Station for a total of 11 MGD. The total contracted supply available to the Town is 41 MGD. This total contracted supply is required to be greater than the maximum day of demand.

2.2 Ground Storage

The Town currently has 21 million gallons (MG) of ground storage located between the three existing pump stations. The next phase of construction at Stonecrest pump station will increase the station's storage capacity by 5 MG, bringing the total ground storage to 26 MG.

2.3 Elevated Storage

The Town currently has three elevated storage tanks (EST): Bruton Orand, Waketon, and Freeman. These tanks provide 5.5 MG of storage. The Freeman tank serves the western portion of the Town, but due to its height it can serve the eastern portion of Town if either of the other two tanks need to be serviced.

The Texas Commission on Environmental Quality (TCEQ) Chapter 290 requires a minimum of 100 gallons of elevated storage per connection if 2.0 gpm/connection or peak hour is provided in pumping capacity. With the current 5.5 MG of elevated storage available, the Town's system has the capacity to serve up to 55,000 water connections. As of February 2025, the Town served 26,448 connections. The regulation does not account for the operational use of the elevated tanks, so the actual capacity of the elevated storage may be

less than 55,000 connections. Connections versus storage will need to be evaluated as the Town continues to develop.

Figure 3: Replaced With Attached Figure 3 – Existing Water System

2.4 Pumping Stations

The Town currently supplies treated water from three pumping stations, Stonehill, Pintail, and Stonecrest. The Stonehill pump station has a firm capacity of 28,000 gallons per minute (gpm), Pintail pump station has a firm capacity of 13,000 gpm, and Stonecrest pump station has a firm capacity of 12,000 gpm. The existing total firm capacity of all three pump stations is 53,000 gpm. Stonecrest will have an ultimate firm capacity of 24,000 gpm once phases two and three are complete which will increase the system firm capacity to 65,000 gpm. This permits the Town to serve up to 32,500 connections. Currently, peak hour at buildout would be greater than the firm pumping capacity, however, the implementation of the Lakeside and Denton Creek reuse water systems may lower the peak hour demand. Further analysis of the peak hour demand after reuse systems are implemented is recommended in future master plan updates.

2.5 Distribution System

Replace second paragraph.

The Town's water system is divided into two pressure planes, east and west. The west pressure plane, which operates at a higher pressure plane elevation, is served by the Freeman elevated storage tank and the Stonecrest pump station. The east pressure plane, which operates at a lower pressure plane elevation, is served by the Stonehill and Pintail pump stations, the Bruton Orand elevated storage tank, and the Waketon elevated storage tank. Pressure sustaining valves are recommended along the pressure plane boundary to allow the west pressure plane to supplement the east pressure plane, creating one town encompassing pressure plane, as necessary. Refer to **Appendix E** for valve locations.

3.1 Population

The population and growth projections used to estimate future water demands were derived by working with the Town's planning department and are based on the Land Use plan that was updated in April of 2025 (Reference Figure 2).

Land Use Map
Figure 2

THE TOWN OF FLOWER MOUND TEXAS

N

0 0.5 1 2 Miles

Kimley»Horn November 2025

Legend

- Flower Mound Limits
- COE
- Campus Commercial
- Campus Industrial
- Canyon Falls Open Space
- Commercial
- Commercial/Industrial
- Estate
- Flood Plain
- Grapevine Lake
- High
- High Density Single Family Detached
- Institutional
- Low
- Medium
- Mixed Use
- Office
- Office or Medium Density Residential
- Park
- Prairie Vista District
- ROW
- Retail
- Rural
- Utility

Stonecrest Pump Station
Firm Capacity: 12,000 gpm
Ground Storage: 5 MG
UTRWD Delivery Point

Freeman EST
Capacity: 2.5 MG

Waketon EST
Capacity: 1.0 MG

Bruton Orand EST
Capacity: 2.0 MG

Stonehill Pump Station
Firm Capacity: 28,000 gpm
Ground Storage Capacity: 10 MG
UTRWD Delivery Point

Pintail Pump Station
Firm Capacity: 13,000 gpm
Ground Storage: 6 MG
DWU Delivery Point

IH-35W
OAK RIDGE LN
DENTON CREEK SPINE RD
CANYON FALLS DR
DENTON CREEK BLVD
FM 1171
US HWY 377
RED ROCK
SHILOH RD
WEST (HIGH) PRESSURE PLANE
EAST (LOW) PRESSURE PLANE
LUSK LN
KINGS RD
CHINN CHAPEL RD
FM 407
DIXON LN
VALLEY RIDGE BLVD
WAKETON RD
KIRKPATRICK LN
RIPPY RD
MORRIS RD
COLLEGE PKWY
TIMBER CREEK RD
BRIDLEWOOD BLVD
W WINDSOR DR
CHURCHILL DR
FM 2499
SCENIC DR
QUAIL RUN
BRUTON ORAND BLVD
OLD SETTLERS RD
SAGEBRUSH DR
FIREWHEEL DR
OAK DR
RIDGECREST DR
SKILLERN RD
FLOWER MOUND RD
LONG PRAIRIE RD
FOREST VISTA DR
WICHITA TRAIL
MCKAMY CREEK RD
SIMMONS RD
FM 3040
STRAIT LN
LAKE FOREST BLVD
LEXINGTON AVE
GERAULT RD
GARDEN RIDGE BLVD
DUNCAN LN
ABERDEEN
SPINKS RD
LAKESIDE PKWY
SILVERON BLVD
Grapevine Lake

Existing Water System
Figure 3

THE TOWN OF FLOWER MOUND TEXAS

N W E S

0 4,000 8,000 Feet

Kimley»Horn November 2025

Legend

- Existing Elevated Storage Tank
- Ground Storage Tank
- PS Existing Pump Station
- Pressure Plane Boundary
- Service Area Boundary
- Existing Water Transmission System: Modeled Pipes

Maxar

Table 3. Projected Population

Year	2025	2030	2035	Buildout
Population[1]	81,827	89,393	96,230	116,556

1. Numbers reflect population within the water service area.

3.2.1 Current Water System Demands

The current water system demands were developed by evaluating historic usage and existing demographics. Based on pumping data obtained from 2020-2024, the Town's historical high maximum day and peak hour demands, 34.73 MGD and 83.35 MGD respectively, were recorded on July 18, 2022. It should be noted that a larger peaking factor between max day and peak hour demand was observed in the 2020-2024 historical data than in the 2020 master plan study. 2024 average demand per meter (from billing data) was matched geographically to existing meters. There were some cases where meters from billing data were not matched geographically; for these meters, the applicable 2024 average account class demand was assigned. To account for the 2022 max day, demands were scaled to the 2022 average day then assigned the 2022 max day factor of 2.098. Demands for future residential developments were calculated using the average demand of 520 gallons per day per lot (gpd/lot) and an assumed lot size (shown below in square feet, or SF) for each residential density to develop a demand per acre for future residential development demand projections. Table 4 shows the resulting water demands for various residential uses.

Table 4. Residential Average Demands per Land Use Type

Land Use Type	Assumed Lot Size (SF)	Demand per Lot (gpd)	Demand (gpm/acre)
Multifamily	-	-	1.81
Existing Single Family Lot	Varies	520	-
High	8,712	520	1.81
Medium	10,980	520	1.43
Low	14,520	520	1.08
Estate	43,560 (1 acre)	520	0.36
Rural	87,120 (2 acres)	520	0.18

In 2015, the water demands for non-residential land uses were taken from the 2001 Water Master Plan then compared to historical customer usage and were determined to be appropriate apart from a few single large volume users such as Lifetime Fitness Center and Texas Health Presbyterian Hospital. In 2020, the non-residential water demands were again calibrated utilizing customer usage data from 2015-2019. The historical data showed demands differing from what was predicted in 2015 for most land use types. The model duty factors were adjusted to reflect historical data and took into consideration the top water users,

some of which were classified into their own land use types for this exercise. In 2025, this exercise was repeated utilizing customer usage data from 2020-2024. Table 4.1 shows the resulting water demands for various non-residential uses and compares to 2020 values.

Table 4.1. Non-Residential Average Demands per Land Use Type

Land Use Type	2020 Demand (gpd/acre)	2025 Demand[1] (gpd/acre)
Mixed Use	4000	4000
Office	2625	2000
Retail	1000	1500
Commercial	2025	1800
Industrial	1300	1300
Park	250	400
Utility	200	200
Hospital	3000	3900
Institutional	150	500
School	2000	500
Presbyterian Hospital*	-	3460
Park Central*	-	3050
Lifetime Fitness	2500	2060
Rocky Point MHP*	-	2000
Timber Ridge*	-	1340
Holly Mead*	-	2330
East Bank Riverwalk*	-	2370
The Park at Flower Mound*	-	1160
Watermere at Flower Mound*	-	1030
Village Oaks MHP*	-	590

1. Unlike the 2020 model, the 2025 model did not require any manual adjustments to account for entitlements.
2. Denotes top 10 users from 2024 Consumption Summary Report that were matched geographically in the 2025 model but were not among the top users reported in the 2020 Master Plan.*

3.2.2 Projected Water System Demands

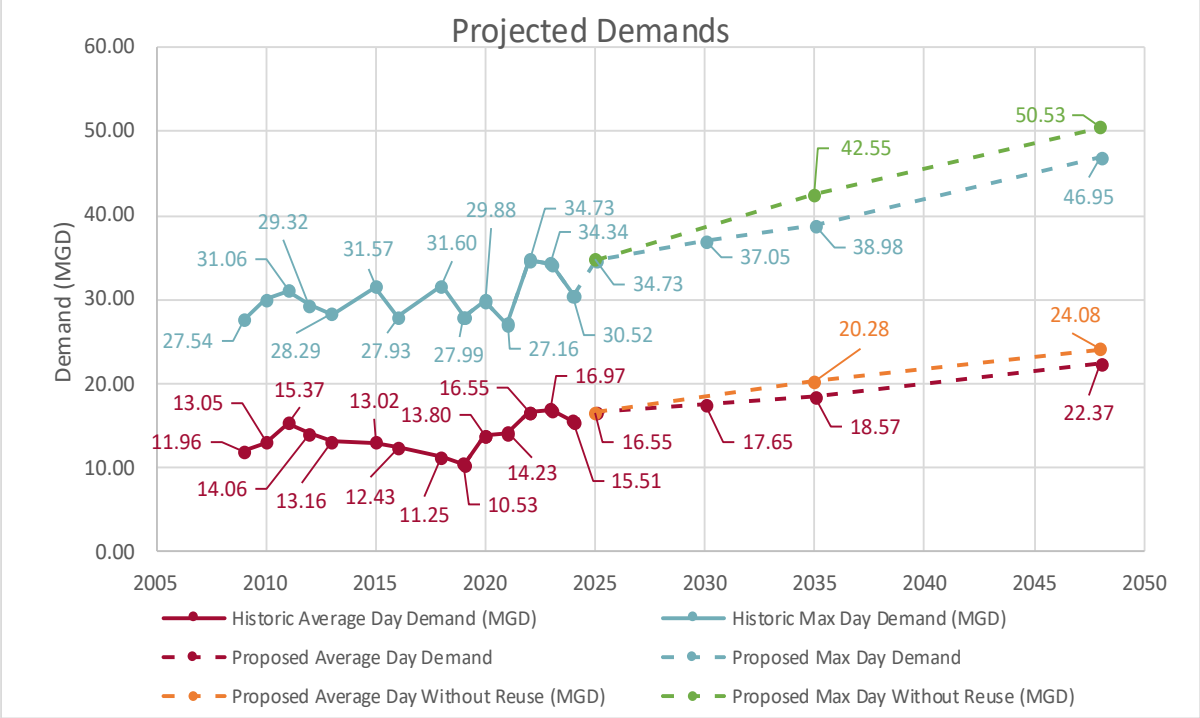
Replace Table 5 with the table below.

Table 5. Projected Water System Demands – Reuse Included

Year	2025	2030	2035	Buildout
Population	81,827	89,393	96,230	116,556
Average Day Demand (MGD)	16.55	17.65	18.57	22.37
Maximum Day Demand (MGD)	34.73	37.05	38.98	46.95

Replace Figure 5 with attached Figure 5. Note that the Table above accounts for reuse water systems being partially in service by 2030 and completely in service by 2035. Note that all future max day demands use the 2.098 max day factor which is subject to change with the implementation of the proposed reuse water systems.

Figure 5: Projected Water Demands



3.3.A Land Use (supplemental)

Kimley-Horn coordinated with the Town's Planning Department to determine projected growth rates based on phasing of known developments. These projections were used to then project water demands, and the water demands were distributed throughout the water system. Growth was evaluated for the years 2030, 2035, and buildout. This was utilized to determine projected demands for these scenarios. Reference **Figure 2** for updated land use map.

3.4 Existing Model Conversion

The previous Flower Mound hydraulic model was converted from InfoWater to InfoWater Pro, a water distribution modeling and management software that is fully integrated into ArcGIS Pro. The model was updated to include distribution piping with a diameter of 8 inches and greater. The model was prepared for extended period simulations (EPS).

4.1.1 Water Supplies

The Town is currently contracted for 11 million gallons a day (MGD) from Dallas Water Utilities and another 30 MGD from the Upper Trinity Regional Water District; however, only 10 MGD can be supplied to the west pressure plane at Stonecrest pump station. The Town currently has plans to implement reuse water systems in the Denton Creek and Lakeside Districts. These systems will decrease future potable water demand for irrigation. The projected reuse offset for the Denton Creek and Lakeside Districts has been incorporated into the future projected water demands shown in Table 5 above and Table 6 below. It should be noted that these reuse water systems are not in service at this time so the decrease in potable water demand in these areas could vary from the projections provided. Additionally, both Denton Creek and Lakeside Reuse studies project a maximum anticipated irrigation demand to conservatively size the planned infrastructure. The actual decrease in potable water demand may be greater than the projections provided. As reuse water systems come online, the decrease in potable water demand should be analyzed to determine a more accurate impact on demand. The projected ultimate maximum day demand for potable water is 46.95 MGD, which will result in a water supply deficiency of 5.95 MGD. Based on the growth projections utilized, it is estimated that the Town will exceed their currently contracted water supply by the year 2031 without the implementation of reuse water systems. With reuse implemented, the contracted water supply is not anticipated to be exceeded until the year 2037. A water supply study is recommended to investigate solutions to capture the additional 6.0 MGD of water supply.

Additional water supply may be sourced by existing wholesale suppliers or by alternative supply methods. Increasing conservation efforts can also alleviate water demands and prolong the need for increasing water supply. Expanding current reuse plans is another potential solution to alleviate max day and peak hour usage.

Table 6. Contracted Potable Water Supplies by Planning Scenario – Reuse Included

Planning Scenario	2025	2030	2035	Buildout
Projected Demands				
Average Day Demand (MGD)[1]	16.55	17.65	18.57	22.37
Maximum Day Demand (MGD)[1]	34.73	37.05	38.98	46.95
Contracted Water Supply Point				
Pintail (MGD)	11	11	11	11
Stonehill (MGD)	20	20	20	20
Stonecrest (MGD)	10	10	10	10
Future Supply (MGD)				6
Total (MG)	41	41	41	47

1. Reuse supply from Denton Creek Reuse Pump Station and Phase 1 Transmission Line Preliminary Design Report Draft prepared by Kimley-Horn and Associates, Inc. dated June 2025 and Lakeside Reuse Water Master Plan prepared by Alan Plummer Associates, Inc. dated October 2018. The reported demand accounts for a decrease in potable water demand for irrigation in the affected areas and projected phases.

4.1.2 Ground Storage

To balance supply rates with pumping rates, it is recommended that the Town continue to store approximately half of the max daily demand in ground storage. Currently the Town has 10 MG of ground storage available at the Stonehill pump station, 6 MG available at Pintail pump station, and 5 MG available at Stonecrest pump station for a total of 21 MG. With the future construction of a 5 MG ground storage tank at Stonecrest, the system will be able to store 26 MG of water which is greater than 50% of the ultimate maximum daily demand. The total storage will also satisfy TCEQ regulations requiring the system to provide a minimum of 200 gallons of storage per connection.

Table 7. Ground Storage Facilities

Planning Scenario	2025	2030	2035	Buildout
Regulatory Requirements				
200 gal per connection (MG)	5.37	5.78	6.22	7.53
50% MDD (MG) – Reuse Included	17.37	18.52	19.49	23.48
50% MDD (MG) – Reuse Excluded	17.37	19.32	21.28	25.27
Ground Storage Tanks				
Pintail (MG)	6	6	6	6
Stonehill (MG)	10	10	10	10
Stonecrest (MG)	5	10	10	10
Total (MG)	21	26	26	26

4.1.3 Elevated Storage

The Town of Flower Mound currently has 5.5 MG in elevated storage between the Bruton Orand, Waketon, and Freeman Elevated Storage Tanks. TCEQ regulation requires water systems to have 100 gallons per connection if firm pumping capacity can satisfy the 2.0 gpm per connection or peak hour demand. Additionally, it is generally accepted engineering and operational practice that water systems maintain approximately 10% of the maximum day demand in elevated storage for fire protection. This would require 4.7 MG of elevated storage.

Table 8. Elevated Storage Facilities

Planning Scenario	2025	2030	2035	Buildout
Regulatory Requirements				
100 gal per connection (MG)	2.68	2.89	3.11	3.77
10% MDD (MG) – Reuse Included	3.47	3.71	3.90	4.70
10% MDD (MG) – Reuse Excluded	3.47	3.86	4.26	5.05
Elevated Storage Tanks				
Waketon (MG)	1.0	1.0	1.0	1.0
Bruton (MG)	2.0	2.0	2.0	2.0
Freeman (MG)	2.5	2.5	2.5	2.5
Total (MG)	5.5	5.5	5.5	5.5

4.1.4 Pumping Stations

The Stonehill, Pintail, and Stonecrest pump stations currently have a combined firm pumping capacity of 53,000 gpm (76.32-MGD). TCEQ regulation requires water systems to have sufficient pumping to achieve 2.0 gpm per connection or peak hour demand. The current firm pumping capacity is not sufficient to supply the Town's peak hour demand. Expansion at Stonecrest will temporarily provide the required firm pumping capacity. Additionally, the Denton Creek and Lakeside District reuse systems are anticipated to decrease peaking factors. Once reuse data is available, it is recommended to update the peak hour projections in the next master plan update to account for decreased peaking factors for Denton and Lakeside Districts. If the system maintains the current peaking factor and achieves the project buildout peak hour demand, additional pumping improvements will be required to satisfy TCEQ regulation.

