

**AGENDA
TOWN OF FLOWER MOUND
PLANNING AND ZONING COMMISSION MEETING**

NOVEMBER 9, 2020

**FLOWER MOUND TOWN HALL
2121 CROSS TIMBERS ROAD
FLOWER MOUND, TEXAS**

.....
AN AGENDA INFORMATION PACKET IS AVAILABLE ONLINE AT www.flower-mound.com/AgendaCenter
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There will be limited seating in Jody Smith Hall to allow for social distancing.

Meeting participants may be asked to wait in the lobby until their name is called.

Comments regarding any item on this agenda can be sent to the Planning & Zoning Commission by emailing pz@flower-mound.com or by calling 972-874-6005.

A. CALL MEETING TO ORDER 6:30 P.M. *(or immediately following the Capital Improvements Advisory Committee Meeting.)*

B. PUBLIC COMMENT

The purpose of this item is to allow the public an opportunity to address the Commission on issues that are not indicated as a "Public Hearing" on this agenda. Issues regarding daily operational or administrative matters should first be dealt with by calling Town Hall at 972-874-6000 during business hours.

Please state your name and address when speaking. Speakers are limited to 3 minutes. A tone will sound when 30 seconds are left and when time has expired.

C. FUTURE AGENDA ITEMS

The purpose of this item is to allow the Chairman and members of the Commission an opportunity to bring forward items they wish to discuss at a future meeting, with the understanding a consensus of the Commission is needed in order for that item to be placed on a future agenda and in accordance with the Town Council Agenda Setting Policy (Ord. 65-15).

D. DIRECTOR'S REPORT

1. Development Process Review and Ordinance Updates

E. CONSENT ITEMS

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 October 26, 2020: Consider approval of the minutes of the October 26, 2020, Planning and Zoning Commission Regular Session.

2. RP20-0006 – Wildwood Estates Lots 13R & 14R: Consider a request for a Replat (RP20-0006 – Wildwood Estates Lots 13R & 14R) to relocate a lot line. The property is generally located south of Red Bud Cove and east of Wildwood Drive.

F. NON-DISCRETIONARY ITEMS

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

3. *RC20-0005 – Whyburn Medical Addition Lot 1, Block A*

Consider a request for a Record Plat (RC20-0005 – Whyburn Medical Addition Lot 1, Block A) to create one nonresidential lot. The property is generally located north of Waketon Road and west of Long Prairie Road.

4. *SP20-0012 – Whyburn Medical Office*

Consider a request for a Site Plan (SP20-0012 - Whyburn Medical Office) to develop a medical office building. The property is generally located north of Waketon Road and west of Long Prairie Road.

G. REGULAR ITEMS

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 next to the item on the agenda. Typically, the Planning & Zoning Commission will make a recommendation to Town Council on these types of projects.

5. *MPA20-0002 - Water Plan*

Public Hearing

Public Hearing to consider an ordinance amending Section 8.0 Water Plan of the Master Plan (MPA20-0002 – Water Plan) to adopt amendments and additions to the 2009 Water Master Plan Update as a component of the Master Plan.

6. *MPA20-0003 – Wastewater Plan*

Public Hearing

Public Hearing to consider an ordinance amending Section 9.0 Wastewater Plan of the Master Plan (MPA20-0003 – Wastewater Plan) to adopt amendments to the 2009 Wastewater Master Plan Update as a component of the Master Plan.

7. *DP20-0004 – Grace Park*

Consider a request for a Development Plan (DP20-0004 – Grace Park) to develop a residential subdivision, with an exception to Section IV.C.5. of the Town's Engineering Design Criteria requirement to provide a wet retention pond, and an exception to the access management policy and criteria, regarding driveway spacing, contained in the Town's Engineering Design Criteria and Construction Standards adopted through Chapter 32 of the Code of Ordinances. The property is generally located south of Cross Timbers Road and east of Regency Park Court.

8. *ZPD20-0005 – Niagara Conservation PD-179*

Public Hearing

Public Hearing to consider an ordinance amending the zoning (ZPD20-0005 - Niagara Conservation) from an Agricultural (A) Zoning district to Planned Development District No.179 (PD-179) with Campus Industrial uses, with certain waivers, exceptions and modifications to the Code of Ordinances. The property is generally located north of Enterprise Road and east of Old Gerault Road.

H. ADJOURNMENT – REGULAR SESSION

I do hereby certify that the Notice of Meeting was posted on the bulletin board in Town Hall of the Town of Flower Mound, Texas, a place convenient and readily accessible to the general public at all times, on the following date and time: November 5, 2020, at 4:00 p.m., at least 72 hours prior to the scheduled time of said meeting.

LauriAnn Cash, Executive Assistant

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.

The Flower Mound Town Hall and Jody Smith Hall are wheelchair accessible. Requests for accommodations or interpretive services must be made at least 48 hours prior to this meeting by contacting Planning Services at (972) 874-6350.
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PLANNING AND ZONING COMMISSION

AGENDA ITEM NO: 1

CONSENT ITEM

DATE: November 9, 2020

FROM: LauriAnn Cash, Development Services Executive Assistant

ITEM: Consider approval of the minutes of the October 26, 2020, Planning and Zoning Commission Regular Session.

I. BACKGROUND INFORMATION

The Planning and Zoning Commission held a regular meeting on October 26, 2020.

II. ATTACHMENTS

1. Draft Minutes

THE FLOWER MOUND PLANNING & ZONING COMMISSION MEETING HELD ON THE 26TH DAY OF OCTOBER 2020, IN THE FLOWER MOUND TOWN HALL, LOCATED AT 2121 CROSS TIMBERS ROAD IN THE TOWN OF FLOWER MOUND, COUNTY OF DENTON, TEXAS, AT 6:30 PM

The Planning & Zoning Commission met in a regular session with the following members present:

Brad Ruthrauff	Chair
Robert Rawson	Vice-Chair
Adam Schiestel	Commissioner, Place 2
David Johnson	Commissioner, Place 4
Philip Del Vecchio	Commissioner, Place 5
Donald Gilmore	Commissioner, Place 6
Tim Fink	Commissioner, Place 7
Robert Cox	Commissioner, Place 8
Janvier Werner	Commissioner, Place 9

Constituting a quorum with the following members absent:

None

(Places 8 and 9 of the Commission do not vote on items unless they sit in place of one of the regular members, Places 1-7.)

And the following members of Town staff present:

Alicia Kreh	Town Attorney
Lexin Murphy	Director of Planning Services
Robert Pegg	Assistant Director of Engineering
Chuck Russell	Principal Planner
Poornima Kashyap	Principal Planner
LauriAnn Cash	Executive Assistant

A. CALL REGULAR SESSION TO ORDER (Council Chambers): 6:30 P.M.

B. INVOCATION AND PLEDGE OF ALLEGIANCE

C. PUBLIC COMMENT

None

D. FUTURE AGENDA ITEMS

None

E. DIRECTOR'S REPORT

1. Coordination of Calendars

Commissioner Cox asked if there would be a Work Session in November regarding Uses. Lexin Murphy, Director of Planning Services, communicated that on November 19 there would be a Town Council only Work Session to discuss Uses.

F. CONSENT ITEMS

1. Consider approval of the minutes of the October 12, 2020, Planning and Zoning Commission Regular Session.
2. Consider a request for a Record Plat (RC20-0006 – Heritage West) to create a residential subdivision. The property is generally located north of Spinks Road and west of Gerault Road.

Commission Deliberation

Vice-Chair Rawson moved to approve Consent Item 1 as presented in the agenda caption. Commissioner Johnson seconded the motion.

LauriAnn Cash, Executive Assistant, inquired if the Commission would like to consider making a motion to include both Consent Items.

Vice-Chair Rawson amended his motion to approve Consent Items 1 and 2 as presented in the agenda caption. Commissioner Johnson amended his motion to second Vice-Chair Rawson's amended motion.

VOTE ON THE MOTION

AYES: Schiestel, Johnson, Del Vecchio, Gilmore, Fink, Rawson

NAYS: None

The motion to approve passed by a vote of 6 to 0.

G. NON-DISCRETIONARY ITEMS

3. Consider a request for a Site Plan (SP20-0018 – The Brokerage Addition) to develop an addition to an existing office building. The property is generally located east of Stone Hill Farms Parkway and north of Stone Bend Lane.

Staff Presentation

Chuck Russell, Principal Planner

Applicant Presentation

Michael Bates, Bates Martin Architects; present for questions, no presentation

Commission Deliberation

Commissioner Johnson moved to approve SP20-0018 – The Brokerage Addition, as presented. Commissioner Del Vecchio seconded the motion.

VOTE ON THE MOTION

AYES: Rawson, Fink, Gilmore, Del Vecchio, Johnson, Schiestel

NAYS: None

The motion to approve passed by a vote of 6 to 0.

H. REGULAR ITEMS

- 4. Consider a request for a Site Plan (SP20-0016 – River Walk Chapel) to amend the previously approved elevations to eliminate stained glass windows. The property is generally located north of 1st Avenue and east of River Walk Drive.**

Staff Presentation

Poornima Kashyap, Principal Planner

Applicant Presentation

Michael Beaty, MRW Investors, LLC
Ralph Bush, Katmo Venues

Commission Deliberation

Commissioner Johnson moved to recommend denial of SP20-0016 – River Walk Chapel), as presented. Commissioner Del Vecchio seconded the motion.

VOTE ON THE MOTION

AYES: Schiestel, Johnson, Del Vecchio, Gilmore, Fink, Rawson

NAYS: None

The motion to recommend denial passed by a vote of 6 to 0.

- 5. Public Hearing to consider an ordinance amending the Land Development Regulations (LDR20-0004 – Nonconforming Uses) by amending Chapter 78 entitled “Administration,” of the Town’s Code of Ordinances to update the definitions and processes related to nonconformities within the Town of Flower Mound, as well as to update the standards for submitting appeals to the Board of Adjustment, in order to comply with new state requirements.**

Staff Presentation

Lexin Murphy, Director of Planning Services

Spoke in Favor:

None

Spoke in Opposition:

None

Commission Deliberation

Vice-Chair Rawson moved to recommend approval of LDR20-0004 – Nonconforming Uses, as presented. Commissioner Johnson seconded the motion.

VOTE ON THE MOTION

AYES: Rawson, Fink, Gilmore, Del Vecchio, Johnson, Schiestel

NAYS: None

The motion to recommend approval passed by a vote of 6 to 0.

I. ADJOURNMENT – REGULAR SESSION 7:54 P.M.

TOWN OF FLOWER MOUND, TEXAS

Lexin Murphy, Director of Planning Services

ATTEST:

LauriAnn Cash, Executive Assistant



PLANNING AND ZONING COMMISSION
AGENDA ITEM NO: 2
CONSENT ITEM

DATE: November 9, 2020

FROM: Claire Barnes, Planner

ITEM: Consider a request for a Replat (RP20-0006 – Wildwood Estates Lots 13R & 14R) to relocate a lot line. The property is generally located south of Red Bud Cove and east of Wildwood Drive.

I. ITEM SUMMARY

This application has been reviewed by DRC and determined to be ready for consideration by the Planning and Zoning Commission.

This application will require final action by the Planning and Zoning Commission.

II. APPLICATION ANALYSIS

The purpose of this application is to relocate a lot line in order to reconfigure two buildable, single-family residential lots. Per the original plat approved on June 10, 1968, Lots 13 and 14 were divided via a lot line running north to south. The applicant is proposing to relocate this dividing line to run west to east. The site contains approximately 4.901 acres with a minimum lot size of approximately 87,126 square feet. The property is zoned Single-Family Estate (SF-E).

The plat depicts necessary easements and setbacks. The proposed northern lot is a key lot and provides a front yard along both Red Bud Cove and Wildwood Drive. The existing primary dwelling is located on the proposed southern lot and is accessed from Wildwood Drive.

III. ATTACHMENTS

A. Background Information

1. Vicinity Map
2. Letter of Intent

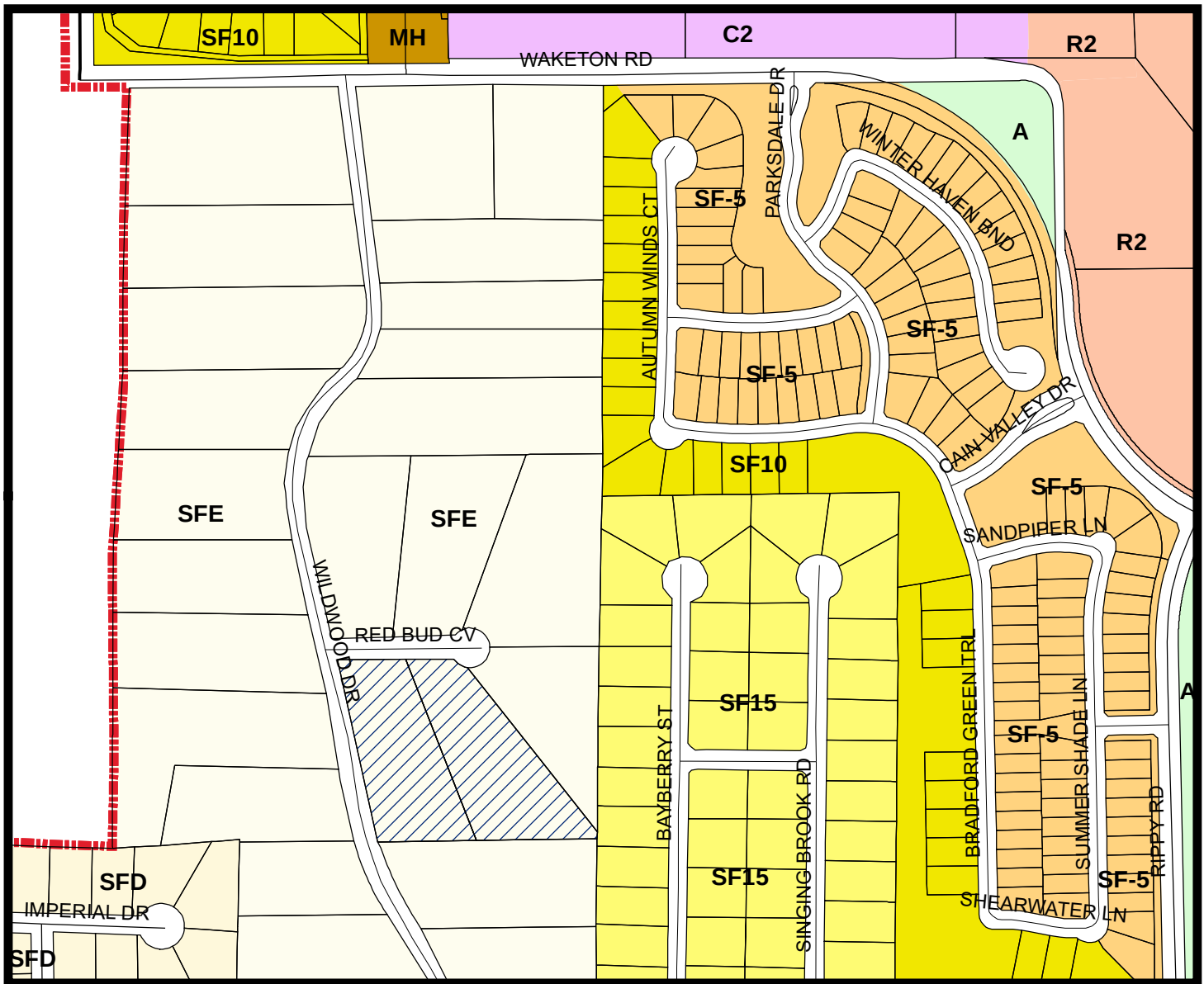
B. Application Details

1. Replat Package

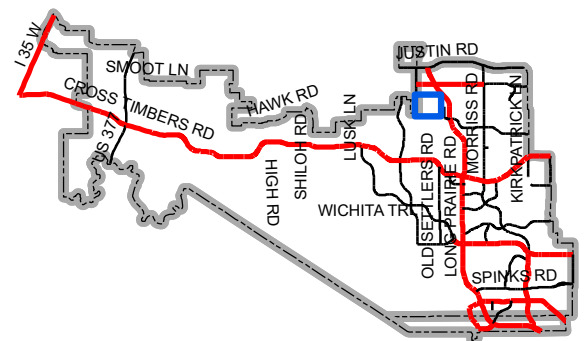
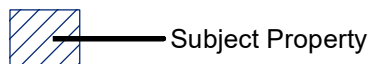
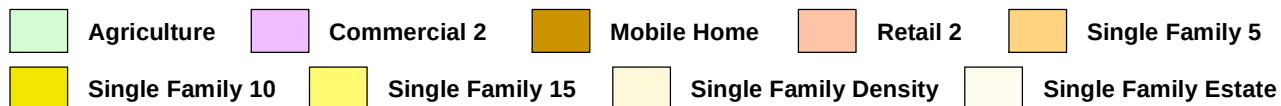


Vicinity Map

Reference Project: RP20-0006



LEGEND



Map Location

Friday, October 30, 2020
5304 Wildwood
Lots 13 and 14
Town of Flower Mound, Denton County, Texas
Page 1 of 1



Letter of Intent:

To Whom It May Concern:

Regarding Wildwoods Estates, Lots 13 and 14, this replat is proposing to revise an existing lot line to front Wildwood Estates instead of Red Bud Cove. The current zoning is: Single Family Estate.

These two lots are being proposed as Lots 13R and 14R, Wildwoods Estates.

These proposed lot sizes are as follows:

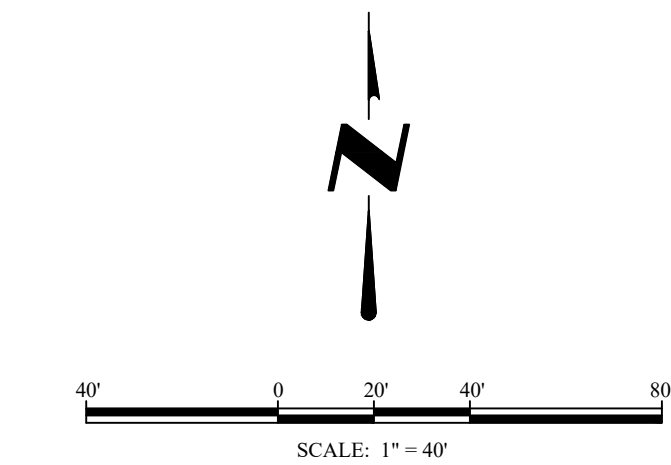
Lot 13R – 126,359 square feet or 2.901 acres. This proposed lot has an existing home on the lot.

Lot 14R – 87,126 square feet or 2.000 acres. This proposed lot is vacant.

Throughout the process of platting, we appreciate all the help that goes into making this project as smooth and complete as possible. Please contact me if you have any questions, comments or concerns.

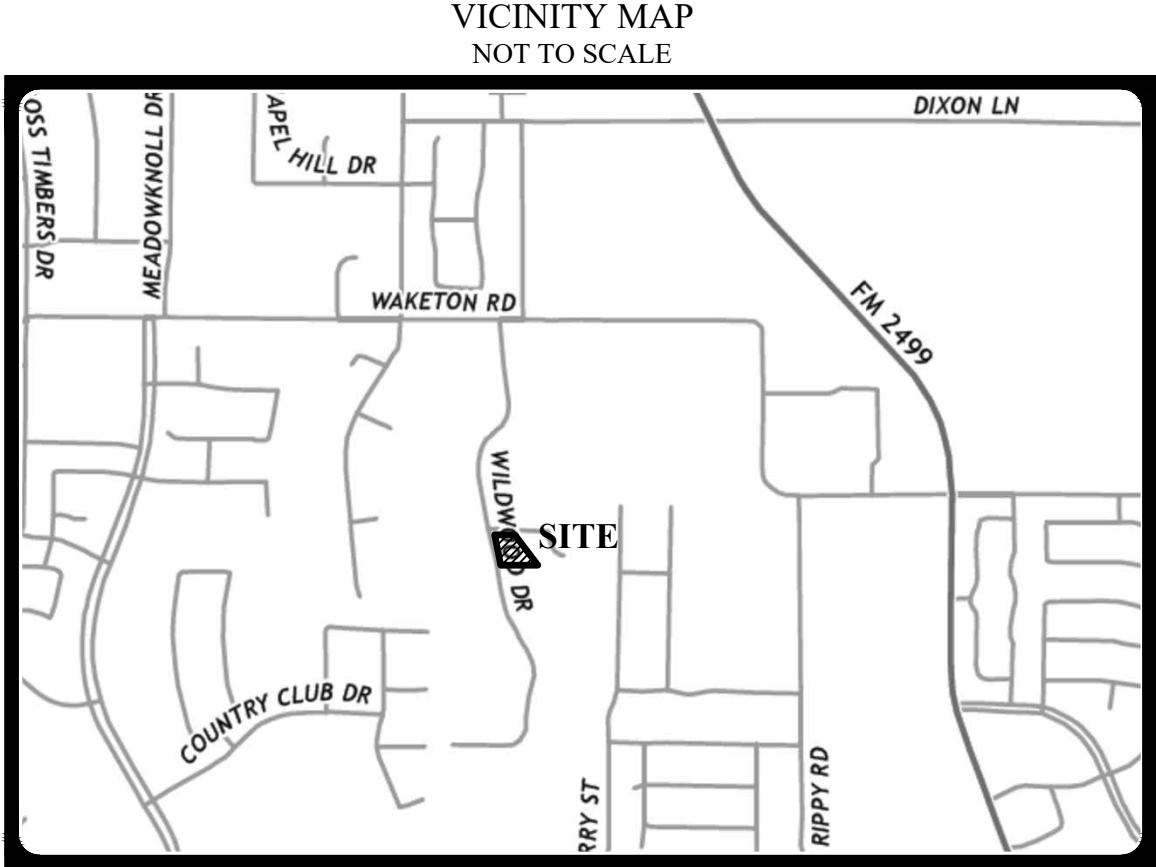
A handwritten signature in blue ink, appearing to read "Grayson CeBallos".

Grayson CeBallos
Project Manager
Windrose Land Services
grayson.cebaltos@windorseservices.com
972-370-5871 – Direct
214-217-2544 - Main



SURVEYOR'S NOTES:

- Bearings and distances are based on Texas State Plane Coordinate System, Texas North Central Zone 4202 North American Datum of 1983 (NAD 83) (U.S. Foot) with a combined scale factor of 1.000150630.
- This property lies within Zone "X" Unshaded of the Flood Insurance Rate Map for Denton County, Texas and Incorporated Areas, map no. 48121C0540G, dated April 18, 2011, via scaled map location and graphic plotting.
- Notice: Selling a portion of this addition by metes and bounds is a violation of City subdivision ordinance and state platting statutes and is subject to fines and withholding of utilities and building certificates.
- The purpose of this plat is to reconfigure two platted lots.
- Lot grading and drainage exhibit will be required with the building permit package submitted to the Town of Flower Mound.
- No lot to lot drainage is allowed.
- Upkeep and maintenance of the private drainage easement is the responsibility of the property owner



STATE OF TEXAS §
COUNTY OF DENTON §

This is to certify that I, Mark N. Peeples, a Registered Professional Land Surveyor of the State of Texas, have platted the subdivision from an actual survey on the ground, and that this plat correctly represents that survey made by me or under my direction and supervision.

PRELIMINARY
THIS DOCUMENT SHALL NOT BE RECORDED FOR ANY PURPOSE AND SHALL NOT BE VIEWED OR RELIED UPON AS A FINAL SURVEY DOCUMENT DATED 10/14/2020

Mark N. Peeples, R.P.L.S.
No. 6443

STATE OF TEXAS §
COUNTY OF DENTON §

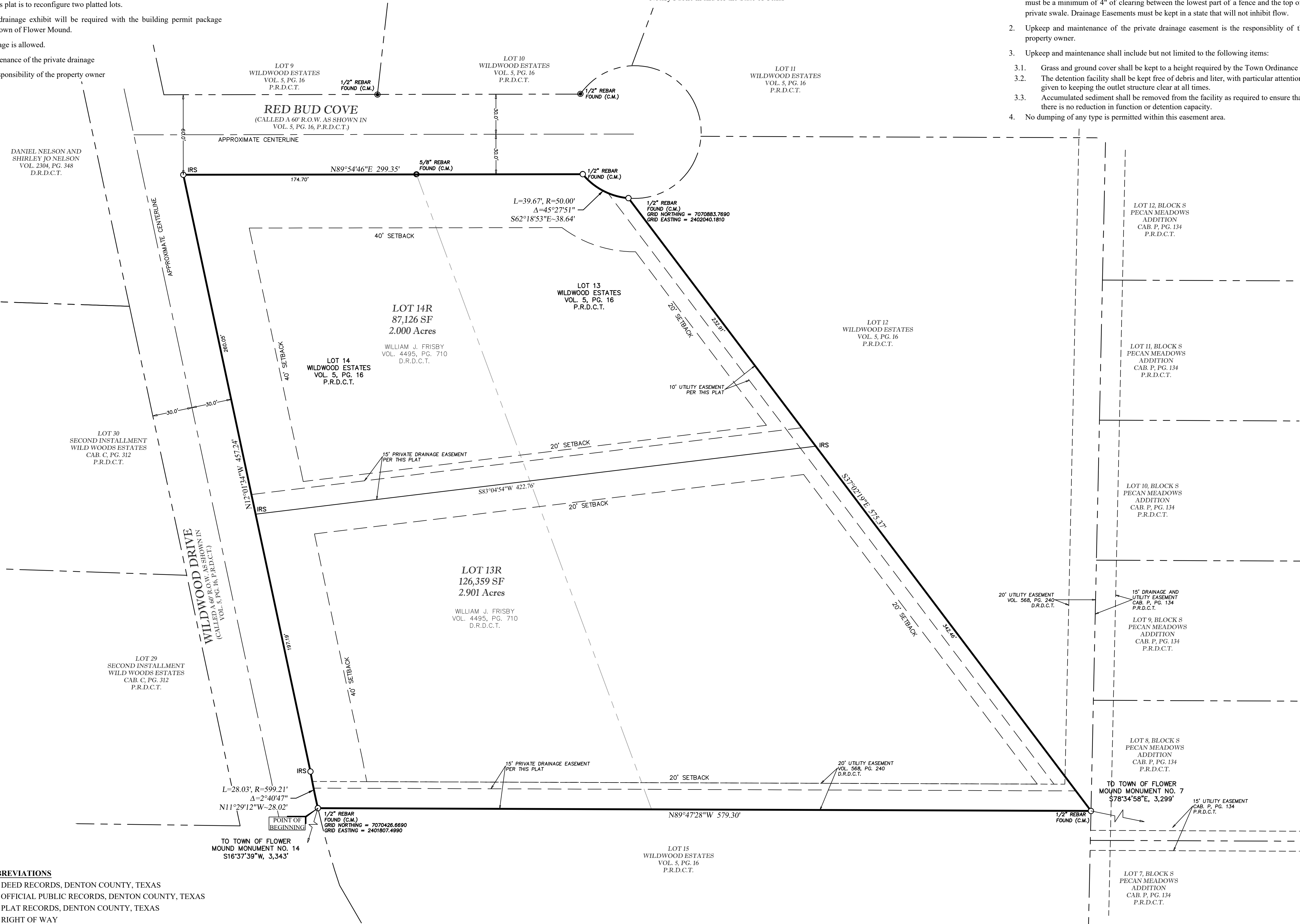
BEFORE ME, the undersigned authority, a Notary Public in and for the State of Texas, on this day personally appeared Mark N. Peeples, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this _____ day of _____, 20____.

Notary Public in and for the State of Texas

Drainage Notes

- Drainage Easements with open channel may be crossed by tubular steel fencing. There must be a minimum of 4" of clearing between the lowest part of a fence and the top of a private swale. Drainage Easements must be kept in a state that will not inhibit flow.
- Upkeep and maintenance of the private drainage easement is the responsibility of the property owner.
- Upkeep and maintenance shall include but not limited to the following items:
 - Grass and ground cover shall be kept to a height required by the Town Ordinance
 - The detention facility shall be kept free of debris and litter, with particular attention given to keeping the outlet structure clear at all times.
 - Accumulated sediment shall be removed from the facility as required to ensure that there is no reduction in function or detention capacity.
- No dumping of any type is permitted within this easement area.