Table 9. Firm Pumping Capacity

Planning Scenario	2025	2030	2035	Buildout
Regulatory Requirements				
2 gpm per connection (MGD)	77.30	83.21	89.58	108.50
Peak Hour Demands (MGD)[1]	77.10	82.25	86.54	104.23
Peak Hour Demands (MGD)[2]	77.10	85.78	94.46	112.18
AWWA Peak Hour (MGD)[3]	62.51	66.69	70.16	84.51
Pump Station Firm Capacity				
Pintail (gpm)	13,000	13,000	13,000	13,000
Stonehill (gpm)	28,000	28,000	28,000	28,000
Stonecrest (gpm)	12,000	18,000	24,000	24,000
Total (gpm)	53,000	59,000	65,000	65,000
Total (MGD)	76.32	84.96	93.60	93.60

1. An exceedingly high Max Day to Peak Hour factor of 2.22 was observed in the historical data. Reuse implementation should result in a decreased Max Day to Peak Hour factor. Reuse Included.

2. Reuse excluded.

3. The American Water Work Association (AWWA) Manual M32 Figure 5 depicts a standard diurnal demand curve showing a Peak Hour factor of approximately 1.8, which is significantly lower than the observed factor of 2.22

4.2.1 System Improvements

The proposed system improvements assume the Lakeside and Denton Creek Reuse systems are completed by 2035. The proposed system improvements for the 5-year, 10-year, and buildout planning windows are presented in this section. The Proposed System Map is included in **Appendix D**. A water distribution system map showing the locations of proposed capacity capital projects is included in **Appendix E**. Projected opinions of probable construction costs are shown in **Appendix F**.

4.2.2 5-Year Capital Improvement Plan (CIP)

1. **FM 1171 to HWY 377 Water Line – Phase I**
   Approximately 7000 LF of 16-Inch Water Line from existing Water Line near Freeman Road to existing 20-Inch Water Line near Belle Drive. This line will provide secondary transmission from the Freeman EST to the east pressure plane.

   Project Cost $4,530,000

2. **Prairie Vista Water Lines**
   Approximately 10800 LF of 12-Inch &16-Inch Water Line from existing 30-Inch Water Line near Smoot Lane to 5 Year CIP Project 4 located in Furst Ranch. This line will provide service to Furst Ranch and Prairie Vista.

   Project Cost $5,738,000

3. **HWY 377/ UPRR Water Line – Phase II**
   Approximately 1300 LF of Looping 24-Inch Water Lines from sub out near Stonecrest Road to HWY 377/UPRR Water Line – Phase 3. This line will provide service to Furst Ranch and Brookview.

   Project Cost $2,212,000

4. **Furst Ranch 12/16-Inch Water Line – Phase I**
   Approximately 5,800 LF of 12-Inch & 16-Inch water line from an existing 30-Inch water line along US 377 looping through the proposed Furst Ranch Phase 1 to an existing 20-Inch along FM 1171. This line will provide service to Furst Ranch and Prairie Vista.

   Project Cost $4,142,000

5. **Bruton Orand Water Lines**
   Approximately 2400 LF of 16-Inch & 24-Inch Water Lines parallelling the existing Bruton Orand EST transmission mains along Bruton Orand Blvd. These lines will decrease head loss in max day demand scenarios when pumps at Stonehill and Pintail are not running.

   Project Cost $3,244,000

6. **Scenic Drive 12-Inch Water Line – Phase II and Pressure Sustaining Valves**
   Approximately 2700 LF of 12-Inch Water Line from Scenic Drive Water Line Phase I to existing 8-Inch water line near River Hill Drive and pressure sustaining valves along boundary of east and west pressure planes. These valves will allow water to enter the east pressure plane from the west and provide water during max day demand or emergency scenarios as necessary.

   Project Cost $2,286,000

7. **HWY 377/ UPRR Water Line – Phase IV**
   Approximately 2000 LF of 20-Inch Water line from 24-Inch Brookview stubout to existing 20-Inch Water Line near Intersection of HWY 377 and FM 1171. This line will provide looped service to Brookview.

   Project Cost $2,181,000

8. **Stonecrest Pump Station – Phase II**
   5.0 MG Prestressed Concrete Ground Storage Tank, 8.5 MGD Horizontal Split Case Bottom Suction Pump, 450 HP motor, electrical/SCADA improvements, and miscellaneous civil improvements. These improvements will provide necessary storage and pumping for the development of the west pressure plane.

   Project Cost $12,075,000

4.2.3 10-Year CIP

1. **Furst Ranch 16-Inch Water Line – Phase II**
   Approximately 4100 LF of 16-Inch Water Line from 5 Year CIP Project 2 to 5 Year CIP Project 4. This line will provide service to Furst Ranch.

   Project Cost $3,044,000

2. **Furst Ranch 12-Inch Water Line – Phase II**
   Approximately 6100 LF of 12-Inch Water Lines from 10 Year CIP Project 1 to 5 Year CIP Project 4. This line will provide service to Furst Ranch.

   Project Cost $3,335,000

3. **Furst Ranch 12-Inch Water Line – Phase III**
   Approximately 1300 LF of 12-Inch Water Line from existing 30-Inch Water Line near US Highway 377 to 10 Year CIP Project 1. This line will provide service to Furst ranch and Prairie Vista.

   Project Cost $1,017,000

4. **FM 1171 Water Line – Phase II and Pressure Sustaining Valve**
   Approximately 6100 LF of 16-Inch Water Line parallel to existing 20-Inch Water Line on FM 1171. This line will provide secondary transmission from the Freeman EST to the east pressure plane.

   Project Cost $4,375,000

5. **West Side Water Line (South) – Phase I**
   Approximately 2400 LF of 12-Inch Water line from existing 20-Inch Water Line near FM 1171 to 12-Inch Dunham Road Water Line. This line will provide service to Furst Ranch south of FM 1171.

   Project Cost $2,186,000

6. **Morriss Road 20-Inch Parallel Water Lines**
   Approximately 1100 LF of 20-Inch Water Line from Mallard Way to FM 3040. This line will parallel an existing 16-Inch Water Line and provide secondary transmission from Pintail Pump Station to the Lakeside Business District.

   Project Cost $2,196,000

7. **Kirkpatrick Lane Water Line Loop**
   Approximately 1000 LF of 12-Inch Water Line from existing 12-Inch Water line near Kirkpatrick Lane south of FM 1171 to existing 12-Inch Water Line near Kirkpatrick Lane west of South Garden Ridge Boulevard. This line will eliminate two dead ends in the area and improve water quality.

   Project Cost $895,000

8. **Stonecrest Pump Station – Phase III**
   8.5 MGD Horizontal Split Case Bottom Suction Pump, 450 HP Motor, and electrical/SCADA improvements at Stonecrest Pump Station. This pump is necessary for supporting development in the west pressure plane.

   Project Cost $2,100,000

9. **FM 1171 to HWY 377 Water Line – Phase III**
   Approximately 14100 LF of 24-Inch Water Lines parallel to existing 20-Inch Water Lines along FM 1171. These lines will provide secondary transmission from Stonecrest Pump Station to Freeman EST.

   Project Cost $13,408,000

4.2.3 Beyond 10-Year CIP

1. **West Side Water Line (South) – Phase II**
   Approximately 13500 LF of 12-Inch Water Line from existing 12-Inch Water line in Trailwood to Beyond 10 Year project 3. This line will provide looping and improve water quality for the southwest portion of the system.

   Project Cost $6,473,000

2. **West Side Water Line (South) – Phase III**
   Approximately 3900 LF of 12-Inch Water Line from existing 20-Inch Water line near intersection of HWY 377 and FM 1171 to Beyond 10 Year project 2. This line will provide looping and improve water quality for the southwest portion of the system

   Project Cost $2,347,000

Stonecrest Pump Station
Current Firm Capacity: 12,000 gpm
Current Ground Storage: 5 MG
UTRWD Delivery Point
Proposed Firm Capacity: 24,000 gpm
Proposed Ground Storage: 10 MG

Freeman EST
Capacity: 2.5 MG

Waketon EST
Capacity: 1.0 MG

Bruton Orand EST
Capacity: 2.0 MG

Stonehill Pump Station
Firm Capacity: 28,000 gpm
Ground Storage Capacity: 10 MG
UTRWD Delivery Point

Pintail Pump Station
Firm Capacity: 13,000 gpm
Ground Storage: 6 MG
DWU Delivery Point

IH-35W
OAK RIDGE LN
DENTON CREEK SPINE RD
CANYON FALLS DR
DENTON CREEK BLVD
FM 1171
US HWY 377
RED ROCK
SHILOH RD
RIDGECREST DR
SCENIC DR
QUAIL RUN
WICHITA TRAIL
SKILLERN RD
LUSK LN
WEST (HIGH) PRESSURE PLANE
EAST (LOW) PRESSURE PLANE
KINGS RD
CHINN CHAPEL RD
FM 407
DIXON LN
WAKETON RD
VALLEY RIDGE BLVD
KIRKPATRICK LN
MORRISS RD
RIPPY RD
COLLEGE PKWY
TIMBER CREEK RD
BRIDLEWOOD BLVD
W WINDSOR DR
CHURCHILL DR
FM2499
BRUTON ORAND BLVD
FLOWER MOUND RD
OLD SETTLERS RD
SAGEBRUSH DR
FIREWHEEL DR
LONG PRAIRIE RD
FOREST VISTA DR
OAK DR
MCKAMY CREEK RD
SIMMONS RD
FM 3040
STRAIT LN
LAKE FOREST BLVD
LEXINGTON AVE
GERAULT RD
GARDEN RIDGE BLVD
DUNCAN LN
ABERDEEN
SPINKS RD
LAKESIDE PKWY
SILVERON BLVD
FM 2499
Grapevine Lake

Proposed Water System
Appendix D

THE TOWN OF FLOWER MOUND TEXAS

N W E S

0 4,000 8,000 Feet

Kimley»Horn November 2025

Legend

- Existing Elevated Storage Tank
- Ground Storage Tank
- Existing Pump Station
- Pressure Plane Boundary
- Service Area Boundary
- Existing Water Transmission System: Modeled Pipes
- Proposed Water System
- Proposed Pressure Sustaining Valve

Maxar

Stonecrest Pump Station
Current Firm Capacity: 12,000 gpm
Current Ground Storage: 5 MG
UTRWD Delivery Point
Proposed Firm Capacity: 24,000 gpm
Proposed Ground Storage: 10 MG

Freeman EST
Capacity: 2.5 MG

Bruton Orand EST
Capacity: 2.0 MG

Waketon EST
Capacity: 1.0 MG

Stonehill Pump Station
Firm Capacity: 28,000 gpm
Ground Storage Capacity: 10 MG
UTRWD Delivery Point

Pintail Pump Station
Firm Capacity: 13,000 gpm
Ground Storage: 6 MG
DWU Delivery Point

Water Capital Improvements Capacity Projects Appendix E

THE TOWN OF FLOWER MOUND TEXAS

0 4,000 8,000 Feet

Kimley»Horn

November 2025

Legend

- Existing Elevated Storage Tank
- Existing Pump Station
- Pressure Sustaining Valve 10-YR
- Pressure Sustaining Valve 5-YR
- Pump
- Ground Storage Tank
- Pressure Plane Boundary
- Service Area Boundary
- Existing Water Transmission System: Modeled Pipes
- Proposed Water Distribution: Under Design or Construction
- Proposed Water Distribution: 5-YR Water CIP Project
- Proposed Water Distribution: 10-YR Water CIP Project
- Proposed Water Distribution: Beyond 10-YR Water CIP Project

Flower Mound Under Design or Construction Project List

1. Morriss Road Water Line Phase III (Eaton to Waketon Road)
2. Morriss Road Water Line Phase IV (Waketon Road to FM 407)
3. Brookview 12-Inch Water Line - Phase I
4. Eden Ranch 20-Inch Water Line
5. Denton Creek Spine Road 12-Inch Water Line
6. Scenic Drive Water Line - Phase I
7. Furst Ranch 12-Inch Water Line - Phase I
8. Dunham Road Water Line
9. HWY 377/ UPRR Water Line - Phase III
10. Denton Creek Blvd 12-Inch Water Line
11. Brookview 12-Inch Water Line - Phase II

Flower Mound 5-YR Water CIP Project List

1. FM 1171 to HWY 377 Water Line - Phase I
2. Prairie Vista Water Lines
3. HWY 377/UPRR Water Line - Phase II
4. Furst Ranch 12/16-Inch Water Line - Phase I
5. Bruton Orand Water Lines
6. Scenic Drive Water Line - Phase II and Pressure Sustaining Valves
7. HWY 377/UPRR Water Line - Phase IV
8. Stonecrest Pump Station - Phase II

Flower Mound 10-YR Water CIP Project List

1. Furst Ranch 16-Inch Water Line - Phase II
2. Furst Ranch 12-Inch Water Lines - Phase II
3. Furst Ranch 12-Inch Water Line - Phase III
4. FM 1171 Water Line - Phase II and Pressure Sustaining Valve
5. West Side Water Line (South) - Phase I
6. Morriss Rd 20-Inch Parallel Water Line
7. Kirkpatrick Lane Water Line Loop
8. Stonecrest Pump Station - Phase III
9. FM 1171 to HWY 377 Water Line - Phase II

Flower Mound Beyond 10-YR Water CIP Project List

1. West Side Water Line (South) - Phase II
2. West Side Water Line (South) - Phase III

Appendix F

Kimley-Horn & Associates, Inc. — Opinion of Probable Construction Cost

Client:	Town of Flower Mound	Date:	10/16/2025
Project:	2025 Flower Mound Water Master Plan Update	Prepared By:	JBA
KHA No.:	061000231	Checked By:	CJM

5-Yr-1 FM 1171 to HWY 377 Water Line - Phase I

Project Description: Approximately 7000 LF of 16-Inch Water Line from existing Water Line near Freeman Road to existing 20-Inch Water Line near Belle Drive. This line will provide secondary transmission from the Freeman EST to the east pressure plane.

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 150,000	$ 150,000
2	Traffic Control	1	LS	$ 35,000	$ 35,000
3	Miscellaneous	1	LS	$ 175,000	$ 175,000
4	Allowance	1	LS	$ 200,000	$ 200,000
5	Erosion Control	1.29	MI	$ 10,000	$ 17,900
6	16" Water Pipe	6,800	LF	$ 275	$ 1,870,000
7	16" Resilient Seated Gate Valve	7	EA	$ 15,000	$ 105,000
8	2" Combination Air Release Valve & Vault	2	EA	$ 30,000	$ 60,000
9	Fire Hydrant Assembly	14	EA	$ 10,000	$ 140,000
10	Connect to Existing Water Line (16-24")	4	EA	$ 30,000	$ 120,000
11	Water Line Trench Safety	6,800	LF	$ 3	$ 20,400
12	Hydromulch Repair	14,000	SY	$ 3	$ 42,000

	Subtotal:		$ 2,935,300
☑ No Design Completed	Conting. (%,+/-)	30%	$ 880,590
☐ Preliminary Design	Professional Services (%,+/-)	10%	$ 293,530
☐ Final Design	Easement Acquisition		$ 420,000
	***Total:**		**$ 4,530,000**

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*Total is rounded up to the nearest $1,000.

Kimley-Horn & Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	10/16/2025
Project:	2025 Flower Mound Water Master Plan Update	Prepared By:	JBA
KHA No.:	061000231	Checked By:	CJM
5-Yr-2	Prairie Vista Water Lines		
Project Description:	Approximately 10800 LF of 16-Inch Water Line from existing 30-Inch Water Line near Smoot Lane to 5 Year CIP Project 4. This line will provide service to Furst Ranch and Prairie Vista.		

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 150,000	$ 150,000
2	Traffic Control	1	LS	$ 25,000	$ 25,000
3	Miscellaneous	1	LS	$ 250,000	$ 250,000
4	Allowance	1	LS	$ 300,000	$ 300,000
5	Erosion Control	2.06	MI	$ 10,000	$ 25,600
6	12" Water Pipe	8,720	LF	$ 200	$ 1,744,000
7	16" Water Pipe	2,180	LF	$ 275	$ 599,500
8	12" Resilient Seated Gate Valve	5	EA	$ 7,000	$ 35,000
9	16" Resilient Seated Gate Valve	2	EA	$ 15,000	$ 30,000
10	1" Combination Air Release Valve & Vault	3	EA	$ 20,000	$ 60,000
11	2" Combination Air Release Valve & Vault	1	EA	$ 30,000	$ 30,000
12	Fire Hydrant Assembly	22	EA	$ 10,000	$ 220,000
13	Connect to Existing Water Line (16-24")	2	EA	$ 30,000	$ 60,000
14	Water Line Trench Safety	10,900	LF	$ 3	$ 32,700
15	Hydromulch Repair	24,100	SY	$ 3	$ 72,300

	Subtotal:		$ 3,634,100
☑ No Design Completed	Conting. (%,+/-)	30%	$ 1,090,230
☐ Preliminary Design	Professional Services (%,+/-)	10%	$ 363,410
☐ Final Design	Easement Acquisition		$ 649,800
	***Total:**		**$ 5,738,000**

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*Total is rounded up to the nearest $1,000.

Kimley-Horn & Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	10/16/2025
Project:	2025 Flower Mound Water Master Plan Update	Prepared By:	JBA
KHA No.:	061000231	Checked By:	CJM
5-Yr-3	Hwy 377/UPRR Water Line - Phase II		
Project Description:	Approximately 1300 LF of 24-Inch Water Line from stub out near Stonecrest Road to HWY 377/ UPRR Water Line - Phase III. This line will provide service to Brookview and Furst Ranch.		

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 150,000	$ 150,000
2	Traffic Control	1	LS	$ 25,000	$ 25,000
3	Miscellaneous	1	LS	$ 175,000	$ 175,000
4	Allowance	1	LS	$ 200,000	$ 200,000
5	Erosion Control	0.27	MI	$ 10,000	$ 7,700
6	24" Water Pipe	1,400	LF	$ 400	$ 560,000
7	24" Resilient Seated Gate Valve & Vault	4	EA	$ 50,000	$ 200,000
8	3" Combination Air Release Valve & Vault	1	EA	$ 40,000	$ 40,000
9	Blow Off Valve & Vault	1	EA	$ 30,000	$ 30,000
10	Connect to Existing Water Line (16-24")	3	EA	$ 30,000	$ 90,000
11	Water Line Trench Safety	1,400	LF	$ 3	$ 4,200
12	Hydromulch Repair	4,400	SY	$ 3	$ 13,200

	Subtotal:		$ 1,495,100
☑ No Design Completed	Conting. (%,+/-)	30%	$ 448,530
☐ Preliminary Design	Professional Services (%,+/-)	10%	$ 149,510
☐ Final Design	Easement Acquisition		$ 117,900
	***Total:**		**$ 2,212,000**

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*Total is rounded up to the nearest $1,000.

Kimley-Horn & Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	10/16/2025
Project:	2025 Flower Mound Water Master Plan Update	Prepared By:	JBA
KHA No.:	061000231	Checked By:	CJM
5-Yr-4	Furst Ranch 12/16-Inch Water Line - Phase I		
Project Description:	Approximately 5800 LF of Looping 12 & 16-Inch Water Lines near US Highway 377 and FM 1171. This line will provide service to Furst Ranch.		

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 150,000	$ 150,000
2	Traffic Control	1	LS	$ 25,000	$ 25,000
3	Miscellaneous	1	LS	$ 175,000	$ 175,000
4	Allowance	1	LS	$ 200,000	$ 200,000
5	Erosion Control	1.10	MI	$ 10,000	$ 16,000
6	16" Water Pipe	5,800	LF	$ 275	$ 1,595,000
7	16" Resilient Seated Gate Valve	9	EA	$ 15,000	$ 135,000
8	2" Combination Air Release Valve & Vault	2	EA	$ 30,000	$ 60,000
9	Fire Hydrant Assembly	12	EA	$ 10,000	$ 120,000
10	Connect to Existing Water Line (16-24")	6	EA	$ 30,000	$ 180,000
11	Water Line Trench Safety	5,800	LF	$ 3	$ 17,400
12	Hydromulch Repair	12,800	SY	$ 3	$ 38,400

	Subtotal:		$ 2,711,800
☑ No Design Completed	Conting. (%,+/-)	30%	$ 813,540
☐ Preliminary Design	Professional Services (%,+/-)	10%	$ 271,180
☐ Final Design	Easement Acquisition		$ 345,300
	***Total:**		**$ 4,142,000**

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*Total is rounded up to the nearest $1,000.

Kimley-Horn & Associates, Inc. — Opinion of Probable Construction Cost

Client:	Town of Flower Mound	Date:	10/16/2025
Project:	2025 Flower Mound Water Master Plan Update	Prepared By:	JBA
KHA No.:	061000231	Checked By:	CJM

5-Yr-5 Bruton Orand Water Lines

Project Description: Approximately 2400 LF of Parallel 16 & 24-Inch Water Lines parallel to existing Bruton Orand EST transmission mains. These lines will decrease headloss in max day demand scenarios.

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 150,000	$ 150,000
2	Traffic Control	1	LS	$ 35,000	$ 35,000
3	Miscellaneous	1	LS	$ 175,000	$ 175,000
4	Allowance	1	LS	$ 200,000	$ 200,000
5	Erosion Control	0.38	MI	$ 10,000	$ 8,800
6	16" Water Pipe	2,000	LF	$ 275	$ 550,000
7	30" Casing BOTOC w/16" Carrier Pipe	150	LF	$ 1,700	$ 255,000
8	42" Casing BOTOC w/24" Carrier Pipe	200	LF	$ 2,400	$ 480,000
9	16" Resilient Seated Gate Valve	5	EA	$ 15,000	$ 75,000
10	2" Combination Air Release Valve & Vault	1	EA	$ 30,000	$ 30,000
11	Fire Hydrant Assembly	4	EA	$ 10,000	$ 40,000
12	Connect to Existing Water Line (16-24")	4	EA	$ 30,000	$ 120,000
13	Water Line Trench Safety	2,000	LF	$ 3	$ 6,000
14	Hydromulch Repair	4,400	SY	$ 3	$ 13,200
15	Pavement Repair	600	SY	$ 125	$ 75,000

	Subtotal:		$ 2,213,000
☑ No Design Completed	Conting. (%,+/-)	30%	$ 663,900
☐ Preliminary Design	Professional Services (%,+/-)	10%	$ 221,300
☐ Final Design	Easement Acquisition		$ 145,500
	***Total:**		**$ 3,244,000**

The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.

*Total is rounded up to the nearest $1,000.

Kimley-Horn & Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	10/16/2025
Project:	2025 Flower Mound Water Master Plan Update	Prepared By:	JBA
KHA No.:	061000231	Checked By:	CJM
5-Yr-6	Scenic Drive Water Line - Phase II and Pressure Sustaining Valves		
Project Description:	Approximately 2700 LF of 12-Inch Water Line from Scenic Drive Water Line Phase I to existing 8-Inch water line near River Hill Drive and pressure sustaining valves along boundary of east and west pressure planes. These valves will allow water to enter the east pressure plane from the west and provide water during max day demand scenarios.		

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 150,000	$ 150,000
2	Traffic Control	1	LS	$ 25,000	$ 25,000
3	Miscellaneous	1	LS	$ 175,000	$ 175,000
4	Allowance	1	LS	$ 200,000	$ 200,000
5	Erosion Control	0.53	MI	$ 10,000	$ 10,300
6	12" Water Pipe	2,800	LF	$ 200	$ 560,000
7	12" Resilient Seated Gate Valve	4	EA	$ 7,000	$ 28,000
8	1" Combination Air Release Valve & Vault	1	EA	$ 20,000	$ 20,000
9	Pressure Sustaining Valve	4	EA	$ 60,000	$ 240,000
10	Fire Hydrant Assembly	6	EA	$ 10,000	$ 60,000
11	Connect to Existing Water Line (<16")	2	EA	$ 10,000	$ 20,000
12	Water Line Trench Safety	2,800	LF	$ 3	$ 8,400
13	Hydromulch Repair	6,100	SY	$ 3	$ 18,300

	Subtotal:		$ 1,515,000
☑ No Design Completed	Conting. (%,+/-)	30%	$ 454,500
☐ Preliminary Design	Professional Services (%,+/-)	10%	$ 151,500
☐ Final Design	Easement Acquisition		$ 164,700
	***Total:**		**$ 2,286,000**

The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.

*Total is rounded up to the nearest $1,000.

Kimley-Horn & Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	10/16/2025
Project:	2025 Flower Mound Water Master Plan Update	Prepared By:	JBA
KHA No.:	061000231	Checked By:	CJM
5-Yr-7	HWY 377/UPRR Water Line - Phase IV		
Project Description:	Approximately 2000 LF of 20-Inch Water line from 24-Inch Brookview stubout to existing 20-Inch Water Line near Intersection of HWY 377 and FM 1171		

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 150,000	$ 150,000
2	Traffic Control	1	LS	$ 25,000	$ 25,000
3	Miscellaneous	1	LS	$ 175,000	$ 175,000
4	Allowance	1	LS	$ 200,000	$ 200,000
5	Erosion Control	0.38	MI	$ 10,000	$ 8,800
6	20" Water Pipe	2,000	LF	$ 350	$ 700,000
7	20" Resilient Seated Gate Valve	3	EA	$ 25,000	$ 75,000
8	2" Combination Air Release Valve & Vault	1	EA	$ 30,000	$ 30,000
9	Blow Off Valve & Vault	1	EA	$ 30,000	$ 30,000
10	Connect to Existing Water Line (16-24")	2	EA	$ 30,000	$ 60,000
11	Water Line Trench Safety	2,000	LF	$ 3	$ 6,000
12	Hydromulch Repair	4,400	SY	$ 3	$ 13,200

	Subtotal:		$ 1,473,000
☑ No Design Completed	Conting. (%,+/-)	30%	$ 441,900
☐ Preliminary Design	Professional Services (%,+/-)	10%	$ 147,300
☐ Final Design	Easement Acquisition		$ 118,200
	***Total:**		**$ 2,181,000**

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*Total is rounded up to the nearest $1,000.

Kimley-Horn & Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	10/21/2025
Project:	Flower Mound Water Master Plan Update	Prepared By:	JBA
KHA No.:	061000231	Checked By:	CJM
5-Yr-8	Stonecrest Pump Station - Phase II		
Project Description:	5.0 MG Prestressed Concrete Ground Storage Tank and 8.5 MGD Horizontal Split Case Bottom Suction Pump and 450 HP motor.		

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 300,000	$ 300,000
2	Miscellaneous	1	LS	$ 500,000	$ 500,000
3	Allowance	1	LS	$ 300,000	$ 300,000
4	Erosion Control and SWPPP	1	LS	$ 25,000	$ 25,000
5	5.0 MG Prestressed Concrete Ground Storage Tank	1	EA	$ 5,000,000	$ 5,000,000
6	36" Supply Yard Piping	300	LF	$ 1,000	$ 300,000
7	42" Discharge Yard Piping	300	LF	$ 1,500	$ 450,000
8	8.5 MGD Horizontal Split Case Bottom Suction Pump and 450 HP Moto	1	EA	$500,000	$ 500,000
9	Pump Station Mechanical Piping and Valves	1	LS	$ 100,000	$ 100,000
10	Electrical and SCADA - PS	1	LS	$ 750,000	$ 750,000
11	36" Resilient Seated Gate Valve & Vault	1	EA	$100,000	$ 100,000
12	42" Resilient Seated Gate Valve & Vault	1	EA	$150,000	$ 150,000
13	Site Work - PS	1	LS	$ 150,000	$ 150,000

	Subtotal:		$ 8,625,000
☑ No Design Completed	Conting. (%,+/-)	30%	$ 2,587,500
☐ Preliminary Design	Professional Services (%,+/-)	10%	$ 862,500
☐ Final Design	Property Purchase		
	Total:		**$ 12,075,000**

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Kimley-Horn & Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	10/16/2025
Project:	2025 Flower Mound Water Master Plan Update	Prepared By:	JBA
KHA No.:	061000231	Checked By:	CJM
10-Yr-1	Furst Ranch 16-Inch Water Line - Phase II		
Project Description:	Approximately 4100 LF of 16-Inch Water Line from 5 Year CIP Project 2 to 5 Year CIP Project 4. This line will provide service to Furst Ranch.		

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 150,000	$ 150,000
2	Traffic Control	1	LS	$ 25,000	$ 25,000
3	Miscellaneous	1	LS	$ 175,000	$ 175,000
4	Allowance	1	LS	$ 200,000	$ 200,000
5	Erosion Control	0.78	MI	$ 10,000	$ 12,800
6	16" Water Pipe	4,100	LF	$ 275	$ 1,127,500
7	16" Resilient Seated Gate Valve	6	EA	$ 15,000	$ 90,000
8	2" Combination Air Release Valve & Vault	2	EA	$ 30,000	$ 60,000
9	Connect to Existing Water Line (16-24")	4	EA	$ 30,000	$ 120,000
10	Water Line Trench Safety	4,100	LF	$ 3	$ 12,300
11	Hydromulch Repair	9,100	SY	$ 3	$ 27,300

	Subtotal:		$ 1,999,900
☑ No Design Completed	Conting. (%,+/-)	30%	$ 599,970
☐ Preliminary Design	Professional Services (%,+/-)	10%	$ 199,990
☐ Final Design	Easement Acquisition		$ 243,600
	***Total:**		**$ 3,044,000**

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*Total is rounded up to the nearest $1,000.

Kimley-Horn & Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	10/16/2025
Project:	2025 Flower Mound Water Master Plan Update	Prepared By:	JBA
KHA No.:	061000231	Checked By:	CJM
10-Yr-2	Furst Ranch 12-Inch Water Lines - Phase II		
Project Description:	Approximately 6100 LF of 12-Inch Water Lines from 10 Year CIP Project 1 to 5 Year CIP Project 4. This line will provide service to Furst Ranch.		

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 150,000	$ 150,000
2	Traffic Control	1	LS	$ 25,000	$ 25,000
3	Miscellaneous	1	LS	$ 175,000	$ 175,000
4	Allowance	1	LS	$ 200,000	$ 200,000
5	Erosion Control	1.16	MI	$ 10,000	$ 16,600
6	12" Water Pipe	6,100	LF	$ 200	$ 1,220,000
7	12" Resilient Seated Gate Valve	8	EA	$ 7,000	$ 56,000
8	1" Combination Air Release Valve & Vault	2	EA	$ 20,000	$ 40,000
9	Fire Hydrant Assembly	13	EA	$ 10,000	$ 130,000
10	Connect to Existing Water Line (<16")	5	EA	$ 10,000	$ 50,000
11	Water Line Trench Safety	6,100	LF	$ 3	$ 18,300
12	Hydromulch Repair	13,500	SY	$ 3	$ 40,500

	Subtotal:		$ 2,121,400
☑ No Design Completed	Conting. (%,+/-)	30%	$ 636,420
☐ Preliminary Design	Professional Services (%,+/-)	10%	$ 212,140
☐ Final Design	Easement Acquisition		$ 364,200
	***Total:**		**$ 3,335,000**

The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.

*Total is rounded up to the nearest $1,000.

Kimley-Horn & Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	10/16/2025
Project:	2025 Flower Mound Water Master Plan Update	Prepared By:	JBA
KHA No.:	061000231	Checked By:	CJM
10-Yr-3	Furst Ranch 12-Inch Water Line - Phase III		
Project Description:	Approximately 1300 LF of 12-Inch Water Line from existing 30-Inch Water Line near US Highway 377 to 10 Year CIP Project 1. This line will provide service to Furst ranch and Prairie Vista.		

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 75,000	$ 75,000
2	Traffic Control	1	LS	$ 25,000	$ 25,000
3	Miscellaneous	1	LS	$ 100,000	$ 100,000
4	Allowance	1	LS	$ 100,000	$ 100,000
5	Erosion Control	0.25	MI	$ 10,000	$ 7,500
6	12" Water Pipe	1,300	LF	$ 200	$ 260,000
7	12" Resilient Seated Gate Valve	3	EA	$ 7,000	$ 21,000
8	1" Combination Air Release Valve & Vault	1	EA	$ 20,000	$ 20,000
9	Fire Hydrant Assembly	3	EA	$ 10,000	$ 30,000
10	Connect to Existing Water Line (<16")	2	EA	$ 10,000	$ 20,000
11	Water Line Trench Safety	1,300	LF	$ 3	$ 3,900
12	Hydromulch Repair	2,900	SY	$ 3	$ 8,700

	Subtotal:		$ 671,100
☑ No Design Completed	Conting. (%,+/-)	30%	$ 201,330
☐ Preliminary Design	Professional Services (%,+/-)	10%	$ 67,110
☐ Final Design	Easement Acquisition		$ 77,100
	***Total:**		**$ 1,017,000**

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*Total is rounded up to the nearest $1,000.

Kimley-Horn & Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	10/16/2025
Project:	2025 Flower Mound Water Master Plan Update	Prepared By:	JBA
KHA No.:	061000231	Checked By:	CJM
10-Yr-4	FM 1171 Water Line - Phase II and Pressure Sustaining Valve		
Project Description:	Approximately 6100 LF of 16-Inch Water Line parallel to existing 20-Inch Water Line on FM 1171. This line will provide secondary transmission from the Freeman EST to the east pressure plane.		

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 150,000	$ 150,000
2	Traffic Control	1	LS	$ 35,000	$ 35,000
3	Miscellaneous	1	LS	$ 175,000	$ 175,000
4	Allowance	1	LS	$ 200,000	$ 200,000
5	Erosion Control	1.17	MI	$ 10,000	$ 16,700
6	16" Water Pipe	6,200	LF	$ 275	$ 1,705,000
7	16" Resilient Seated Gate Valve	8	EA	$ 15,000	$ 120,000
8	2" Combination Air Release Valve & Vault	2	EA	$ 30,000	$ 60,000
9	Pressure Sustaining Valve	1	EA	$ 60,000	$ 60,000
10	Fire Hydrant Assembly	13	EA	$ 10,000	$ 130,000
11	Connect to Existing Water Line (16-24")	5	EA	$ 30,000	$ 150,000
12	Water Line Trench Safety	6,200	LF	$ 3	$ 18,600
13	Hydromulch Repair	13,700	SY	$ 3	$ 41,100

	Subtotal:		$ 2,861,400
☑ No Design Completed	Conting. (%,+/-)	30%	$ 858,420
☐ Preliminary Design	Professional Services (%,+/-)	10%	$ 286,140
☐ Final Design	Easement Acquisition		$ 368,400
	***Total:**		**$ 4,375,000**

The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.

*Total is rounded up to the nearest $1,000.

Kimley-Horn & Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	10/16/2025
Project:	2025 Flower Mound Water Master Plan Update	Prepared By:	JBA
KHA No.:	061000231	Checked By:	CJM
10-Yr-5	West Side Water Line (South) - Phase I		
Project Description:	Approximately 2400 LF of 12-Inch Water line from existing 20-Inch Water Line near FM 1171 to Dunham Road Water Line. This line will provide service to Furst Ranch south of FM 1171.		

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 150,000	$ 150,000
2	Traffic Control	1	LS	$ 35,000	$ 35,000
3	Miscellaneous	1	LS	$ 175,000	$ 175,000
4	Allowance	1	LS	$ 200,000	$ 200,000
5	Erosion Control	0.42	MI	$ 10,000	$ 9,200
6	12" Water Pipe	2,200	LF	$ 200	$ 440,000
7	24" Casing BOTOC w/12" Carrier Pipe	200	LF	$ 1,400	$ 280,000
8	12" Resilient Seated Gate Valve	3	EA	$ 7,000	$ 21,000
9	1" Combination Air Release Valve & Vault	1	EA	$ 20,000	$ 20,000
10	Fire Hydrant Assembly	5	EA	$ 10,000	$ 50,000
11	Connect to Existing Water Line (<16")	2	EA	$ 10,000	$ 20,000
12	Water Line Trench Safety	2,200	LF	$ 3	$ 6,600
13	Hydromulch Repair	4,800	SY	$ 3	$ 14,400
14	Pavement Repair	300	SY	$ 125	$ 37,500

	Subtotal:		$ 1,458,700
☑ No Design Completed	Conting. (%,+/-)	30%	$ 437,610
☐ Preliminary Design	Professional Services (%,+/-)	10%	$ 145,870
☐ Final Design	Easement Acquisition		$ 143,100
	***Total:**		**$ 2,186,000**

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*Total is rounded up to the nearest $1,000.

Kimley-Horn & Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	10/16/2025
Project:	2025 Flower Mound Water Master Plan Update	Prepared By:	JBA
KHA No.:	061000231	Checked By:	CJM
10-Yr-6	Morriss Rd 20-Inch Parallel Water Lines		
Project Description:	Approximately 1100 LF of 20-Inch Water Line from Mallard Way to FM 3040. This line will parallel an existing 16-Inch Water Line and provide secondary transmission from Pintail Pump Station to the Lakeside Business District.		