- LEGEND OF ABBREVIATIONS**
- D.R.D.C.T. DEED RECORDS, DENTON COUNTY, TEXAS
 - O.P.R.D.C.T. OFFICIAL PUBLIC RECORDS, DENTON COUNTY, TEXAS
 - P.R.D.C.T. PLAT RECORDS, DENTON COUNTY, TEXAS
 - ROW RIGHT OF WAY
 - IRS 1/2 INCH CAPPED REBAR STAMPED "WINDROSE" SET
 - C.M. CONTROLLING MONUMENT

STATE OF TEXAS §
COUNTY OF DENTON §

WHEREAS William J. Frisby is the owner of a 4.901 acre tract of land situated in the J. Smart Survey, Abstract Number 1171, being all of Lots 13 and 14 of Wildwood Estates, an addition to the Town of Flower Mound, as recorded in Volume 5, Page 16, Plat Records, Denton County, Texas, and also being a tract of land conveyed to William J. Frisby by deed recorded in Volume 4495, Page 710, Deed Records, Denton County, Texas, and being more particularly described as follows: (Bearings and distances are based on the Texas State Coordinate System, Texas North Central Zone (4202) North American Datum of 1983 (NAD83) (US Foot) with a combined scale factor of 1.000136506);

BEGINNING at a 1/2 inch rebar found for the northwest corner of Lot 15 of said Wildwood Estates, same being the southwest corner of said Lot 14, said point lying on the east right-of-way line of Wildwood Drive (Called 60 foot right-of-way as shown on Volume 5, Page 16, Plat Records, Denton County, Texas), and being the beginning of a curve to the right with a radius of 599.21 feet, a central angle of 02 degrees 40 minutes 47 seconds, and a chord bearing and distance of North 11 degrees 29 minutes 12 seconds West, a distance of 28.02 feet;

THENCE in a northeasterly direction, with the curving east right-of-way line of said Wildwood Drive, the west line of said Lot 14 and with said curve to the right, an arc length of 28.03 feet to a 1/2 inch rebar with a cap stamped "WINDROSE" set for corner;

THENCE North 12 degrees 01 minutes 34 seconds West, continuing with the east right of way line of said Wildwood Drive; and the west line of said Lot 14, a distance of 457.24 feet to a 1/2 inch rebar with a cap stamped "WINDROSE" set for the northwest corner thereof, same point lying at the intersection of the east right-of-way line of said Wildwood Drive with the south right of way line of Red Bud Cove (60 foot right-of-way as shown on Volume 5, Page 16, Plat Records, Denton County, Texas);

THENCE North 89 degrees 54 minutes 46 seconds East, with the south right-of-way line of said Red Bud Cove, passing at a distance of 174.70 feet a 5/8 inch rebar found for the northeast corner of said Lot 14, same being the northwest corner of said Lot 13 and continuing with the north line of said Lot 13, a total distance of 299.35 feet to a 1/2 inch rebar found at the beginning of a non-tangent curve to the left, with a radius of 50.00 feet, a central angle of 45 degrees 27 minutes 51 seconds and a chord bearing and distance of South 62 degrees 18 minutes 53 seconds East, a distance of 38.64 feet;

THENCE in a southeasterly direction, with the curving southern right-of-way line of said Red Bud Cove, an arc length of 39.67 feet to a 1/2 inch rebar found for the easternmost northeast corner of said Lot 13, same being the westernmost northwest corner of Lot 12 of said Wildwood Estates;

THENCE South 37 degrees 02 minutes 19 seconds East, departing the southern right of way line of said Red Bud Cove, with the west line of said Lot 12 and the east line of said Lot 13, a distance of 575.37 feet to a 1/2 inch rebar found for the southeast corner of said Lot 13, and the southernmost corner of said Lot 12, also being the northeast corner of said Lot 15;

THENCE North 89 degrees 47 minutes 28 seconds West, with the south line of said Lot 13, the south line of said Lot 14 and with the north line of said Lot 15, a distance of 579.30 feet to THE POINT OF BEGINNING and containing 213,485 square feet or 4.901 acres of land, more or less.

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS

That William J. Frisby acting herein by and through its duly authorized officers, does hereby adopt this plat designated herein as Lots 13R and 14R Wildwood Estates, an addition to the Town of Flower Mound, Denton County, Texas.

The easements shown hereon are hereby reserved for the purposes as indicated. All streets, alleys, rights of way and **Lots 13R and 14R**, are hereby dedicated in fee simple to the Town of Flower Mound for municipal purposes. The utility and fire lane easements (streets, alleys, and common areas) shall be open to the public, fire and police units, garbage and rubbish collection agencies and all public and private utilities for each particular use. No buildings, trees, shrubs or other improvements or growths shall be constructed, reconstructed or placed upon, over or across the utility easements as shown. Said utility easements being hereby reserved for the mutual use and accommodation of all public utilities using or desiring to use same.

All and any public utility shall have the right to remove and keep removed all or parts of any buildings, fences, trees, shrubs, or other improvements or growths which in any way endanger or interfere with the construction, maintenance or efficiency of its respective system on the utility easements and all public utilities shall at all times have the full right of ingress and egress to and from and upon the said utility easements for the purpose of construction, reconstruction, inspecting, patrolling, maintaining and adding to or removing all or parts of its respective systems without the necessity at any time of procuring the permission of anyone. Any public utility shall have the right of ingress and egress to private property for the purposes of reading meters and any maintenance and service required or ordinarily performed by that utility

This plat approved subject to all platting ordinances, rules, regulations and resolutions of the Town of Flower Mound.

By: _____
William J. Frisby

STATE OF TEXAS §
COUNTY OF _____ §

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

GIVEN UNDER MY HAND AND SEAL OF OFFICE this _____ day of _____, 20____.

Notary Public in and for the State of Texas

APPROVED: TOWN OF FLOWER MOUND PLANNING AND ZONING COMMISSION	
Brad Ruthruff, Chairman Planning and Zoning Commission	Lexin Murphy - Director of Planning Services Town of Flower Mound
_____, 20____ Date	
SIGNED AND SEALED: TOWN OF FLOWER MOUND	
Theresa Scott, Town Secretary Town of Flower Mound	

REPLAT
WILDWOODS ESTATES
LOTS 13R AND 14R
Being a Replat of Lots 13 and 14,
Wildwoods Estates, an addition
to The Town of Flower Mound, as recorded in
Volume 5, Page 16, Plat Records,
Denton County, Texas
Town of Flower Mound, Denton County, Texas

WINDROSE
LAND SURVEYING & PLATING
220 ELM STREET, SUITE 200 | LEWISVILLE, TX 75057 | 214.217.2544
FIRM REGISTRATION NO. 10194331 | WINDROSESERVICES.COM

OWNER/DEVELOPER
William J. Frisby
5304 Wildwood Drive
Flower Mound, Texas 75028



PLANNING AND ZONING COMMISSION
AGENDA ITEM NO: 3
NON-DISCRETIONARY ITEM

DATE: November 9, 2020

FROM: Claire Barnes, Planner

ITEM: Consider a request for a Record Plat (RC20-0005 – Whyburn Medical Addition Lot 1 Block A) to create one nonresidential lot. The property is generally located north of Waketon Road and west of Long Prairie Road.

I. ITEM SUMMARY

This application has been reviewed by DRC and determined to be ready for consideration by the Planning and Zoning Commission.

This project has a companion site plan application (SP20-0012) for consideration on the same agenda.

This application will require final action by the Planning and Zoning Commission.

II. APPLICATION ANALYSIS

The purpose of this application is to create one buildable, non-residential lot. The site contains approximately 2.7389 acres.

The property is zoned Planned Development District-172 (PD-172) with Office uses.

The plat depicts necessary easements and setbacks. Access to the lot is provided via a mutual access easement connecting the site to the properties to the west.

III. ATTACHMENTS

A. Background Information

1. Vicinity Map
2. Letter of Intent

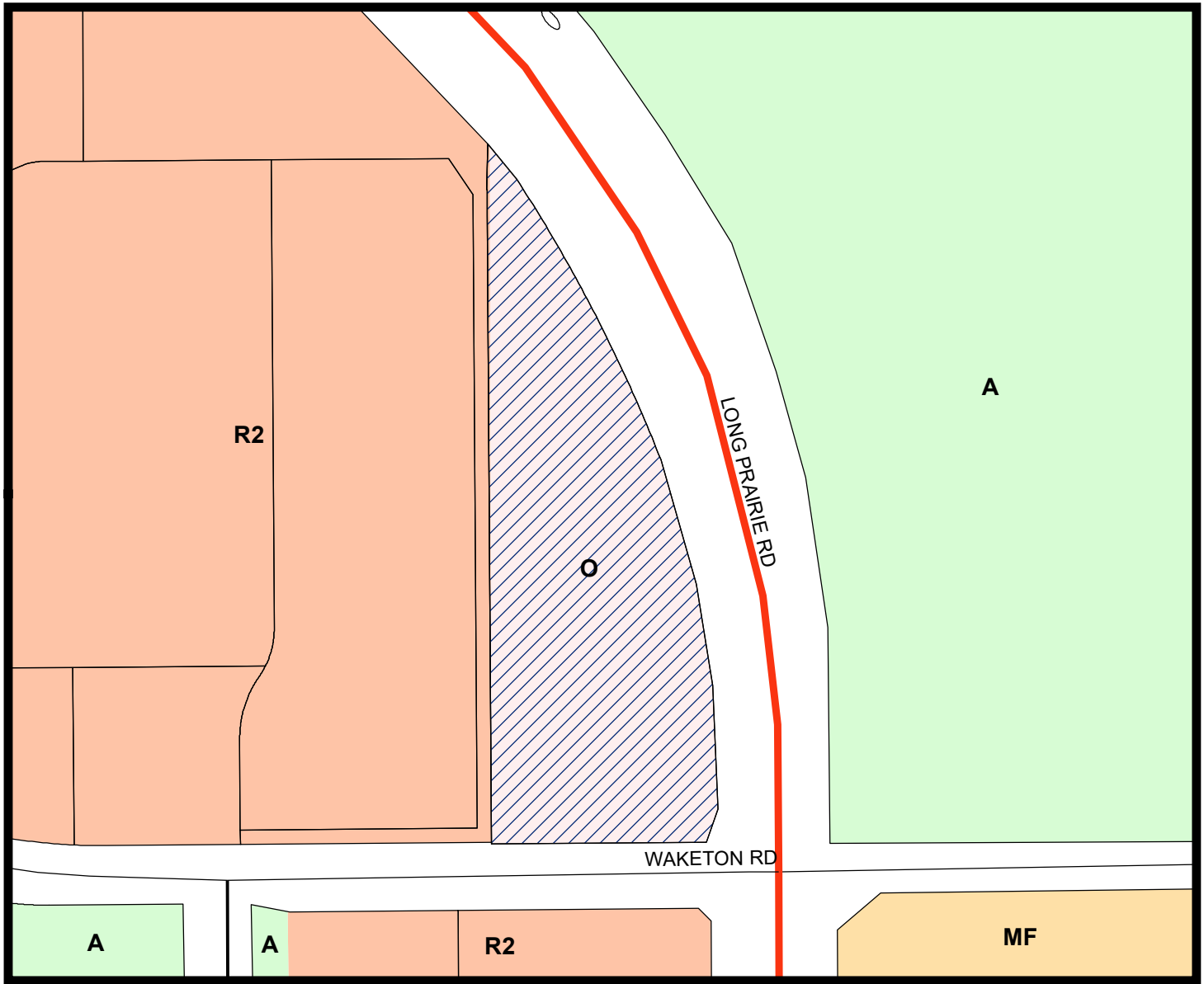
B. Application Details

1. Record Plat Package

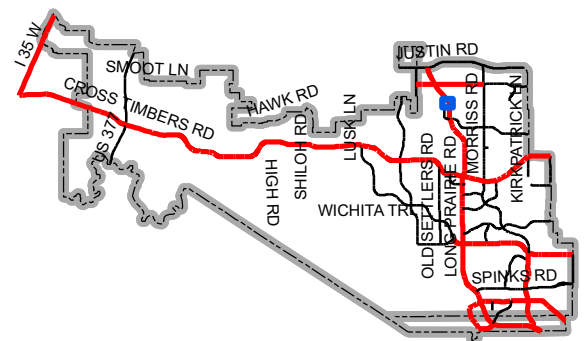
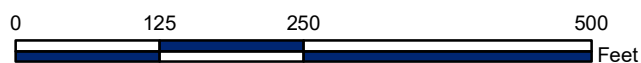
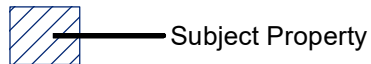


Vicinity Map

Reference Project: RC20-0005 & SP20-0012



LEGEND



Map Location



T: 214.609.9271 | F: 469.359.6709 | W: triangle-engr.com | O: 1333 McDermott Drive, Suite 150, Allen, TX 75013

LETTER OF INTENT

NOVEMBER 02, 2020

ATTN; Poornima Kashyap
Town of Flower Mound
2121 Cross Timber Road
Flower Mound, TX 75028

RE: Letter of Intent for Record Plat submittal of Medical Office Development at Long Prairie road & Waketon Road, Flower Mound, TX

Dear Madam,

This letter of intent is to inform the Town of Flower Mound about record plat submittal.

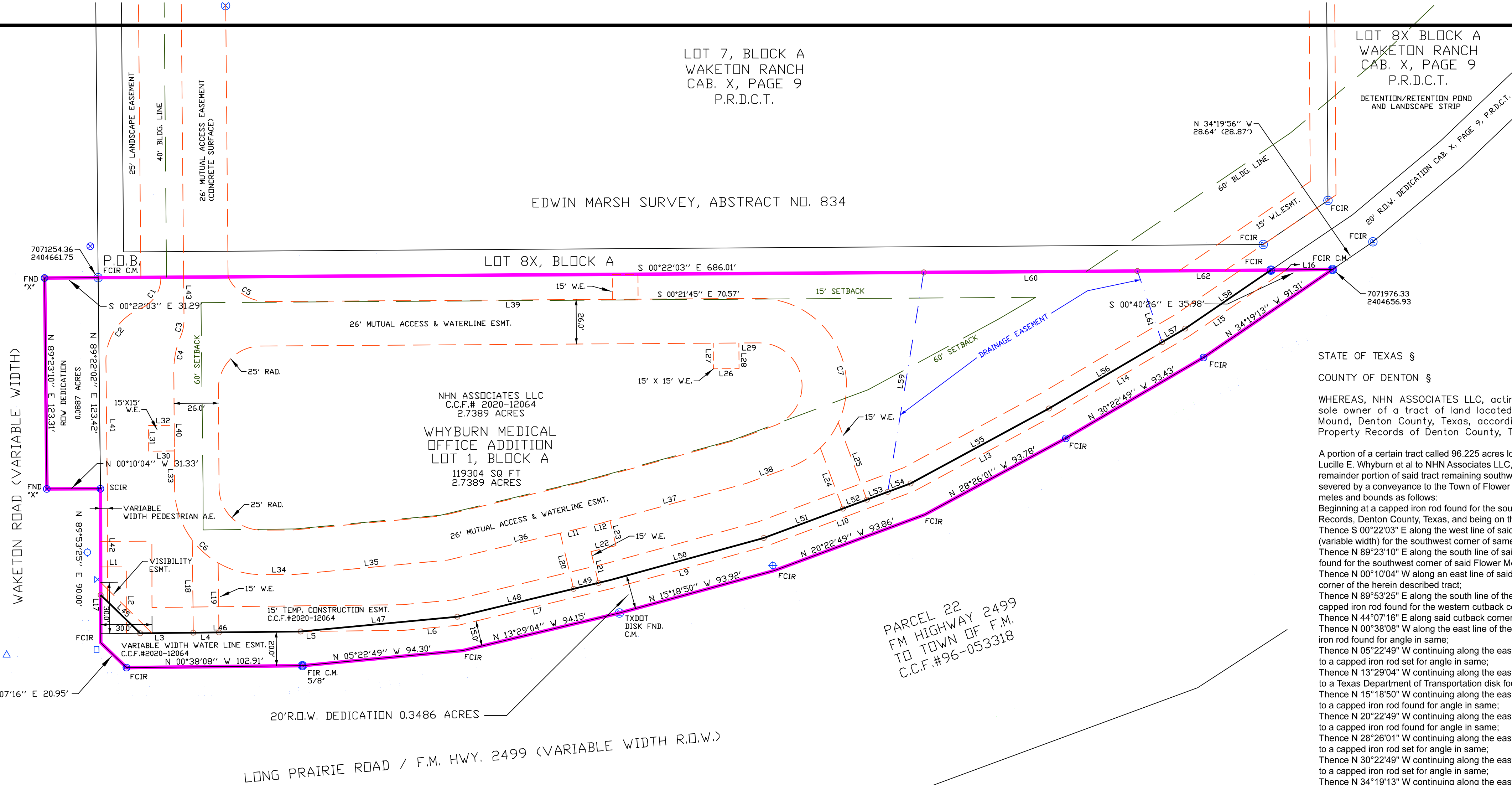
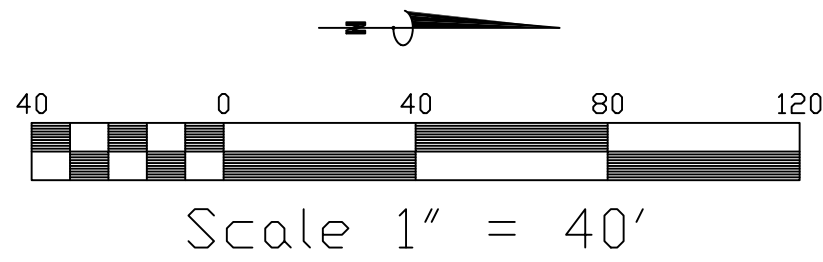
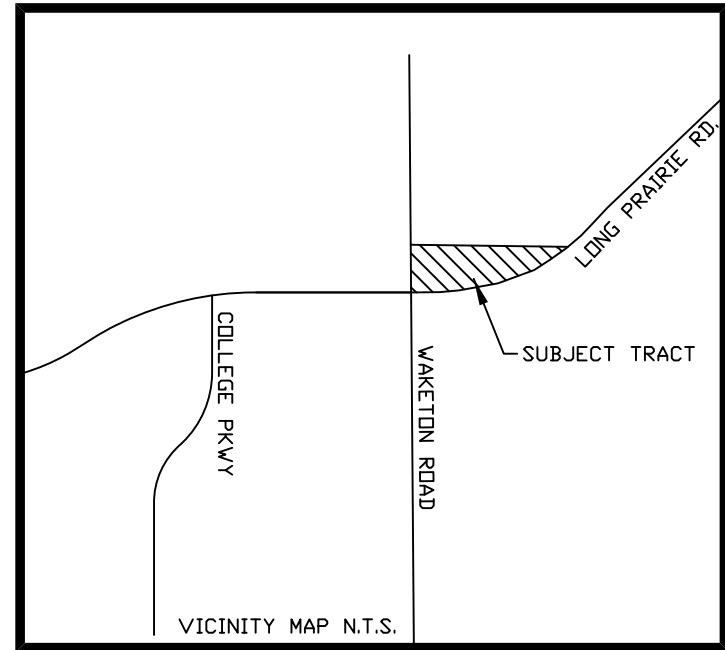
Site Data:

- a) Existing Zoning District: Planned Development (PD-172) Office District (O).
- b) Development plan Acreage: 2.7389 acres
- c) Proposed use: Medical Office
Proposed building area: 17,815 S.F. Medical Office
Proposed parking spaces quantities: 85
Phase development: No
Proposed lot is single lot with single unit.
Approved Conceptual Site Plan: Yes
- d) Special consideration: No

On November 4, 2019 the Town council of Town of Flower Mound approved the request for rezoning (ZPD 19-0001- Medical Offices) from Agricultural District (A) uses to Planned Development District-172 (PD-172) with Office District (O) uses, and with certain exceptions and modifications to Code of Ordinances, and consider adopting an ordinance for said amendment.

We believe the Medical Office Development will be great addition to the Town of Flower Mound.

Triangle Engineering
TX PE FIRM #11525
Kiew Kam, P.E.
Senior Project Manager
469-331-8566



STATE OF TEXAS §
COUNTY OF DENTON §

WHEREAS, NHN ASSOCIATES LLC, acting by and through the under-signed, its duly authorized agent, is the sole owner of a tract of land located in the E. MARSH SURVEY, ABSTRACT NUMBER 834, Town of Flower Mound, Denton County, Texas, according to the deed recorded in County Clerks File # 2019-79051 of the Real Property Records of Denton County, Texas, and being more particularly described as follows:

A portion of a certain tract called 96.225 acres located in the Edwin Marsh Survey, Abstract Number 834, described in a warranty deed from Lucille E. Whyburn et al to NHN Associates LLC, and recorded under Denton County Clerks file number 2019-79051, same being all of the remainder portion of said tract remaining southwest of Farm to Market Road 2499 (F.M. 2499), also known as Long Prairie Road, and being severed by a conveyance to the Town of Flower Mound recorded under County Clerks file number 96-053318, being more fully described by metes and bounds as follows:
Beginning at a capped iron rod found for the southeast corner of the Waketon Ranch Addition, recorded in Cabinet X, Page 9, of the Plat Records, Denton County, Texas, and being on the west line of said Whyburn tract;
Thence S 00°22'03" E along the west line of said Whyburn tract a distance of 31.29 feet to an "X" found in the surface of Waketon Road (variable width) for the southwest corner of same;
Thence N 89°23'10" E along the south line of said Whyburn tract and near the center of said Waketon Road a distance of 123.31 feet to an "X" found for the southwest corner of said Flower Mound Tract;
Thence N 00°10'04" W along an east line of said Flower Mound Tract a distance of 31.33 feet to a capped iron rod found for an interior "L" corner of the herein described tract;
Thence N 08°53'25" E along the south line of the herein described tract and the north line of said Waketon Road a distance of 90.00 feet to a capped iron rod found for the western cutback corner at the northwest intersection of said Waketon Road and said F.M. 2499;
Thence N 44°07'16" E along said cutback corner a distance of 20.95 feet to a capped iron rod found for the northern corner of same;
Thence N 00°38'08" W along the east line of the herein described tract and the west line of said F.M. 2499 a distance of 102.91 feet to a 5/8" iron rod found for angle in same;
Thence N 05°22'49" W continuing along the east line of the herein described tract and the west line of said F.M. 2499 a distance of 94.30 feet to a capped iron rod set for angle in same;
Thence N 13°29'04" W continuing along the east line of the herein described tract and the west line of said F.M. 2499 a distance of 94.15 feet to a Texas Department of Transportation disk found for angle in same;
Thence N 15°18'50" W continuing along the east line of the herein described tract and the west line of said F.M. 2499 a distance of 93.92 feet to a capped iron rod found for angle in same;
Thence N 20°22'49" W continuing along the east line of the herein described tract and the west line of said F.M. 2499 a distance of 93.86 feet to a capped iron rod found for angle in same;
Thence N 28°26'01" W continuing along the east line of the herein described tract and the west line of said F.M. 2499 a distance of 93.78 feet to a capped iron rod set for angle in same;
Thence N 13°29'04" W continuing along the east line of the herein described tract and the west line of said F.M. 2499 a distance of 93.43 feet to a capped iron rod set for angle in same;
Thence N 30°22'49" V 93.43' FCIR
Thence N 34°19'13" V 91.31' FCIR
Thence N 34°19'13" V 91.31' FCIR
Thence S 00°22'03" E along the west line of this tract and the east line of said Lot 8X, a distance of 686.01 feet to the Point of Beginning and Containing 2.7389 acres of land.

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS:

THAT, NHN Associates LLC, acting herein by and through its duly authorized officers, does hereby adopt this plat designated herein as Whyburn Medical Office Addition, an addition to the Town of Flower, Denton County, Texas.

The easements shown hereon are hereby reserved for the purposes as indicated. All streets, alleys, rights-of-way, are hereby dedicated in fee simple to the Town of Flower Mound for municipal purposes. The utility and fire lane easements (streets, alleys, and common areas) shall be open to the public, fire and police units, garbage and rubbish collection agencies and all public and private utilities for each particular use. No buildings, trees, shrubs or other improvements or growths shall be constructed, reconstructed or placed upon, over or across the utility easements as shown. Said utility easements being hereby reserved for the mutual use and accommodation of all public utilities using or desiring to use same.

All and any public utility shall have the right to remove and keep removed all or parts of any buildings, fences, trees, shrubs, or other improvements or growths which in any way endanger or interfere with the construction, maintenance or efficiency of its respective system on the utility easements and all public utilities shall at all times have the full right of ingress and egress to and from and upon the said utility easements for the purpose of construction, reconstructing, inspecting, patrolling, maintaining and adding to or removing all or parts of its respective systems without the necessity at any time of procuring the permission of anyone. Any public utility shall have the right of ingress and egress to private property for the purposes of reading meters and any maintenance and service required or ordinarily performed by that utility. This plat approved subject to all platting ordinances, rules, regulations and resolutions of the Town of Flower Mound.

Owner's Agent DR. ADNAN NADIR L.L.C. MANAGER

STATE OF TEXAS §
COUNTY OF DENTON §

BEFORE ME, the undersigned authority, on this day personally appeared Dr. Adnan Nadir, of NHN Associates LLC, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he/she executed the same for the purpose and consideration therein expressed, in the capacity therein stated, and as the act and deed of said partnership.

GIVEN UNDER MY HAND AND SEAL OF OFFICE on the _____ day of _____, 20____

Notary Public in and for the State of Texas
NOTARY SEAL

My Commission Expires: _____

Approved:
TOWN OF FLOWER MOUND
PLANNING AND ZONING COMMISSION set fo

David Johnson, Chairman Lexin Murphy, Director of Planning Services
Planning and Zoning Commission Town of Flower Mound

SIGNED AND SEALED:
TOWN OF FLOWER MOUND

Theresa Scott, Town Secretary ast
Town of Flower Mound

NUMBER	D	CD	R	A	LC
C1	69°31'46"	N 57°15'02" W	19.01	23.07	21.68
C2	68°06'22"	N 56°32'20" W	33.00	39.23	36.96
C3	23°30'32"	S 78°51'48" E	24.75	10.15	10.08
C4	24°20'06"	S 79°16'35" E	50.82	21.59	21.42
C5	63°22'50"	S 32°19'34" V	25.00	28.32	27.00
C6	89°59'00"	N 44°38'27" E	51.00	80.10	72.11
C7	159°58'09"	S 79°37'07" W	51.00	142.39	100.45

NUMBER	DIRECTION	DISTANCE	NUMBER	DIRECTION	DISTANCE
L1	N 00°06'35" W	15.00'	L32	N 00°21'50" W	15.00'
L2	N 89°53'25" E	38.89'	L33	N 89°38'10" E	21.62'
L3	N 00°38'08" W	39.13'	L34	N 00°22'02" W	19.51'
L4	N 00°38'08" W	15.00'	L35	N 05°22'49" W	89.39'
L5	N 00°38'08" W	108.23'	L36	N 13°29'04" W	89.10'
L6	N 05°22'49" W	32.17'	L37	N 15°18'21" W	91.05'
L7	N 13°29'04" W	92.84'	L38	N 20°10'38" W	27.13'
L9	N 15°10'35" W	100.58'	L39	S 00°21'45" E	287.59'
L10	N 20°22'49" W	92.14'	L40	N 89°38'10" E	67.54'
L11	N 13°29'04" W	21.55'	L41	S 89°22'32" V	74.62'
L12	N 15°18'21" W	8.45'	L42	N 89°53'25" E	66.00'
L13	N 28°26'01" W	92.47'	L43	N 89°30'11" E	25.77'
L14	N 30°22'49" W	92.66'	L45	N 44°07'16" E	32.19'
L15	N 34°19'13" W	68.26'	L46	N 00°38'08" W	93.85'
L16	N 00°40'26" W	27.07'	L47	N 05°22'49" W	92.05'
L17	S 89°53'25" W	44.28'	L48	N 13°29'04" W	69.92'
L18	S 89°21'52" W	54.17'	L49	N 13°29'04" W	15.00'
L19	S 89°21'52" W	40.63'	L50	N 15°10'38" W	102.29'
L20	S 76°30'56" W	33.50'	L51	N 20°22'49" W	49.32'
L21	N 76°30'56" E	18.77'	L52	N 20°22'49" W	15.00'
L22	S 13°29'04" E	15.00'	L53	N 20°22'49" W	13.01'
L23	N 76°30'56" E	15.00'	L54	N 20°22'49" W	14.24'
L24	S 69°37'11" W	37.83'	L55	N 28°26'01" W	92.03'
L25	N 69°37'11" E	48.06'	L56	N 30°22'49" W	76.73'
L26	S 00°22'03" E	15.00'	L57	N 30°22'49" W	15.67'
L27	S 89°37'58" V	15.00'	L58	N 34°19'13" W	60.58'
L28	N 89°37'57" E	15.00'	L59	N 00°41'25" W	130.08'
L29	S 00°22'03" E	11.79'	L60	N 00°22'03" W	124.99'
L30	S 00°21'50" W	15.00'	L61	N 70°50'19" E	44.02'
L31	S 89°38'10" W	15.00'	L62	N 00°22'03" W	78.00'

W.E. = WATER EASEMENT
(DISTANCE) = CALL DISTANCE
WATER METER = M, SIGN = S
LIGHT POLE = O, MAN HOLE = H
SPOT ELEV. = +650.0, DRAIN ARROW = →
SURVEY CONTROL = Δ, UTILITY POLE = U
UTILITY BOX = B, ELEC. MTR. = O, TELE. BOX = T
OVERHEAD UTILITY LINE = ---
FIR = FOUND IRON ROD
SCIR = SET 1/2" IRON RODS WITH CAP
NOTE: BASIS OF BEARING IS RELATIVE TO THE TOWN OF FLOWER MOUND GEDDING MONUMENTS NO. 6 & 53.
CM = CONTROLLING MONUMENT
AE = ACCESS ESMT.

NOTE: THE PROPERTY SHOWN HEREON IS NOT BELOW THE 100-YEAR FLOOD PLAIN IN ACCORDANCE WITH F.I.R.M. COMMUNITY PANEL NO. 48121C-0540G, ZONE X, DATED 04/18/2011.