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 150,000	$ 150,000
2	Traffic Control	1	LS	$ 35,000	$ 35,000
3	Miscellaneous	1	LS	$ 175,000	$ 175,000
4	Allowance	1	LS	$ 200,000	$ 200,000
5	Erosion Control	0.17	MI	$ 10,000	$ 6,700
6	20" Water Pipe	900	LF	$ 350	$ 315,000
7	36" Casing BOTOC w/20" Carrier Pipe	200	LF	$ 2,000	$ 400,000
8	20" Resilient Seated Gate Valve	3	EA	$ 25,000	$ 75,000
9	2" Combination Air Release Valve & Vault	1	EA	$ 30,000	$ 30,000
10	Blow Off Valve & Vault	1	EA	$ 30,000	$ 30,000
11	Connect to Existing Water Line (16-24")	2	EA	$ 30,000	$ 60,000
12	Water Line Trench Safety	900	LF	$ 3	$ 2,700
13	Hydromulch Repair	1,900	SY	$ 3	$ 5,700
14	Pavement Repair	300	SY	$ 125	$ 37,500

	Subtotal:		$ 1,522,600
☑ No Design Completed	Conting. (%,+/-)	30%	$ 456,780
☐ Preliminary Design	Professional Services (%,+/-)	10%	$ 152,260
☐ Final Design	Easement Acquisition		$ 63,900
	***Total:**		**$ 2,196,000**

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Kimley-Horn & Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	10/16/2025
Project:	2025 Flower Mound Water Master Plan Update	Prepared By:	JBA
KHA No.:	061000231	Checked By:	CJM
10-Yr-7	Kirkpatrick Lane Water Line Loop		
Project Description:	Approximately 1000 LF of 12-Inch Water Line from existing 12-Inch Water line near Kirkpatrick Lane south of FM 1171 to existing 12-Inch Water Line near Kirkpatrick Lane west of South Garden Ridge Boulevard. This line will eliminate two dead ends in the area and improve water quality.		

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 75,000	$ 75,000
2	Traffic Control	1	LS	$ 25,000	$ 25,000
3	Miscellaneous	1	LS	$ 100,000	$ 100,000
4	Allowance	1	LS	$ 100,000	$ 100,000
5	Erosion Control	0.19	MI	$ 10,000	$ 6,900
6	12" Water Pipe	1,000	LF	$ 200	$ 200,000
7	12" Resilient Seated Gate Valve	3	EA	$ 7,000	$ 21,000
8	1" Combination Air Release Valve & Vault	1	EA	$ 20,000	$ 20,000
9	Fire Hydrant Assembly	2	EA	$ 10,000	$ 20,000
10	Connect to Existing Water Line (<16")	2	EA	$ 10,000	$ 20,000
11	Water Line Trench Safety	1,000	LF	$ 3	$ 3,000
12	Hydromulch Repair	2,200	SY	$ 3	$ 6,600
			Subtotal:		$ 597,500
☑	No Design Completed		Conting. (%,+/-)	30%	$ 179,250
☐	Preliminary Design		Professional Services (%,+/-)	10%	$ 59,750
☐	Final Design		Easement Acquisition		$ 57,900
			***Total:**		**$ 895,000**

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Kimley-Horn & Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	10/21/2025
Project:	Flower Mound Water Master Plan Update	Prepared By:	JBA
KHA No.:	061000231	Checked By:	CJM
10-Yr-8	Stonecrest Pump Station - Phase III		
Project Description:	8.5 MGD Horizontal Split Case Bottom Suction Pump and 450 HP Motor		

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 150,000	$ 150,000
2	Miscellaneous	1	LS	$ 150,000	$ 150,000
3	Allowance	1	LS	$ 100,000	$ 100,000
4	8.5 MGD Horizontal Split Case Bottom Suction Pump and 450 HP Moto	1	EA	$ 500,000	$ 500,000
5	Pump Station Mechanical Piping and Valves	1	LS	$ 100,000	$ 100,000
6	Electrical and SCADA - PS	1	LS	$ 500,000	$ 500,000

	Subtotal:		$ 1,500,000
☑ No Design Completed	Conting. (%,+/-)	30%	$ 450,000
☐ Preliminary Design	Professional Services (%,+/-)	10%	$ 150,000
☐ Final Design			
	Total:		**$ 2,100,000**

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Kimley-Horn & Associates, Inc. — Opinion of Probable Construction Cost

Client:	Town of Flower Mound	Date:	10/16/2025
Project:	2025 Flower Mound Water Master Plan Update	Prepared By:	JBA
KHA No.:	061000231	Checked By:	CJM
10-Yr-9	FM 1171 to HWY 377 Water Line - Phase II		
Project Description:	Approximately 14100 LF of 24-Inch Water Lines parallel to existing 20-Inch Water Lines along FM 1171. These lines will provide secondary transmission from Stonecrest Pump Station to Freeman EST.		

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 300,000	$ 300,000
2	Traffic Control	1	LS	$ 35,000	$ 35,000
3	Miscellaneous	1	LS	$ 250,000	$ 250,000
4	Allowance	1	LS	$ 300,000	$ 300,000
5	Erosion Control	2.65	MI	$ 10,000	$ 31,500
6	24" Water Pipe	14,000	LF	$ 400	$ 5,600,000
7	42" Casing BOTOC w/24" Carrier Pipe	200	LF	$ 2,400	$ 480,000
8	24" Resilient Seated Gate Valve & Vault	12	EA	$ 50,000	$ 600,000
9	3" Combination Air Release Valve & Vault	7	EA	$ 40,000	$ 280,000
10	Blow Off Valve & Vault	4	EA	$ 30,000	$ 120,000
11	Connect to Existing Water Line (16-24")	9	EA	$ 30,000	$ 270,000
12	Water Line Trench Safety	14,000	LF	$ 3	$ 42,000
13	Hydromulch Repair	42,200	SY	$ 3	$ 126,600
14	Pavement Repair	1,900	SY	$ 125	$ 237,500

	Subtotal:		$ 8,672,600
☑ No Design Completed	Conting. (%,+/-)	30%	$ 2,601,780
☐ Preliminary Design	Professional Services (%,+/-)	10%	$ 867,260
☐ Final Design	Easement Acquisition		$ 1,265,700
	***Total:**		**$ 13,408,000**

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*Total is rounded up to the nearest $1,000.

Kimley-Horn & Associates, Inc. — Opinion of Probable Construction Cost

Client:	Town of Flower Mound	Date:	10/16/2025
Project:	2025 Flower Mound Water Master Plan Update	Prepared By:	JBA
KHA No.:	061000231	Checked By:	CJM

BO-1 West Side Water Line (South) - Phase II

Project Description: Approximately 13500 LF of 12-Inch Water Line from existing 12-Inch Water line in Trailwood to Beyond 10 Year project 3. This line will provide looping and improve water quality for the southwest portion of the system.

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 150,000	$ 150,000
2	Traffic Control	1	LS	$ 25,000	$ 25,000
3	Miscellaneous	1	LS	$ 250,000	$ 250,000
4	Allowance	1	LS	$ 300,000	$ 300,000
5	Erosion Control	2.58	MI	$ 10,000	$ 30,800
6	12" Water Pipe	13,600	LF	$ 200	$ 2,720,000
7	12" Resilient Seated Gate Valve	8	EA	$ 7,000	$ 56,000
8	1" Combination Air Release Valve & Vault	4	EA	$ 20,000	$ 80,000
9	Fire Hydrant Assembly	28	EA	$ 10,000	$ 280,000
10	Connect to Existing Water Line (<16")	2	EA	$ 10,000	$ 20,000
11	Water Line Trench Safety	13,600	LF	$ 3	$ 40,800
12	Hydromulch Repair	30,100	SY	$ 3	$ 90,300

	Subtotal:		$ 4,042,900
☑ No Design Completed	Conting. (%,+/-)	30%	$ 1,212,870
☐ Preliminary Design	Professional Services (%,+/-)	10%	$ 404,290
☐ Final Design	Easement Acquisition		$ 812,400
	***Total:**		**$ 6,473,000**

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*Total is rounded up to the nearest $1,000.

Kimley-Horn & Associates, Inc.					Opinion of Probable Construction Cost
Client:	Town of Flower Mound			Date:	10/16/2025
Project:	2025 Flower Mound Water Master Plan Update			Prepared By:	JBA
KHA No.:	061000231			Checked By:	CJM
BO-2	West Side Water Line (South) - Phase III				
Project Description:	Approximately 3900 LF of 12-Inch Water Line from existing 20-Inch Water line near intersection of HWY 377 and FM 1171 to Beyond 10 Year project 2. This line will provide looping and improve water quality for the southwest portion of the system.				

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 150,000	$ 150,000
2	Traffic Control	1	LS	$ 25,000	$ 25,000
3	Miscellaneous	1	LS	$ 175,000	$ 175,000
4	Allowance	1	LS	$ 200,000	$ 200,000
5	Erosion Control	0.74	MI	$ 10,000	$ 12,400
6	12" Water Pipe	3,900	LF	$ 200	$ 780,000
7	12" Resilient Seated Gate Valve	4	EA	$ 7,000	$ 28,000
8	1" Combination Air Release Valve & Vault	1	EA	$ 20,000	$ 20,000
9	Fire Hydrant Assembly	8	EA	$ 10,000	$ 80,000
10	Connect to Existing Water Line (<16")	2	EA	$ 10,000	$ 20,000
11	Water Line Trench Safety	3,900	LF	$ 3	$ 11,700
12	Hydromulch Repair	8,600	SY	$ 3	$ 25,800

	Subtotal:		$ 1,527,900
☑ No Design Completed	Conting. (%,+/-)	30%	$ 458,370
☐ Preliminary Design	Professional Services (%,+/-)	10%	$ 152,790
☐ Final Design	Easement Acquisition		$ 231,300
	***Total:**		**$ 2,371,000**

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*Total is rounded up to the nearest $1,000.

PLANNING & ZONING COMMISSION AGENDA I.4. REGULAR ITEM(S)

DATE: December 8, 2025
FROM: Leandro Rodriguez, CIP Manager
ITEM: **Public Hearing to consider an ordinance amending Section 9.0 - Wastewater Plan of the Master Plan (MPA25-0007 - Wastewater Plan Amendment) to adopt amendments and additions to the 2009 Wastewater Master Plan Update as a component of the Master Plan.**

BACKGROUND:

The Town periodically provides updates to its Master Plans. Growth trends and population distribution, along with collected field data, are reflected in the update to the Town's Wastewater Model. (See Attachment for proposed amendments). The updated model helps the Town determine priorities for upcoming Capital Projects and is used to determine updated impact fees. The wastewater model has been updated and, as a result, staff is recommending approval of the amendment to the Wastewater Plan component of the Master Plan.

A public hearing and final consideration by Town Council for a Master Plan Amendment to amend Section 9.0 Wastewater Master Plan is scheduled for the December 15, 2025 Town Council Meeting. The impact fee update process will follow the approval of the amendment.

BOARD REVIEW/CITIZEN FEEDBACK: The Town Code requires notice in a newspaper of general circulation (Denton Record Chronicle). At the time this report was written, staff had not received any correspondence regarding this item.

ALTERNATIVES: N/A

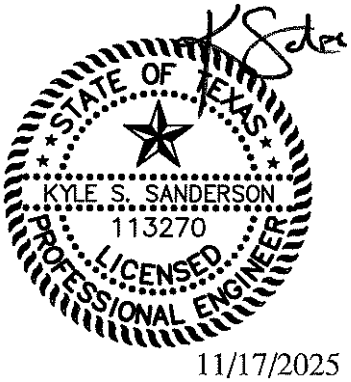
FISCAL IMPACT: N/A

LEGAL REVIEW: Brennan Lafferty, of Taylor, Olson, Adkins, Sralla, & Elam L.L.P., will review the ordinance as to form and legality.

ATTACHMENTS:
1. 2025 Wastewater Master Plan Amendments

DRAFT MOTION: Move to approve as presented in the agenda caption.

Kimley»Horn



Technical Memorandum

Prepared for: Town of Flower Mound

Prepared by: Kimley-Horn and Associates, Inc.

Date: November 17, 2025

WASTEWATER MASTER PLAN AMENDMENTS

This memo amends the Wastewater System Master Plan Update prepared by Kellogg Brown & Root (KBR) in 2009. Sections of this memo are designated with the corresponding section number from the 2009 document. Sections in this memo with the same section number as the 2009 report are intended to replace the section from the 2009 report. Sections in this report with a new section number are intended to supplement the original report.

1.2 Project Scope Updated

The Town has retained Kimley-Horn to update the Town's wastewater model and Wastewater Master Plan for the year 2025. The 2009 Wastewater Master Plan and wastewater model done by KBR was previously updated by Kimley-Horn in 2015 and 2020. This master plan update included an update to the 2020 model based on current wastewater flows, demographics, future land uses and growth projections. This master plan projects growth and associated infrastructure needs for years 2030, 2035 and buildout. Furthermore, previous master planning efforts have been limited to the east side of Flower Mound due to limited development in the west. Over the last five years, west Flower Mound has seen an increase in development activity that warranted developing a detailed master plan. The results of this additional master planning has been incorporated as part of the 2025 update.

Historically, the Town's wastewater system was divided into five major service areas to correspond with the Town's five planning districts: Long Prairie, Lakeside, Cross Timbers Conservation District, Denton Creek, and Prairie Vista. Both Denton Creek and Prairie Vista are in the west part of the Town and are served by the Trinity River Authority of Texas (TRA). As mentioned above, development has increased in the Denton Creek and Prairie Vista service areas, with the Furst Ranch planned development spanning both and requiring shared wastewater infrastructure. To better meet these needs and streamline planning in the west part of the Town, both areas have been combined into a single Denton Creek service area. **Section 3.6** details the TRA wastewater service area updates for 2025. **Figure 2** has been replaced with an updated map of west Flower Mound that depicts the revised service area

limits as well as the TRA infrastructure. **Figure 3** has been replaced with the Wastewater Capital Improvements Capacity Projects (West System) map.

2.1.1 Software Selection (Updates)

The previous wastewater model used for the Town's master plans utilized InfoSewer as the modeling software. InfoSewer has since been discontinued, and as part of the 2025 master planning effort, the existing wastewater model was converted to InfoWorks ICM. All modeling scenarios for the 2025 master plan were completed using InfoWorks ICM.

2.3.1 Calculation of System Loads (Updates)

In 2015, the Town's gravity sewer basin was modified slightly from the 2009 KBR model to include new developments within the Long Prairie service area. Since then, there have not been any additional service area boundary changes.

As part of the 2025 model update, Kimley-Horn reconfigured the existing wastewater model to be directly linked to the Town's land use plan so that flow projections were directly correlated with existing and future land use assumptions for every property in the Town with potential to be provided public sewer service.

Prior to 2020, the Town's wastewater model used an extended period simulation (EPS) analysis where residential and commercial loads were calculated separately and loaded using diurnal patterns. Beginning in 2020, the model was updated to run peak flow simulations in a steady state condition. As a result, diurnal patterns were not applied to the commercial or residential loadings in model simulations. Furthermore, it was assumed that all land uses within a specific sub-basin would have the same peaking factor based on the Harmon's Formula. Since diurnal patterns are not utilized and peaking factors are consistent across land uses, all sewer loads (residential and non-residential) were combined into a single load at each respective node in the model, which reduces the complexity of the model. Peak flow simulations were used again in the 2025 master plan modeling. See **Sections 3.1.2** and **3.2.2** for additional information related to dry weather and wet weather modeling methodology.

2.4.1 Collection System Updates (Updates)

In 2012, the Town entered into an agreement with the City of Copper Canyon (Copper Canyon) in which the Town agreed to provide service to a portion of Copper Canyon. The agreement states that Copper Canyon may discharge up to 400,000 gallons of wastewater flow per day into the Town's wastewater system. This flow has been incorporated into the wastewater model.

As part of the 2025 update, the lift station pumps in model were calibrated to better reflect actual conditions. On-site testing was completed at the Glen Chester, Kirkpatrick, La Salle,

Point Noble, and Sanctuary lift stations in which field measurements were used to generate pump curves at the respective lift stations. For all other sites, with the exception of Emerald Bay, the pump curves in the model were updated to match the actual pump curves provided by the Town. A pump curve was not able to be located for the Emerald Bay lift station.

3.1.2 Dry Weather Modeling (Updates)

As part of the 2025 model update, residential flow data was gathered and evaluated. Data used to represent existing residential dry weather flows was obtained from system flow meters. Residential dry weather flow data was obtained from system flow meters installed in basins that serve primarily residential properties. Accurate flow meter data was difficult to obtain from many of the meter stations. It was observed that many meters had inaccurate readings or unavailable data. Accurate meter data will be important for calibrating future models and determining observed flows. See **Section 3.3.1** for more information on replacing and relocating meter stations. In calibrating dry weather residential flows, flow data was only used for meter stations where accurate data could be obtained. The available historical flow data indicated that the per capita duty factor for existing residential flows used in 2020 was still appropriate.

For existing non-residential flows, using flow meter data as the basis of duty factors was not practical because the system primarily conveys residential flows. Non-residential duty factors were calculated by multiplying the duty factors used for the drinking water master plan model by a specified multiplier. Using this approach, future non-residential developments were assigned a multiplier of 0.8 and future residential developments were assigned a multiplier of 0.45.

The 2009 KBR model did not provide projected dry weather flows for future scenarios; it only focused on wet weather peak events. As part of the 2015 and 2020 wastewater master plans, a dry weather model was created for future scenarios. The 2025 master plan includes dry weather load calculations for future scenarios as well. This data will be useful when evaluating the available capacity of the Town's wastewater treatment plant.

3.2.2 Wet Weather Modeling (Updates)

The 2009 model used historical data to generate a peaking factor for both I/I and domestic wastewater usage for each meter basin.

As part of the 2020 master plan, the Town's east wastewater service area was divided into 12 different sub-basins based on existing wastewater infrastructure. See **Figure 1** for sub-basin boundaries. The wastewater sub-basins were divided to make it simple to collect flow meter data from each basin to calibrate future models. These sub-basins were used again in the 2025 master plan to calculate peaking factors using Harmon's Formula. The Harmon's Formula is an engineering equation used to calculate peak flows through gravity wastewater

systems. Peak flow in this equation is determined as a factor of population. See below for Harmon's Formula.

Harmon's Formula:

$$PF = \frac{1 + 14}{(4 + P^{\frac{1}{2}})}$$

P = Population in thousands

See **Table 3.2.1** for East system sub-basin peaking factors.

Sub-Basin	Peaking Factor
1	3.36
2	3.16
3	3.32
4	2.98
5	3.35
6	3.04
7	3.58
8	2.82
9	2.98
10	3.12
11	3.20
12	2.98

Table 3.2.1. East System Sub-Basin Peaking Factors

As part of the 2025 master plan, 14 different subbasins were established within the west (TRA) service area and Harmon's Formula was used to calculate peak flows (See **Figure 2**). See **Table 3.2.2** for sub-basin peaking factors for the west system.

Sub-Basin	Peaking Factor
1	3.87
2	3.92
3	3.88
4	3.77
5	4.43
6	3.31
7	3.54
8	3.83
9	3.82
10	2.96
11	3.20
12	3.82
13	4.25
14	3.84

Table 3.2.2. West System Sub-Basin Peaking Factors

As discussed above, both the 2020 and 2025 model utilized peak flow scenarios. The peak flow scenarios provide a more conservative analysis than the modeling scenarios used in the 2009 master plan because it assumes that all flow throughout the wastewater system peaks simultaneously whereas scenarios in the 2009 master plan used diurnal patterns for the wastewater loadings that do not always peak at the same time. This method simulates the worst-case scenario for the Town's wastewater system.

3.3.1 Metering Stations (Updates)

The Town currently has 14 permanent meter station sites located in the east system. These sites are located throughout the Town and appear to be evenly distributed, as shown in **Figure 1**. When gathering historical flow meter data for model calibration, it was observed that many meter stations have limited available data or inaccurate flow readings.

In the west system, TRA has several existing meters that measure influent flow into their system. The TRA meter data was recorded in monthly intervals, and peak flows could not be compared to average flows with an interval that large. For future model scenarios, it is recommended that the Town coordinate with TRA to obtain daily or hourly data, if possible.

Accurate meter data will be important for calibrating future models and determining observed wet weather peaking factors for each sub-basin compared to peaking factors calculated with the Harmon's Formula. To collect accurate historical flow data for future model updates, the Town may consider repairing or replacing these meters over the next five years as well as

relocating and/or installing new meters at more appropriate locations based on the updated sub-basins. Long term or temporary meter stations may be used to satisfy wet weather calibration going forward.

3.4 Wastewater Treatment Plant

Currently the treatment plant serves the Long Prairie and Lakeside service areas. While the collection system is designed and rated to accommodate peak wet weather conditions, the wastewater treatment plant is permitted and rated based on average annual flow rates. In previous discussions with the Town, the treatment plant had a capacity of 9.5 million gallons a day (MGD) but was de-rated in 2019 to have a capacity of 8.7 MGD. Utilizing the dry weather model prepared as part of the model update, the projected build out annual average flow for these areas is around 8.4 MGD and the existing projected average day flow is 7.0 MGD.

Although the plant has adequate capacity to meet buildout flows, the Texas Commission on Environmental Quality (TCEQ) requires wastewater treatment plants to have a design capacity at least 10% above projected buildout average flows. The Town completed a Wastewater Treatment Plant (WWTP) Master Plan in 2023 and identified necessary capital improvements projects to meet TCEQ requirements. See the 2023 WWTP Master Plan for details on required capital improvements to achieve 10 MGD capacity.

3.5.1 Lakeside Business District (Updates)

The Lakeside Business District was originally composed of two land uses: Campus Industrial and Campus Commercial. At the time of the 2009 report, the Campus Industrial use was generally built-out with the remainder of developable land with the Lakeside Business District being Campus Commercial.

Prior to the 2015 update, a developer approached the Town with plans to pursue a Mixed Use development in the western part of the Lakeside Business District that exceeded the density projections associated with Campus Commercial. Kimley-Horn worked with the Town's planning department to determine what wastewater demands should be utilized for the new mixed use development. Based on the guidance provided by the Town, a composite average day wastewater demand of 2,440 gallons per day per acre was utilized in 2015 for the anticipated mixture of residential and non-residential uses (Mixed Use). In the 2020 and 2025 model update, the Mixed Use duty factor was increased to 3,200 gallons per day per acre.

In several other instances, developers have approached the Town with plans to develop properties with a higher density than allowed by the land use. Most recently, the Lakeside Village and Wynn Crosby developments have gone through the development review process and had their development plans approved with densities greater than that projected by the respective land use duty factors. These developments have been incorporated into the current

model with the sewer loads specified in the development review process instead of sewer loads calculated utilizing duty factors.

During the 2020 model updates, capital improvements projects were identified due to the projected increased densities and classified as necessary improvements within 5 years. Between 2020 and 2025, significant development has occurred in the Lakeside Business District; however, many areas have developed at lower densities than projected in 2020. This led to reduced peak flows in the 2025 model updates compared to the 2020 model. Consequently, some capital improvement projects identified in the 2020 update are no longer required, while others have been rescheduled for later phases.

Two of the projects that have been pushed into the buildout phase include the Southside Lift Station Improvements and Southside Force Main Extension. The Town's Southside Lift Station may require pumping improvements in the future to accommodate the projected flows indicated by the buildout peak flow simulation. In addition to these improvements, it may be necessary to extend the force main from the lift station to the wastewater treatment plant preliminary treatment area. Currently the force main discharges into the Town's gravity sewer systems just north of Lakeside Parkway, but in the future may need to be extended from this point to the treatment plant.

3.6 TRA Service Area

The Town currently has a contract with TRA to provide wastewater service for the Denton Creek service area (formerly Denton Creek and Prairie Vista) which falls within TRA's Denton Creek Regional Wastewater System (DCRWS).

New development plans within the Denton Creek Service area include the Monarch commercial development, the Brookview Estates residential development, portions of the Furst Ranch mixed use development, a new single-family estate development and a community activity center.

As part of the 2025 master plan, comprehensive modeling and planning for the TRA service area were conducted to assess current conditions and forecast future infrastructure requirements to support anticipated growth. Infrastructure necessary for proposed developments was incorporated into the future phase model scenarios. Flow calculations for both existing and buildout conditions within the TRA service area were based on the land use assumptions and duty factors detailed in **Section 3.1.2**. The current peak flow is measured at 1.2 MGD, while the projected buildout peak flow is 14.7 MGD. **Figure 3** provides an illustration of the TRA service area.

From conversations with TRA, the DCRWS is growing faster than previously anticipated resulting additional infrastructure needs. TRA will be performing a wastewater model update for the DCRWS soon which will likely trigger additional TRA infrastructure requirements and

potential improvements to TRA's wastewater treatment plant. Specifics of the additional infrastructure and associated costs are not known currently; however, it's understood that a portion of the infrastructure will be the Town's responsibility and will likely be covered through rate increases.

From conversations with the Town, there is a wastewater agreement with the Town of Argyle (Argyle) to route some of Argyle's flow through the Town's sewer infrastructure before ultimately being conveyed to TRA interceptors. Sewer loads representing the Argyle connection were included in the West system model.

4.1 Population Projections

The population and growth projections used to estimate future wastewater flows were derived by working with the Town's planning department and are based on the Town's current land use plan.

See **Table 4.1** for Population Projections in both the east and west sewer systems.

Phase	East System Population	West System Population
Existing	75,425	3,468
5-Year	78,908	7,546
10-Year	80,253	9,993
Buildout	82,544	29,161

Table 4.1. Sewer System Population Projections

4.2 Land Use and System Loads

Delete Section 4.2 and 4.2.A and replace with the following

Kimley-Horn worked with the Town's planning department to determine projected growth for the years 2030, 2035 and buildout. These scenarios were evaluated to identify necessary infrastructure improvements for each planning year. These projections included the revised land use plan for the Lakeside Area, updates to the future Prairie Vista development plan, and include the current land use plan for the Riverwalk development which was added in the 2015 model update.

4.3 5-Year CIP (2030 Scenario)

East – 5-Year Capital Improvements Projects

1. **Riverwalk Collector (Morriss Road to Windsor Drive)**
   Approximately 1,430 LF of 15-inch wastewater main is proposed running north and east from between FM 2499 and Morriss Road to Morriss Road, north of the intersection with Eaton.

   Project Cost $1,340,000

2. **Kirkpatrick Interceptor**
   Approximately 530 LF of 15-inch wastewater main is proposed running south from Sunlight Drive to Kirkpatrick Lane.

   Project Cost $730,000

3. **Upper Timber Interceptor (College Parkway to Corporate Drive)**
   Approximately 550 LF of 15-inch wastewater main is proposed running south from College Parkway to Corporate Drive.

   Project Cost $760,000

4. **Upper Timber Interceptor (Morriss Road to Leonard and Helen Johns Park)**
   Approximately 2,300 LF of 30-inch wastewater main is proposed to replace the existing 27-inch wastewater line from Morriss Road to Leonard and Helen Johns Park.

   Project Cost $2,980,000

West – 5-Year Capital Improvements Projects

1. **Western Trunk Line #1, Phase 1**
   Approximately 2,400 LF of 15-inch wastewater main is proposed to provide service to the proposed Furst Ranch development.

   Project Cost $1,330,000

2. **Prairie Vista Interceptor**
   Approximately 7,100 LF of 8" wastewater main is proposed to provide service to the proposed single family estate development and community activity center in the northern portion of the Prairie Vista service area.

   Project Cost $3,050,000

3. **Prairie Vista Lift Station and Force Main**
   This project includes the addition of a new lift station and approximately 1,560 LF of 6" force main to serve the proposed single family estate development and community activity center in the northern portion of the Prairie Vista service area.

   Project Cost $3,520,000

4. **Western Trunk Line #2**
   Approximately 700 LF of 12-inch wastewater main, 1,150 LF of 15-inch wastewater main, 1,550 LF of 18-inch wastewater main, and 1,500 LF of 21-inch wastewater main is proposed to provide service to the proposed Furst Ranch development.

   Project Cost $3,470,000

5. **Western Lift Station and Force Main Phase 1**
   This project includes the addition of a new lift station and approximately 6,900 LF of 8" force main to serve the Prairie Vista Service Area.

   Project Cost $5,700,000

4.4 10-Year CIP (2035 Scenario)

West – 10-Year Capital Improvements Projects

1. **Furst Ranch Southwest Interceptor**
   Approximately 800 LF of 12-inch wastewater main is proposed to provide service to the proposed Furst Ranch development.

   Project Cost $850,000

2. **Cross Timbers Road South Interceptor**
   Approximately 1,050 LF of 12-inch wastewater main and 1,050 LF of 15-inch wastewater main is proposed to provide service to the proposed Furst Ranch development.

   Project Cost $1,170,000

3. **Dunham Road Interceptor**
   Approximately 2,800 LF of 15-inch wastewater main and 2,550 LF of 8-inch wastewater main is proposed to provide service to the proposed Furst Ranch development.

   Project Cost $2,620,000

4. **Furst Ranch Northwest Interceptor**
   Approximately 1,700 LF of 12-inch wastewater main and 1,450 LF of 18-inch wastewater main is proposed to provide service to the proposed Furst Ranch development.

   Project Cost $1,680,000

5. **Western Trunk Line #1, Phase 2**
   Approximately 600 LF of 12-inch wastewater main and 1,000 LF of 15-inch wastewater main is proposed to provide service to the proposed Furst Ranch development.

   Project Cost $950,000

6. **Furst Ranch Phase 2 Infrastructure (Wastewater)**
   Approximately 3,700 LF of 30-inch wastewater main and 500 LF of 36-inch wastewater main is proposed to provide service to the proposed Furst Ranch development.

   Project Cost $5,070,000

7. **Furst Ranch Phase 3 Infrastructure (Wastewater)**
   Approximately 2,350 LF of 18-inch wastewater main is proposed to provide service to the proposed Furst Ranch development.

   Project Cost $2,520,000

4.5 Buildout CIP

East – Buildout Capital Improvements Projects

1. **Upper Timber Interceptor (Helen Johns Park to 1 Place Lane)**
   Approximately 1,400 LF of 30-inch wastewater main is proposed to replace the existing 27-inch wastewater line from Helen Johns Park to 1 Pl Lane.

   Project Cost $2,130,000

2. **Southside Force Main Extension**
   Approximately 4,600 LF of 18-inch force main is proposed to alleviate capacity constraints at the raw water lift station at the wastewater treatment plant. This force main will connect to the existing 18" force main constructed as part of the Lakeside Lift Station and Force Main project and end at the headworks of the Town's wastewater treatment plant. A detailed capacity study of the raw water lift station located at the wastewater treatment plant should be performed to determine if and when the force main extension will be required.

   Project Cost $4,550,000

3. **Southside Pump Upgrade**
   This project includes upsizing the two smaller pumps at the Southside Lift Station to add capacity to the lift station.

   Project Cost $1,550,000

4. **Upper Timber Interceptor (Rippy Road to Pecan Drive)**
   Approximately 430 LF of 21-inch wastewater main is proposed running south from Rippy Road to Pecan Drive.

   Project Cost $810,000

5. **Upper Timber Interceptor (Waketon Road)**
   Approximately 1,950 LF of 18-inch wastewater main is proposed running south from Long Prairie Road to the intersection of Waketon Road and Rippy Road.

   Project Cost $1,550,000

6. **Wastewater Treatment Plant Additional Treatment Units**
   This project consists of the addition of new treatment units to increase the capacity of the wastewater treatment plant.

   Project Cost $12,790,000

7. **WWTP SBR Conversion**
   This project consists of the conversion of an existing sequencing batch reactor basin to a storage basin to retain wastewater during peak flow events.

   Project Cost $1,490,000

West – Buildout Capital Improvements Projects

1. **Western Lift Station and Force Main Phase 2**
   This project includes upsizing the pumps at the Western Lift Station to add capacity to the lift station and approximately 6,900 LF of 12" force main to serve the Prairie Vista service area.

   Project Cost $9,170,000

2. **Southwest Lift Station and Force Main**
   This project includes the addition of a new lift station and approximately 8,050 of 4" force main to serve the proposed single family estate developments in the southwest portion of the Denton Creek service area.

   Project Cost $5,780,000

3. **Southeast Lift Station and Force Main**
   This project includes the addition of a new lift station and approximately 3,750 LF of 4" force main to serve the existing and proposed single family estates in the southern portion of the Prairie Vista service area.

   Project Cost $3,730,000

WASTEWATER SERVICE AREA (EAST SYSTEM)
Figure 1

THE TOWN OF FLOWER MOUND TEXAS

N W E S

0 2,800 5,600 Feet

Kimley»Horn

November 2025

- Proposed Meter Stations
- Meter Stations
- Wastewater Treatment Plant
- Existing Lift Station
- Existing Force Main
- Existing Wastewater Gravity Collectors
- Existing Wastewater Gravity Mains
- Service Area Boundary
- # Subbasins

TRA-MS-02

21"

TRA-MS-03

21"

DENTON CREEK BLVD

1

TRA-MS-05

2

TRA-MS-04

TRA-MS-06

TRA-MS-11

15"

3

CANYON FALLS

4

5

24"

TRA-MS-07

15"

SMOOT LN

8

7

21"

HWY 377

6

12

DENTON CREEK

27"

TRA-MS-08

TRA-MS-09

9

10

36"

24"

FM 1171

Prop MS-1

11

TRA LS

TRA-MS-10

14

DUNHAM RD

13

16"FM

30"FM

Vantor

WASTEWATER SERVICE AREA (WEST SYSTEM)
Figure 2

THE TOWN OF FLOWER MOUND TEXAS

N W E S

0 1,800 3,600 Feet

Kimley»Horn **November 2025**

Legend

- Proposed Meter Stations
- TRA Meter Stations
- Existing TRA Wastewater Gravity Main
- Existing Town Wastewater Gravity Main
- Existing Wastewater Force Main
- Lift Station: Existing TRA
- TRA Service Area Boundary
- # Subbasins

Wastewater Capital Improvements Capacity Projects (East System)

THE TOWN OF FLOWER MOUND TEXAS

N W E S

0 2,800 5,600 Feet

Kimley»Horn

November 2025

- Meter Stations
- Wastewater Treatment Plant
- Lift Station Improvements: Under Design or Construction
- Lift Station Improvements: 5-year CIP
- Lift Station Improvements: Buildout CIP
- Existing Lift Station
- Wastewater Force Main: Buildout CIP
- Wastewater Force Main: Under Design or Construction
- Wastewater Gravity Main: 5-year CIP
- Wastewater Gravity Main: Buildout CIP
- Existing Force Main
- Existing Wastewater Gravity Collectors
- Existing Wastewater Gravity Mains
- Service Area Boundary

Flower Mound Wastewater CIP Project Under Design or Construction

1. Lift Station Improvements and Decommissioning Phase III
2. Dakota Lift Station

Flower Mound 5-Year Wastewater CIP Project List

1. Riverwalk Collector (Morris Road to Windsor Drive)
2. Kirkpatrick Interceptor
3. Upper Timber Interceptor (College Parkway to Corporate Drive)
4. Upper Timber Interceptor (Morris Road to Leonard and Helen Johns Park

Flower Mound Buildout Wastewater CIP Project List

1. Upper Timber Interceptor (Helen Johns Park to 1 Place Lane)
2. Southside Force Main Extension
3. Southside Pump Upgrade
4. Upper Timber Interceptor (Rippy Road to Pecan Drive)
5. Upper Timber Interceptor (Waketon Road)
6. Wastewater Treatment Plant Additional Treatment Units
7. WWTP SBR Conversion

Wastewater Capital Improvements Capacity Projects (West System)

THE TOWN OF FLOWER MOUND TEXAS

N W E S

0 1,800 3,600 Feet

Kimley»Horn November 2025

Legend

- Lift Station: Existing TRA
- Lift Station: Build Out CIP
- Lift Station: Improvement 5-Year CIP
- Wastewater Gravity Main: Under Design or Construction
- Wastewater Gravity Main: 5-year CIP
- Wastewater Gravity Main: 10-year CIP
- Wastewater Gravity Main: Buildout CIP
- Wastewater Force Main: 5-Year CIP
- Wastewater Force Main: BuildOut CIP
- Wastewater Force Main: Existing TRA
- Existing TRA Wastewater Gravity Main
- Wastewater Gravity Main Existing Town
- TRA Service Area Boundary

Flower Mound CIP Project Under Design or Construction (West)

1. Furst Ranch Phase 1 (Wastewater)
2. Brookview Interceptor
3. Monarch Interceptor

Flower Mound 5-Year Wastewater CIP Project List (West)

1. Western Trunk Line #1, Phase 1
2. Prairie Vista Interceptor
3. Prairie Vista Lift Station & Force Main
4. Western Trunk Line #2
5. Western Lift Station & Force Main Phase 1

Flower Mound 10-year Wastewater CIP Project List (West)

1. Furst Ranch Southwest Interceptor
2. Cross Timbers Road South Interceptor
3. Dunham Road Interceptor
4. Furst Ranch Northwest Interceptor
5. Western Trunk Line #1, Phase 2
6. Furst Ranch Phase 2 Infrastructure (Wastewater)
7. Furst Ranch Phase 3 Infrastructure (Wastewater)

Flower Mound Buildout Wastewater CIP Project List (West)

1. Western Lift Station & Force Main Phase 2
2. Southwest Lift Station & Force Main
3. Southeast Lift Station & Force Main

Kimley-Horn & Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	9/26/2025
Project:	Wastewater Master Plan - East	Prepared By:	BP
KHA No.:	61000231	Checked By:	KSS
E 5-Yr-1	Riverwalk Collector (Morriss Road to Windsor Drive)		
Project Description:	Approximately 1,430 LF of 15-inch wastewater main is proposed running north and east from between FM 2499 and Morriss Road to Morriss Road, north of the intersection with Eaton.		