DRAINAGE EASEMENT NOTES:

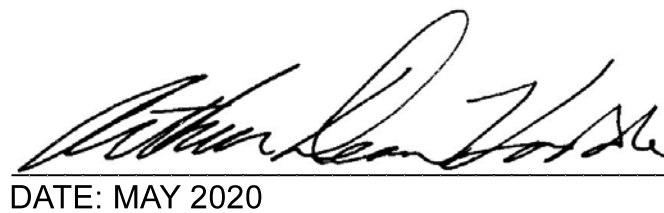
- Upkeep and maintenance of the private drainage easement is the responsibility of the property owner.
- Upkeep and maintenance shall include but not be limited to the following items:
 - grass and ground cover shall be kept to a height required by Town ordinance.
 - The detention facility shall be kept free of debris and litter, with particular attention given to keeping the outlet structure clear at all times.
 - Accumulated sediment shall be removed from the facility as required to ensure that there is no reduction in function or detention capacity.
 - All electrical and mechanical systems associated with the retention function of this facility shall be kept in working order at all times.
- No dumping of any type is permitted within the easement area.

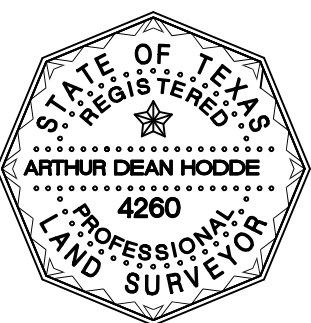
NOTE:

THIS PROPERTY IS SUBJECT TO PD# 172.

KNOW ALL MEN BY THESE PRESENTS:

That I, Arthur Dean Hodde do hereby certify that I prepared this plat from an actual and accurate survey of the land and that the corner monuments shown thereon were properly placed under my supervision.


DATE: MAY 2020



OWNER/DEVELOPER:

NHN ASSOCIATES LLC
DR. ADNAN NADIR
4221 MEDICAL PARKWAY
CARROLLTON TX. 75010
PHONE: 469-766-0218
EMAIL: aminanadir@yahoo.com

LENDER:

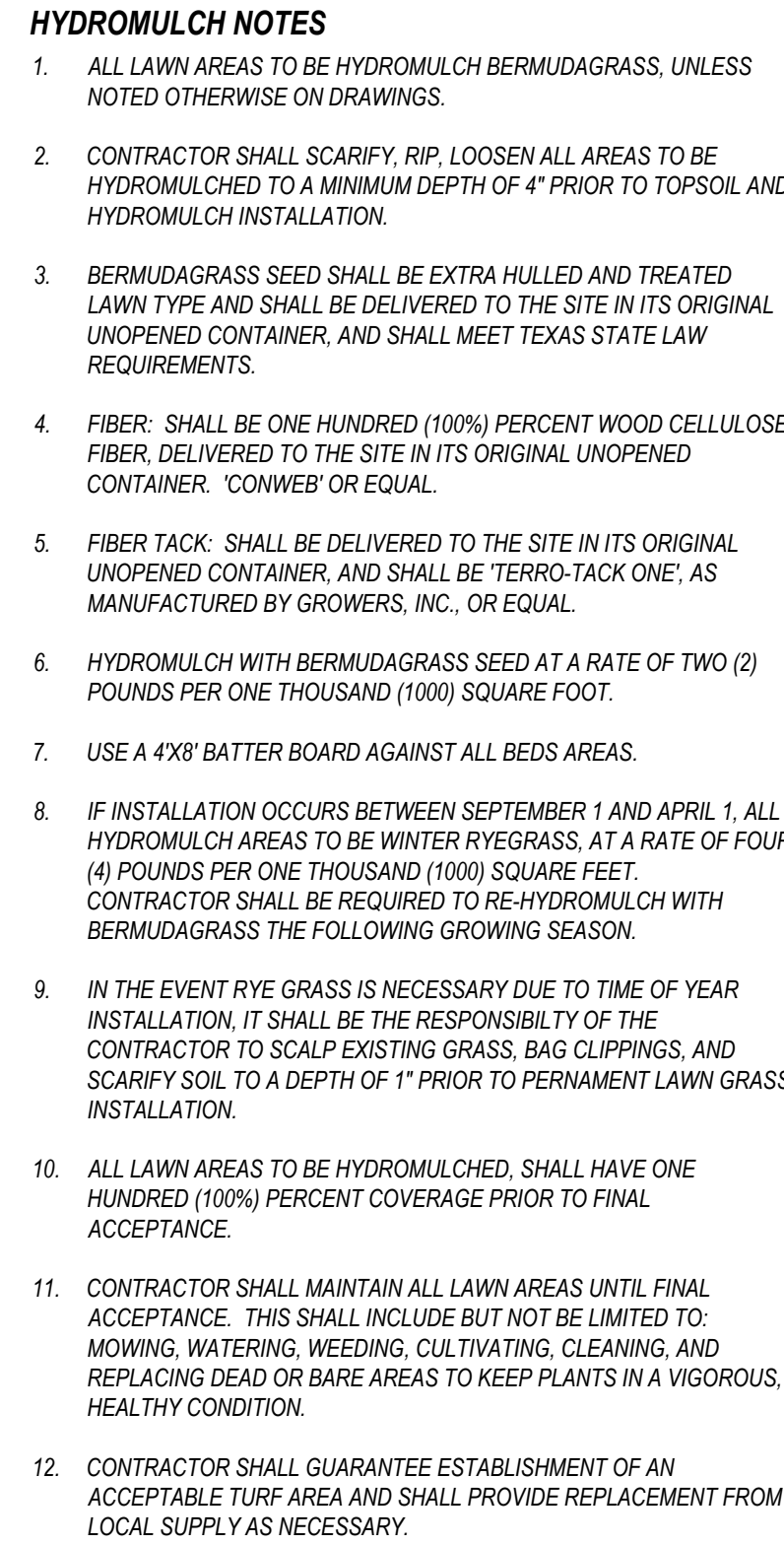
POINT BANK
DUSTIN HODGES
2103 EAST ELDORADO PARKWAY
LITTLE ELM TX. 75068
PHONE: 940-686-3205 WK
PHONE: 972-515-6674 CELL

Texas National Surveying

P.O. BOX 293254
LEWISVILLE, TEXAS 75029
REGISTERED FIRM NO. 10021600
PH: 972-539-7676, 979-451-1551
EMAIL: adhodge@aol.com

DRAWN BY:	APPROVED BY:
DATE: Plot date: 05/17/20 at 2109	PROJ. NO.
DWG. NO.: File name: C:\DWG\MAY20\13802001	DWG. Plot date: 05/17/20 at 2110

REVISIONS
REVISED EASEMENTS & BLDG. LINES 08/07/2020
REVISED EASEMENTS & DRAWING PER CITY COMMENTS 09/09/2020
REVISED EASEMENTS & LINE TABLE 09/16/2020



GENERAL LAWN NOTES

1. FINE GRADE AREAS TO ACHIEVE FINAL CONTOURS INDICATED ON CIVIL PLANS.
2. ADJUST CONTOURS TO ACHIEVE POSITIVE DRAINAGE AWAY FROM BUILDINGS. PROVIDE UNIFORM ROUNDING AT TOP AND BOTTOM OF SLOPES AND OTHER BREAKS IN GRADE. CORRECT IRREGULARITIES AND AREAS WHERE WATER MAY STAND.
3. ALL LAWN AREAS TO RECEIVE SOLID SOIL SHALL BE LEFT IN A MAXIMUM OF 1" BELOW FINAL FINISH GRADE. CONTRACTOR TO COORDINATE OPERATIONS WITH ON-SITE CONSTRUCTION MANAGER.
4. IMPORTED TOPSOIL SHALL BE NATURAL, FRIABLE SOIL FROM THE REGION, KNOWN AS BOTTOM AND SOIL, FREE FROM LUMPS, CLAY, TOXIC SUBSTANCES, ROOTS, DEBRIS, VEGETATION, STONES, CONTAINING NO SALT AND BLACK TO BROWN IN COLOR.
5. ALL LAWN AREAS TO BE FINE GRADED. IRRIGATION TRENCHES COMPLETELY SETTLED, AND FINISH GRADE APPROVED BY THE OWNER'S CONSTRUCTION MANAGER OR ARCHITECT PRIOR TO INSTALLATION.
6. ALL ROCKS 3/4" DIAMETER AND LARGER, DIRT CLOUDS, STICKS, CONCRETE SPOILS, ETC. SHALL BE REMOVED PRIOR TO PLACING TOPSOIL AND ALL LAWN INSTALLATION.
7. CONTRACTOR SHALL PROVIDE (1") INCH OF IMPORTED TOPSOIL ON ALL AREAS TO RECEIVE LAWN.

LANDSCAPE NOTES

1. CONTRACTOR SHALL VERIFY ALL EXISTING AND PROPOSED SITE ELEMENTS AND NOTIFY ARCHITECT OF ANY DISCREPANCIES. SURVEY DATA OF EXISTING CONDITIONS WAS SUPPLIED BY OTHERS.
2. CONTRACTOR SHALL LOCATE ALL EXISTING UNDERGROUND UTILITIES AND NOTIFY ARCHITECT OF ANY CONFLICTS. CONTRACTOR SHALL EXERCISE CAUTION WHEN WORKING IN THE VICINITY OF UNDERGROUND UTILITIES.
3. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED LANDSCAPE AND IRRIGATION PERMITS.
4. CONTRACTOR TO PROVIDE A MINIMUM 2% SLOPE AWAY FROM ALL STRUCTURES.
5. ALL PLANTING BEDS AND LAWN AREAS TO BE SEPARATED BY STEEL EDGING. NO STEEL TO BE INSTALLED ADJACENT TO SIDEWALKS OR CURBS.
6. ALL LANDSCAPE AREAS TO BE 100% IRRIGATED WITH AN UNDERGROUND AUTOMATIC IRRIGATION SYSTEM AND SHALL INCLUDE RAIN AND FREEZE SENSORS.
7. ALL LAWN AREAS TO BE SOLID SOO BERMUDAGRASS, UNLESS OTHERWISE NOTED ON THE DRAWINGS.

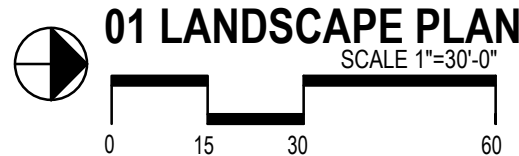
LANDSCAPE TABULATIONS				
Street Yard Landscaping				
Standard	Total Street Yard (Square Feet)	Required	Provided	
Min. 20% of street yard	40,980 s.f.	8,196	16,125	
Street Yard Trees				
Standard	Total Street Yard (Square Feet)	Required	Provided	
10,000 ± 110,000 10 trees for less 10,000 plus 1 (per 2,000 ± excess per 10,000 ±)	40,980 s.f.	22	26-3 Cal. Trees	
Trees required to satisfy other provisions of landscaping requirements and lying within the street yard may be used to satisfy the requirements of other sections.				
Street Buffer Trees				
Standard	Street Frontage (Linear Feet)	Required	Provided	
1 per 30 ft.	Long Prairie Road 720 ft.	24	25-3 Cal. Trees	
Standard	Street Frontage (Linear Feet)	Required	Provided	
1 per 30 ft.	Waketon Road 209 ft.	7	7-3 Cal. Trees	
Parking Area Landscaping				
Standard	No. of Parking Spaces	Required	Provided	
90 s.f. per 10 spaces	85	638 s.f.	1,656 s.f.	
Parking Area Trees				
Standard	No. of Parking Spaces	Required	Provided	
1 tree per 10 spaces	85	9	15	

PLANT MATERIAL SCHEDULE					
TREES					
TYPE	QTY	COMMON NAME	BOTANICAL NAME	SIZE	REMARKS
CM	4	Crape Myrtle 'Dallas Red'	<i>Lagerstroemia indica</i> 'Dallas Red'	3" cal.	container, 8' ht. 5' spread, 3 or 5 trunks, tree form
CE	13	Cedar Elm	<i>Ulmus crassifolia</i>	3" cal.	B&B, 13' ht., 5' spread min., 5' clear trunk
LO	8	Live Oak	<i>Quercus virginiana</i>	3" cal.	container, 14' ht., 6' spread, 5' clear straight trunk
RO	7	Shumard Red Oak	<i>Quercus shumardi</i>	3" cal.	container, 14' ht., 6' spread, 5' clear straight trunk
LE	7	Lacebark Elm	<i>Ulmus parvifolia</i>	3" cal.	B&B, 13' ht., 5' spread min., 5' clear trunk
TA	7	Texas Ash	<i>Fraxinus texensis</i>	3" cal.	container, 14' ht., 6' spread, 5' clear straight trunk
TP	5	Texas Persimmon	<i>Diospyros texana</i>	3" cal.	container, 14' ht., 6' spread, 5' clear straight trunk
SHRUBS					
TYPE	QTY.	COMMON NAME	BOTANICAL NAME	SIZE	REMARKS
NPH	339	Needlepoint Holly	<i>Ilex cornuta</i> 'Needlepoint'	5 gal.	container, 24" ht., 20" spread
NRS	68	Nellie R. Stevens Holly	<i>Ilex x 'Nellie R. Stevens'</i>	4" ht.	container grown, 36" spread, full to base
LOR	84	Loropetalum	<i>Loropetalum chinense</i>	3 gal.	container, 18" ht., 20" spread
DYH	125	Dwarf Yaupon Holly	<i>Ilex vomitoria</i> 'Nana'	3 gal.	container, 18" ht., 20" spread
IH	131	Indian Hawthorn 'Clara'	<i>Raphiolepis indica</i>	3 gal.	container, 18" ht., 20" spread
AB	89	Abelia Kalescope Abelia	<i>Abelia x grandiflora</i> 'Kalescope'	3 gal.	container, 18" ht., 20" spread
GROUNDCOVERS					
TYPE	QTY	COMMON NAME	BOTANICAL NAME	SIZE	REMARKS
WC	800	Purple Wintercreeper '1919 Bermuda grass	<i>Euryonyma dactyloides</i> <i>Cynodon dactylon</i> '419'	4" pots	container, 3 - 12" runners min., 12" o.c. Refer to notes

NOTE: Plant list is an aid to bidders only. Contractor shall verify all quantities on plan. All heights and spreads are minimums. All plant material shall meet or exceed remarks as indicated. All trees to have straight trunks and be matching within varieties.

**THERE ARE NO EXISTING TREES
LOCATED ON THE PROPERTY**

OWNER/DEVELOPER PANCHAL INVESTMENTS 2500 SOUTH MAIN STREET WEATHERFORD, TX 76087 CONTACT: PREM N. PANCHAL TEL: 817-896-7889	ENGINEER TRIANGLE ENGINEERING LLC 1784 MCDERMOTT DRIVE, SUITE 110 ALLEN, TEXAS 75013 CONTACT: KIEW KAM, P.E. TEL: 469-213-2268	SURVEYOR TEXAS NATIONAL SURVEYING P.O. BOX 293254 LEWISVILLE, TEXAS 75029 CONTACT: ARTHUR DEAN HODDE TEL: 972-539-7676
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SECTION 02900 - LANDSCAPE

PART 1 - GENERAL

1.1 REFERENCED DOCUMENTS

Refer to bidding requirements, special provisions, and schedules for additional requirements.

1.2 DESCRIPTION OF WORK

Work included: Furnish all supervision, labor, materials, services, equipment and appliances required to complete the work covered in conjunction with the landscaping covered in these specifications and landscaping plans, including:

- Planting (trees, shrubs, and grass)
- Bed preparation and fertilization
- Notification of sources
- Water and Maintenance until final acceptance
- Guarantee

1.3 REFERENCE STANDARDS

- American Standard for Nursery Stock published by American Association of Nurserymen: 27 October 1980, Edition; by American National Standards Institute, Inc. (Z60.1) – plant material.
- American Joint Committee on Horticultural Nomenclature: 1942 Edition of Standardized Plant Names
- Texas Association of Nurserymen, Grades and Standards.
- Hortis Third, 1975 - Cornell University

1.4 NOTIFICATION OF SOURCES AND SUBMITTALS

- The Contractor shall, within ten (10) days following acceptance of bid, notify the Architect/Owner of the sources of plant materials and bed preparation required for the project.
- Samples: Provide representative quantities of sandy loam soil, mulch, bed mix material, gravel, and crushed stone. Samples shall be approved by Architect before use on project.
- Product Data: Submit complete product data and specifications on all other specified materials.
- Submit three representative samples of each variety of ornamental trees, shrubs, and groundcover plants for Architect's approval. When approved, tag, install, and maintain as representative samples for final installed plant materials.
- File Certificates of Inspection of plant material by state, county, and federal authorities with Architect, if required.
- Soil Analysis: Provide sandy loam soil analysis if requested by the Architect.

PART 3 - EXECUTION

3.1 BED PREPARATION & FERTILIZATION

- Landscaping Contractor to inspect all existing conditions and report any deficiencies to the Owner.
- All planting areas shall be conditioned as follows:
 - Prepare new planting beds by scraping away existing grass and weeds as necessary. Till existing soil to a depth of six (6") inches prior to placing compost and fertilizer. Apply fertilizer as per manufacturers recommendations. Add six (6") inches of compost and till into a depth of six (6") inches of the topsoil. Apply organic fertilizer such as Sustane or Green Sense at the rate of twenty (20) pounds per one thousand (1,000) square feet.
 - All planting areas shall receive a two (2") inch layer of specified mulch.
 - Backfill for tree pits shall be as follows: Use existing top soil on site (use imported topsoil as needed) free from large clumps, rocks, debris, caliche, subsoils, etc., placed in nine (9") inch layers and watered in thoroughly.
- Grass Areas:
 - Areas to be Solid Sod Bermudagrass: Blocks of sod should be laid joint to joint, (staggered joints) after fertilizing the ground first. Roll grass areas to achieve a smooth, even surface. The joints between the blocks of sod should be filled with topsoil where they are evidently gaped open, then watered thoroughly.
 - Areas to be Hydromulch Common Bermudagrass: Hydromulch with bermudagrass seed at a rate of two (2) pounds per one thousand (1,000) square feet. Use a 4' x 8' batter board against the bed areas.

3.2 INSTALLATION

- Maintenance of plant materials shall begin immediately after each plant is delivered to the site and shall continue until all construction has been satisfactorily accomplished.
- Plant materials shall be delivered to the site only after the beds are prepared and area ready for planting. All shipments of nursery materials shall be thoroughly protected from the drying winds during transit. All plants which cannot be planted at once, after delivery to the site, shall be well protected against the possibility of drying by wind and sun. Balls of earth of B & B plants shall be kept covered with soil or other acceptable material. All plants remain the property of the Contractor until final acceptance.
- Position the trees and shrubs in their intended location as per plan.
- Notify the Landscape Architect for inspection and approval of all positioning of plant materials.
- Excavate pits with vertical sides and horizontal bottom. Tree pits shall be large enough to permit handling and planting without injury to balls of earth or roots and shall be of such depth that, when planted and settled, the crown of the plant shall bear the same relationship to the finish grade as it did to soil surface in original place of growth.

JOB CONDITIONS

- General Contractor to complete the following punch list: Prior to Landscape Contractor initiating any portion of landscape installation, General Contractor shall leave planting bed areas three (3") inches below finish grade of sidewalks, drives and curbs as shown on the drawings. All lawn areas to receive solid soil shall be left one (1") inch below the finish grade of sidewalks, drives, and curbs. All construction debris shall be removed prior to Landscape Contractor beginning any work.
- General Contractor shall provide topsoil as described in Section 02200 - Earthwork.
- Storage of materials and equipment at the job site will be at the risk of the Landscape Contractor. The Owner cannot be held responsible for theft or damage.

1.6 MAINTENANCE AND GUARANTEE

- Maintenance:
 - The Landscape Contractor will be held responsible for the maintenance of all work from the time of planting until final acceptance by the Owner. No trees, shrubs, groundcover or grass will be accepted unless they show a healthy growth and satisfactory foliage conditions.
 - Maintenance shall include watering of trees and plants, cultivation, weeding, spraying, edging, pruning of trees, mowing of grass, cleaning up and all other work necessary of maintenance.
 - A written notice requesting final inspection and acceptance should be submitted to the Owner at least seven (7) days prior to completion. An on-site inspection by Owner and Landscape Contractor will be completed prior to written acceptance.
 - After final acceptance of installation, the Landscape Contractor will not be required to do any of the above listed work.
- Guarantee:
 - Trees shall be guaranteed for a twelve (12) month period after acceptance. Shrubs and groundcover shall be guaranteed for twelve (12) months. The Contractor shall replace all dead materials as soon as weather permits and upon notification of the Owner. Plants, including trees, which have partially died so that shape, size, or symmetry has been damaged, shall be considered subject to replacement. In such cases, the opinion of the Owner shall be final.
 - Plants used for replacement shall be of the same size and kind as those originally planted and shall be planted as originally specified. All work, including materials, labor and equipment used in replacements, shall carry a twelve (12) month guarantee. Any damage, including ruts in lawn or bed areas, incurred as a result of making replacements shall be immediately repaired.
 - At the direction of the Owner, plants may be replaced at the start of the next year's planting season. In such cases, dead plants shall be removed from the premises immediately.
 - When plant replacements are made, plants, soil mix, fertilizer and mulch are to be utilized as originally specified and reinspected for full compliance with Contract requirements. All replacements are to be included under "Work" of this section.

1.7 QUALITY ASSURANCE

- General: Comply with applicable Federal, State, County and Local regulations governing landscape materials and work.
- Personnel: Employ only experienced personnel who are familiar with the required work. Provide full time supervision by a qualified foreman acceptable to Landscape Architect.
- Selection of Plant Material:
 - Make contact with suppliers immediately upon obtaining notice of contract acceptance to select and book materials. Develop a program of maintenance (pruning and fertilization) which will insure the purchased materials will meet and/or exceed project specifications.
 - Landscape Architect will provide a key identifying each tree location on site. Written verification will be required to document material selection, source and delivery schedules to site.
 - Owner and/or Architect shall inspect all plant materials when reasonable at place of growth for compliance with requirements for genus, species, cultivar/variety, size and quality.
 - Owner and/or Architect retains the right to further inspect all plant material upon arrival at the site and during installation for size and condition of root balls, limbs, branching habit, insects, injuries, and latent defects.
 - Owner and/or Architect may reject unsatisfactory or defective material at any time during the process of work. Remove rejected materials from the site immediately. Plants damaged in transit or at job site shall be rejected.

1.8 PRODUCT DELIVERY, STORAGE AND HANDLING

- Preparation:
 - Balled and Burlapped (B&B) Plants: Dig and prepare shipment in a manner that will not damage roots, branches, shape, and future development.
 - Container Grown Plants: Deliver plants in rigid container to hold ball shape and protect root mass.

A. Delivery:

- Deliver packaged materials in sealed containers showing weight, analysis and name of manufacturer. Protect materials from deterioration during delivery and while stored at site.
- Deliver only plant materials that can be planted in one day unless adequate storage and watering facilities are available on job site.
- Protect root balls by heating in with sawdust or other approved moisture retaining material if not planted within 24 hours of delivery.
- Protect plants during delivery to prevent damage to root balls or desiccation of leaves. Keep plants moist at all times. Cover all materials during transport.
- Notify Architect of delivery schedule 72 hours in advance so plant material may be observed upon arrival at job site.
- Remove rejected plant material immediately from site.
- To avoid damage or stress, do not lift, move, adjust to plumb, or otherwise manipulate plants by trunk or stems.

PART 2 - PRODUCTS

2.1 PLANTS

- General: Well-formed No. 1 grade or better nursery grown stock. Listed plant heights are from tops of root balls to nominal tops of plants. Plant spread refers to nominal outer width of the plant, not to the outer leaf tips. Plants will be individually approved by the Architect and his decision as to their acceptability shall be final.
- Quantities: The drawings and specifications are complimentary. Anything called for on one and not the other is as binding as if shown and called for on both. The plant schedule is an aid to bidders only. Confirm all quantities on plan.
- Quality and size: Plant materials shall conform to the size given on the plan, and shall be healthy, symmetrical, well-shaped, full branched, and well rooted. The plants shall be free from injurious insects, diseases, injuries to the bark or roots, broken branches, objectionable disfigurements, insect eggs and larvae and are to be of specimen quality.
- Approval: All plant materials shall be subject to the approval of the Owner. All plants which are found unsuitable in growth, or in any unhealthy, badly shaped, or undersized condition, will be rejected by the Landscape Architect, either before or after planting, and shall be removed at the expense of the Landscape Contractor and replaced with acceptable plants as specified.
- Trees shall be healthy, full-branched, well-shaped and shall meet the trunk diameter and height requirements of the plant schedule. Balls shall be firm, neat, slightly tapered, and well wrapped in burlap. Any tree loose in the ball or with broken ball at time of planting will be rejected. Balls shall be ten (10") inches in diameter for each one (1") inch of trunk diameter. Measured six (6") inches above ball. Nomenclature conforms to the customary nursery usage: for clarification, the term "multi-trunk" defines a plant having three (3) or more trunks of nearly equal diameter.
- Pruning: All pruning of trees and shrubs, as directed by the Landscape Architect, shall be executed by the Landscape Contractor at no additional cost to the Owner.

2.2 SOIL PREPARATION MATERIALS

A. Sandy Loam:

- Friable, fertile, dark, loamy soil, free of clay lumps, subsoil, stones and other extraneous material and reasonably free of weeds and foreign grasses. Loam containing Dallasgrass or Nutgrass shall be rejected.
- Physical properties as follows:
 - Clay – between 7-27 percent
 - Silt – between 15-25 percent
 - Sand – less than 52 percent
- Organic matter shall be 3%-10% of total dry weight.
- If requested, provide a certified soil analysis conducted by an approved soil testing laboratory verifying that sandy loam meets the above requirements.

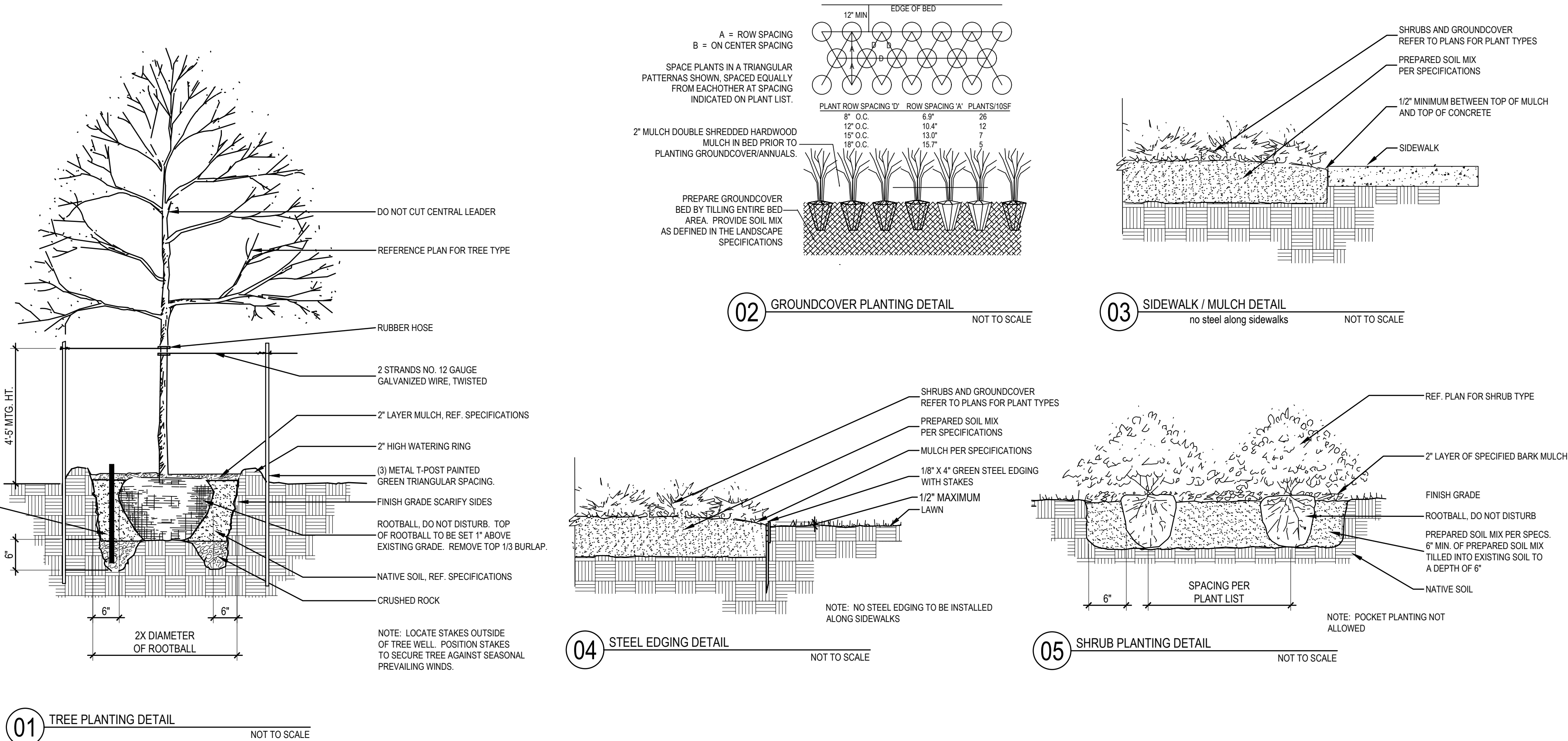
- Organic Material: Compost with a mixture of 80% vegetative matter and 20% animal waste. Ingredients should be a mix of course and fine textured material.
- Premixed Bedding Soil as supplied by Vital Earth Resources, Gladewater, Texas; Professional Bedding Soil as supplied by Living Earth Technology, Dallas, Texas or Acid Gro Municipal Mix as supplied by Soil Building Systems, Dallas, Texas or approved equal.
- Sharp Sand: Sharp sand must be free of seeds, soil particles and weeds.

- Mulch: Double Shredded Hardwood Mulch, partially decomposed, dark brown. Living Earth Technologies or approved equal.
- Organic Fertilizer: Fertalid, Sustane, or Green Sense or equal as recommended for required applications. Fertilizer shall be delivered to the site in original unopened containers, each bearing the manufacturer's guaranteed statement of analysis.

- Commercial Fertilizer: 10-20-10 or similar analysis. Nitrogen source to be a minimum 50% slow release organic Nitrogen (SCU or UF) with a minimum 8% sulphur and 4% iron, plus micronutrients.
- Peat: Commercial sphagnum peat moss or partially decomposed shredded pine bark or other approved organic material.

2.3 MISCELLANEOUS MATERIALS

- Steel Edging: Shall be Ryerson "Estate Curbing", 1/8" x 4" with stakes 4" on center.
- Staking Material for Shade Trees:
 - Post: Studded T-Post, #1 Armocon with anchor plate; 6'-0" length; paint green.
 - Wire: 12 gauge, single strand, galvanized wire.
 - Rubber hose: 2 ply, fiber reinforced hose, minimum 1/2 inch inside diameter. Color: Black.
- Gravel: Washed native pea gravel, graded 1 in. to 1-1/2 in.
- Filter Fabric: Mirafi 140N by Celanese Fibers Marketing Company, available at Loftland Co., (214) 631-5250 or approved equal.



LANDSCAPE ARCHITECT
STUDIO GREEN SPOT, INC.
1784 W. McDERMOTT DR.
SUITE 110
ALLEN, TEXAS 75013
(469) 369-4448
CHRIS@STUDIOGREENSPOT.COM



04.23.2020

MEDICAL OFFICE DEVELOPMENT

LONG PRAIRIE RD & WAKETON RD
FLOWER MOUND, TEXAS

ISSUE:

FOR APPROVAL 04.23.2020

DATE:

04.23.2020

SHEET NAME:

LANDSCAPE DETAILS

SHEET NUMBER:

L.2



PLANNING AND ZONING COMMISSION

AGENDA ITEM NO: 4

NON-DISCRETIONARY ITEM

DATE: November 9, 2020

FROM: Claire Barnes, Planner

ITEM: Consider a request for a Site Plan (SP20-0012 - Whyburn Medical Office) to develop a medical office building. The property is generally located north of Waketon Road and west of Long Prairie Road.

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 project has a companion Record Plat application (RC20-0005) for consideration on the same agenda.

This application will require final action by the Planning and Zoning Commission.

II. APPLICATION ANALYSIS

The purpose of this site plan application is to develop a medical office building. The subject site is approximately 2.7389 acres. The property is zoned Planned Development District-172 (PD-172) for Office uses and master-planned for Retail uses. Per the Master Plan, properties designated as Retail land uses are suitable for small professional offices, such as doctor and dentist offices.

On November 4, 2019, Town Council approved Ordinance No. 54-19 establishing PD-172. The ordinance included a concept site plan, concept landscape plan, and concept elevations.

The applicant proposes to develop a 17,815 square foot, one-story medical office building. Office and medical office uses are allowed by-right in PD-172. Overall, the development requires 71 parking spaces. The proposed site plan provides 85 spaces, which is within the Town's allowable 20 percent deviation. Access to the site is provided via a mutual access easement that connects the site with the properties to the west.

The elevations depict a one-story building. The building materials predominantly consist of brick, stone, and stucco, all of which are considered primary masonry materials. The architecture and colors comply with the concept elevations found within PD-172 and the Town's Urban Design Plan.

The landscape plan provided depicts all trees required for the development.

III. ATTACHMENTS

A. Background Information

1. Vicinity Map
2. Letter of Intent

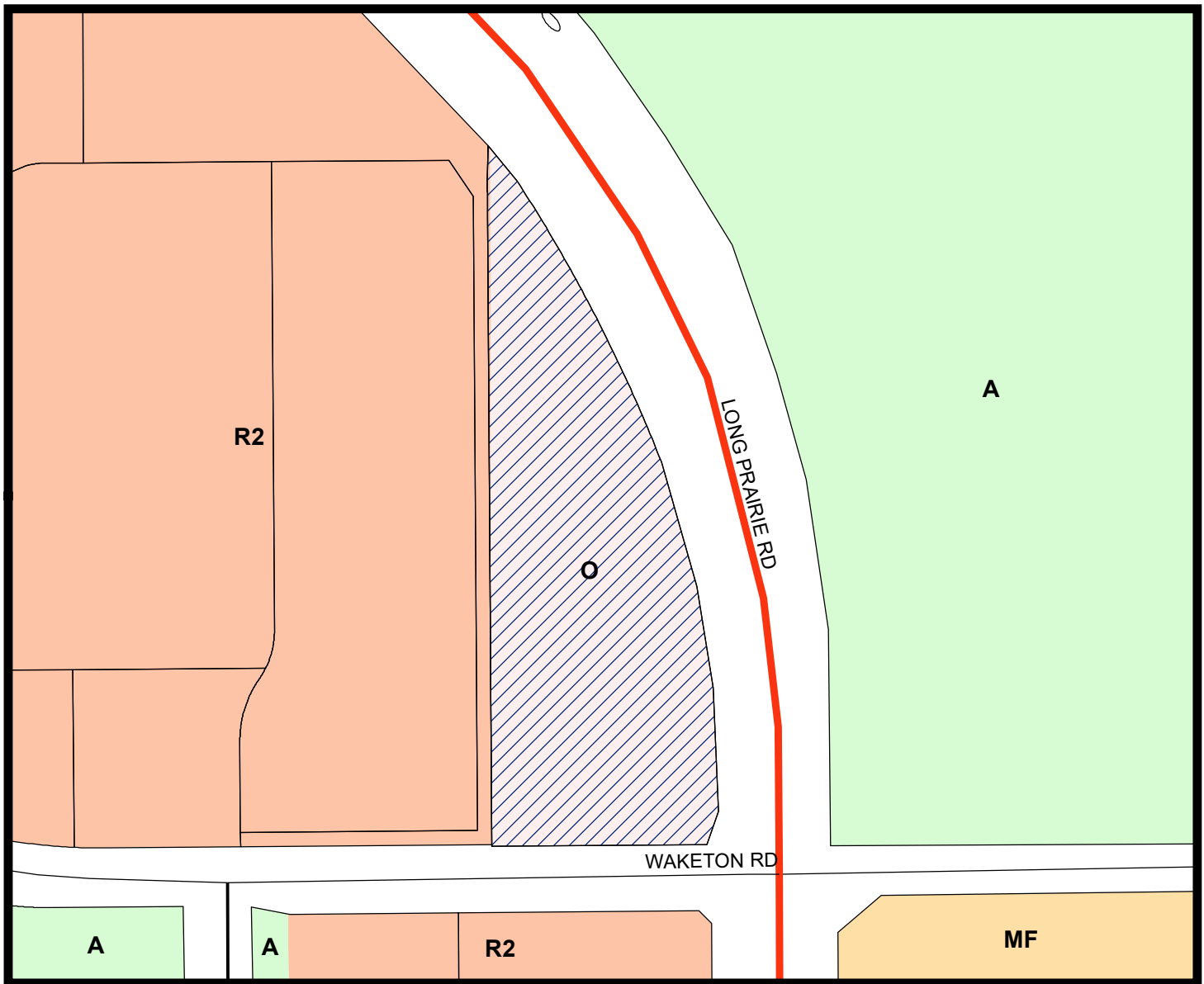
B. Application Details

1. Site Plan Package

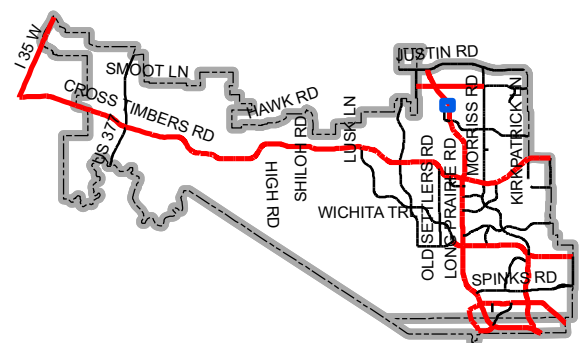
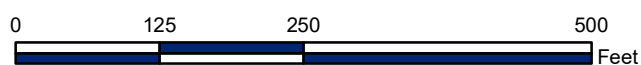
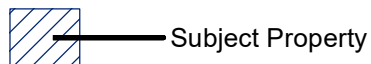


Vicinity Map

Reference Project: RC20-0005 & SP20-0012



LEGEND



Map Location



T: 214.609.9271 | F: 469.359.6709 | W: triangle-engr.com | O: 1333 McDermott Drive, Suite 150, Allen, TX 75013

LETTER OF INTENT

NOVEMBER 02, 2020

ATTN; Poornima Kashyap
Town of Flower Mound
2121 Cross Timber Road
Flower Mound, TX 75028

RE: Letter of Intent for site plan submittal of Medical Office Development at Long Prairie road & Waketon Road, Flower Mound, TX

Dear Madam,

This letter of intent is to inform the Town of Flower Mound about site plan submittal.

Site Data:

- a) Existing Zoning District: Planned Development (PD-172) Office District (O).
- b) Development plan Acreage: 2.7389 acres
- c) Proposed use: Medical Office
Proposed building area: 17,815 S.F. Medical Office
Proposed parking spaces quantities: 85
Phase development: No
Proposed lot is single lot with single unit.
- d) Special consideration: No

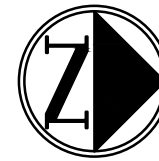
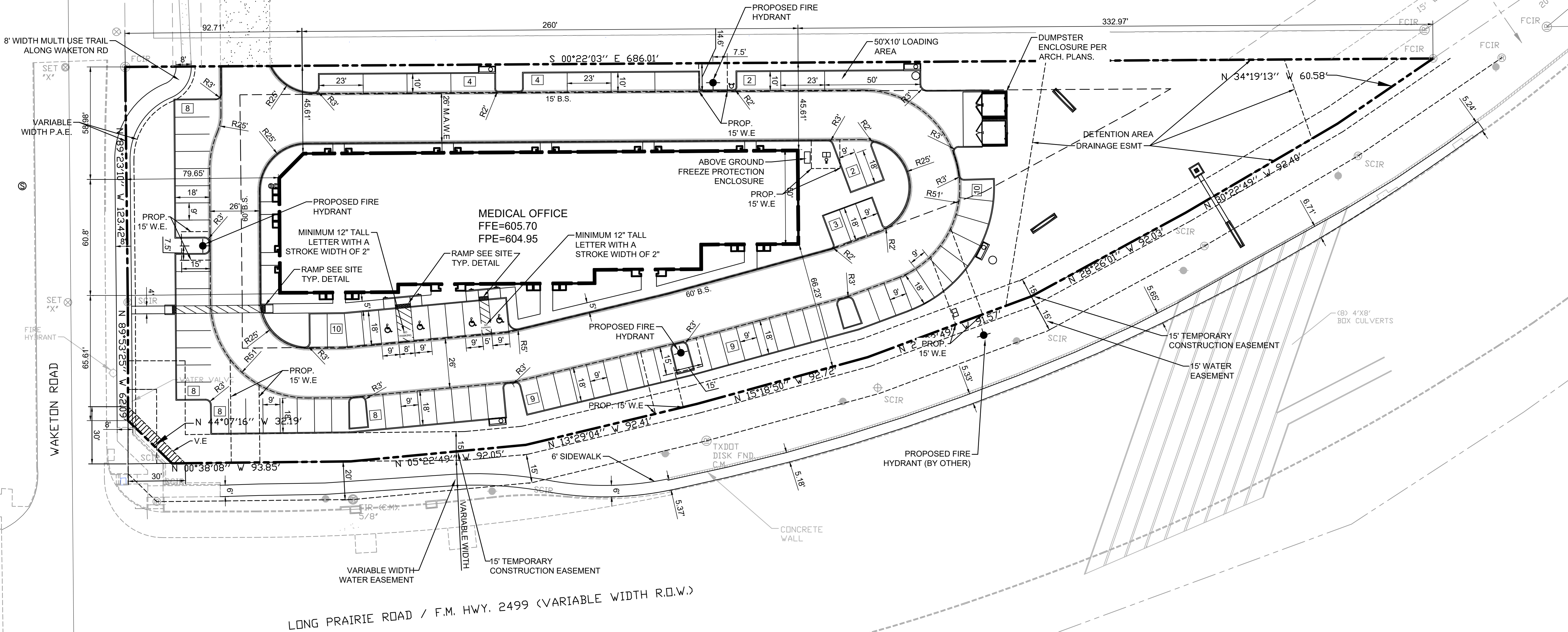
On November 4, 2019 the Town council of Town of Flower Mound approved the request for rezoning (ZPD 19-0001- Medical Offices) from Agricultural District (A) uses to Planned Development District-172 (PD-172) with Office District (O) uses, and with certain exceptions and modifications to Code of Ordinances, and consider adopting an ordinance for said amendment.

We believe the Medical Office Development will be great addition to the Town of Flower Mound.

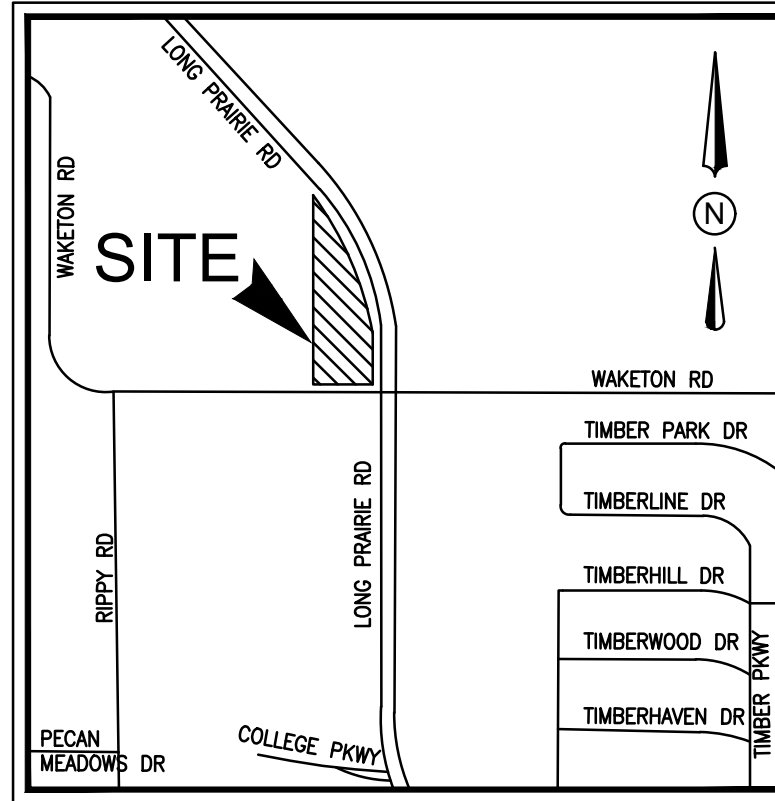
Triangle Engineering
TX PE FIRM #11525
Kiew Kam, P.E.
Senior Project Manager
469-331-8566

LOT 7 BLOCK A
WAKETON RANCH
CAB. X, PAGE 9
P.R.D.C.T.

EDWIN MARSH SURVEY, ABSTRACT NO. 834



Scale: 1" = 30' Feet



VICINITY MAP
N.T.S.

SITE GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH THE CITY OR LOCAL JURISDICTION STANDARDS.
- THE LOCATION OF UNDERGROUND UTILITIES INDICATED ON THE PLANS IS TAKEN FROM AS-BUILTS, UTILITY PLANS OR SURVEY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAKE ARRANGEMENTS WITH THE OWNERS OF SUCH UNDERGROUND UTILITIES PRIOR TO WORKING IN THE AREA TO CONFIRM THEIR EXACT LOCATION AND TO DETERMINE WHETHER ANY ADDITIONAL UTILITIES OTHER THAN THOSE SHOWN ON THE PLANS MAY BE PRESENT. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL UNDERGROUND UTILITIES. IF EXISTING UNDERGROUND UTILITIES ARE DAMAGED, THE CONTRACTOR WILL BE RESPONSIBLE FOR THE COST OF REPAIRING THE UTILITY.
- WHERE EXISTING UTILITIES OR SERVICE LINES ARE CUT, BROKEN OR DAMAGED, THE CONTRACTOR SHALL REPLACE OR REPAIR THE UTILITIES OR SERVICE LINES WITH THE SAME TYPE OF ORIGINAL MATERIAL AND CONSTRUCTION, OR BETTER, UNLESS OTHERWISE SHOWN OR NOTED ON THE PLANS, AT HIS OWN COST AND EXPENSE. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AT ONCE OF ANY CONFLICTS WITH UTILITIES.
- ALL EXCAVATIONS, TRENCHING AND SHORING OPERATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE U. S. DEPARTMENT OF LABOR, OSHA, CONSTRUCTION SAFETY AND HEALTH REGULATIONS AND ANY AMENDMENTS THERETO.
- THE CONTRACTOR SHALL RESTORE ALL AREAS DISTURBED BY CONSTRUCTION TO ORIGINAL CONDITION OR BETTER. RESTORED AREAS INCLUDE, BUT ARE NOT LIMITED TO TRENCH BACKFILL, SIDE SLOPES, FENCES, DRAINAGE DITCHES, DRIVEWAYS, PRIVATE YARDS AND ROADWAYS.
- ANY CHANGES NEEDED AFTER CONSTRUCTION PLANS HAVE BEEN RELEASED, SHALL BE APPROVED BY THE CITY ENGINEER. THESE CHANGES MUST BE RECEIVED IN WRITING.
- THE CONTRACTOR SHALL PROVIDE "RED LINED" MARKED PRINTS TO THE ENGINEER PRIOR TO FINAL INSPECTION INDICATING ALL CONSTRUCTION WHICH DEVIATED FROM THE PLANS OR WAS CONSTRUCTED IN ADDITION TO THAT INDICATED ON THE PLANS.
- ALL CURB RADIUS TO BE 10' OR 2' UNLESS OTHERWISE NOTED ON THE SITE PLAN.

NOTES

- 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.
- 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.
- ALL ROOF-MOUNTED MECHANICAL UNITS AND/OR EQUIPMENT SHALL BE SCREENED FROM VIEW.
- DUMPSTER SCREENING WALL SHALL BE CLAD IN A MATERIAL TO MATCH THE MATERIALS ON THE MAIN BUILDING.
- DUMPSTER SCREENING WALL REQUIRES A SEPARATE BUILDING PERMIT.
- 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.
- ALL ACCESSIBLE WALKWAYS SHALL HAVE CROSS SLOPES NO GREATER THAN 2% AND RUNNING SLOPES NOT GREATER THAN 5%. NO GAPS IN THE SIDEWALK NO GREATER THAN 1/2 INCH OR ELEVATION CHANGE GREATER THAN 1/4 INCH.
- ALL WORK WITHIN TXDOT ROW REQUIRE SEPERATE PERMIT ISSUED BY TXDOT.
- THE TOWN OF FLOWER MOUND CONSTRUCTION STANDARDS APPLY, WHETHER INDICATED ON THESE PLANS OR NOT

PROJECT CONTACT LIST

ENGINEER
TRIANGLE ENGINEERING LLC
1784 McDERMOTT DR., STE. 110
ALLEN, TX. 75013
KIEW KAM
469-213-2268

OWNER
NHN ASSOCIATES LLC
6612 ADOBE CIR
THE COLONY TX 75058
RAO HARRIS NASEEM

SURVEYOR
TEXAS NATIONAL SURVEYING
P.O. BOX. 293254
LEWISVILLE, TEXAS 75029
ARTHUR DEAN HODDE
972-539-7676

DEVELOPER
B&B CONSTRUCTION LLC
JAMES BULLINGTON
JAMESBULLINGTON@ATT.NET
469-231-7350

EASEMENT/SETBACK LEGEND

BUILDING SET BACK	B.S.
PEDESTRIAN ACCESS EASEMENT	P.A.E.
WATER EASEMENT	W.E.
MUTUAL ACCESS AND WATER EASEMENT	M.A.W.E.
VISIBILITY EASEMENT	V.E.

FLOOD PLAIN NOTE

THE SUBJECT PROPERTY LIES WITHIN THE ZONE "X" UNSHADED (DETERMINED TO BE OF THE 0.20% ANNUAL CHANGE FLOODPLAIN) AS DETERMINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY NATIONAL FLOOD INSURANCE PROGRAM (NFIP) FLOOD INSURANCE RATE MAP NUMBER 48121C0540G, DATED APRIL 18, 2011 FOR THE DENTON COUNTY, TEXAS AND INCORPORATED AREAS.

EXISTING LEGEND

(DISTANCE) = CALL DISTANCE
WATER METER = SIGN =
LIGHT POLE = MAN HOLE =
SPOT ELEV. = +650.0, DRAIN ARROW =
SURVEY CONTROL = UTILITY POLE =
UTILITY BOX = ELEC. MTR. = BOX =
OVERHEAD UTILITY LINE =
FIR = FOUND IRON ROD
SCIR = SET 1/2" IRON ROD WITH CAP
NOTE: BASIS OF BEARING IS RELATIVE TO THE TOWN OF FLOWER MOUND GEODETIC MONUMENTS NO. 6 & 53.
CM = CONTROLLING MONUMENT
FENCE =

SITE LEGEND

CONCRETE CURB
FIRE LANE
STRIPING
PARKING SPACES
HANDICAP LOGO
HANDICAP SIGN
RAMP
FIRE HYDRANT
DUMPSTER
SANITARY SEWER MANHOLE
SANITARY SEWER DOUBLE CLEANOUT
DOMESTIC WATER METER
IRRIGATION METER
CURB INLET
HEADWALL
OUTFALL STRUCTURE

SITE DATA SUMMARY TABLE

GROSS SITE AREA	2.7389 ACRES OR 119,304 S.F.	
NET SITE AREA:	2.3023 ACRES (AFTER ROW DEDICATION)	
ZONING:	PLANNED DEVELOPMENT	
	(PD-172) FOR OFFICE DISTRICT (O) USES	
PROPOSED USE	MEDICAL OFFICE	
LOT COVERAGE DATA		
BUILDING COVERAGE	17,815 SF (17.76%)	
IMPERVIOUS AREA	63,537 SF (63.38%)	
PERVIOUS AREA	36,722 SF (36.62%)	
FLOOR AREA RATIO:	0.17:1	
PARKING SUMMARY	REQUIRED	PROVIDED
MEDICAL OFFICE (17,815 SF)	71	85
HANDICAP PARKING	4	4
TOTAL PARKING	71	85
BUILDING DATA		
NUMBER OF STORIES	1	
PEAK HEIGHT	35'-0"	
MEAN HEIGHT	30'-0"	
MEDIAN ROOF HEIGHT	21'-0"	
TOTAL SQUARE FOOTAGE	17,815 S.F.	

MASTER PLAN FEATURES TABLE

LAND USE PLAN	MEDICAL OFFICE
URBAN DESIGN PLAN	LONG PRAIRIE DISTRICT
PARKS AND TRAILS	8' MULTI-PURPOSE TRAIL TO BE INSTALLED ON THE NORTH SIDE OF WAKETON ROAD AND CONNECTED TO EXISTING 5' EXISTING SIDE WALK
OPEN SPACE PLAN	NOT A CONSERVATION DEVELOPMENT
THOROUGHFARE PLAN	LONG PRAIRIE ROAD - MAJOR ARTERIAL - VARIABLE WIDTH RIGHT OF WAY AT THE EAST SIDE OF PROPERTY WAKETON ROAD - URBAN COLLECTOR -72' RIGHT OF WAY AT THE SOUTH SIDE OF THE PROPERTY CROSS ACCESS PROVIDED TO NEIGHBORING PROPERTY TO WEST
WATER PLAN	LONG PRAIRIE DISTRICT, 12 INCH WATER LINES ALONG WEST SIDE WEST SIDE ROAD AND 16 INCH WATER LINE ALONG NORTH SIDE OF WAKETON ROAD
WASTEWATER PLAN	LONG PRAIRIE DISTRICT, 18 INCH SANITARY SEWER LINES ALONG EAST SIDE OF WAKETON ROAD

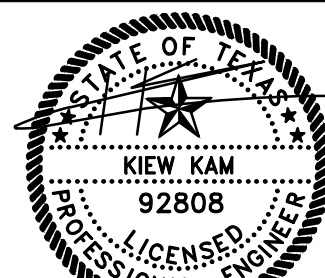
REVIEWED
TOWN OF FLOWER MOUND
Released for Construction
Date _____

Town of Flower Mound
Engineering Services Division



THE TOWN OF FLOWER MOUND CONSTRUCTION STANDARDS APPLY WHETHER INDICATED IN THESE PLANS OR NOT.

NO.	DATE	DESCRIPTION	BY
1	05-26-2020	1st SITE PLAN SUBMITTAL	KK
2	08-12-2020	2ND SITE PLAN SUBMITTAL	KK
3	09-17-2020	3RD SITE PLAN SUBMITTAL	KK
4	10-13-2020	4TH SITE PLAN SUBMITTAL	KK
5	11-03-2020	CITY COMMENT	KK
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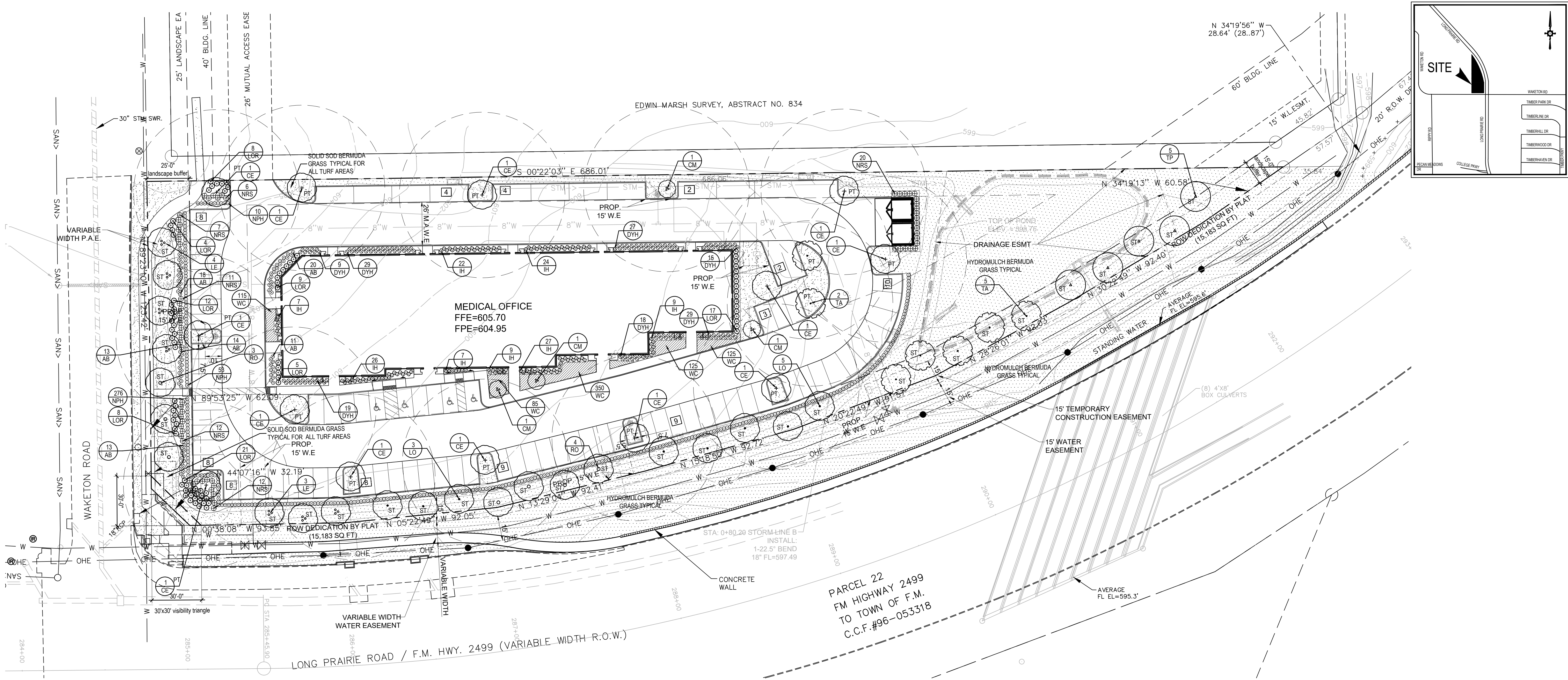
SITE PLAN
MEDICAL OFFICE
LONG PRAIRIE RD & WAKETON RD
TOWN OF FLOWER MOUND
DENTON COUNTY, TEXAS 75028



T: 469.331.8566 | F: 469.213.7145 | E: info@triangle-engr.com
W: triangle-engr.com | O: 1784 McDermott Drive, Suite 110, Allen, TX 75013

Planning | Civil Engineering | Construction Management

P.E.	DRAWN	DATE	SCALE	PROJECT NO.	SHEET NO.
KK	BD	08/12/20	SEE SCALE BAR	064-18	C-3.0
TX, P.E. FIRM #11525					



HYDROMULCH NOTES

- ALL LAWN AREAS TO BE HYDROMULCH BERMUDAGRASS, UNLESS NOTED OTHERWISE ON DRAWINGS.
- CONTRACTOR SHALL SCARIFY, RIP, LOOSEN ALL AREAS TO BE HYDROMULCH TO A MINIMUM DEPTH OF 4" PRIOR TO TOPSOIL AND HYDROMULCH INSTALLATION.
- BERMUDAGRASS SEED SHALL BE EXTRA HULLED AND TREATED LAWN TYPE AND SHALL BE DELIVERED TO THE SITE IN ITS ORIGINAL UNOPENED CONTAINER, AND SHALL MEET TEXAS STATE LAW REQUIREMENTS.
- FIBER: SHALL BE ONE HUNDRED (100%) PERCENT WOOD CELLULOSE FIBER, DELIVERED TO THE SITE IN ITS ORIGINAL UNOPENED CONTAINER, "CONWEB" OR EQUAL.
- FIBER TACK: SHALL BE DELIVERED TO THE SITE IN ITS ORIGINAL UNOPENED CONTAINER, AND SHALL BE "TERRO-TACK ONE", AS MANUFACTURED BY GROWERS, INC., OR EQUAL.
- HYDROMULCH WITH BERMUDAGRASS SEED AT A RATE OF TWO (2) POUNDS PER ONE THOUSAND (1000) SQUARE FOOT.
- USE A 4'X8' BATTER BOARD AGAINST ALL BEDS AREAS.
- IF INSTALLATION OCCURS BETWEEN SEPTEMBER 1 AND APRIL 1, ALL HYDROMULCH AREAS TO BE WINTER RYEGRASS, AT A RATE OF FOUR (4) POUNDS PER ONE THOUSAND (1000) SQUARE FEET. CONTRACTOR SHALL BE REQUIRED TO RE-HYDROMULCH WITH BERMUDAGRASS THE FOLLOWING GROWING SEASON.
- IN THE EVENT RYE GRASS IS NECESSARY DUE TO TIME OF YEAR INSTALLATION, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SCALP EXISTING GRASS, BAG CLIPPINGS, AND SCARIFY SOIL TO A DEPTH OF 1" PRIOR TO PERMANENT LAWN GRASS INSTALLATION.
- ALL LAWN AREAS TO BE HYDROMULCHED, SHALL HAVE ONE HUNDRED (100%) PERCENT COVERAGE PRIOR TO FINAL ACCEPTANCE.
- CONTRACTOR SHALL MAINTAIN ALL LAWN AREAS UNTIL FINAL ACCEPTANCE. THIS SHALL INCLUDE BUT NOT BE LIMITED TO: MOWING, WATERING, WEEDING, CULTIVATING, CLEANING, AND REPLACING DEAD OR BARE AREAS TO KEEP PLANTS IN A VIGOROUS, HEALTHY CONDITION.
- CONTRACTOR SHALL GUARANTEE ESTABLISHMENT OF AN ACCEPTABLE TURF AREA AND SHALL PROVIDE REPLACEMENT FROM LOCAL SUPPLY AS NECESSARY.