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 48,000	$ 48,000
2	Miscellaneous	1	LS	$ 100,000	$ 100,000
3	Allowance	1	LS	$ 75,000	$ 75,000
4	Traffic	1	LS	$ 35,000	$ 35,000
5	Erosion Control	0.27	MI	$ 10,000	$ 7,800
6	Bypass Pumping	1	LS	$ 25,000	$ 25,000
7	4' Manhole	7	EA	$ 12,500	$ 88,000
8	15" Sanitary Sewer by Pipe Bursting	1,430	LF	$ 400	$ 572,000

Basis for Cost Projection:			
☑ No Design Completed	Subtotal:		$ 950,800
☐ Preliminary Design	Contingency (%,+/-)	30%	$ 285,240
☐ Final Design	Professional Services (%,+/-)	10%	$ 95,080
	Easement Acquisition		$ -
	***Total:**		**$ 1,340,000**

The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.

*Total is rounded up to the nearest $10,000.

*Miscellaneous accounts for any work that is not accounted for in the above table that will be neccessary for project completion.

*Allowance accounts for potential change orders and will be recovered if not used.

Kimley-Horn & Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	9/26/2025
Project:	Wastewater Master Plan - East	Prepared By:	BP
KHA No.:	61000231	Checked By:	KSS
E 5-Yr-2	Kirkpatrick Interceptor		
Project Description:	Approximately 530 LF of 15-inch wastewater main is proposed running south from Sunlight Drive to Kirkpatrick Lane.		

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 26,000	$ 26,000
2	Miscellaneous	1	LS	$ 100,000	$ 100,000
3	Allowance	1	LS	$ 75,000	$ 75,000
4	Traffic	1	LS	$ 35,000	$ 35,000
5	Erosion Control	0.08	MI	$ 10,000	$ 5,800
6	Bypass Pumping	1	LS	$ 25,000	$ 25,000
7	4' Manhole	3	EA	$ 12,500	$ 38,000
8	15" Sanitary Sewer by Pipe Bursting	530	LF	$ 400	$ 212,000

Basis for Cost Projection:			
☑ No Design Completed	Subtotal:		$ 516,800
☐ Preliminary Design	Contingency (%,+/-)	30%	$ 155,040
☐ Final Design	Professional Services (%,+/-)	10%	$ 51,680
	Easement Acquisition		$ -
	***Total:**		**$ 730,000**

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*Total is rounded up to the nearest $10,000.

*Miscellaneous accounts for any work that is not accounted for in the above table that will be neccessary for project completion.

*Allowance accounts for potential change orders and will be recovered if not used.

Kimley-Horn & Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	9/26/2025
Project:	Wastewater Master Plan - East	Prepared By:	BP
KHA No.:	61000231	Checked By:	KSS
E 5-Yr-3	Upper Timber Interceptor (College Parkway to Corporate Drive)		
Project Description:	Approximately 550 LF of 15-inch wastewater main is proposed running south from College Parkway to Corporate Drive.		

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 28,000	$ 28,000
2	Miscellaneous	1	LS	$ 100,000	$ 100,000
3	Allowance	1	LS	$ 75,000	$ 75,000
4	Traffic	1	LS	$ 50,000	$ 50,000
5	Erosion Control	0.09	MI	$ 10,000	$ 6,000
6	Bypass Pumping	1	LS	$ 25,000	$ 25,000
7	4' Manhole	3	EA	$ 12,500	$ 38,000
8	15" Sanitary Sewer by Pipe Bursting	550	LF	$ 400	$ 220,000

Basis for Cost Projection:			
☑ No Design Completed	Subtotal:		$ 542,000
☐ Preliminary Design	Contingency (%,+/-)	30%	$ 162,600
☐ Final Design	Professional Services (%,+/-)	10%	$ 54,200
	Easement Acquisition		$ -
	***Total:**		**$ 760,000**

The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.

*Total is rounded up to the nearest $10,000.

*Miscellaneous accounts for any work that is not accounted for in the above table that will be neccessary for project completion.

*Allowance accounts for potential change orders and will be recovered if not used.

Kimley-Horn & Associates, Inc. — Opinion of Probable Construction Cost

Client:	Town of Flower Mound	Date:	9/26/2025
Project:	Wastewater Master Plan - East	Prepared By:	BP
KHA No.:	61000231	Checked By:	KSS

E 5-Yr-4 Upper Timber Interceptor (Morriss Road to Leonard and Helen Johns Park)

Project Description: Approximately 2,300 LF of 30-inch wastewater main is proposed to replace the existing 27-inch wastewater line from Morriss Road to Leonard and Helen Johns Park.

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 107,000	$ 107,000
2	Miscellaneous	1	LS	$ 175,000	$ 175,000
3	Allowance	1	LS	$ 150,000	$ 150,000
4	Traffic	1	LS	$ 25,000	$ 25,000
5	Erosion Control	0.42	MI	$ 10,000	$ 9,300
6	Sewer Line Trench Safety	2,240	LF	$ 3	$ 6,720
7	Hydromulch Repair	10,000	SY	$ 3	$ 30,000
8	Pavement Repair	3,000	SY	$ 125	$ 375,000
9	Bypass Pumping	1	LS	$ 50,000	$ 50,000
10	5' Manhole	6	EA	$ 25,000	$ 150,000
11	30" Sanitary Sewer	2,240	LF	$ 400	$ 896,000
12	48" Casing BOTOC w/30" Carrier Pipe	60	LF	$ 2,500	$ 150,000

Basis for Cost Projection:			
☑ No Design Completed	Subtotal:		$ 2,124,020
☐ Preliminary Design	Contingency (%,+/-)	30%	$ 637,210
☐ Final Design	Professional Services (%,+/-)	10%	$ 212,410
	Easement Acquisition		$ -
	***Total:**		**$ 2,980,000**

The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.

*Total is rounded up to the nearest $10,000.

*Miscellaneous accounts for any work that is not accounted for in the above table that will be neccessary for project completion.

*Allowance accounts for potential change orders and will be recovered if not used.

Kimley-Horn & Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	9/26/2025
Project:	Wastewater Master Plan - West	Prepared By:	BP
KHA No.:	061000231	Checked By:	KSS
W 5-Yr-1	Western Trunk Line #1, Phase 1		
Project Description:	Approximately 2,400 LF of 15-inch wastewater main is proposed to provide service to the proposed Furst Ranch development.		

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 48,000	$ 48,000
2	Miscellaneous	1	LS	$ 100,000	$ 100,000
3	Allowance	1	LS	$ 75,000	$ 75,000
4	Erosion Control	0.45	MI	$ 10,000	$ 9,600
5	Sewer Line Trench Safety	2,400	LF	$ 3	$ 7,200
6	Hydromulch Repair	10,700	SY	$ 3	$ 32,100
7	Connect to Exisitng Manhole	1	EA	$ 12,000	$ 12,000
8	4' Manhole	5	EA	$ 12,500	$ 62,500
9	15" Sanitary Sewer	2,400	LF	$ 250	$ 600,000

Basis for Cost Projection:				
☑ No Design Completed	Subtotal:			$ 946,400
☐ Preliminary Design	Contingency (%,+/-)	30%		$ 283,920
☐ Final Design	Professional Services (%,+/-)	10%		$ 94,640
	Easement Acquisition			$ -
	***Total:**			**$ 1,330,000**

The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.

*Total is rounded up to the nearest $10,000.

*Miscellaneous accounts for any work that is not accounted for in the above table that will be neccessary for project completion.

*Allowance accounts for potential change orders and will be recovered if not used.

Kimley-Horn & Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	9/26/2025
Project:	Wastewater Master Plan - West	Prepared By:	BP
KHA No.:	061000231	Checked By:	KSS
W 5-Yr-2	Prairie Vista Interceptor		
Project Description:	Approximately 7,100 LF of 8" wastewater main is proposed to provide service to the proposed single family estate development and community activity center in the northern portion of the Prairie Vista service area.		

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 109,000	$ 109,000
2	Miscellaneous	1	LS	$ 175,000	$ 175,000
3	Allowance	1	LS	$ 150,000	$ 150,000
4	Erosion Control	1.34	MI	$ 10,000	$ 18,500
5	Sewer Line Trench Safety	7,100	LF	$ 3	$ 21,300
6	Hydromulch Repair	31,600	SY	$ 3	$ 94,800
7	Connect to Existing Manhole	1	EA	$ 12,000	$ 12,000
8	4' Manhole	14	EA	$ 12,500	$ 175,000
9	8" Sanitary Sewer	7,100	LF	$ 200	$ 1,420,000

Basis for Cost Projection:			
☑ No Design Completed	Subtotal:		$ 2,175,600
☐ Preliminary Design	Contingency (%,+/-)	30%	$ 652,680
☐ Final Design	Professional Services (%,+/-)	10%	$ 217,560
	Easement Acquisition		$ -
	***Total:**		**$ 3,050,000**

The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.

*Total is rounded up to the nearest $10,000.

*Miscellaneous accounts for any work that is not accounted for in the above table that will be neccessary for project completion.

*Allowance accounts for potential change orders and will be recovered if not used.

Kimley-Horn and Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	9/26/2025
Project:	Wastewater Master Plan - West	Prepared By:	BP
KHA No.:	61000231	Checked By:	KSS
W 5-Yr-3	Prairie Vista Force Main		
Project Description:	Approximately 1,560 LF of 6" force main is proposed to serve the proposed single family estate development and community activity center in the Northern portion of the Prairie Vista service area.		

Line No.	Description	Quantity	Unit	Unit Price	Cost
1	Mobilization	1	LS	$ 32,000	$ 32,000
2	Miscellaneous	1	LS	$ 100,000	$ 100,000
3	Allowance	1	LS	$ 75,000	$ 75,000
4	Erosion Control	0.3	MI	$ 10,000	$ 2,960
5	Force Main Trench Safety	1,560	LF	$ 3	$ 4,680
6	Hydromulch Repair	7,000	SY	$ 3	$ 21,000
7	6" Force Main	1,410	LF	$ 125	$ 176,250
8	6" Plug Valve	1	EA	$ 6,000	$ 6,000
9	1" Combination Air Release Valve & Vault	1	EA	$ 20,000	$ 20,000
10	14" Casing BOTOC w/ 6" Carrier Pipe	150	LF	$ 1,000	$ 150,000

Basis for Cost Projection:			
☑ No Design Completed	Subtotal:		$ 587,890
☐ Preliminary Design	Contingency (%, +/-)	30%	$ 176,370
☐ Final Design	Professional Services (%, +/-)	10%	$ 58,790
	Easement Acquisition		$ 93,600
	***Total:**		**$ 920,000**

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*Miscellaneous accounts for any work that is not accounted for in the above table that will be neccessary for project completion.

*Allowance accounts for potential change orders and will be recovered if not used.

Kimley-Horn and Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	9/26/2025
Project:	Wastewater Master Plan - West	Prepared By:	BP
KHA No.:	61000231	Checked By:	KSS
W 5-Yr-3	Prairie Vista Lift Station		
Project Description:	This project includes the addition of a new lift station to serve the proposed single family estate development and community activity center in the northern portion of the Prairie Vista service area.		

Line No.	Description	Quantity	Unit	Unit Price	Cost
Civil					
1	Mobilization	1	LS	$ 97,000	$ 97,000
2	Miscellaneous	1	LS	$ 175,000	$ 175,000
3	Allowance	1	LS	$ 150,000	$ 150,000
4	300 GPM Submersible Pumps	2	EA	$ 35,000	$ 70,000
5	Mechanical Piping & Valves	1	LS	$ 100,000	$ 100,000
6	8" Sanitary Sewer	100	LF	$ 100	$ 10,000
7	4' Manhole	1	EA	$ 10,000	$ 10,000
8	6' Diameter Wet Well	1	LS	$ 110,000	$ 110,000
9	Wet Well Excavation	21	CY	$ 35	$ 740
10	Valve Vault	1	LS	$ 40,000	$ 40,000
11	Odor Control Unit and Controller System	1	LS	$ 50,000	$ 50,000
12	Equipment Pads	25	CY	$ 550	$ 13,750
13	Concrete Driveway	500	SY	$ 200	$ 100,000
14	Chain Link Fence & Gate	1	LS	$ 50,000	$ 50,000
15	SWPP	1	LS	$ 50,000	$ 50,000
16	Grading/Site Restoration	1	LS	$ 75,000	$ 75,000
				Civil Subtotal:	$ 1,101,490

Line No.	Description	Quantity	Unit	Unit Price	Cost
Electrical, Instrumentation, and SCADA					
1	Electrical Service Equipment and Automatic Transfer Switch	1	LS	$ 100,000	$ 100,000
2	Variable Frequency Drive	1	LS	$ 50,000	$ 50,000
3	Pump Control Panel	1	LS	$ 50,000	$ 50,000
4	Standby Diesel Generator and Transfer Switch	1	LS	$ 250,000	$ 250,000
5	SCADA Equipment, Instrumentation, and Programming	1	LS	$ 100,000	$ 100,000
6	Miscellaneous Electrical Items	1	LS	$ 100,000	$ 100,000
7	Area Lighting	1	LS	$ 10,000	$ 10,000
8	Electrical Rack Mount and Sunscreen Canopy	1	LS	$ 20,000	$ 20,000
9	Electrical Service Provider Allowance	1	LS	$ 25,000	$ 25,000
				Electrical Subtotal:	$ 705,000

Basis for Cost Projection:			
☑ No Design Completed	Subtotal:		$ 1,806,490
☐ Preliminary Design	Contingency (%, +/-)	30%	$ 541,950
☐ Final Design	Professional Services (%, +/-)	10%	$ 180,650
	Easement Acquisition		$ 65,000
	*Total:		**$ 2,600,000**

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*Total is rounded up to the nearest $10,000.

*Miscellaneous accounts for any work that is not accounted for in the above table that will be neccessary for project completion.

*Allowance accounts for potential change orders and will be recovered if not used.

Kimley-Horn & Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	9/26/2025
Project:	Wastewater Master Plan - West	Prepared By:	BP
KHA No.:	061000231	Checked By:	KSS
W 5-Yr-4	Western Trunk Line #2		
Project Description:	Approximately 700 LF of 12-inch wastewater main, 1,150 LF of 15-inch wastewater main, 1,550 LF of 18-inch wastewater main, and 1,500 LF of 21-inch wastewater main is proposed to provide service to the proposed Furst Ranch development.		

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 121,000	$ 121,000
2	Miscellaneous	1	LS	$ 175,000	$ 175,000
3	Allowance	1	LS	$ 150,000	$ 150,000
4	Erosion Control	0.88	MI	$ 10,000	$ 13,900
5	Sewer Line Trench Safety	4,650	LF	$ 3	$ 14,000
6	Hydromulch Repair	20,700	SY	$ 3	$ 62,100
7	Connect to Exisitng Manhole	1	EA	$ 12,000	$ 12,000
8	4' Manhole	6	EA	$ 12,500	$ 75,000
9	5' Manhole	3	EA	$ 25,000	$ 75,000
10	12" Sanitary Sewer	700	LF	$ 225	$ 157,500
11	15" Sanitary Sewer	1,150	LF	$ 250	$ 287,500
12	18" Sanitary Sewer	1,300	LF	$ 275	$ 357,500
13	21" Sanitary Sewer	1,500	LF	$ 325	$ 487,500
14	30" Casing BOTOC w/18" Carrier Pipe	250	LF	$ 1,700	$ 425,000

Basis for Cost Projection:			
☑ No Design Completed	Subtotal:		$ 2,413,000
☐ Preliminary Design	Contingency (%,+/-)	30%	$ 723,900
☐ Final Design	Professional Services (%,+/-)	10%	$ 241,300
	Easement Acquisition		$ 90,000
	***Total:**		**$ 3,470,000**

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*Total is rounded up to the nearest $10,000.

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*Allowance accounts for potential change orders and will be recovered if not used.

Kimley-Horn and Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	9/26/2025
Project:	Wastewater Master Plan - West	Prepared By:	BP
KHA No.:	61000231	Checked By:	KSS
W 5-Yr-5	Western Force Main Phase 1		
Project Description:	Approximately 6,900 LF of 8" force main is proposed to serve the Prairie Vista Service Area.		

Line No.	Description	Quantity	Unit	Unit Price	Cost
1	Mobilization	1	LS	$ 85,000	$ 85,000
2	Miscellaneous	1	LS	$ 175,000	$ 175,000
3	Allowance	1	LS	$ 150,000	$ 150,000
4	Traffic	1	LS	$ 25,000	$ 25,000
5	Erosion Control	1.3	MI	$ 10,000	$ 13,070
6	Force Main Trench Safety	6,900	LF	$ 3	$ 20,700
7	Hydromulch Repair	30,700	SY	$ 3	$ 92,100
8	Pavement Repair	250	SY	$ 125	$ 31,250
9	8" Force Main	6,900	LF	$ 150	$ 1,035,000
10	8" Plug Valve	3	EA	$ 10,000	$ 30,000
11	1" Combination Air Release Valve & Vault	2	EA	$ 20,000	$ 40,000

Basis for Cost Projection:			
☑ No Design Completed	Subtotal:		$ 1,697,120
☐ Preliminary Design	Contingency (%, +/-)	30%	$ 509,140
☐ Final Design	Professional Services (%, +/-)	10%	$ 169,720
	Easement Acquisition		$ -
	***Total:**		**$ 2,380,000**

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Kimley-Horn and Associates, Inc. — Opinion of Probable Construction Cost

Client:	Town of Flower Mound	Date:	9/26/2025
Project:	Wastewater Master Plan - West	Prepared By:	BP
KHA No.:	61000231	Checked By:	KSS
W 5-Yr-5	Western Lift Station Phase 1		
Project Description:	This project includes the addition of a new lift station to serve the Prairie Vista Service Area.		