SOLID SOD NOTES

- FINE GRADE AREAS TO ACHIEVE FINAL CONTOURS INDICATED. LEAVE AREAS TO RECEIVE TOPSOIL 3" BELOW FINAL DESIRED GRADE IN PLANTING AREAS AND 1" BELOW FINAL GRADE IN TURF AREAS.
- ADJUST CONTOURS TO ACHIEVE POSITIVE DRAINAGE AWAY FROM BUILDINGS. PROVIDE UNIFORM ROUNDING AT TOP AND BOTTOM OF SLOPES AND OTHER BREAKS IN GRADE. CORRECT IRREGULARITIES AND AREAS WHERE WATER MAY STAND.
- ALL LAWN AREAS TO RECEIVE SOLID SOD SHALL BE LEFT IN A MAXIMUM OF 1" BELOW FINAL FINISH GRADE. CONTRACTOR TO COORDINATE OPERATIONS WITH ON-SITE CONSTRUCTION MANAGER.
- CONTRACTOR TO COORDINATE WITH ON-SITE CONSTRUCTION MANAGER FOR AVAILABILITY OF EXISTING TOPSOIL.
- PLANT SOD BY HAND TO COVER INDICATED AREA COMPLETELY. INSURE EDGES OF SOD ARE TOUCHING. TOP DRESS JOINTS BY HAND WITH TOPSOIL TO FILL VOIDS.
- ROLL GRASS AREAS TO ACHIEVE A SMOOTH, EVEN SURFACE, FREE FROM UNNATURAL UNDULATIONS.
- WATER SOD THOROUGHLY AS SOD OPERATION PROGRESSES.
- CONTRACTOR SHALL MAINTAIN ALL LAWN AREAS UNTIL FINAL ACCEPTANCE. THIS SHALL INCLUDE, BUT NOT LIMITED TO: MOWING, WATERING, WEEDING, CULTIVATING, CLEANING AND REPLACING DEAD OR BARE AREAS TO KEEP PLANTS IN A VIGOROUS, HEALTHY CONDITION.
- CONTRACTOR SHALL GUARANTEE ESTABLISHMENT OF AN ACCEPTABLE TURF AREA AND SHALL PROVIDE REPLACEMENT FROM LOCAL SUPPLY IF NECESSARY.
- IF INSTALLATION OCCURS BETWEEN SEPTEMBER 1 AND MARCH 1, ALL SOD AREAS TO BE OVER-SEEDED WITH WINTER RYEGRASS, AT A RATE OF (4) POUNDS PER ONE THOUSAND (1000) SQUARE FEET.

GENERAL LAWN NOTES

- FINE GRADE AREAS TO ACHIEVE FINAL CONTOURS INDICATED ON CIVIL PLANS.
- ADJUST CONTOURS TO ACHIEVE POSITIVE DRAINAGE AWAY FROM BUILDINGS. PROVIDE UNIFORM ROUNDING AT TOP AND BOTTOM OF SLOPES AND OTHER BREAKS IN GRADE. CORRECT IRREGULARITIES AND AREAS WHERE WATER MAY STAND.
- ALL LAWN AREAS TO RECEIVE SOLID SOD SHALL BE LEFT IN A MAXIMUM OF 1" BELOW FINAL FINISH GRADE. CONTRACTOR TO COORDINATE OPERATIONS WITH ON-SITE CONSTRUCTION MANAGER.
- IMPORTED TOPSOIL SHALL BE NATURAL, FRIABLE SOIL FROM THE REGION, KNOWN AS BOTTOM AND SOIL, FREE FROM LUMPS, CLAY, TOXIC SUBSTANCES, ROOTS, DEBRIS, VEGETATION, STONES, CONTAINING NO SALT AND BLACK TO BROWN IN COLOR.
- ALL LAWN AREAS TO BE FINE GRADED, IRRIGATION TRENCHES COMPLETELY SETTLED, AND FINISH GRADE APPROVED BY THE OWNER'S CONSTRUCTION MANAGER OR ARCHITECT PRIOR TO INSTALLATION.
- ALL ROCKS 3/4" DIAMETER AND LARGER, DIRT CLOUDS, STICKS, CONCRETE SPOILS, ETC. SHALL BE REMOVED PRIOR TO PLACING TOPSOIL AND ANY LAWN INSTALLATION.
- CONTRACTOR SHALL PROVIDE (1") ONE INCH OF IMPORTED TOPSOIL ON ALL AREAS TO RECEIVE LAWN.

LANDSCAPE NOTES

- CONTRACTOR SHALL VERIFY ALL EXISTING AND PROPOSED SITE ELEMENTS AND NOTIFY ARCHITECT OF ANY DISCREPANCIES. SURVEY DATA OF EXISTING CONDITIONS WAS SUPPLIED BY OTHERS.
- CONTRACTOR SHALL LOCATE ALL EXISTING UNDERGROUND UTILITIES AND NOTIFY ARCHITECT OF ANY CONFLICTS. CONTRACTOR SHALL EXERCISE CAUTION WHEN WORKING IN THE VICINITY OF UNDERGROUND UTILITIES.
- CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED LANDSCAPE AND IRRIGATION PERMITS.
- CONTRACTOR TO PROVIDE A MINIMUM 2% SLOPE AWAY FROM ALL STRUCTURES.
- ALL PLANTING BEDS AND LAWN AREAS TO BE SEPARATED BY STEEL EDGING. NO STEEL TO BE INSTALLED ADJACENT TO SIDEWALKS OR CURBS.
- ALL LANDSCAPE AREAS TO BE 100% IRRIGATED WITH AN UNDERGROUND AUTOMATIC IRRIGATION SYSTEM AND SHALL INCLUDE RAIN AND FREEZE SENSORS.
- ALL LAWN AREAS TO BE SOLID SOD BERMUDAGRASS, UNLESS OTHERWISE NOTED ON THE DRAWINGS.

LANDSCAPE TABULATIONS

Street Yard Landscaping			
Standard	Total Street Yard (Square Feet)	Required	Provided
Min. 20% of street yard	40,980 s.f.	8,196	16,125
Street Yard Trees			
Standard	Total Street Yard (Square Feet)	Required	Provided
10,000 to 110,000 10 trees per acre (10,000 sq. ft.) (plus 1) per 2,000 sq. ft. excess of 10,000 s.f.	40,980 s.f.	22	26-3' Cal. Trees
Trees required to satisfy other provisions of landscaping requirements and lying within the street yard may be used to satisfy the requirements of other sections.			
Street Buffer Trees			
Standard	Street Frontage (Linear Feet)	Required	Provided
1 per 30 L.F.	Long Prairie Road 730 L.F.	24	25-3' Cal. Trees
Parking Area Landscaping			
Standard	Street Frontage (Linear Feet)	Required	Provided
1 per 30 L.F.	Waketon Road 209 L.F.	7	7-3' Cal. Trees
Parking Area Trees			
Standard	No. of Parking Spaces	Required	Provided
90 s.f. per 10 spaces	85	638 s.f.	1,656 s.f.
Parking Area Trees			
Standard	No. of Parking Spaces	Required	Provided
1 tree per 10 spaces	85	9	15

PLANT MATERIAL SCHEDULE

TREES					
TYPE	QTY	COMMON NAME	BOTANICAL NAME	SIZE	REMARKS
CM	4	Crape Myrtle 'Dallas Red'	Lagerstroemia indica 'Dallas Red'	3" cal.	container, 8' ht., 5' spread, 3 or 5 trunks, tree form
CE	13	Cedar Elm	Ulmus crassifolia	3" cal.	B&B, 13' ht., 5' spread min., 5' clear trunk
LO	8	Live Oak	Quercus virginiana	3" cal.	container, 14' ht., 6' spread, 5' clear straight trunk
RO	7	Shumard Red Oak	Quercus shumardii	3" cal.	container, 14' ht., 6' spread, 5' clear straight trunk
LE	7	Lacinate Elm	Ulmus perfoliata	3" cal.	B&B, 13' ht., 5' spread min., 5' clear trunk
TA	7	Texas Ash	Fraxinus texensis	3" cal.	container, 14' ht., 6' spread, 5' clear straight trunk
TP	5	Texas Persimmon	Diospyros texana	3" cal.	container, 14' ht., 6' spread, 5' clear straight trunk
SHRUBS					
TYPE	QTY.	COMMON NAME	BOTANICAL NAME	SIZE	REMARKS
NPH	339	Needlepoint Holly	Ilex cornuta 'Needlepoint'	5 gal.	container, 24" ht., 20" spread
NRS	68	Nellie R. Stevens Holly	Ilex x 'Nellie R. Stevens'	4" ht.	container grown, 36" spread, full to base
LOR	84	Loropetalum	Loropetalum chinense	3 gal.	container, 18" ht., 20" spread
DYH	125	Dwarf Yaupon Holly	Ilex vomitoria 'Nana'	3 gal.	container, 18" ht., 20" spread
IH	131	Indian Hawthorn 'Clara'	Rhaphiolepis indica	3 gal.	container, 18" ht., 20" spread
AB	89	Kaleidoscope Abelia	Abelia x grandiflora 'Kaleidoscope'	3 gal.	container, 18" ht., 20" spread
GROUNDCOVERS					
TYPE	QTY	COMMON NAME	BOTANICAL NAME	SIZE	REMARKS
WC	800	Purple Wintercreeper	Euonymus fortunei	4" pots	container, 3-12" runners min., 12" o.c.
		'419' Bermudagrass	Cynodon dactylon '419'		Refer to notes

NOTE: Plant list is an aid to bidders only. Contractor shall verify all quantities on plan. All heights and spreads are minimums. All plant material shall meet or exceed remarks as indicated. All trees to have straight trunks and be matching within varieties.

THERE ARE NO EXISTING TREES LOCATED ON THE PROPERTY

LANDSCAPE ARCHITECT
STUDIO GREEN SPOT, INC.
1784 W. McDERMOTT DR.
SUITE 110
ALLEN, TEXAS 75013
(469) 369-4448
CHRIS@STUDIOGREENSPOT.COM



MEDICAL OFFICE DEVELOPMENT

LONG PRAIRIE RD & WAKETON RD
FLOWER MOUND, TEXAS

ISSUE:

FOR APPROVAL 04.23.2020
CITY COMMENTS 08.11.2020
CITY COMMENTS 09.17.2020
CITY COMMENTS 09.28.2020
CITY COMMENTS 11.03.2020

DATE:

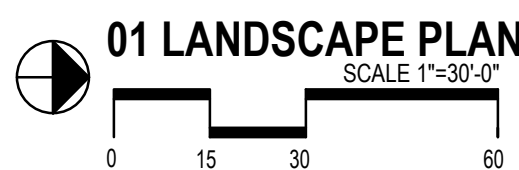
11.03.2020

SHEET NAME:

LANDSCAPE PLAN

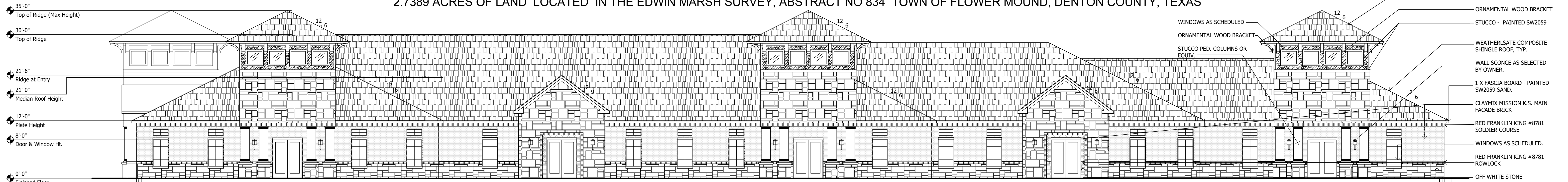
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L.1



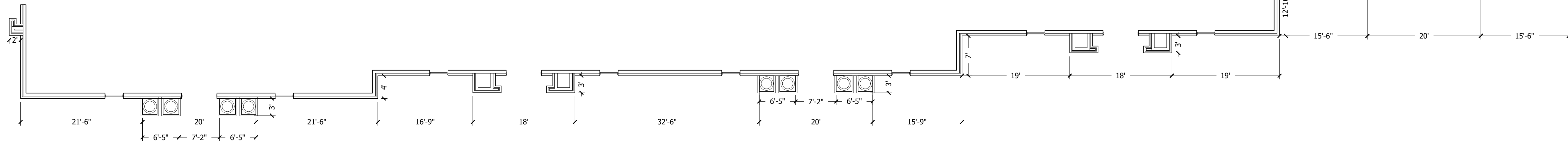
MEDICAL OFFICE DEVELOPMENT

2.7389 ACRES OF LAND LOCATED IN THE EDWIN MARSH SURVEY, ABSTRACT NO 834 TOWN OF FLOWER MOUND, DENTON COUNTY, TEXAS



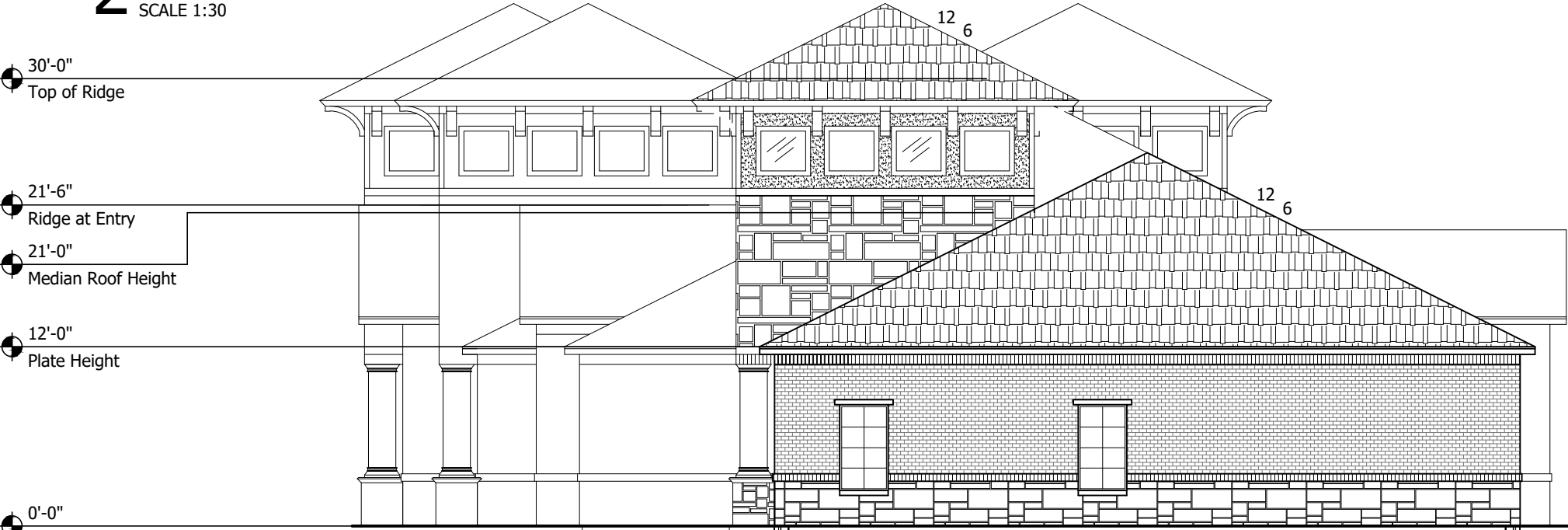
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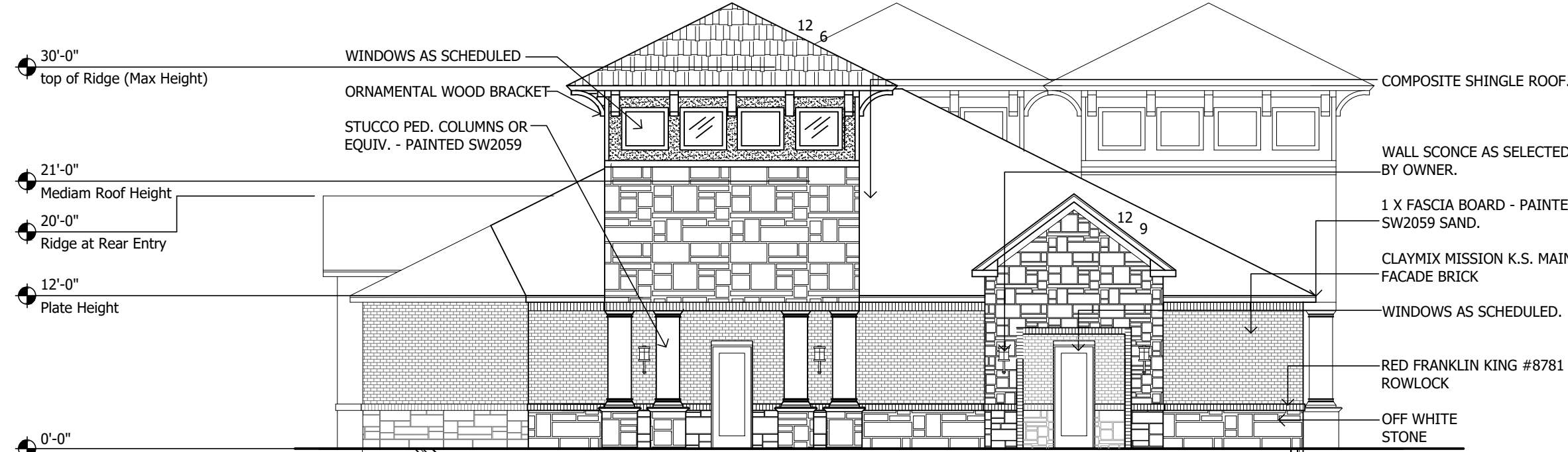
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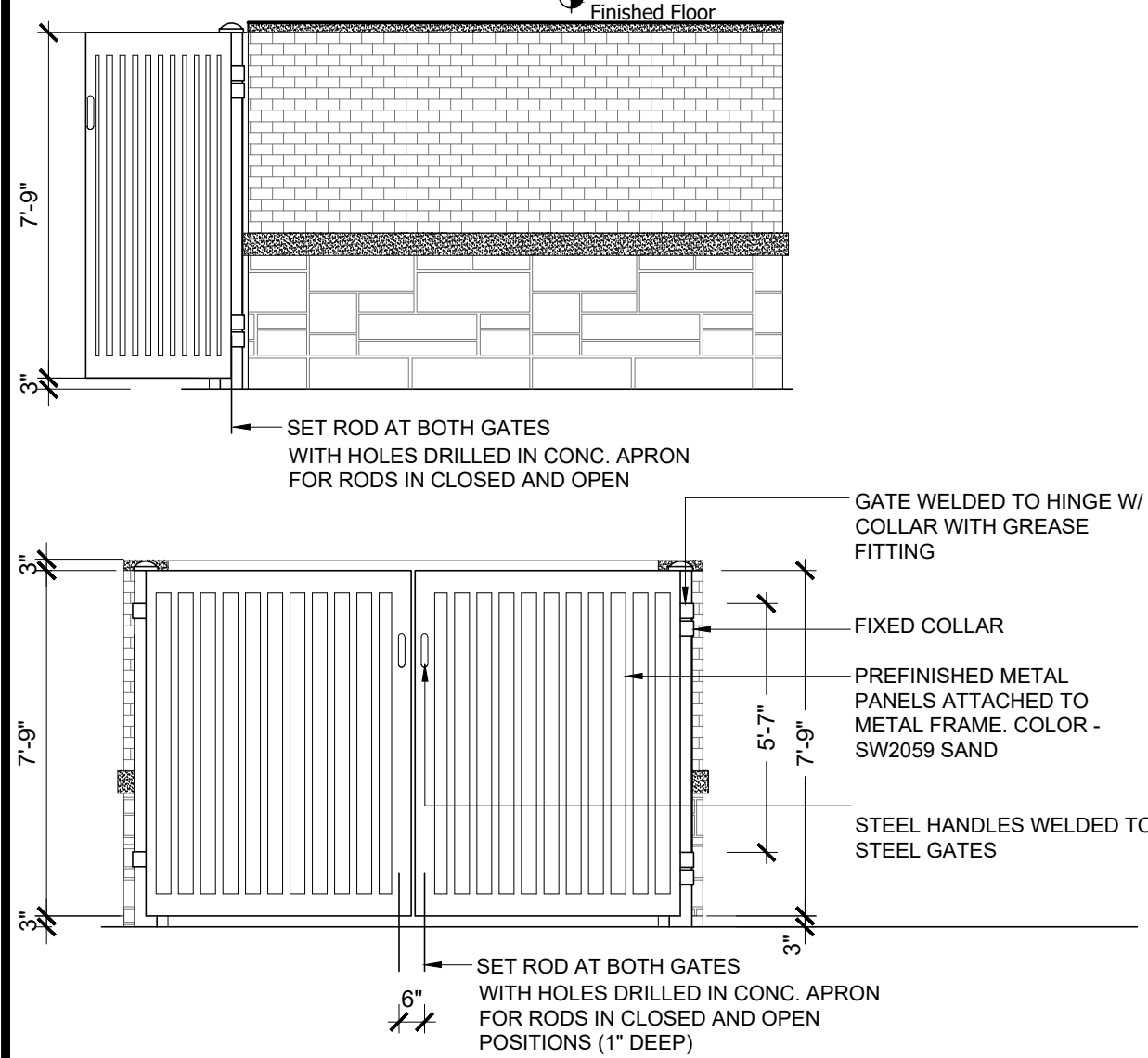
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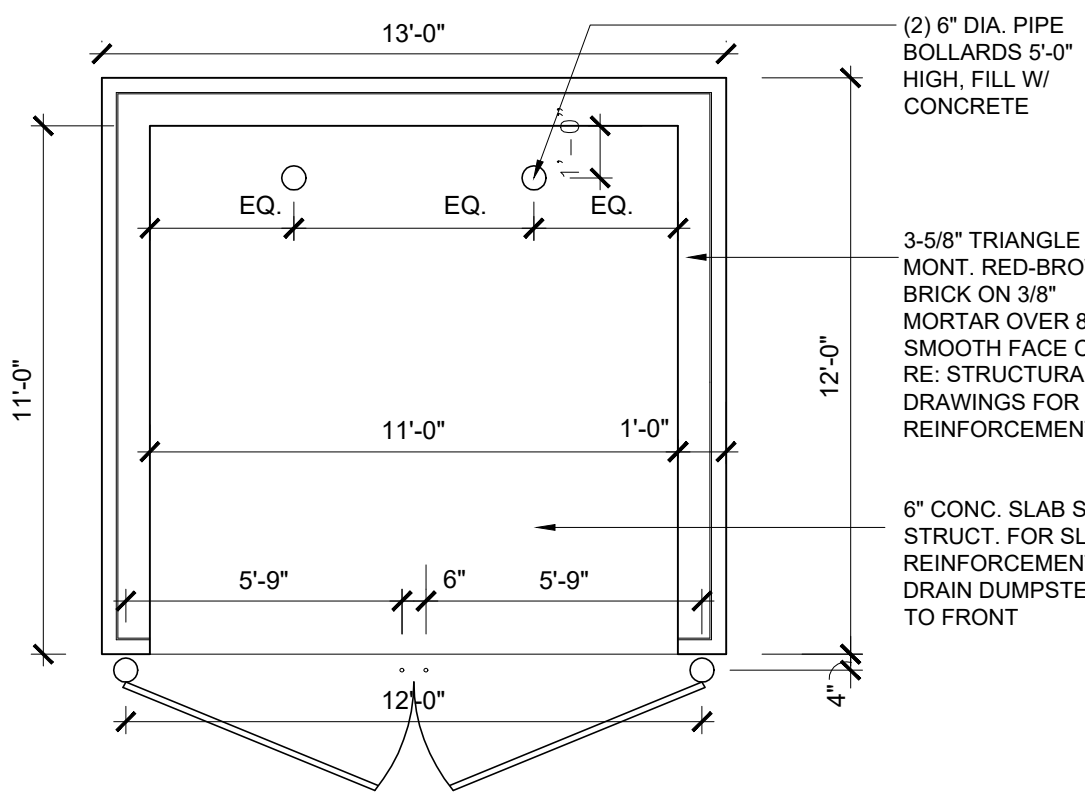
4 SOUTH ELEVATION

SCALE 1:30



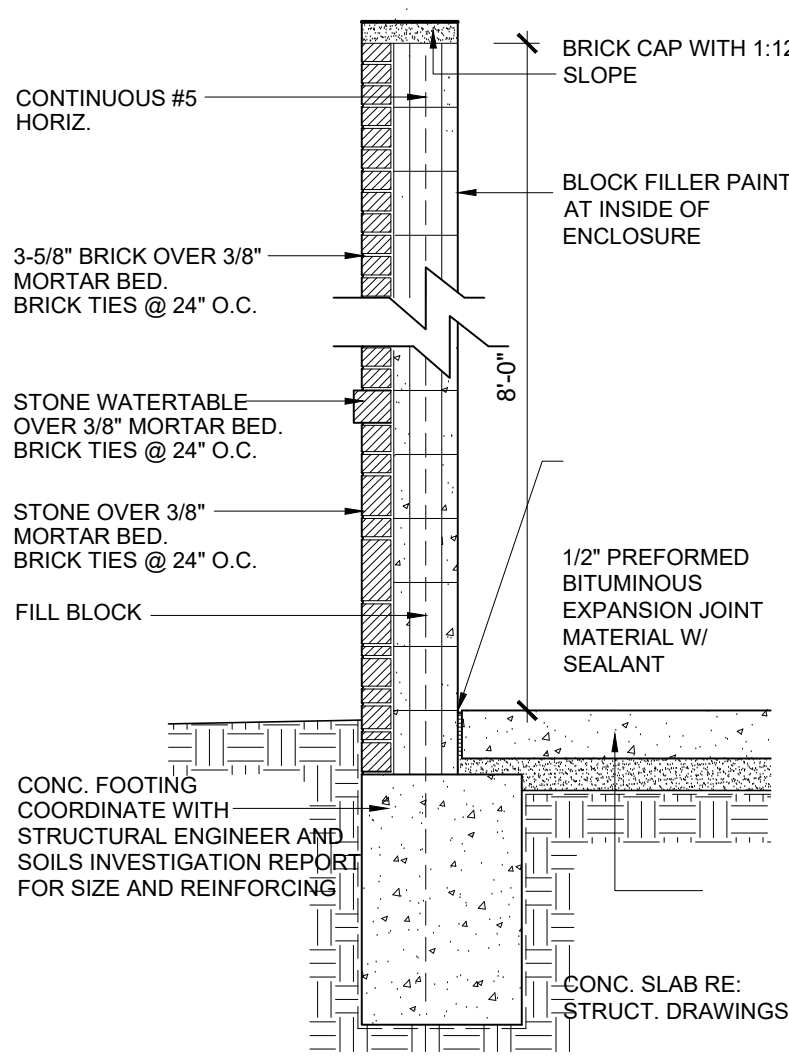
5 DUMPSTER ELEVATIONS - MINIMUM REQUIREMENTS

SCALE 1/4\"/>



6 DUMPSTER PLAN - MINIMUM REQUIREMENTS

SCALE 1/4\"/>



7 DUMPSTER SECTION

SCALE 1/2\"/>

MATERIAL TABULATION CHART

LONG PRAIRIE ROAD MEDICAL OFFICE BUILDING		East	West	North	South
1. Total Facade S.F.		4,408 s.f.	3,221 s.f.	831 s.f.	1,101 s.f.
2. Facade S.F. Excl of Doors and Windows		3,722 s.f.	2,906 s.f.	763 s.f.	1,015 s.f.
3. Doors and Windows S.F.		686 s.f.	315 s.f.	68 s.f.	86 s.f.
4. Primary Masonry Totals (Min. 80% masonry)		3,722 s.f. (100%)	2,906 s.f. (100%)	763 s.f. (100%)	1,015 s.f. (100%)
- Brick		1,623 s.f.	1,639 s.f.	393 s.f.	396 s.f.
- Stone		1,679 s.f.	1,267 s.f.	269 s.f.	479 s.f.
- Stucco		156 s.f.	0 s.f.	13 s.f.	52 s.f.
- Stucco @Tower		264 s.f.	0 s.f.	88 s.f.	88 s.f.