Line No.	Description	Quantity	Unit	Unit Price	Cost
Civil					
1	Mobilization	1	LS	$ 124,000	$ 124,000
2	Miscellaneous	1	LS	$ 175,000	$ 175,000
3	Allowance	1	LS	$ 150,000	$ 150,000
4	700 GPM Submersible Pumps	2	EA	$ 75,000	$ 150,000
5	LS Mechanical Piping and Valves	1	LS	$ 200,000	$ 200,000
6	5' Manhole	1	EA	$ 15,000	$ 15,000
7	21" Sanitary Sewer	100	LF	$ 325	$ 32,500
8	30' x 10' Cast-In-Place Rectangular Wet Well	1	LS	$ 326,000	$ 326,000
9	Wet Well Excavation	223	CY	$ 35	$ 7,810
10	Odor Control Unit and Controller System	1	LS	$ 50,000	$ 50,000
11	Equipment Pads	25	CY	$ 550	$ 13,750
12	Concrete Driveway	500	SY	$ 200	$ 100,000
13	Chain Link Fence & Gate	1	LS	$ 50,000	$ 50,000
14	SWPP	1	LS	$ 50,000	$ 50,000
15	Grading/Site Restoration	1	LS	$ 75,000	$ 75,000
				Civil Subtotal:	$ 1,519,060

Line No.	Description	Quantity	Unit	Unit Price	Cost
Electrical, Instrumentation, and SCADA					
1	Electrical Service Equipment and Automatic Transfer Switch	1	LS	$ 100,000	$ 100,000
2	Variable Frequency Drive	1	LS	$ 50,000	$ 50,000
3	Pump Control Panel	1	LS	$ 50,000	$ 50,000
4	Standby Diesel Generator and Transfer Switch	1	LS	$ 350,000	$ 350,000
5	SCADA Equipment, Instrumentation, and Programming	1	LS	$ 100,000	$ 100,000
6	Miscellaneous Electrical Items	1	LS	$ 100,000	$ 100,000
7	Area Lighting	1	LS	$ 10,000	$ 10,000
8	Electrical Rack Mount and Sunscreen Canopy	1	LS	$ 20,000	$ 20,000
9	Electrical Service Provider Allowance	1	LS	$ 25,000	$ 25,000
				Electrical Subtotal:	$ 805,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:		$ 2,324,060
Contingency (%, +/-)	30%	$ 697,220
Professional Services (%, +/-)	10%	$ 232,410
Easement Acquisition		$ 65,000
*Total:		**$ 3,320,000**

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*Miscellaneous accounts for any work that is not accounted for in the above table that will be neccessary for project completion.

*Allowance accounts for potential change orders and will be recovered if not used.

Kimley-Horn & Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	9/26/2025
Project:	Wastewater Master Plan - West	Prepared By:	BP
KHA No.:	061000231	Checked By:	KSS
W 10-Yr-1	Furst Ranch Southwest Interceptor		
Project Description:	Approximately 800 LF of 12-inch wastewater main is proposed to provide service to the proposed Furst Ranch development.		

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 31,000	$ 31,000
2	Miscellaneous	1	LS	$ 100,000	$ 100,000
3	Allowance	1	LS	$ 75,000	$ 75,000
4	Traffic	1	LS	$ 25,000	$ 25,000
5	Erosion Control	0.15	MI	$ 10,000	$ 6,600
6	Sewer Line Trench Safety	800	LF	$ 3	$ 2,400
7	Hydromulch Repair	3,600	SY	$ 3	$ 10,800
8	Pavement Repair	1,100	SY	$ 125	$ 137,500
9	Connect to Existing Manhole	1	EA	$ 12,000	$ 12,000
10	4' Manhole	2	EA	$ 12,500	$ 25,000
11	12" Sanitary Sewer	800	LF	$ 225	$ 180,000

Basis for Cost Projection:			
☑ No Design Completed	Subtotal:		$ 605,300
☐ Preliminary Design	Contingency (%,+/-)	30%	$ 181,590
☐ Final Design	Professional Services (%,+/-)	10%	$ 60,530
	Easement Acquisition		$ -
	***Total:**		**$ 850,000**

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*Total is rounded up to the nearest $10,000.

*Miscellaneous accounts for any work that is not accounted for in the above table that will be neccessary for project completion.

*Allowance accounts for potential change orders and will be recovered if not used.

Kimley-Horn & Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	9/26/2025
Project:	Wastewater Master Plan - West	Prepared By:	BP
KHA No.:	061000231	Checked By:	KSS
W 10-Yr-2	Cross Timbers Road South Interceptor		
Project Description:	Approximately 1,050 LF of 12-inch wastewater main and 1,050 LF of 15-inch wastewater main is proposed to provide service to the proposed Furst Ranch development.		

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 42,000	$ 42,000
2	Miscellaneous	1	LS	$ 100,000	$ 100,000
3	Allowance	1	LS	$ 75,000	$ 75,000
4	Erosion Control	0.40	MI	$ 10,000	$ 9,000
5	Sewer Line Trench Safety	2,100	LF	$ 3	$ 6,300
6	Hydromulch Repair	9,400	SY	$ 3	$ 28,200
7	Connect to Existing Manhole	1	EA	$ 12,000	$ 12,000
8	4' Manhole	5	EA	$ 12,500	$ 62,500
9	12" Sanitary Sewer	1,050	LF	$ 225	$ 236,250
10	15" Sanitary Sewer	1,050	LF	$ 250	$ 262,500

Basis for Cost Projection:			
☑ No Design Completed	Subtotal:		$ 833,750
☐ Preliminary Design	Contingency (%,+/-)	30%	$ 250,130
☐ Final Design	Professional Services (%,+/-)	10%	$ 83,380
	Easement Acquisition		$ -
	***Total:**		**$ 1,170,000**

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*Total is rounded up to the nearest $10,000.

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*Allowance accounts for potential change orders and will be recovered if not used.

Kimley-Horn & Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	9/26/2025
Project:	Wastewater Master Plan - West	Prepared By:	BP
KHA No.:	061000231	Checked By:	KSS
W 10-Yr-3	Dunham Road Interceptor		
Project Description:	Approximately 2,800 LF of 15-inch wastewater main and 2,550 LF of 8-inch wastewater main is proposed to provide service to the proposed Furst Ranch development.		

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 94,000	$ 94,000
2	Miscellaneous	1	LS	$ 175,000	$ 175,000
3	Allowance	1	LS	$ 150,000	$ 150,000
4	Erosion Control	1.01	MI	$ 10,000	$ 15,200
5	Sewer Line Trench Safety	5,350	LF	$ 3	$ 16,050
6	Hydromulch Repair	23,800	SY	$ 3	$ 71,400
7	Connect to Exisitng Manhole	1	EA	$ 12,000	$ 12,000
8	4' Manhole	10	EA	$ 12,500	$ 125,000
9	8" Sanitary Sewer	2,550	LF	$ 200	$ 510,000
10	15" Sanitary Sewer	2,800	LF	$ 250	$ 700,000

Basis for Cost Projection:			
☑ No Design Completed	Subtotal:		$ 1,868,650
☐ Preliminary Design	Contingency (%,+/-)	30%	$ 560,600
☐ Final Design	Professional Services (%,+/-)	10%	$ 186,870
	Easement Acquisition		$ -
	***Total:**		**$ 2,620,000**

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*Total is rounded up to the nearest $10,000.

*Miscellaneous accounts for any work that is not accounted for in the above table that will be neccessary for project completion.

*Allowance accounts for potential change orders and will be recovered if not used.

Kimley-Horn & Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	9/26/2025
Project:	Wastewater Master Plan - West	Prepared By:	BP
KHA No.:	061000231	Checked By:	KSS
W 10-Yr-4	Furst Ranch Northwest Interceptor		
Project Description:	Approximately 1,700 LF of 12-inch wastewater main and 1,450 LF of 18-inch wastewater main is proposed to provide service to the proposed Furst Ranch development.		

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 59,000	$ 59,000
2	Miscellaneous	1	LS	$ 100,000	$ 100,000
3	Allowance	1	LS	$ 75,000	$ 75,000
4	Erosion Control	0.60	MI	$ 10,000	$ 11,000
5	Sewer Line Trench Safety	3,150	LF	$ 3	$ 9,450
6	Hydromulch Repair	14,000	SY	$ 3	$ 42,000
7	Connect to Exisitng Manhole	1	EA	$ 12,000	$ 12,000
8	4' Manhole	6	EA	$ 12,500	$ 75,000
9	12" Sanitary Sewer	1,700	LF	$ 225	$ 382,500
10	18" Sanitary Sewer	1,450	LF	$ 275	$ 398,750

Basis for Cost Projection:			
☑ No Design Completed	Subtotal:		$ 1,164,700
☐ Preliminary Design	Contingency (%,+/-)	30%	$ 349,410
☐ Final Design	Professional Services (%,+/-)	10%	$ 116,470
	Easement Acquisition		$ 45,000
	***Total:**		**$ 1,680,000**

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*Total is rounded up to the nearest $10,000.

*Miscellaneous accounts for any work that is not accounted for in the above table that will be neccessary for project completion.

*Allowance accounts for potential change orders and will be recovered if not used.

Kimley-Horn & Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	9/26/2025
Project:	Wastewater Master Plan - West	Prepared By:	BP
KHA No.:	061000231	Checked By:	KSS
W 10-Yr-5	Western Trunk Line #1, Phase 2		
Project Description:	Approximately 600 LF of 12-inch wastewater main and 1,000 LF of 15-inch wastewater main is proposed to provide service to the proposed Furst Ranch development.		

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 34,000	$ 34,000
2	Miscellaneous	1	LS	$ 100,000	$ 100,000
3	Allowance	1	LS	$ 75,000	$ 75,000
4	Erosion Control	0.30	MI	$ 10,000	$ 8,100
5	Sewer Line Trench Safety	1,600	LF	$ 3	$ 4,800
6	Hydromulch Repair	7,200	SY	$ 3	$ 21,600
7	Connect to Existing Manhole	1	EA	$ 12,000	$ 12,000
8	4' Manhole	3	EA	$ 12,500	$ 37,500
9	12" Sanitary Sewer	600	LF	$ 225	$ 135,000
10	15" Sanitary Sewer	1,000	LF	$ 250	$ 250,000

Basis for Cost Projection:			
☑ No Design Completed	Subtotal:		$ 678,000
☐ Preliminary Design	Contingency (%,+/-)	30%	$ 203,400
☐ Final Design	Professional Services (%,+/-)	10%	$ 67,800
	Easement Acquisition		$ -
	***Total:**		**$ 950,000**

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*Total is rounded up to the nearest $10,000.

*Miscellaneous accounts for any work that is not accounted for in the above table that will be neccessary for project completion.

*Allowance accounts for potential change orders and will be recovered if not used.

Kimley-Horn & Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	9/26/2025
Project:	Wastewater Master Plan - West	Prepared By:	BP
KHA No.:	061000231	Checked By:	KSS
W 10-Yr-6	Furst Ranch Phase 2 Infrastructure (Wastewater)		
Project Description:	Approximately 3,700 LF of 30-inch wastewater main and 500 LF of 36-inch wastewater main is proposed to provide service to the proposed Furst Ranch development.		

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 159,000	$ 159,000
2	Miscellaneous	1	LS	$ 175,000	$ 175,000
3	Allowance	1	LS	$ 150,000	$ 150,000
4	Traffic	1	LS	$ 25,000	$ 25,000
5	Erosion Control	0.75	MI	$ 10,000	$ 12,500
6	Sewer Line Trench Safety	3,950	LF	$ 3	$ 11,850
7	Hydromulch Repair	17,600	SY	$ 3	$ 52,800
8	Pavement Repair	500	SY	$ 125	$ 62,500
9	Connect to Exisitng Manhole	1	EA	$ 12,000	$ 12,000
10	5' Manhole	7	EA	$ 25,000	$ 175,000
11	6' Manhole	1	EA	$ 55,000	$ 55,000
12	30" Sanitary Sewer	3,450	LF	$ 400	$ 1,380,000
13	36" Sanitary Sewer	500	LF	$ 450	$ 225,000
14	48" Casing BOTOC w/30" Carrier Pipe	250	LF	$ 2,700	$ 675,000

Basis for Cost Projection:			
☑ No Design Completed	Subtotal:		$ 3,170,650
☐ Preliminary Design	Contingency (%,+/-)	30%	$ 951,200
☐ Final Design	Professional Services (%,+/-)	10%	$ 317,070
	Easement Acquisition		$ 630,000
	***Total:**		**$ 5,070,000**

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*Total is rounded up to the nearest $10,000.

*Miscellaneous accounts for any work that is not accounted for in the above table that will be neccessary for project completion.

*Allowance accounts for potential change orders and will be recovered if not used.

Kimley-Horn & Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	9/26/2025
Project:	Wastewater Master Plan - West	Prepared By:	BP
KHA No.:	061000231	Checked By:	KSS
W 10-Yr-7	Furst Ranch Phase 3 Infrastructure (Wastewater)		
Project Description:	Approximately 2,350 LF of 18-inch wastewater main is proposed to provide service to the proposed Furst Ranch development.		

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 90,000	$ 90,000
2	Miscellaneous	1	LS	$ 175,000	$ 175,000
3	Allowance	1	LS	$ 150,000	$ 150,000
4	Traffic	1	LS	$ 25,000	$ 25,000
5	Erosion Control	0.37	MI	$ 10,000	$ 8,700
6	Sewer Line Trench Safety	1,950	LF	$ 3	$ 5,850
7	Hydromulch Repair	8,700	SY	$ 3	$ 26,100
8	Pavement Repair	100	SY	$ 125	$ 12,500
9	Connect to Exisitng Manhole	2	EA	$ 12,000	$ 24,000
10	4' Manhole	5	EA	$ 12,500	$ 62,500
11	18" Sanitary Sewer	1,950	LF	$ 275	$ 536,250
12	30" Casing BOTOC w/18" Carrier Pipe	400	LF	$ 1,700	$ 680,000

Basis for Cost Projection:			
☑ No Design Completed	Subtotal:		$ 1,795,900
☐ Preliminary Design	Contingency (%,+/-)	30%	$ 538,770
☐ Final Design	Professional Services (%,+/-)	10%	$ 179,590
	Easement Acquisition		$ -
	***Total:**		**$ 2,520,000**

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*Allowance accounts for potential change orders and will be recovered if not used.

Kimley-Horn & Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	9/26/2025
Project:	Wastewater Master Plan - East	Prepared By:	BP
KHA No.:	61000231	Checked By:	KSS
E BO-1	Upper Timber Interceptor (Helen Johns Park to 1 Place Lane)		
Project Description:	Approximately 1,400 LF of 30-inch wastewater main is proposed to replace the existing 27-inch wastewater line from Helen Johns Park to 1 Pl Lane.		

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 150,000	$ 76,000
2	Miscellaneous	1	LS	$ 175,000	$ 175,000
3	Allowance	1	LS	$ 150,000	$ 150,000
4	Traffic	1	LS	$ 25,000	$ 25,000
5	Erosion Control	0.25	MI	$ 10,000	$ 7,600
6	Sewer Line Trench Safety	1,340	LF	$ 3	$ 4,020
7	Hydromulch Repair	6,000	SY	$ 3	$ 18,000
8	Pavement Repair	1,800	SY	$ 125	$ 225,000
9	Bypass Pumping	1	LS	$ 50,000	$ 50,000
10	5' Manhole	4	EA	$ 25,000	$ 100,000
11	30" Sanitary Sewer	1,340	LF	$ 400	$ 536,000
12	48" Casing BOTOC w/30" Carrier Pipe	60	LF	$ 2,500	$ 150,000

Basis for Cost Projection:			
☑ No Design Completed	Subtotal:		$ 1,516,620
☐ Preliminary Design	Contingency (%,+/-)	30%	$ 454,990
☐ Final Design	Professional Services (%,+/-)	10%	$ 151,670
	Easement Acquisition		$ -
	***Total:**		**$ 2,130,000**

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Kimley-Horn and Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	9/26/2025
Project:	Wastewater Master Plan - East	Prepared By:	BP
KHA No.:	61000231	Checked By:	KSS
E BO-2	Southside Force Main Extension		
Project Description:	Approximately 4,600 LF of 18-inch force main is proposed to alleviate capacity constraints at the raw water lift station at the wastewater treatment plant. This force main will connect to the existing 18" force main constructed as part of the Lakeside Lift Station and Force Main project and end at the headworks of the Town's wastewater treatment plant.		

Line No.	Description	Quantity	Unit	Unit Price	Cost
1	Mobilization	1	LS	$ 163,000	$ 163,000
2	Miscellaneous	1	LS	$ 100,000	$ 100,000
3	Allowance	1	LS	$ 75,000	$ 75,000
4	Traffic	1	LS	$ 35,000	$ 35,000
5	Erosion Control	0.8	MI	$ 10,000	$ 7,960
6	Force Main Trench Safety	4,200	LF	$ 3	$ 12,600
7	Hydromulch Repair	18,700	SY	$ 3	$ 56,100
8	3" Combination Air Release Valve & Vault	2	EA	$ 40,000	$ 80,000
9	Connect to Headworks	1	EA	$ 60,000	$ 60,000
10	Connect to Existing 18" Force Main	1	EA	$ 250,000	$ 250,000
12	30" Casing BOTOC w/18" Carrier Pipe	400	LF	$ 1,800	$ 720,000
13	18" Force Main	4,600	LF	$ 350	$ 1,610,000
13	Cathodic Protection	1	EA	$ 75,000	$ 75,000

Basis for Cost Projection:			
☑	No Design Completed	Subtotal:	$ 3,244,660
☐	Preliminary Design	Contingency (%, +/-) 30%	$ 973,400
☐	Final Design	Professional Services (%, +/-) 10%	$ 324,470
		Easement Acquisition	$ -
		***Total:**	**$ 4,550,000**

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Kimley-Horn and Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	9/26/2025
Project:	Wastewater Master Plan - East	Prepared By:	BP
KHA No.:	61000231	Checked By:	KSS
E BO-3	Southside Pump Upgrade		
Project Description:	This project includes upsizing the two smaller pumps at the Southside Lift Station to add capacity to the lift station.		