EXTERIOR MATERIAL SCHEDULE

PRIMARY MATERIAL	SUPP./MANUF.	SPECIFICATIONS	COLOR	FINISH/NOTES
BRICK	TRIANGLE	FRANKLIN	RED-BROWN	-
BRICK	CLAYMEX	MISSION K.S.	TAN	-
STUCCO	QUIKRETE OR EQ.	SMOOTH	SW2059 SAND	-
STONE	CHAMPION STONE CO. OR EQ.	LUEDER ROUGH FACE LIMESTONE OR EQ.	OFF-WHITE	NON-OVERLAPPING
STONE MORTAR	TBD	POLYMER MODIFIED	OFF-WHITE	-
ANODIZED ALUMINUM	KAWNEER OR EQ.	EXTERIOR	DARK BRONZE	FRAME & DOOR FIN.
PAINT	SHERWIN WILLIAMS	EXTERIOR	SW2059 SAND	-
SHINGLE ROOF	GAF OR EQ.	30 YR.	BLK/GREY	COMPOSITE

- ALL RETAINING/DETAINING WALLS, TURN-DOWN CURBS, TREE RETAINING WALLS SHALL BE CLAD IN A MATERIAL TO MATCH THE MATERIALS ON THE MAIN BUILDING.
- 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.
- ALL ELECTRICAL PANELS AND ASSOCIATED COMPONENTS SHALL BE PAINTED/TEXTURED TO MATCH THE COLOR OF THE BUILDING.
- DUMPSTER SCREENING WALL REQUIRES A SEPARATE BUILDING PERMIT.
- 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.
- ALL EXTERNAL ELECTRICAL PANELS SHALL BE PAINTED/TEXTURED TO MATCH THE MATERIAL AND COLOR OF THE BUILDING.

NO.	DATE	DESCRIPTION	BY
#	9/17/19	CONCEPT ELEVATIONS	MP
	08/14/20	ELEVATIONS	MP
	09/17/20	CITY COMMENTS REV#4	MP
	10/12/20	CITY COMMENTS REV#5	MP

MEDICAL OFFICE DEVELOPMENT ELEVATIONS				
LONG PRAIRIE RD & WAKETON RD				
CITY OF FLOWER MOUND				
DENTON COUNTY, TEXAS				
DESIGN/DRAWN	DATE	SCALE	PROJECT NO.	SHEET NO.
				E-1

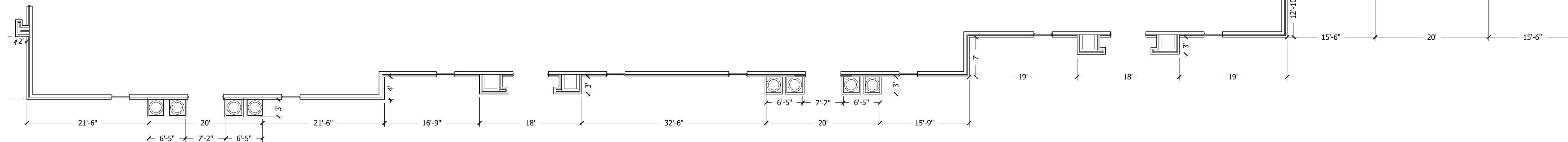
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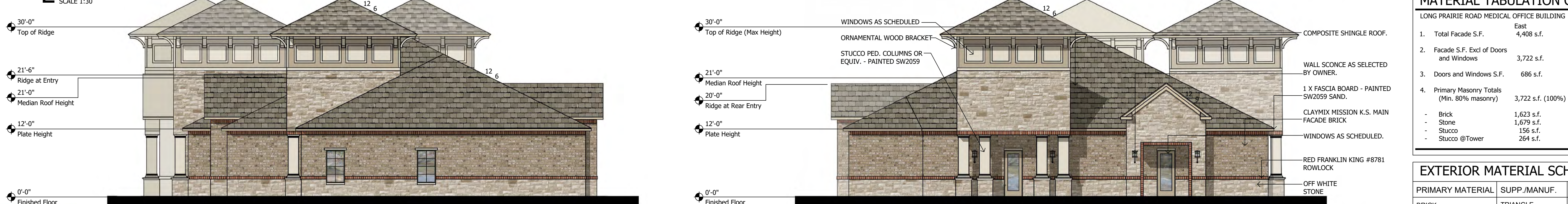
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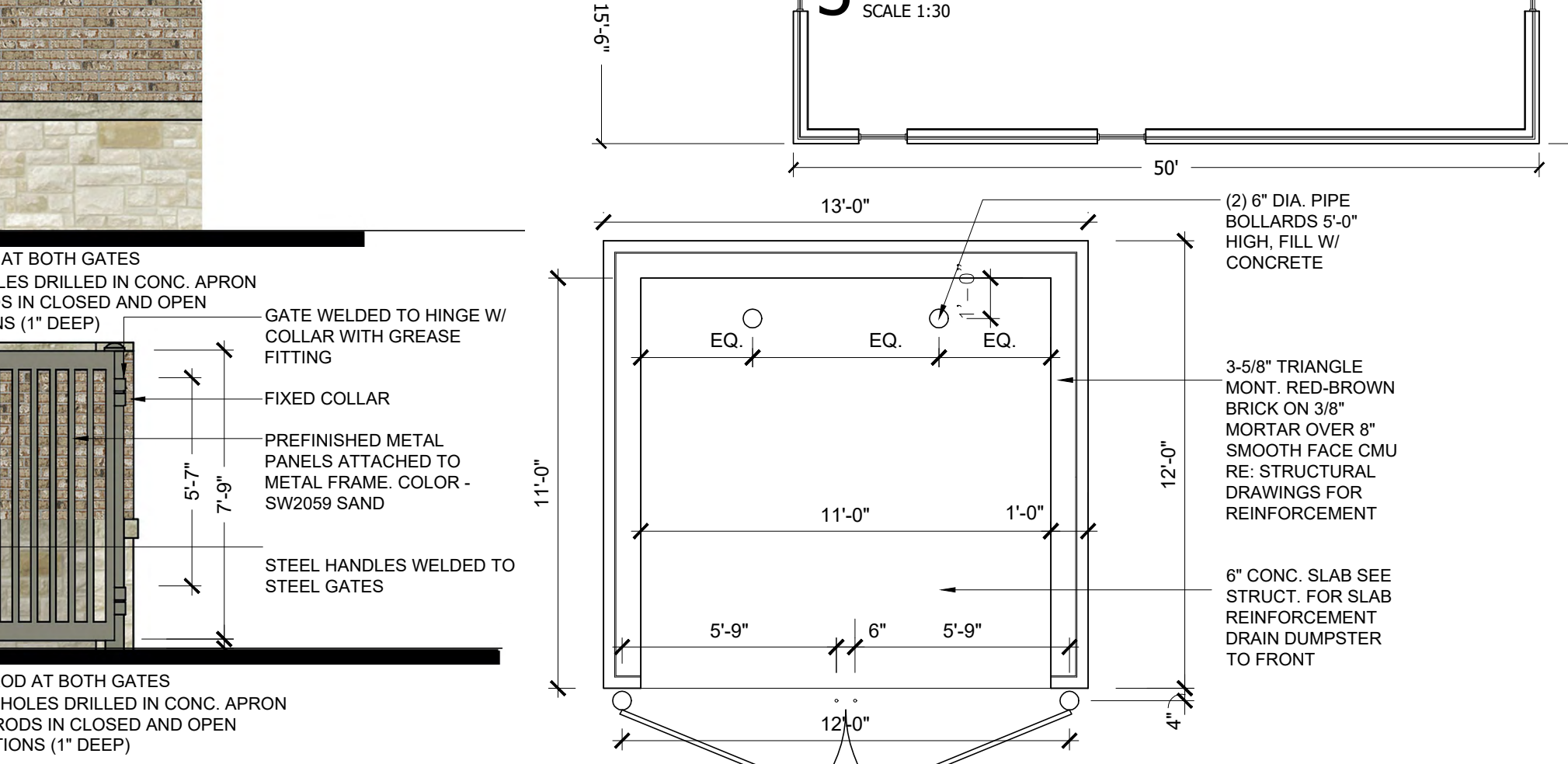
2 WEST ELEVATION

SCALE 1:30



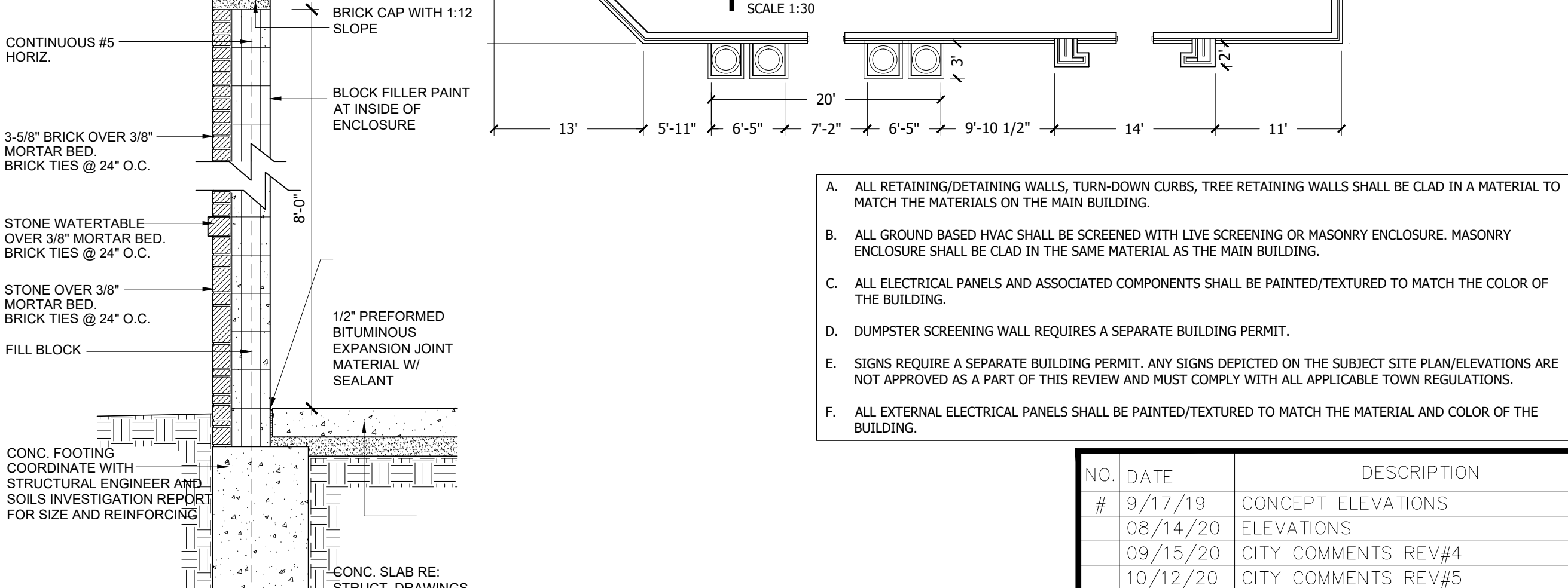
3 NORTH ELEVATION

SCALE 1:30



4 SOUTH ELEVATION

SCALE 1:30



- A. ALL RETAINING/DETAINING WALLS, TURN-DOWN CURBS, TREE RETAINING WALLS SHALL BE CLAD IN A MATERIAL TO MATCH THE MATERIALS ON THE MAIN BUILDING.
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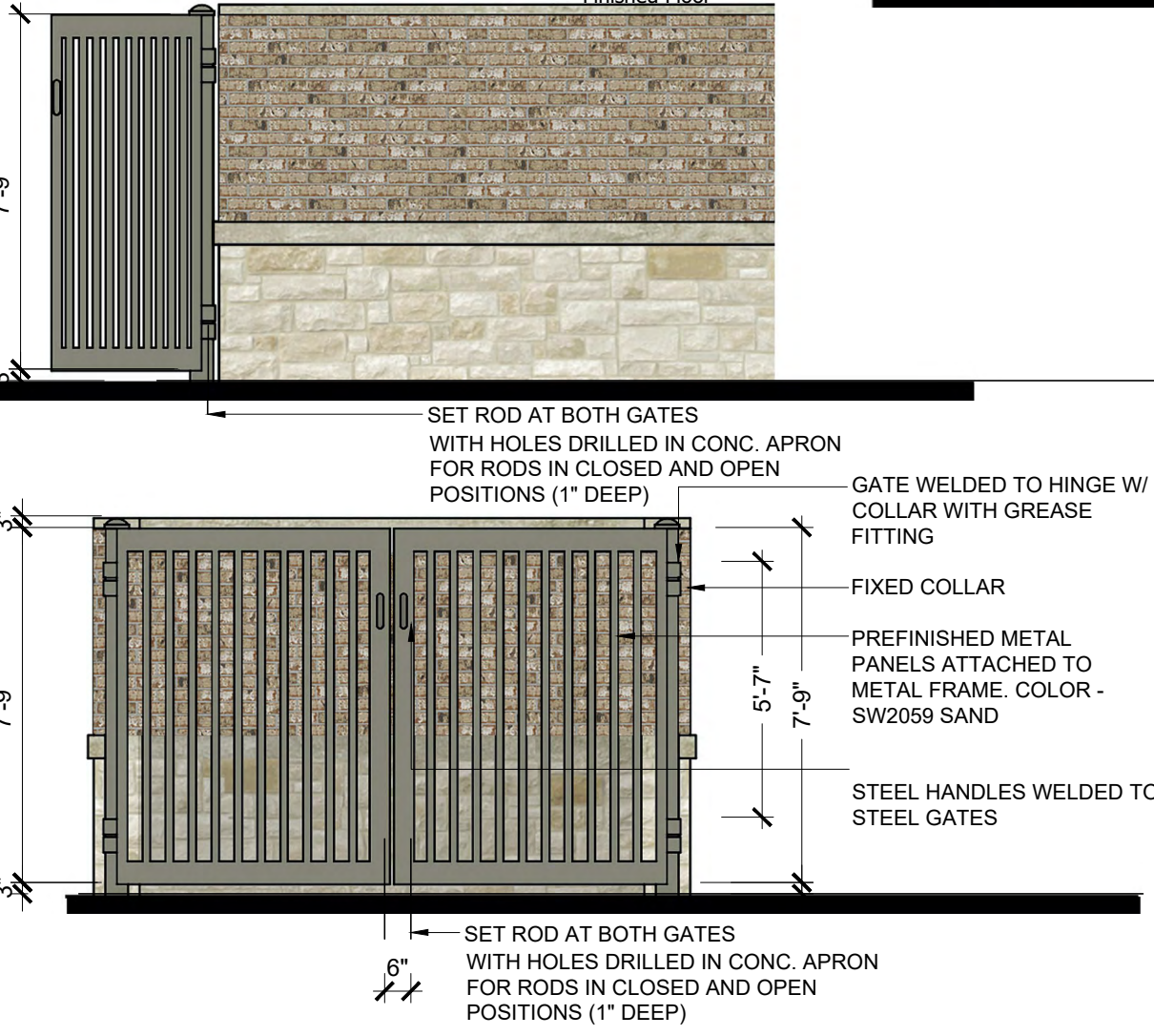
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STONE	CHAMPION STONE CO. OR EQ.	LUEDER ROUGH FACE LIMESTONE OR EQ.	OFF-WHITE	NON-OVERLAPPING
STONE MORTAR	TBD	POLYMER MODIFIED	OFF-WHITE	-
ANODIZED ALUMINUM	KAWNEER OR EQ.	EXTERIOR	DARK BRONZE	FRAME & DOOR FIN.
PAINT	SHERWIN WILLIAMS	EXTERIOR	SW2059 SAND	-
SHINGLE ROOF	GAF OR EQ.	30 YR.	BLK/GREY	COMPOSITE

OWNER/DEVELOPER
B & B CONSTRUCTION LLC.
6612 ADOBE CIRCLE
COLONY, TX 75056
CONTACT: JAMES BULLINGTON
TEL: 469-231-7350

ARCHITECT
HOLTMAN DESIGNWORKS INC
403 US 377 S
ARGYLE, TEXAS 76226
CONTACT: MATTHEW HOLTMAN, RA
TEL: 214-455-5623

SURVEYOR
TEXAS NATIONAL SURVEYING
P.O. BOX 293254
LEWISVILLE, TEXAS 75029
CONTACT: ARTHUR DEAN HODDE
TEL: 972-539-7676



5 DUMPSTER ELEVATIONS - MINIMUM REQUIREMENTS

SCALE 1/4" = 1'-0"

6 DUMPSTER PLAN - MINIMUM REQUIREMENTS

SCALE 1/4" = 1'-0"

7 DUMPSTER SECTION

SCALE 1/2" = 1'-0"

NO.	DATE	DESCRIPTION	BY
#	9/17/19	CONCEPT ELEVATIONS	MP
	08/14/20	ELEVATIONS	MP
	09/15/20	CITY COMMENTS REV#4	MP
	10/12/20	CITY COMMENTS REV#5	MP

MEDICAL OFFICE DEVELOPMENT ELEVATIONS

LONG PRAIRIE RD & WAKETON RD
CITY OF FLOWER MOUND
DENTON COUNTY, TEXAS

DESIGN/DRAWN	DATE	SCALE	PROJECT NO.	SHEET NO.
				E-1



PLANNING AND ZONING COMMISSION

AGENDA ITEM NO: 5

REGULAR ITEM

DATE: November 7, 2020

FROM: Brian Waltenburg, P.E., Assistant Director of Engineering

ITEM: **Public Hearing to consider an ordinance amending Section 8.0 Water Plan of the Master Plan (MPA20-0002 – Water Plan) to adopt amendments and additions to the 2009 Water Master Plan Update as a component of the Master Plan.**

I. ITEM SUMMARY

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 A1 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 7, 2020 Town Council Meeting. The impact fee update process will follow the approval of the amendment.

II. APPLICATION ANALYSIS

The purpose of this request is to amend Section 8.0 Water Plan.

III. CORRESPONDENCE

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

IV. ATTACHMENTS

A. Proposed

1. Master Plan Section 8.0 Water Plan Amendment

Technical Memorandum

Prepared for: Town of Flower Mound
Prepared by: Kimley-Horn and Associates, Inc.
Date: November 4, 2020



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 has retained Kimley-Horn to update the Town's water model and Water Master Plan for the year 2020. Kimley-Horn utilized the model prepared by KBR in 2009 and subsequently updated by Kimley-Horn in 2015. This master plan updated the 2015 model based on current water demands, demographics, future land uses and growth projections.

1.2 Study Area

The Town encompasses approximately 44 square miles of land area. Of this area, approximately 32 square miles is developable with the remainder consisting of Grapevine Lake, floodplain, and roads. Of this developable area, approximately 68% of this land is developed and 32% 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.

The Town has three large planning areas identified on their land use map with potential future growth: the Lakeside District, the Denton Creek District, and the Prairie Vista District. In the 2015 master plan update, the Lakeside area land use was modified to include some residential in the Campus Commercial areas. Kimley-Horn worked with the Town's planning department to determine the projected water demands for this area. The 2020 model reflects what is currently developed in that area as well as entitlements for developments that have already been approved by the Town. The second area, Denton Creek, is currently being developed and will include a mix of residential and non-residential areas. The Denton Creek area is



planned to be served with Reuse Water in the future. The reuse supply has been included in the future water projections to decrease the amount of needed potable water. The third area, Prairie Vista, is planned to consist of mixed use and estate density residential developments.

1.3.2 Master Planning Scenarios

The water system was analyzed for existing and future scenarios. The analysis included an extended period simulation using InfoWater software which models the system demands and performance over a 24-hour period. Future scenarios were modeled for years 2025, 2030 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 second paragraph.

The Town currently operates several ground storage tanks at water supply points. One 10 MG tank is located at the Stonehill pump station (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 (DWU supply).

2.2 Ground Storage

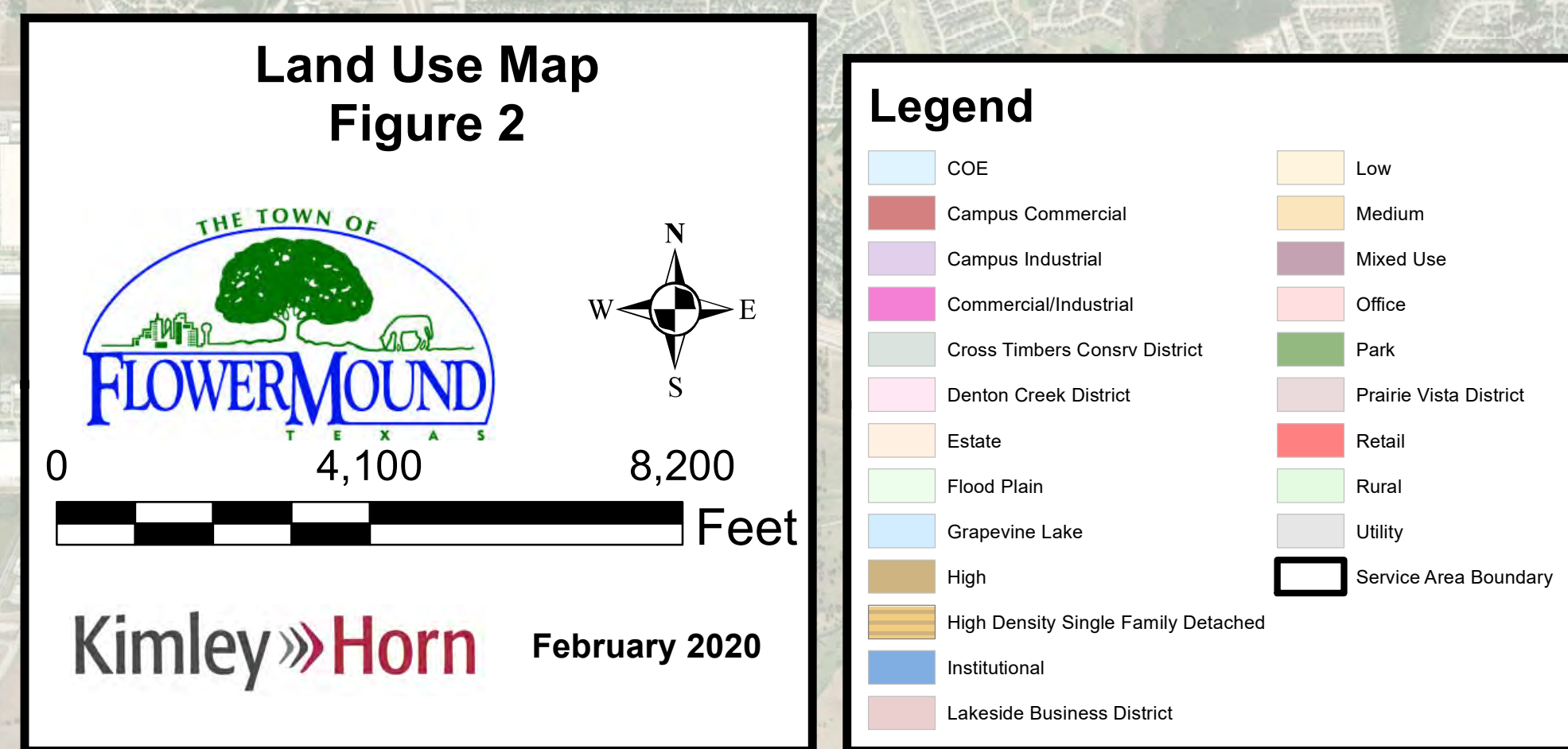
The Town of Flower Mound currently has 21 million gallons (MG) of ground storage located between the three existing pump stations. The next phase of construction at Stonecrest pump station will increase the station's storage capacity by 5 MG, bringing the total ground storage to 26 MG.

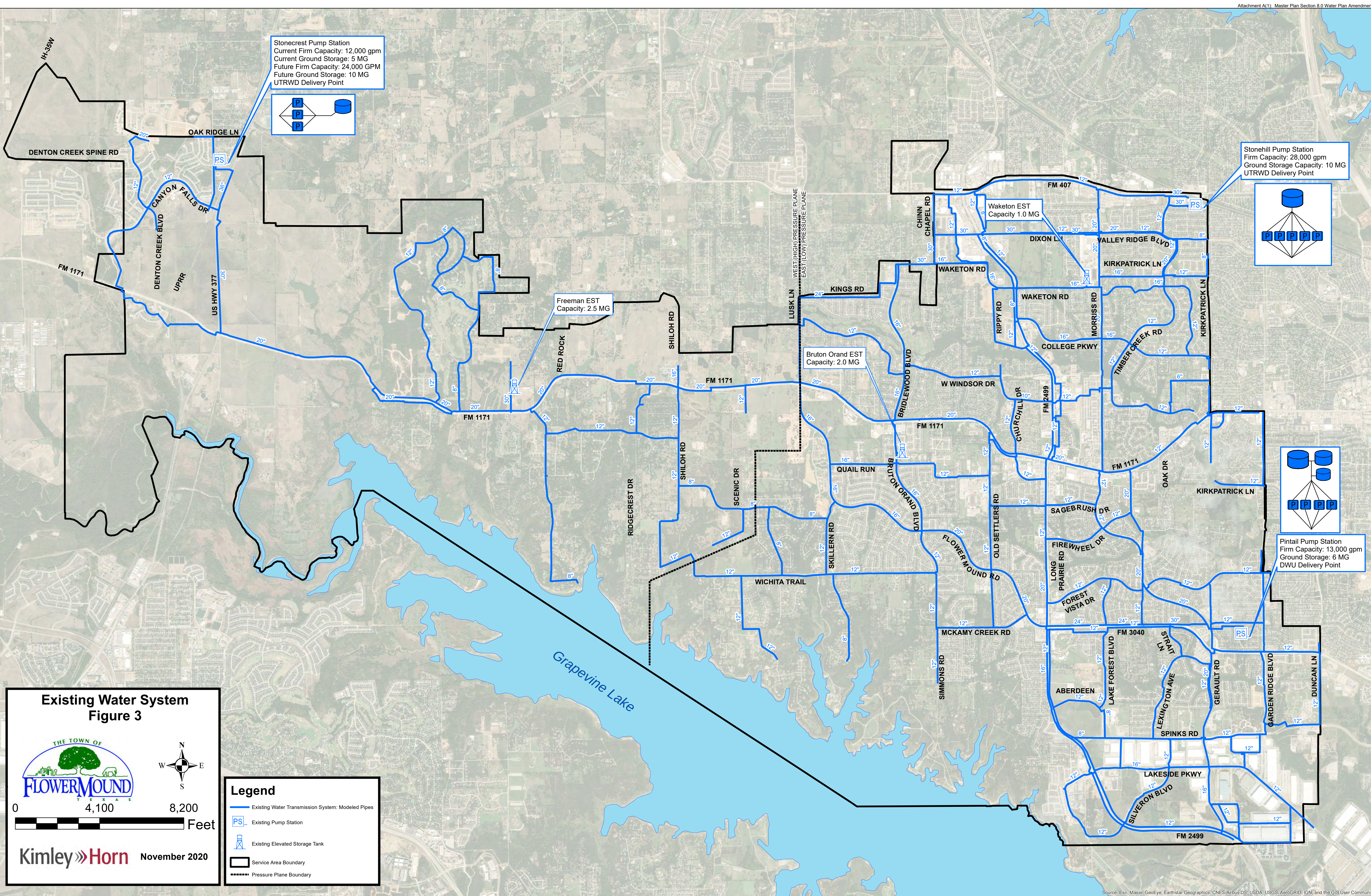
2.3 Elevated Storage

The Town currently has three elevated storage tanks in operation: Bruton Orand, Waketon, and Freeman. These tanks provided 5.5 MG of storage. The Freeman tank has the ability to not only serve the western portion of the Town, but due to its height has the ability to serve the eastern portion of Town if either of the other two tanks needs to be serviced.