Line No.	Description	Quantity	Unit	Unit Price	Cost
Civil					
1	Mobilization	1	LS	$ 56,000	$ 56,000
2	Miscellaneous	1	LS	$ 100,000	$ 100,000
3	Allowance	1	LS	$ 75,000	$ 75,000
4	1,500 GPM Submersible Pumps	2	EA	$ 150,000	$ 300,000
5	Mechanical Piping and Fittings	1	LS	$ 120,000	$ 120,000
6	Remove Existing Pumps and Piping	1	LS	$ 30,000	$ 30,000
				Civil Subtotal:	$ 681,000

Line No.	Description	Quantity	Unit	Unit Price	Cost
Electrical, Instrumentation, and SCADA					
1	Variable Frequency Drive	2	EA	$ 50,000	$ 100,000
2	Pump Control Panel	1	EA	$ 100,000	$ 100,000
3	SCADA Equipment, Instrumentation, and Programming	1	LS	$ 100,000	$ 100,000
4	Miscellaneous Electrical Items	1	LS	$ 100,000	$ 100,000
5	Electrical Service Provider Allowance	1	LS	$ 25,000	$ 25,000
				Electrical Subtotal:	$ 425,000

Basis for Cost Projection:			
☑ No Design Completed	Subtotal:		$ 1,106,000
☐ Preliminary Design	Contingency (%, +/-)	30%	$ 331,800
☐ Final Design	Professional Services (%, +/-)	10%	$ 110,600
	Easement Acquisition		$ -
	*Total:		**$ 1,550,000**

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Kimley-Horn & Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	9/26/2025
Project:	Wastewater Master Plan - East	Prepared By:	BP
KHA No.:	61000231	Checked By:	KSS
E BO-4	Upper Timber Interceptor (Rippy Road to Pecan Drive)		
Project Description:	Approximately 430 LF of 21-inch wastewater main is proposed running south from Rippy Road to Pecan Drive.		

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 29,000	$ 29,000
2	Miscellaneous	1	LS	$ 100,000	$ 100,000
3	Allowance	1	LS	$ 75,000	$ 75,000
4	Traffic	1	LS	$ 50,000	$ 50,000
5	Erosion Control	0.08	MI	$ 10,000	$ 5,820
6	Bypass Pumping	1	LS	$ 50,000	$ 50,000
7	5' Manhole	2	EA	$ 25,000	$ 50,000
8	21" Sanitary Sewer by Pipe Bursting	430	LF	$ 500	$ 215,000

Basis for Cost Projection:			
☑ No Design Completed	Subtotal:		$ 574,820
☐ Preliminary Design	Contingency (%,+/-)	30%	$ 172,450
☐ Final Design	Professional Services (%,+/-)	10%	$ 57,490
	Easement Acquisition		$ -
	***Total:**		**$ 810,000**

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Kimley-Horn & Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	9/26/2025
Project:	Wastewater Master Plan - East	Prepared By:	BP
KHA No.:	61000231	Checked By:	KSS
E BO-5	Upper Timber Interceptor (Waketon Road)		
Project Description:	Approximately 1,950 LF of 18-inch wastewater main is proposed running south from Long Prairie Road to the intersection of Waketon Road and Rippy Road.		

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	$ 56,000	$ 56,000
2	Miscellaneous	1	LS	$ 100,000	$ 100,000
3	Allowance	1	LS	$ 75,000	$ 75,000
4	Traffic	1	LS	$ 35,000	$ 35,000
5	Erosion Control	0.37	MI	$ 10,000	$ 8,700
6	Sewer Line Trench Safety	1,950	LF	$ 3	$ 5,850
7	Hydromulch Repair	8,700	SY	$ 3	$ 26,100
8	Pavement Repair	1,200	SY	$ 125	$ 150,000
9	Bypass Pumping	1	LS	$ 25,000	$ 25,000
10	4' Manhole	7	EA	$ 12,500	$ 87,500
11	18" Sanitary Sewer	1,950	LF	$ 275	$ 536,250

Basis for Cost Projection:			
☑ No Design Completed	Subtotal:		$ 1,105,400
☐ Preliminary Design	Contingency (%,+/-)	30%	$ 331,620
☐ Final Design	Professional Services (%,+/-)	10%	$ 110,540
	Easement Acquisition		$ -
	***Total:**		**$ 1,550,000**

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Kimley-Horn and Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	9/26/2025
Project:	Wastewater Master Plan - East	Prepared By:	BP
KHA No.:	61000231	Checked By:	KSS
E BO-6	Wastewater Treatment Plant Additional Treatment Units		
Project Description:	This project consists of the addition of new treatment units to increase the capacity of the wastewater treatment plant.		

Line No.	Description	Quantity	Unit	Unit Price	Cost
1	Convert Third Basin to an Aeration Basin, Add One Additional Final Clarifier	1	LS	$ 8,517,000	$ 8,517,000
2	New Covered Peak Flow Storage with Odor Control	1	LS	$ 3,142,000	$ 3,142,000

Basis for Cost Projection:		
Subtotal:		$ 11,659,000
☑ No Design Completed	Contingency (%, +/-)	$ -
☐ Preliminary Design	Professional Services (%, +/-)	$ 1,124,000
☐ Final Design	Easement Acquisition	$ -
	***Total:**	**$ 12,790,000**

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*Total is rounded up to the nearest $10,000.

*Costs developed by Plummer and Associates as part of the wastewater treatment plant master plan dated 2023. Costs are shown in 2025 dollars.

Kimley-Horn and Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	10/27/2025
Project:	Wastewater Master Plan - East	Prepared By:	BP
KHA No.:	61000231	Checked By:	KSS
E BO-7	WWTP SBR Conversion		
Project Description:	This project consists of the conversion of an existing sequencing batch reactor basin to a storage basin to retain wastewater during peak flow events.		

Line No.	Description	Quantity	Unit	Unit Price	Cost
1	Convert One (1) SBR Basin to Peak Flow Storage	1	LS	$ 1,359,000	$ 1,359,000

Basis for Cost Projection:		
☑ No Design Completed	Subtotal:	$ 1,359,000
☐ Preliminary Design	Contingency (%, +/-)	
☐ Final Design	Professional Services (%, +/-)	$ 122,000
	Easement Acquisition	$ -
	***Total:**	**$ 1,490,000**

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*Costs developed by Plummer and Associates as part of the wastewater treatment plant master plan dated 2023. Costs are shown in 2025 dollars.

Kimley-Horn and Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	9/26/2025
Project:	Wastewater Master Plan - West	Prepared By:	BP
KHA No.:	61000231	Checked By:	KSS
W BO-1	Western Force Main Phase 2		
Project Description:	Approximately 6,900 LF of 12" force main is proposed to serve the Prairie Vista Service Area.		

Line No.	Description	Quantity	Unit	Unit Price	Cost
1	Mobilization	1	LS	$ 105,000	$ 105,000
2	Miscellaneous	1	LS	$ 175,000	$ 175,000
3	Allowance	1	LS	$ 150,000	$ 150,000
4	Traffic	1	LS	$ 25,000	$ 25,000
5	Erosion Control	1.3	MI	$ 10,000	$ 13,070
6	Force Main Trench Safety	6,900	LF	$ 3	$ 20,700
7	Hydromulch Repair	30,700	SY	$ 3	$ 92,100
8	Pavement Repair	250	SY	$ 125	$ 31,250
9	12" Force Main	6,900	LF	$ 200	$ 1,380,000
10	12" Plug Valve	3	EA	$ 15,000	$ 45,000
11	2" Combination Air Release Valve & Vault	2	EA	$ 30,000	$ 60,000

Basis for Cost Projection:			
☑ No Design Completed	Subtotal:		$ 2,097,120
☐ Preliminary Design	Contingency (%, +/-)	30%	$ 629,140
☐ Final Design	Professional Services (%, +/-)	10%	$ 209,720
	Easement Acquisition		$ 1,035,000
	***Total:**		**$ 3,980,000**

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Kimley-Horn and Associates, Inc. — Opinion of Probable Construction Cost

Client:	Town of Flower Mound	Date:	9/26/2025
Project:	Wastewater Master Plan - West	Prepared By:	BP
KHA No.:	61000231	Checked By:	KSS
W BO-1	Western Lift Station Phase 2		
Project Description:	This project includes upsizing the pumps at the Western Lift Station to add capacity to the lift station.		

Line No.	Description	Quantity	Unit	Unit Price	Cost
Civil					
1	Mobilization	1	LS	$ 197,000	$ 197,000
2	Allowance	1	LS	$ 150,000	$ 150,000
3	1,400 GPM Submersible Pumps	3	EA	$ 150,000	$ 450,000
4	Grading/Site Restoration	1	LS	$ 150,000	$ 150,000
5	Bypass Pumping	1	LS	$ 1,000,000	$ 1,000,000
6	Mechanical Piping and Valves	1	LS	$ 600,000	$ 600,000
7	Remove Existing Pumps and Piping	1	LS	$ 30,000	$ 30,000
				Civil Subtotal:	$ 2,577,000

Line No.	Description	Quantity	Unit	Unit Price	Cost
Electrical, Instrumentation, and SCADA					
1	Variable Frequency Drive	1	LS	$ 100,000	$ 100,000
2	Pump Control Panel	1	LS	$ 100,000	$ 100,000
3	Standby Diesel Generator and Transfer Switch	1	LS	$ 600,000	$ 600,000
4	SCADA Equipment, Instrumentation, and Programming	1	LS	$ 100,000	$ 100,000
5	Miscellaneous Electrical Items	1	LS	$ 100,000	$ 100,000
6	Electrical Building	1	LS	$ 100,000	$ 100,000
7	Electrical Service Provider Allowance	1	LS	$ 25,000	$ 25,000
				Electrical Subtotal:	$ 1,125,000

Basis for Cost Projection:

- [x] No Design Completed
- [ ] Preliminary Design
- [ ] Final Design

Subtotal:		$ 3,702,000
Contingency (%, +/-)	30%	$ 1,110,600
Professional Services (%, +/-)	10%	$ 370,200
Easement Acquisition		$ -
*Total:		**$ 5,190,000**

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Kimley-Horn and Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	9/26/2025
Project:	Wastewater Master Plan - West	Prepared By:	BP
KHA No.:	61000231	Checked By:	KSS
W BO-2	Southwest Force Main		
Project Description:	Approximately 8,050 LF of 4" force main is proposed to serve the single family estate developments in the Southwest portion of the Denton Creek service area.		

Line No.	Description	Quantity	Unit	Unit Price	Cost
1	Mobilization	1	LS	$ 114,000	$ 114,000
2	Miscellaneous	1	LS	$ 175,000	$ 175,000
3	Allowance	1	LS	$ 150,000	$ 150,000
4	Erosion Control	1.5	MI	$ 10,000	$ 15,250
5	Force Main Trench Safety	8,050	LF	$ 3	$ 24,150
6	Hydromulch Repair	35,800	SY	$ 3	$ 107,400
7	4" Force Main	8,050	LF	$ 110	$ 885,500
8	4" Plug Valve	4	EA	$ 5,000	$ 20,000
9	1" Combination Air Release Valve & Vault	2	EA	$ 20,000	$ 40,000
10	TRA Meter Station	1	LS	$ 750,000	$ 750,000

Basis for Cost Projection:			
☑ No Design Completed	Subtotal:		$ 2,281,300
☐ Preliminary Design	Contingency (%, +/-)	30%	$ 684,390
☐ Final Design	Professional Services (%, +/-)	10%	$ 228,130
	Easement Acquisition		$ -
	***Total:**		**$ 3,200,000**

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Kimley-Horn and Associates, Inc. — Opinion of Probable Construction Cost

Client:	Town of Flower Mound	Date:	9/26/2025
Project:	Wastewater Master Plan - West	Prepared By:	BP
KHA No.:	61000231	Checked By:	KSS
W BO-2	Southwest Lift Station		
Project Description:	This project includes the addition of a new lift station to serve the proposed single family estate developments in the southwest portion of the Denton Creek service area.		

Line No.	Description	Quantity	Unit	Unit Price	Cost
Civil					
1	Mobilization	1	LS	$ 96,000	$ 96,000
2	Miscellaneous	1	LS	$ 175,000	$ 175,000
3	Allowance	1	LS	$ 150,000	$ 150,000
4	200 GPM Submersible Pumps	2	EA	$ 30,000	$ 60,000
5	Mechanical Piping & Valves	1	LS	$ 100,000	$ 100,000
6	4' Manhole	1	EA	$ 10,000	$ 10,000
7	8" Sanitary Sewer	100	LF	$ 100	$ 10,000
8	6' Diameter Wet Well	1	LS	$ 110,000	$ 110,000
9	Wet Well Excavation	21	CY	$ 35	$ 740
10	Valve Vault	1	LS	$ 40,000	$ 40,000
11	Odor Control Unit and Controller System	1	LS	$ 50,000	$ 50,000
12	Equipment Pads	25	CY	$ 550	$ 13,750
13	Concrete Driveway	500	SY	$ 200	$ 100,000
14	Chain Link Fence & Gate	1	LS	$ 50,000	$ 50,000
15	SWPP	1	LS	$ 50,000	$ 50,000
16	Grading/Site Restoration	1	LS	$ 75,000	$ 75,000
				Civil Subtotal:	$ 1,090,490

Line No.	Description	Quantity	Unit	Unit Price	Cost
Electrical, Instrumentation, and SCADA					
1	Electrical Service Equipment and Automatic Transfer Switch	1	LS	$ 100,000	$ 100,000
2	Variable Frequency Drive	1	LS	$ 50,000	$ 50,000
3	Pump Control Panel	1	LS	$ 50,000	$ 50,000
4	Standby Diesel Generator and Transfer Switch	1	LS	$ 250,000	$ 250,000
5	SCADA Equipment, Instrumentation, and Programming	1	LS	$ 100,000	$ 100,000
6	Miscellaneous Electrical Items	1	LS	$ 100,000	$ 100,000
7	Area Lighting	1	LS	$ 10,000	$ 10,000
8	Electrical Rack Mount and Sunscreen Canopy	1	LS	$ 20,000	$ 20,000
9	Electrical Service Provider Allowance	1	LS	$ 25,000	$ 25,000
				Electrical Subtotal:	$ 705,000

Basis for Cost Projection:			
	Subtotal:		$ 1,795,490
☑ No Design Completed	Contingency (%, +/-)	30%	$ 538,650
☐ Preliminary Design	Professional Services (%, +/-)	10%	$ 179,550
☐ Final Design	Easement Acquisition		$ 65,000
	*Total:		**$ 2,580,000**

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Kimley-Horn and Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	9/26/2025
Project:	Wastewater Master Plan - West	Prepared By:	BP
KHA No.:	61000231	Checked By:	KSS
W BO-3	Southeast Force Main		
Project Description:	Approximately 3,750 LF of 4" force main is proposed to serve the existing and proposed single family estates in the Southern portion of the Prairie Vista service area.		

Line No.	Description	Quantity	Unit	Unit Price	Cost
1	Mobilization	1	LS	$ 36,000	$ 36,000
2	Miscellaneous	1	LS	$ 100,000	$ 100,000
3	Allowance	1	LS	$ 75,000	$ 75,000
4	Erosion Control	0.5	MI	$ 10,000	$ 4,740
5	Force Main Trench Safety	2,500	LF	$ 3	$ 7,500
6	Hydromulch Repair	11,200	SY	$ 3	$ 33,600
7	Pavement Repair	150	SY	$ 125	$ 18,750
8	4" Force Main	3,750	LF	$ 110	$ 412,500
9	4" Plug Valve	1	EA	$ 5,000	$ 5,000
10	1" Combination Air Release Valve & Vault	1	EA	$ 20,000	$ 20,000

Basis for Cost Projection:			
☑ No Design Completed	Subtotal:		$ 713,090
☐ Preliminary Design	Contingency (%, +/-)	30%	$ 213,930
☐ Final Design	Professional Services (%, +/-)	10%	$ 71,310
	Easement Acquisition		$ 150,000
	***Total:**		**$ 1,150,000**

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*Total is rounded up to the nearest $10,000.

*Miscellaneous accounts for any work that is not accounted for in the above table that will be neccessary for project completion.

*Allowance accounts for potential change orders and will be recovered if not used.

Kimley-Horn and Associates, Inc.			Opinion of Probable Construction Cost
Client:	Town of Flower Mound	Date:	9/26/2025
Project:	Wastewater Master Plan - West	Prepared By:	BP
KHA No.:	61000231	Checked By:	KSS
W BO-3	Southeast Lift Station		
Project Description:	This project includes the addition of a new lift station to serve the existing and proposed single family estates in the southern portion of the Prairie Vista service area.		

Line No.	Description	Quantity	Unit	Unit Price	Cost
Civil					
1	Mobilization	1	LS	$ 96,000	$ 96,000
2	Miscellaneous	1	LS	$ 175,000	$ 175,000
3	Allowance	1	LS	$ 150,000	$ 150,000
4	150 GPM Submersible Pumps	2	EA	$ 30,000	$ 60,000
5	Mechanical Piping & Valves	1	LS	$ 100,000	$ 100,000
6	4' Manhole	1	EA	$ 10,000	$ 10,000
7	8" Sanitary Sewer	100	LF	$ 100	$ 10,000
8	6' Diameter Wet Well	1	LS	$ 110,000	$ 110,000
9	Wet Well Excavation	21	CY	$ 35	$ 740
10	Valve Vault	1	EA	$ 40,000	$ 40,000
11	Odor Control Unit and Controller System	1	LS	$ 50,000	$ 50,000
12	Equipment Pads	25	CY	$ 550	$ 13,750
13	Concrete Driveway	500	SY	$ 200	$ 100,000
14	Chain Link Fence & Gate	1	LS	$ 50,000	$ 50,000
15	SWPP	1	LS	$ 50,000	$ 50,000
16	Grading/Site Restoration	1	LS	$ 75,000	$ 75,000
				Civil Subtotal:	$ 1,090,490

Line No.	Description	Quantity	Unit	Unit Price	Cost
Electrical, Instrumentation, and SCADA					
1	Electrical Service Equipment and Automatic Transfer Switch	1	LS	$ 100,000	$ 100,000
2	Variable Frequency Drive	1	LS	$ 50,000	$ 50,000
3	Pump Control Panel	1	LS	$ 50,000	$ 50,000
4	Standby Diesel Generator and Transfer Switch	1	LS	$ 250,000	$ 250,000
5	SCADA Equipment, Instrumentation, and Programming	1	LS	$ 100,000	$ 100,000
6	Miscellaneous Electrical Items	1	LS	$ 100,000	$ 100,000
7	Area Lighting	1	LS	$ 10,000	$ 10,000
8	Electrical Rack Mount and Sunscreen Canopy	1	LS	$ 20,000	$ 20,000
9	Electrical Service Provider Allowance	1	LS	$ 25,000	$ 25,000
				Electrical Subtotal:	$ 705,000

Basis for Cost Projection:			
☑ No Design Completed	Subtotal:		$ 1,795,490
☐ Preliminary Design	Contingency (%, +/-)	30%	$ 538,650
☐ Final Design	Professional Services (%, +/-)	10%	$ 179,550
	Easement Acquisition		$ 65,000
	*Total:		**$ 2,580,000**

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Manhole Connection Map (East System)

THE TOWN OF FLOWER MOUND TEXAS

N W E S

0 2,800 5,600 Feet

Kimley»Horn

November 2025

Manhole Connection Map (West System)

THE TOWN OF FLOWER MOUND TEXAS

N W E S

0 1,800 3,600 Feet

Kimley»Horn

November 2025