The Texas Commission on Environmental Quality (TCEQ) Chapter 290 requires a minimum of 100 gallons of elevated storage per connection. With the current 5.5 MG of storage available, the Town's system has the capacity to serve up to 55,000 water connections. As of December 2019, the Town served 24,039 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 the 55,000 connections depending on future land uses. Connections versus storage will need to be evaluated as the Town continues to develop.

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





Existing Water System
Figure 3

0

4,100

8,200

Feet

KimleyHorn

November 2020

Legend

Existing Water Transmission System: Modeled Pipes

Existing Pump Station

Existing Elevated Storage Tank

Service Area Boundary

Pressure Plane Boundary



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. Stonecrest will have an ultimate firm capacity of 24,000 gpm once phases two and three are complete. The Lusk Lane booster pump station has been decommissioned.

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 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, and the Bruton Orand elevated storage tank. In previous years, the pressure plane has had a natural divide. Pressure reducing valves will likely be necessary to maintain that divide in the future. 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 February of 2020 (Reference Figure 2).

Table 3. Projected Population

Year	2020	2025	2030
Population ¹	77,286	82,408	89,499

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 2015-2019, the Town's historical high maximum day and peak hour demands, 31.57 MGD and 55.87 MGD respectively, were recorded on August 10, 2015 and August 10, 2016. Based on historic demands, the average dwelling demand of 500 gallons per day per lot (gpd/lot) for single family residences was generally confirmed to be adequate. However, historical data showed that the parcels classified as Conservation District, previously estimated at 846 gpd/lot, used the same amount of water on average as a normal single-family home. The current duty factor for conservation



district has been adjusted to 700 gpd/lot to reflect historical usage. Demand for future residential developments were calculated using the average demand of 500 or 700 gpd/lot and an assumed lot size (shown below in square feet, or SF) for each single-family density to develop a demand per acre for future residential development demand projections. Additionally, the multi-family duty factor from the 2015 Master Plan proved to be sufficient after comparing against historical meter data. Table 4 shows the resulting water demands for various residential uses.

Table 4. Residential Demands per Land Use Type

Land Use Type	Assumed Lot Size (SF)	Demand (gpd)	Demand (gpm/acre)
Multifamily	-	-	2.08
Existing Single Family Lot (Excludes Conservation District)	Varies	500	-
High	8000	500	1.88
Medium	12000	500	1.25
Low	16000	500	0.90
Estate	43,560 (1 acre)	500	0.35
Rural	Varies	500	-
Conservation District (Buildout Only)	87,120 (2 acres)	700	0.24
Prairie Vista District*	43,560 (1 acre)	500	0.35
Medium SF-10*	12,500	500	1.18
Medium SF-5*	8,500	500	1.74

**As part of the Denton Creek Reuse Master Plan, portions of the Denton Creek District were assumed to contain 10,000 SF lots and Mixed-Use developments. Tracts of land in the west part of Town were identified to develop as Medium SF-10 and Medium SF-5 single family densities with lot sizes of 12,500 SF and 8,500 SF, respectively. Prairie Vista District was assumed to develop at Estate and Mixed-Use densities.*

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 current 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. Table 4.1 shows the resulting water demands for various non-residential uses.

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

Land Use Type	Demand (gpd/acre)
Mixed Use	4,000
Lakeside area with residential	3050
Office	2625
Retail	1000
Commercial	2025
Industrial	1300
Park	250
Utility	200
Hospital	3000
Institutional	150
School	2000
Nature's Best	1500
Bridlewood	2250
Wellington	2000
Mi Windows	1800
Lifetime	2500
Inventrust	3500

The 2020 model did require manual adjustments in the Lakeside area to account for entitlements for future development. Entitled demands were based on demand information that was established during the Development Review process for several developments including Lakeside DFW, Lakeside Village, The Point, Southgate, and Stryker. No demand was generated by the following land uses: Grapevine Lake, Corps of Engineers, Floodplain, Open, and Road.

3.2.2 Projected Water System Demands

Replace Table 5 with the table below.

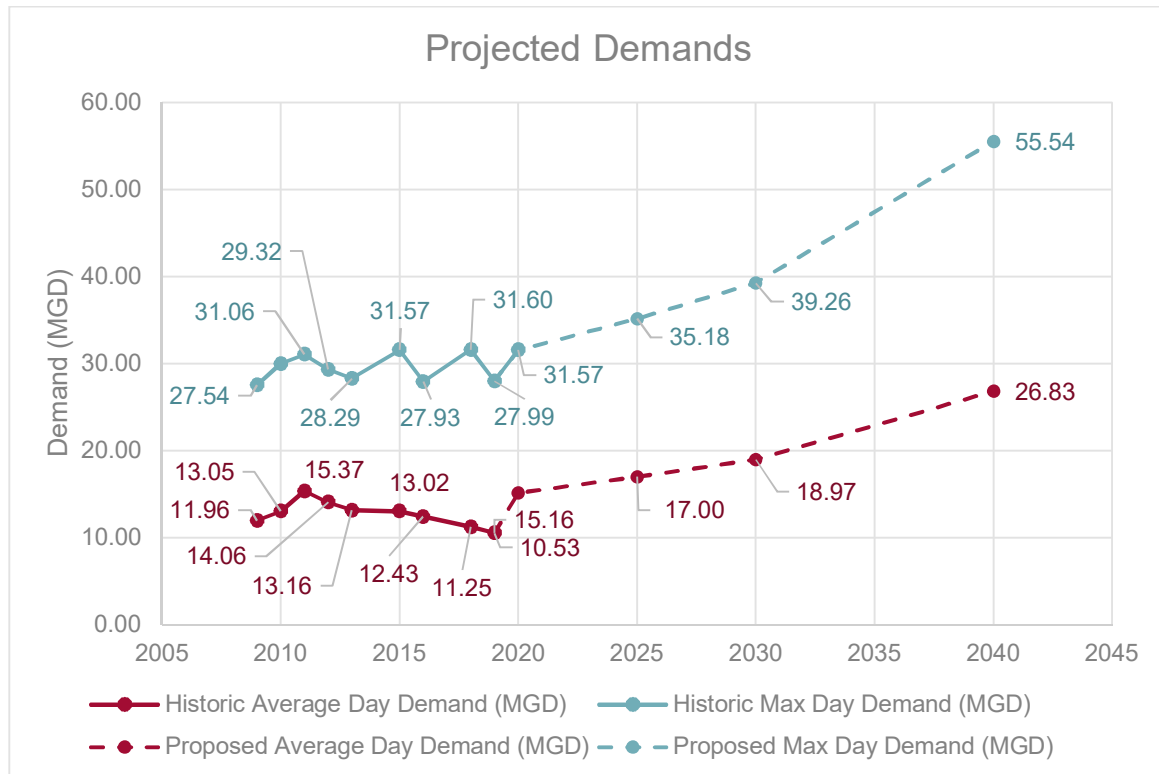
Table 5. Projected Water System Demands

Year	2020	2025	2030	Buildout
Average Day Demand (MGD)	15.16	17.00	18.97	26.83
Maximum Day Demand (MGD)	31.57	35.18	39.26	55.54



Replace Figure 5 with attached Figure 5.

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. These projections were used to then project water demands, and the water demands were distributed over the water system. Growth was evaluated for years 2025, 2030 and buildout. This was utilized to determine projected demands for these scenarios. Reference Figure 2 for updated land use map.

4.1.1 Water Supplies

The Town currently is contracted for 11 million gallons a day (MGD) from Dallas Water Utilities and is contracted with the Upper Trinity Regional Water District for another 30 MGD. The Town currently has plans to implement Reuse Water systems in Denton Creek and Lakeside, which will decrease the amount of potable water required in the future. The projected reuse offset for the Denton Creek and Lakeside areas has been incorporated into the future project water demands shown below. It should be noted that these areas are not fully developed at this time so the ultimate reclaimed water demand in these areas could vary higher or lower



from the projections provided. Additionally, the Lakeside Reuse study projects a maximum anticipated irrigation demand in order to conservatively size the needed infrastructure. The actual amount of potable water that could be saved may be lower than the projections provided. The projected ultimate maximum day demand is 55.54 MGD, which will result in a water supply deficiency of 14.5 MGD not including reuse water supply. Based on the growth projections utilized it is estimated that the Town will exceed their currently contracted water supply by year 2031 without implementation of reuse water.

Table 6. Contracted Water Supplies by Planning Scenario

Planning Scenario	2020	2025	2030	Buildout
Projected Demands				
Average Day Demand (MGD)	15.16	17.00	18.97	26.83
Maximum Day Demand (MGD)	31.57	35.18	39.26	55.54
Contracted Water Supply Point				
Pintail (MGD)	11	11	11	11
Stonehill (MGD)	20	20	20	20
Stonecrest (MGD)	10	10	10	10
Denton Creek Reuse ¹			1.08	2.16
Lakeside Reuse ²				6.56
Future Supply (MGD)				5.82
Total (MG)	41	41	42	55.54

1. Reuse supply from Denton Creek Reuse Water Master Plan prepared by Kimley-Horn and Associates, Inc. dated October 2014. These values do not include the future Lakeside Reuse Demands.

2. Reuse supply from Lakeside Reuse Water Master Plan prepared by Alan Plummer Associates, Inc. dated October 2018.

4.1.2 Ground Storage

In order to balance supply rates with pumping rates, it is recommended that the Town continue to store approximately half of the 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. Combined with elevated storage and future construction of a 5 MG ground storage tank at Stonecrest, the system will be able to store 50% of the maximum daily demand in 2040. 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	2020	2025	2030	Buildout
Regulatory Requirements				
200 gal per connection (MG)	5.21	5.45	5.67	6.67
50% MDD (MG)	15.79	17.59	19.63	27.77
Ground Storage Tanks				
Pintail (MG)	6	6	6	6
Stonehill (MG)	10	10	10	10
Stonecrest (MG)	5	5	5	10
Total (MG)	21	21	21	26

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). The current firm pumping capacity is sufficient to supply the Town's projected peak hour demand through the year 2030. Additional pumping improvements at Stonecrest Pump Station will be needed to meet the buildout peak hour demand projections.

Table 9. Firm Pumping Capacity

Planning Scenario	2020	2025	2030	Buildout
Regulatory Requirements				
2 gpm per connection (MGD)	74.96	78.47	81.60	96.10
Peak Hour Demands (MGD)	55.88	62.27	69.49	98.30
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	12,000	12,000	24,000
Total (gpm)	53,000	53,000	53,000	65,000
Total (MGD)	76.32	76.32	76.32	93.60



4.2.1 System Improvements

The proposed system improvements for the 5-year planning window as well as future buildout water system improvements (beyond 5-year CIP) 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 CIP (2020 Scenario)

1. Morriss Road Parallel 20-inch Water Line (Mallard Way to FM 3040)

Approximately 1,100 LF of 20-inch water line is proposed from Mallard Way to FM 3040. This line will parallel and existing 16-inch line and provide secondary transmission from Pintail Pump Station to the Lakeside Business District.

Project Cost	\$720,000
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2. Morriss Road Water Line Phase III (Eaton to Waketon Road)

Approximately 4,400 LF of 30-inch water line in Morriss Road from Eaton to Waketon Road. This water line will replace the existing 20-inch water line in Morriss Road and provide transmission from Stonehill Pump Station.

Project Cost	\$3,140,000
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3. Morriss Road Water Line Phase IV (Waketon Road to FM 407)

Approximately 5,200 LF of 30-inch water line in Morriss Road from Waketon Road to FM 407. This water line will replace the existing 20-inch water line in Morriss Road and provide transmission from Stonehill Pump Station.

Project Cost	\$4,190,000
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4. Denton Creek Boulevard 12-inch Water Line

Approximately 5,000 LF of 12-inch water line is proposed along Denton Creek Boulevard. This line will extend from FM 1171 north through the Canyon Falls development where it will connect to an existing water line.

Project Cost	\$1,300,000
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5. Denton Creek Spine Road 12-inch Water Line

Approximately 14,300 LF of 12-inch water line is proposed for the far northwest portion of town, extending to Interstate Highway 35-W.

Project Cost	\$3,210,000
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6. Kirkpatrick Lane 12-inch Water Line Phase III (South of FM 1171)

Approximately 1,000 LF of 12-inch water line is proposed to connect the 12-inch water line along Kirkpatrick Lane, south of Spanish Oak Drive, to the 12-inch water line along Bellaire Boulevard, east of Wager Drive.

Project Cost \$450,000

4.2.3 Beyond 5-Year CIP

1. Cowboy Lane Water Line

Approximately 3,800 LF of 12-inch water line is proposed to extend from the intersection of Highway 377 and FM 1171, southeast, to Cowboy Lane.

Project Cost \$930,000

2. FM 1171 to Highway 377 Water Line Phase II

Approximately 12,600 LF of 24-inch water line is proposed along the south side of FM 1171 parallel to the existing 20-inch transmission line. The project would begin east of the Freeman Elevated Tank at High Road and extend west to Highway 377, where it will connect to the 20-inch water line proposed in the Highway 377/UPRR Water Line Phase II project. The line will serve as secondary transmission from the Stonecrest Pump Station to the western portion of the Town.

Project Cost \$6,400,000

3. Highway 377/UPRR Water Lines Phase II

Approximately 7,600 LF of 24-inch water line is proposed along Stonecrest Lane, adjacent to the Union Pacific Railroad, beginning south of Stonecrest Road and extending south to the intersection of the railroad and FM 1171, then continuing east to Highway 377. This line will provide secondary transmission from the Stonecrest Pump Station to the western portion of the Town.

Project Cost \$3,410,000

4. Lake Forest 12-inch Water Line (FM 3040 to Spinks Road)

Approximately 5,600 LF of 12-inch water line is proposed extending from FM 3040 south to Spinks Road parallel to the existing 12-inch water line in Lake Forest Boulevard. This water line is the second section of the parallel Lake Forest 12-inch line and will provide secondary transmission to the Lakeside Business District to accommodate residential uses in the district.

Project Cost \$1,760,000



5. Lusk/Red Rock East-West Connector

Approximately 12,000 LF of 16-inch water line is proposed along the future Lusk/Red Rock East-West Connector as shown on the Master Thoroughfare Plan. It also includes roughly 3,500 LF of 16-inch water line along FM 1171, from Red Rock to the Freeman Elevated Tank. This line will provide secondary transmission to the western portion of the Town.

Project Cost \$4,250,000

6. Scenic Drive Water Line (South of FM 1171 to River Hill Drive)

Approximately 5,700 LF of 12-inch water line is proposed along Scenic Drive, connecting to the existing 12-inch water line along Scenic Drive south of FM 1171 to River Hill Drive. This project also includes installing approximately 500 LF of 12-inch water line to fill an existing gap in the water system east of the intersection of Scenic Drive and Wichita Trail.

Project Cost \$1,430,000

7. Stonecrest Pump Station Phase II

Phase II of the Stonecrest Pump Station will consist of an additional 5 MG of ground storage capacity and an additional fourth pump bringing the firm pumping capacity of the pump station to 18,000 gpm.

Project Cost \$5,460,000

8. Stonecrest Pump Station Phase III

Phase III of the Stonecrest Pump Station will consist of installing a fifth pump, bringing the station to its ultimate firm pumping capacity of approximately 24,000 gpm.

Project Cost \$790,000

9. Timber Creek 20-inch Water Line

Approximately 550 LF of 20-inch water line is proposed in Timber Creek Road from Kirkpatrick Lane to Colony Street. This line, which will parallel an existing 12-inch line, will connect the existing 16-inch lines in Kirkpatrick Lane and Colony Street and alleviate high velocities and headloss in the existing 12-inch line.

Project Cost \$490,000



10. West Side Water Lines (East)

Approximately 12,300 LF of 16-inch water line and 2,700 LF of 20-inch water line is proposed north of FM 1171, east of Highway 377, and west of Tour 18 Drive.

Project Cost	\$4,850,000
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11. West Side Water Lines (South)

Approximately 19,100 LF of looped, 12-inch water line is proposed south of FM 1171, eventually providing service to the southwest portion of the Town.

Project Cost	\$4,550,000
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12. West Side Water Lines (West)

Approximately 3,000 LF of 12-inch water line connecting the system from the 30-inch water line along Highway 377 to Denton Creek Boulevard. This project also includes approximately 2,600 LF of 12-inch water line on the north side of FM 1171 from the future 20-inch water line at UPRR west to the Trailwood Terrace 12-inch Water Line near Canyon Falls Drive. These lines will comprise a portion of the distribution system in the west side of the Town.

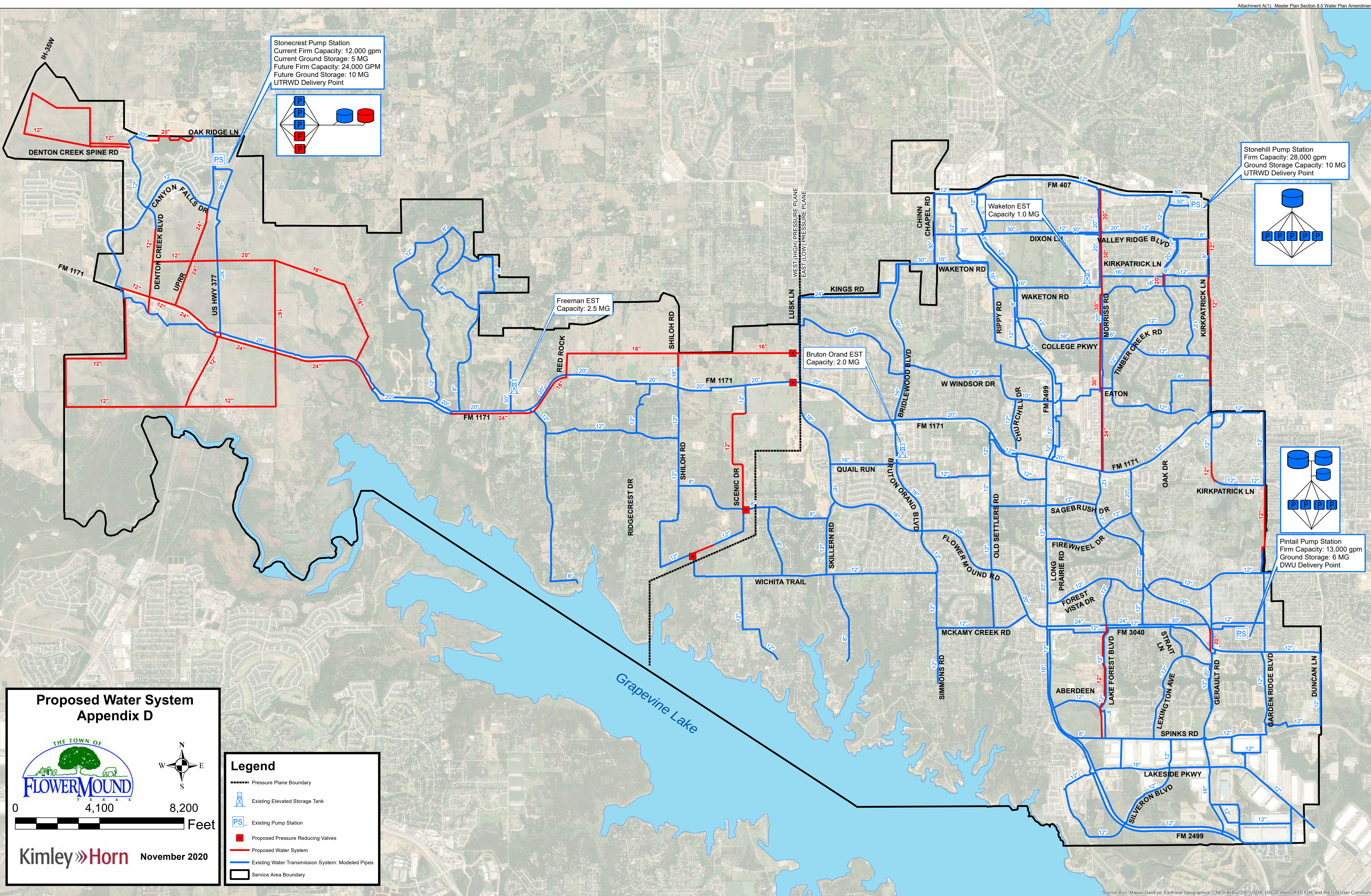
Project Cost	\$1,560,000
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13. Pressure Reducing Valves

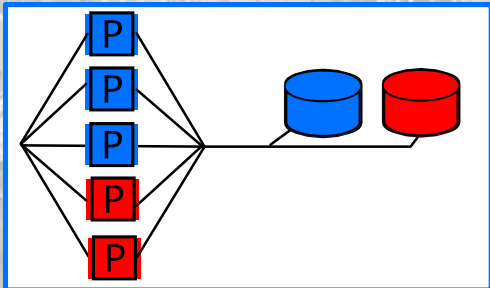
Pressure Reducing Stations are proposed to define the boundary between the East and West Pressure Planes:

- o Lusk/Red Rock East-West Connector
- o FM 1171, west of Flower Mound Road (FM 3040)
- o Scenic Drive at River Hill Drive
- o Cardinal Drive, west of Wichita Trail

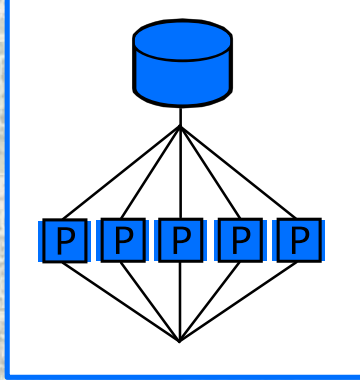
Project Cost	\$710,000
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Stonecrest Pump Station
Current Firm Capacity: 12,000 gpm
Current Ground Storage: 5 MG
Future Firm Capacity: 24,000 GPM
Future Ground Storage: 10 MG
UTRWD Delivery Point



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

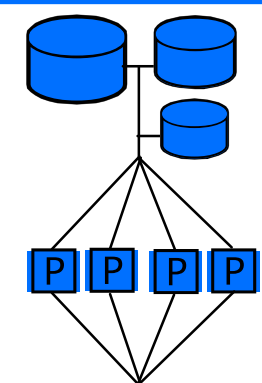


Freeman EST
Capacity: 2.5 MG

Bruton Orand EST
Capacity: 2.0 MG

Waketon EST
Capacity 1.0 MG

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



Proposed Water System Appendix D



N

W

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S

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4,100

8,200

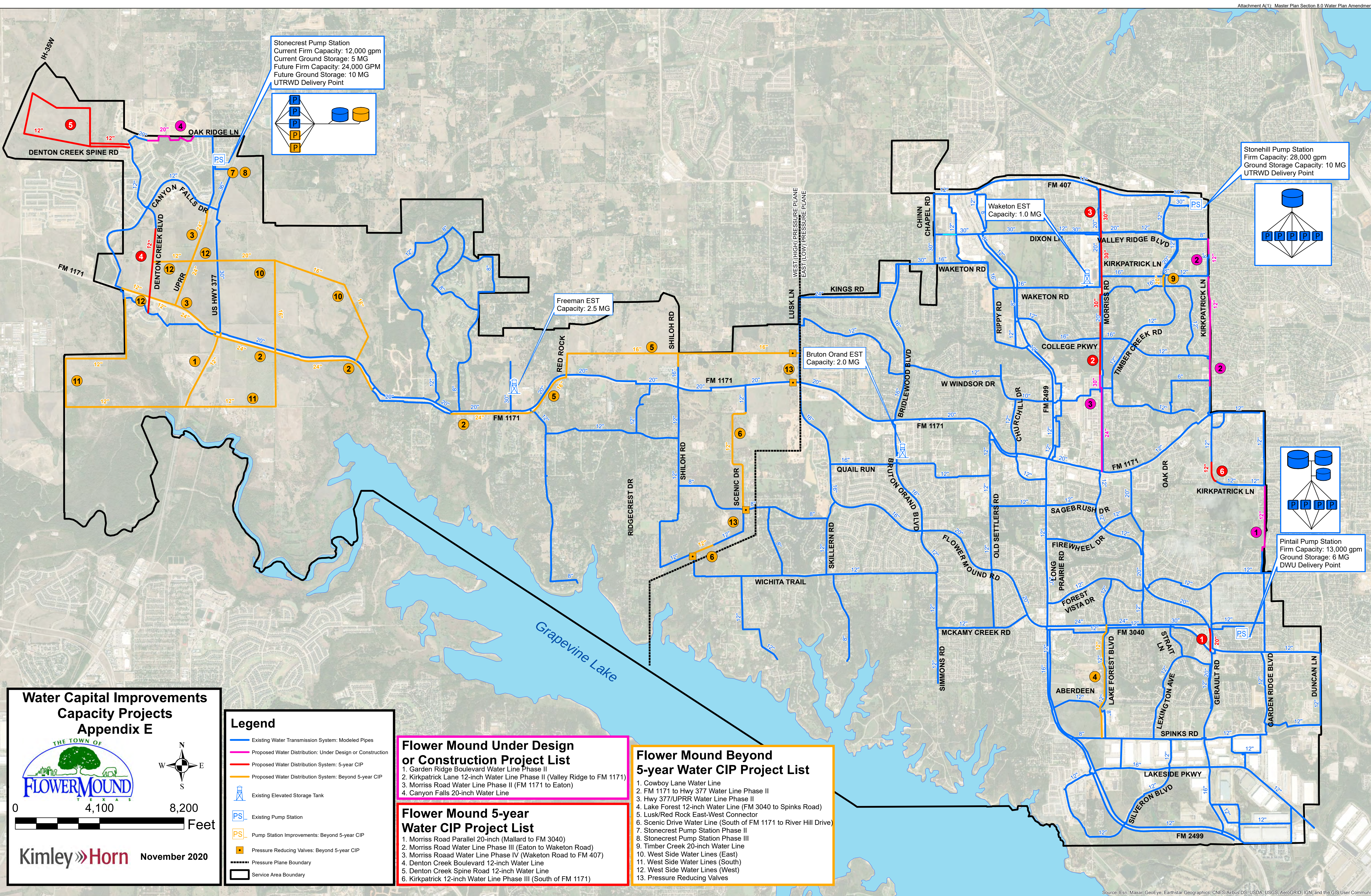
Feet

November 2020

Legend

- Pressure Plane Boundary
-  Existing Elevated Storage Tank
-  Existing Pump Station
-  Proposed Pressure Reducing Valves
-  Proposed Water System
-  Existing Water Transmission System: Modeled Pipes
-  Service Area Boundary

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Town 5-year Water CIP Estimate OPC Summary		
Proj. #	Description	Total Project Cost
1	Morriss Road 20-inch Water Line (Mallard Way to FM 3040)	\$ 720,000
2	Morriss Road Water Line (Eaton to Waketon Road)	\$ 3,140,000
3	Morriss Road Water Line (Waketon Road to FM 407)	\$ 4,190,000
4	Denton Creek Boulevard 12-inch Water Line	\$ 1,300,000
5	Denton Creek Spine Road 12-inch Water Line	\$ 3,210,000
6	Kirkpatrick 12-inch Water Line Phase III (South of FM 1171)	\$ 450,000
	Total	\$ 13,010,000

Town Beyond 5-year Water CIP Estimate		
Proj. #	Description	Total Project Cost
1	Cowboy Lane Water Line	\$ 930,000
2	FM 1171 to Hwy 377 Water Line Phase II	\$ 6,400,000
3	Hwy 377/UPRR Water Line Phase II	\$ 3,410,000
4	Lake Forest 12-inch Water Line (FM 3040 to Spinks Road)	\$ 1,760,000
5	Lusk/Red Rock East-West Connector	\$ 4,250,000
6	Scenic Drive Water Line (S of FM 1171 to River Hill Drive)	\$ 1,430,000
7	Stonecrest Pump Station Phase II	\$ 5,460,000
8	Stonecrest Pump Station Phase III	\$ 790,000
9	Timber Creek 20-inch Water Line	\$ 490,000
10	West Side Water Line (East)	\$ 4,850,000
11	West Side Water Line (South)	\$ 4,550,000
12	West Side Water Line (West)	\$ 1,560,000
13	Pressure Reducing Valves	\$ 710,000
	Total	\$ 36,590,000

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

Client: Flower Mound	Date: 11/4/2020
Project: Water Master Plan Updates: 5-year CIP	Prepared By: MLD
KHA No.: 061000201	Checked By: KSS

Title: Morriss Road 20-inch Water Line (Mallard Way to FM 3040)	Sheet: 1
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Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	\$ 20,000.00	\$ 20,000
2	20" Water Line	1,100	LF	\$ 210.00	\$ 231,000
3	Trench Safety	1,000	LF	\$ 2.00	\$ 2,000
4	Concrete Pavement Repair	100	SY	\$ 110.00	\$ 11,000
5	Seed, Fertilizer and Erosion Control	1,000	LF	\$ 10.00	\$ 10,000
6	20" Gate Valve with Vault (1 per 3,000 lf of pipe)	2	EA	\$ 35,000.00	\$ 70,000
7	Fire Hydrant Assembly (1 per 2,500 lf of pipe)	1	EA	\$ 7,500.00	\$ 7,500
8	Bore with 36" Steel Casing	100	LF	\$ 850.00	\$ 85,000
9	Connect to Large Diameter Water Line	2	EA	\$ 15,000.00	\$ 30,000
10	Combination 4" Air Release/Vacuum Valve & Vault	1	EA	\$ 20,000.00	\$ 20,000
11	Hydrostatic Testing and Disinfection (Short)	1	LS	\$ 10,000.00	\$ 10,000
12	Cathodic Protection	1	LS	\$ 15,000.00	\$ 15,000

Basis for Cost Projection:

- ☒ No Design Completed
- ☐ Preliminary Design
- ☐ Final Design

Subtotal:		\$ 511,500
Eng/Survey Fees (+/- %):	15	\$ 77,000
Contingency (+/- %):	25	\$ 131,500
Prop Acquisition:		\$ -
Total:		\$ 720,000

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

Client: Flower Mound	Date: 11/4/2020
Project: Water Master Plan Updates: 5-year CIP	Prepared By: MLD
KHA No.: 061000201	Checked By: KSS

Title: Morriss Road Water Line Phase III (Eaton to Waketon Road)	Sheet: 2
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Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	\$ 170,000.00	\$ 170,000
2	30" Water Line	4,400	LF	\$ 275.00	\$ 1,210,000
3	Trench Safety	4,100	LF	\$ 2.00	\$ 8,200
4	Seed, Fertilizer and Erosion Control	3,560	LF	\$ 10.00	\$ 35,600
5	Concrete Pavement Repair	600	SY	\$ 110.00	\$ 66,000
6	30" Gate Valve with Vault	2	EA	\$ 90,000.00	\$ 180,000
7	Fire Hydrant Assembly (1 per 2,500 lf of pipe)	3	EA	\$ 7,500.00	\$ 22,500
8	Bore with 48" Steel Casing	300	LF	\$ 1,250.00	\$ 375,000
9	Connect to Large Diameter Water Line	2	EA	\$ 15,000.00	\$ 30,000
10	Hydrostatic Testing and Disinfection (Short)	1	LS	\$ 10,000.00	\$ 10,000
11	Combination 8" Blow Off Valve & Vault	1	EA	\$ 22,500.00	\$ 22,500
12	Combination 6" Air Release/Vacuum Valve & Vault	1	EA	\$ 30,000.00	\$ 30,000
13	Cathodic Protection	1	LS	\$ 75,000.00	\$ 75,000

Basis for Cost Projection:

- ☒ No Design Completed
☐ Preliminary Design
☐ Final Design

Subtotal:		\$ 2,234,800
Eng/Survey Fees (+/- %):	15	\$ 336,000
Contingency (+/- %):	25	\$ 569,200
Prop Acquisition:		\$ -
Total:		\$ 3,140,000

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

Client: Flower Mound	Date: 11/4/2020
Project: Water Master Plan Updates: 5-year CIP	Prepared By: MLD
KHA No.: 061000201	Checked By: KSS

Title: Morriss Road Water Line Phase IV (Waketon Road to FM 407)	Sheet: 3
---	-----------------

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	\$ 170,000.00	\$ 170,000
2	30" Water Line	5,200	LF	\$ 275.00	\$ 1,430,000
3	Trench Safety	4,500	LF	\$ 2.00	\$ 9,000
4	Seed, Fertilizer and Erosion Control	3,960	LF	\$ 10.00	\$ 39,600
5	Concrete Pavement Repair	600	SY	\$ 110.00	\$ 66,000
6	30" Gate Valve with Vault	2	EA	\$ 90,000.00	\$ 180,000
7	Fire Hydrant Assembly (1 per 2,500 lf of pipe)	3	EA	\$ 7,500.00	\$ 22,500
8	Bore with 48" Steel Casing	700	LF	\$ 1,250.00	\$ 875,000
9	Connect to Large Diameter Water Line	2	EA	\$ 15,000.00	\$ 30,000
10	Hydrostatic Testing and Disinfection (Short)	1	LS	\$ 10,000.00	\$ 10,000
11	Combination 8" Blow Off Valve & Vault	1	EA	\$ 22,500.00	\$ 22,500
12	Combination 6" Air Release/Vacuum Valve & Vault	2	EA	\$ 30,000.00	\$ 60,000
13	Cathodic Protection	1	LS	\$ 75,000.00	\$ 75,000
Basis for Cost Projection:		Subtotal:			\$ 2,989,600
☒	No Design Completed	Eng/Survey Fees (+/- %): 15			\$ 449,000
☐	Preliminary Design	Contingency (+/- %): 25			\$ 751,400
☐	Final Design	Prop Acquisition:			\$ -
		Total:			\$ 4,190,000

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

Client: Flower Mound	Date: 11/4/2020
Project: Water Master Plan Updates: 5-year CIP	Prepared By: MLD
KHA No.: 061000201	Checked By: KSS

Title: Denton Creek Boulevard 12-inch Water Line	Sheet: 4
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Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	\$ 40,000.00	\$ 40,000
2	12" Water Line	5,000	LF	\$ 120.00	\$ 600,000
3	Trench Safety	4,900	LF	\$ 2.00	\$ 9,800
4	Seed, Fertilizer and Erosion Control	4,900	LF	\$ 10.00	\$ 49,000
5	Concrete Pavement Repair	20	SY	\$ 110.00	\$ 2,200
6	12" Gate Valve (1 per 500 lf of pipe)	10	EA	\$ 5,000.00	\$ 50,000
7	Fire Hydrant Assembly (1 per 500 lf of pipe)	10	EA	\$ 7,500.00	\$ 75,000
8	Bore with 24" Steel Casing	100	LF	\$ 600.00	\$ 60,000
9	Connect to Small Diameter Water Line	3	EA	\$ 5,000.00	\$ 15,000
10	Connect to Large Diameter Water Line	1	EA	\$ 15,000.00	\$ 15,000
11	Hydrostatic Testing and Disinfection (Short)	1	LS	\$ 10,000.00	\$ 10,000

Basis for Cost Projection:

- ☒ No Design Completed
☐ Preliminary Design
☐ Final Design

Subtotal:		\$ 926,000
Eng/Survey Fees (+/- %):	15	\$ 139,000
Contingency (+/- %):	25	\$ 235,000
Prop Acquisition:		\$ -
Total:		\$ 1,300,000

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

Client: Flower Mound	Date: 11/4/2020
Project: Water Master Plan Updates: 5-year CIP	Prepared By: MLD
KHA No.: 061000201	Checked By: KSS

Title: Denton Creek Spine Road 12-inch Water Line	Sheet: 5
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Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	\$ 90,000.00	\$ 90,000
2	12" Water Line	14,300	LF	\$ 120.00	\$ 1,716,000
3	Trench Safety	14,300	LF	\$ 2.00	\$ 28,600
4	Seed, Fertilizer and Erosion Control	14,270	LF	\$ 10.00	\$ 142,700
5	Concrete Pavement Repair	50	SY	\$ 110.00	\$ 5,500
6	12" Gate Valve (1 per 500 lf of pipe)	29	EA	\$ 5,000.00	\$ 145,000
7	Fire Hydrant Assembly (1 per 500 lf of pipe)	29	EA	\$ 7,500.00	\$ 217,500
8	Connect to Small Diameter Water Line	2	LF	\$ 5,000.00	\$ 10,000
9	Hydrostatic Testing and Disinfection (Long)	1	LF	\$ 20,000.00	\$ 20,000

Basis for Cost Projection:

- ☒ No Design Completed
☐ Preliminary Design
☐ Final Design

Subtotal:		\$ 2,285,300
Eng/Survey Fees (+/- %):	15	\$ 343,000
Contingency (+/- %):	25	\$ 581,700
Prop Acquisition:		\$ -
Total:		\$ 3,210,000

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

Client: Flower Mound	Date: 11/4/2020
Project: Water Master Plan Updates: 5-year CIP	Prepared By: MLD
KHA No.: 061000201	Checked By: KSS

Title: Kirkpatrick Lane 12-inch Water Line Phase III (South of FM 1171)	Sheet: 6
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Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	\$ 20,000.00	\$ 20,000
2	12" Water Line	1,000	LF	\$ 120.00	\$ 120,000
3	Trench Safety	800	LF	\$ 2.00	\$ 1,600
4	Seed, Fertilizer and Erosion Control	770	LF	\$ 10.00	\$ 7,700
5	Concrete Pavement Repair	35	SY	\$ 110.00	\$ 3,850
6	12" Gate Valve (1 per 500 lf of pipe)	2	EA	\$ 5,000.00	\$ 10,000
7	Fire Hydrant Assembly (1 per 500 lf of pipe)	2	EA	\$ 7,500.00	\$ 15,000
8	Bore with 24" Steel Casing	200	LF	\$ 600.00	\$ 120,000
9	Connect to Small Diameter Water Line	2	EA	\$ 5,000.00	\$ 10,000
10	Hydrostatic Testing and Disinfection (Short)	1	LS	\$ 10,000.00	\$ 10,000

Basis for Cost Projection:

- ☒ No Design Completed
☐ Preliminary Design
☐ Final Design

Subtotal:		\$ 318,150
Eng/Survey Fees (+/- %):	15	\$ 48,000
Contingency (+/- %):	25	\$ 83,850
Prop Acquisition:		\$ -
Total:		\$ 450,000

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

Client: Flower Mound	Date: 11/4/2020
Project: Water Master Plan Updates: Beyond 5-year CIP	Prepared By: MLD
KHA No.: 061000201	Checked By: KSS

Title: Cowboy Lane Water Line	Sheet: 7
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Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	\$ 30,000.00	\$ 30,000
2	12" Water Line	3,800	LF	\$ 120.00	\$ 456,000
3	Trench Safety	3,800	LF	\$ 2.00	\$ 7,600
4	Seed, Fertilizer and Erosion Control	3,750	LF	\$ 10.00	\$ 37,500
5	Concrete Pavement Repair	25	SY	\$ 110.00	\$ 2,750
6	12" Gate Valve (1 per 500 lf of pipe)	8	EA	\$ 5,000.00	\$ 40,000
7	Fire Hydrant Assembly (1 per 500 lf of pipe)	8	EA	\$ 7,500.00	\$ 60,000
8	Connect to Small Diameter Water Line	1	EA	\$ 5,000.00	\$ 5,000
9	Connect to Large Diameter Water Line	1	EA	\$ 15,000.00	\$ 15,000
10	Hydrostatic Testing and Disinfection (Short)	1	LS	\$ 10,000.00	\$ 10,000

Basis for Cost Projection:

- ☒ No Design Completed
☐ Preliminary Design
☐ Final Design

Subtotal:		\$ 663,850
Eng/Survey Fees (+/- %):	15	\$ 100,000
Contingency (+/- %):	25	\$ 166,150
Prop Acquisition:		\$ -
Total:		\$ 930,000

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

Client: Flower Mound	Date: 11/4/2020
Project: Water Master Plan Updates: Beyond 5-year CIP	Prepared By: MLD
KHA No.: 061000201	Checked By: KSS

Title: FM 1171 to Highway 377 Water Line Phase II	Sheet: 8
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Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	\$ 170,000.00	\$ 170,000
2	24" Water Line	12,600	LF	\$ 250.00	\$ 3,150,000
3	Trench Safety	12,050	LF	\$ 2.00	\$ 24,100
4	Seed, Fertilizer and Erosion Control	12,000	LF	\$ 10.00	\$ 120,000
5	Concrete Pavement Repair	56	SY	\$ 110.00	\$ 6,111
6	24" Gate Valve with Vault (1 per 3,000 lf of pipe)	5	EA	\$ 50,000.00	\$ 250,000
7	Fire Hydrant Assembly (1 per 2,500 lf of pipe)	6	EA	\$ 7,500.00	\$ 45,000
8	Bore with 42" Steel Casing	550	LF	\$ 1,000.00	\$ 550,000
9	Connect to Small Diameter Water Line	1	EA	\$ 5,000.00	\$ 5,000
10	Connect to Large Diameter Water Line	4	EA	\$ 15,000.00	\$ 60,000
11	Hydrostatic Testing and Disinfection (Long)	1	EA	\$ 20,000.00	\$ 20,000
12	Combination 6" Blow Off Valve & Vault	4	EA	\$ 15,000.00	\$ 60,000
13	Combination 4" Air Release/Vacuum Valve & Vault	4	EA	\$ 20,000.00	\$ 80,000
14	Cathodic Protection	1	LS	\$ 20,000.00	\$ 20,000

Basis for Cost Projection:

- ☒ No Design Completed
☐ Preliminary Design
☐ Final Design

Subtotal:		\$ 4,560,211
Eng/Survey Fees (+/- %):	15	\$ 685,000
Contingency (+/- %):	25	\$ 1,154,789
Prop Acquisition:		\$ -
Total:		\$ 6,400,000

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

Client: Flower Mound	Date: 11/4/2020
Project: Water Master Plan Updates: Beyond 5-year CIP	Prepared By: MLD
KHA No.: 061000201	Checked By: KSS

Title: Highway 377/UPRR Water Lines Phase II	Sheet: 9
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Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	\$ 90,000.00	\$ 90,000
2	24" Water Line	7,600	LF	\$ 250.00	\$ 1,900,000
3	Trench Safety	7,600	LF	\$ 2.00	\$ 15,200
4	Seed, Fertilizer and Erosion Control	7,580	LF	\$ 10.00	\$ 75,800
5	Concrete Pavement Repair	20	SY	\$ 110.00	\$ 2,200
6	24" Gate Valve with Vault (1 per 3,000 lf of pipe)	3	EA	\$ 50,000.00	\$ 150,000
7	Fire Hydrant Assembly (1 per 2,500 lf of pipe)	4	EA	\$ 7,500.00	\$ 30,000
8	Connect to Small Diameter Water Line	4	EA	\$ 5,000.00	\$ 20,000
9	Connect to Large Diameter Water Line	1	LS	\$ 15,000.00	\$ 15,000
10	Hydrostatic Testing and Disinfection (Short)	1	LS	\$ 10,000.00	\$ 10,000
11	Combination 6" Blow Off Valve & Vault	2	EA	\$ 15,000.00	\$ 30,000
12	Combination 4" Air Release/Vacuum Valve & Vault	2	EA	\$ 20,000.00	\$ 40,000
13	Cathodic Protection	1	LS	\$ 50,000.00	\$ 50,000

Basis for Cost Projection:

- ☒ No Design Completed
☐ Preliminary Design
☐ Final Design

Subtotal:		\$ 2,428,200
Eng/Survey Fees (+/- %):	15	\$ 365,000
Contingency (+/- %):	25	\$ 616,800
Prop Acquisition:		\$ -
Total:		\$ 3,410,000

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

Client: Flower Mound	Date: 11/4/2020
Project: Water Master Plan Updates: Beyond 5-year CIP	Prepared By: KSS
KHA No.: 061000201	Checked By: MLD

Title: Lake Forest 12-inch Water Line (FM 3040 to Spinks Road)	Sheet: 10
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Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	\$ 50,000.00	\$ 50,000
2	12" Water Line	5,600	LF	\$ 120.00	\$ 672,000
3	Trench Safety	5,200	LF	\$ 2.00	\$ 10,400
4	Seed, Fertilizer and Erosion Control	4,850	LF	\$ 10.00	\$ 48,500
5	Concrete Pavement Repair	390	SY	\$ 110.00	\$ 42,900
6	12" Gate Valve (1 per 500 lf of pipe)	12	EA	\$ 5,000.00	\$ 60,000
7	Fire Hydrant Assembly (1 per 500 lf of pipe)	12	EA	\$ 7,500.00	\$ 90,000
8	Bore with 24" Steel Casing	400	LF	\$ 600.00	\$ 240,000
9	Connect to Small Diameter Water Line	2	EA	\$ 5,000.00	\$ 10,000
10	Connect to Large Diameter Water Line	1	EA	\$ 15,000.00	\$ 15,000
11	Hydrostatic Testing and Disinfection (Short)	1	LS	\$ 10,000.00	\$ 10,000

Basis for Cost Projection:

- ☒ No Design Completed
☐ Preliminary Design
☐ Final Design

Subtotal:		\$ 1,248,800
Eng/Survey Fees (+/- %):	15	\$ 188,000
Contingency (+/- %):	25	\$ 323,200
Prop Acquisition:		\$ -
Total:		\$ 1,760,000

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

Client: Flower Mound	Date: 11/4/2020
Project: Water Master Plan Updates: Beyond 5-year CIP	Prepared By: MLD
KHA No.: 061000201	Checked By: KSS

Title: Lusk/Red Rock East-West Connector	Sheet: 11
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Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	\$ 120,000.00	\$ 120,000
2	16" Water Line	15,500	LF	\$ 150.00	\$ 2,325,000
3	Trench Safety	15,450	LF	\$ 2.00	\$ 30,900
4	Seed, Fertilizer and Erosion Control	15,350	LF	\$ 10.00	\$ 153,500
5	Concrete Pavement Repair	70	SY	\$ 110.00	\$ 7,700
6	16" Gate Valve (1 per 3,000 lf of pipe)	6	EA	\$ 12,000.00	\$ 72,000
7	Fire Hydrant Assembly (1 per 2,500 lf of pipe)	7	EA	\$ 7,500.00	\$ 52,500
8	Bore with 30" Steel Casing	50	LF	\$ 750.00	\$ 37,500
9	Connect to Small Diameter Water Line	3	EA	\$ 5,000.00	\$ 15,000
10	Hydrostatic Testing and Disinfection (Long)	1	LS	\$ 20,000.00	\$ 20,000
11	Combination 4" Blow Off Valve & Vault	6	EA	\$ 20,000.00	\$ 60,000
12	Combination 2" Air Release/Vacuum Valve & Vault	6	EA	\$ 10,000.00	\$ 60,000
13	Cathodic Protection	1	LS	\$ 75,000.00	\$ 75,000
Basis for Cost Projection:		Subtotal:			\$ 3,029,100
☒	No Design Completed	Eng/Survey Fees (+/- %): 15			\$ 455,000
☐	Preliminary Design	Contingency (+/- %): 25			\$ 765,900
☐	Final Design	Prop Acquisition:			\$ -
		Total:			\$ 4,250,000

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

Client: Flower Mound	Date: 11/4/2020
Project: Water Master Plan Updates: Beyond 5-year CIP	Prepared By: MLD
KHA No.: 061000201	Checked By: KSS

Title: Scenic Drive Water Line (South of FM 1171 to River Hill Drive)	Sheet: 12
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Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	\$ 40,000.00	\$ 40,000
2	12" Water Line	6,200	LF	\$ 120.00	\$ 744,000
3	Trench Safety	6,200	LF	\$ 2.00	\$ 12,400
4	Seed, Fertilizer and Erosion Control	6,050	LF	\$ 10.00	\$ 60,500
5	Concrete Pavement Repair	83	SY	\$ 110.00	\$ 9,167
6	12" Gate Valve (1 per 500 lf of pipe)	13	EA	\$ 5,000.00	\$ 65,000
7	Fire Hydrant Assembly (1 per 500 lf of pipe)	13	EA	\$ 7,500.00	\$ 97,500
8	Connect to Small Diameter Water Line	4	EA	\$ 5,000.00	\$ 20,000
9	Hydrostatic Testing and Disinfection (Short)	1	LS	\$ 10,000.00	\$ 10,000

Basis for Cost Projection:

- ☒ No Design Completed
☐ Preliminary Design
☐ Final Design

Subtotal:		\$ 1,018,567
Eng/Survey Fees (+/- %):	15	\$ 153,000
Contingency (+/- %):	25	\$ 261,433
Prop Acquisition:		\$ -
Total:		\$ 1,430,000

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

Client: Flower Mound	Date: 11/4/2020
Project: Water Master Plan Updates: Beyond 5-year CIP	Prepared By: MLD
KHA No.: 061000201	Checked By: KSS

Title: Stonecrest Pump Station Phase II	Sheet: 13
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Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	\$ 150,000.00	\$ 150,000
2	Tank Supply Line	175	LF	\$ 400.00	\$ 70,000
3	Tank Discharge Line	170	LF	\$ 450.00	\$ 76,500
4	5 MG Ground Storage Tank	1	EA	\$2,300,000.00	\$ 2,300,000
5	Excavation	4,750	CY	\$ 30.00	\$ 142,500
6	Select Backfill	4,750	CY	\$ 30.00	\$ 142,500
7	Connect to Existing Water Line	2	EA	\$ 10,000.00	\$ 20,000
8	Grading	1	LS	\$ 50,000.00	\$ 50,000
9	Landscaping	1	LS	\$ 25,000.00	\$ 25,000
10	Irrigation	1	LS	\$ 10,000.00	\$ 10,000
11	Horizontal Split Case Pump	1	EA	\$ 300,000.00	\$ 300,000
12	Mechanical Piping	1	LS	\$ 50,000.00	\$ 50,000
13	Control Valve	1	LS	\$ 30,000.00	\$ 30,000
14	Feeder and soft starter to pump	1	LS	\$ 50,000.00	\$ 50,000
15	Yard Valves	1	LS	\$ 275,000.00	\$ 275,000
16	Electrical	1	LS	\$ 150,000.00	\$ 150,000
17	SCADA/Instrumentation	1	LS	\$ 50,000.00	\$ 50,000
Basis for Cost Projection:		Subtotal:			\$ 3,891,500
☒	No Design Completed	Eng/Survey Fees (+/- %): 15			\$ 584,000
☐	Preliminary Design	Contingency (+/- %): 25			\$ 984,500
☐	Final Design	Prop Acquisition:			\$ -
		Total:			\$ 5,460,000

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

Client: Flower Mound	Date: 11/4/2020
Project: Water Master Plan Updates: Beyond 5-year CIP	Prepared By: MLD
KHA No.: 061000201	Checked By: KSS

Title: Stonecrest Pump Station Phase III	Sheet: 14
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Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	\$ 30,000.00	\$ 30,000
2	Horizontal Split Case Pump	1	EA	\$ 300,000.00	\$ 300,000
3	Mechanical Piping	1	LS	\$ 45,000.00	\$ 45,000
4	Control Valve	1	LS	\$ 30,000.00	\$ 30,000
5	Feeder and soft starter to pump	1	LS	\$ 50,000.00	\$ 50,000
6	Electrical	1	LS	\$ 50,000.00	\$ 50,000
7	SCADA/Instrumentation	1	LS	\$ 50,000.00	\$ 50,000
Basis for Cost Projection:		Subtotal:			\$ 555,000
☒	No Design Completed	Eng/Survey Fees (+/- %): 15			\$ 84,000
☐	Preliminary Design	Contingency (+/- %): 25			\$ 151,000
☐	Final Design	Prop Acquisition:			\$ -
		Total:			\$ 790,000

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

Client: Flower Mound	Date: 11/4/2020
Project: Water Master Plan Updates: Beyond 5-year CIP	Prepared By: MLS
KHA No.: 061000201	Checked By: KSS

Title: Timber Creek 20-inch Water Line	Sheet: 15
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Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	\$ 20,000.00	\$ 20,000
2	20" Water Line	550	LF	\$ 210.00	\$ 115,500
3	Trench Safety	470	LF	\$ 2.00	\$ 940
4	Seed, Fertilizer and Erosion Control	390	LF	\$ 10.00	\$ 3,900
5	Concrete Pavement Repair	45	SY	\$ 110.00	\$ 4,950
6	20" Gate Valve with Vault (1 per 3,000 lf of pipe)	1	EA	\$ 35,000.00	\$ 35,000
7	Fire Hydrant Assembly (1 per 2,500 lf of pipe)	1	EA	\$ 7,500.00	\$ 7,500
8	Bore with 36" Steel Casing	80	LF	\$ 850.00	\$ 68,000
9	Connect to Large Diameter Water Line	2	EA	\$ 15,000.00	\$ 30,000
10	Hydrostatic Testing and Disinfection (Short)	1	LS	\$ 10,000.00	\$ 10,000
11	Combination 6" Blow Off Valve & Vault	1	EA	\$ 15,000.00	\$ 15,000
12	Combination 4" Air Release/Vacuum Valve & Vault	2	EA	\$ 20,000.00	\$ 40,000
13	Cathodic Protection	1	LS	\$ 10,000.00	\$ 10,000
Basis for Cost Projection:		Subtotal:			\$ 340,790
☒	No Design Completed	Eng/Survey Fees (+/- %): 15			\$ 52,000
☐	Preliminary Design	Contingency (+/- %): 25			\$ 97,210
☐	Final Design	Prop Acquisition:			\$ -
		Total:			\$ 490,000

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

Client:	Flower Mound	Date:	11/4/2020
Project:	Water Master Plan Updates: Beyond 5-year CIP	Prepared By:	MLD
KHA No.:	061000201	Checked By:	KSS

Title:	West Side Water Lines (East)	Sheet:	16
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Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	\$ 130,000.00	\$ 130,000
2	16" Water Line	12,300	LF	\$ 150.00	\$ 1,845,000
3	20" Water Line	2,700	LF	\$ 210.00	\$ 567,000
4	Trench Safety	15,000	LF	\$ 2.00	\$ 30,000
5	Seed, Fertilizer and Erosion Control	15,000	LF	\$ 10.00	\$ 150,000
7	16" Gate Valve (1 per 3,000 lf of pipe)	7	EA	\$ 12,000.00	\$ 84,000
8	20" Gate Valve with Vault (1 per 3,000 lf of pipe)	2	EA	\$ 35,000.00	\$ 70,000
9	Fire Hydrant Assembly (1 per 500 lf of pipe)	8	EA	\$ 7,500.00	\$ 60,000
10	Connect to Large Diameter Water Line	3	EA	\$ 15,000.00	\$ 45,000
11	Hydrostatic Testing and Disinfection (Long)	1	LS	\$ 20,000.00	\$ 20,000
12	Combination 2" Blow Off Valve & Vault	5	EA	\$ 7,500.00	\$ 37,500
13	Combination 2" Air Release/Vacuum Valve & Vault	5	EA	\$ 10,000.00	\$ 50,000
14	Cathodic Protection	5	EA	\$ 75,000.00	\$ 375,000

Basis for Cost Projection:

- ☒ No Design Completed
☐ Preliminary Design
☐ Final Design

Subtotal:		\$ 3,463,500
Eng/Survey Fees (+/- %):	15	\$ 520,000
Contingency (+/- %):	25	\$ 866,500
Prop Acquisition:		\$ -
Total:		\$ 4,850,000

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

Client: Flower Mound	Date: 11/4/2020
Project: Water Master Plan Updates: Beyond 5-year CIP	Prepared By: MLD
KHA No.: 061000201	Checked By: KSS

Title: West Side Water Lines (South)	Sheet: 17
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Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	\$ 120,000.00	\$ 120,000
2	12" Water Line	19,100	LF	\$ 120.00	\$ 2,292,000
3	Trench Safety	18,800	LF	\$ 2.00	\$ 37,600
4	Seed, Fertilizer and Erosion Control	18,750	LF	\$ 10.00	\$ 187,500
5	Concrete Pavement Repair	28	SY	\$ 110.00	\$ 3,056
6	12" Gate Valve (1 per 500 lf of pipe)	39	EA	\$ 5,000.00	\$ 195,000
7	Fire Hydrant Assembly (1 per 500 lf of pipe)	39	EA	\$ 7,500.00	\$ 292,500
8	Bore with 24" Steel Casing	300	LF	\$ 600.00	\$ 180,000
9	Connect to Small Diameter Water Line	1	EA	\$ 5,000.00	\$ 5,000
10	Connect to Large Diameter Water Line	2	EA	\$ 15,000.00	\$ 30,000
11	Hydrostatic Testing and Disinfection (Long)	1	LS	\$ 20,000.00	\$ 20,000

Basis for Cost Projection:

- ☒ No Design Completed
☐ Preliminary Design
☐ Final Design

Subtotal:		\$ 3,242,656
Eng/Survey Fees (+/- %):	15	\$ 487,000
Contingency (+/- %):	25	\$ 817,344
Prop Acquisition:		\$ -
Total:		\$ 4,550,000

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

Client: Flower Mound	Date: 11/4/2020
Project: Water Master Plan Updates: Beyond 5-year CIP	Prepared By: MLD
KHA No.: 061000201	Checked By: KSS

Title: West Side Water Lines (West)	Sheet: 18
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Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	\$ 50,000.00	\$ 50,000
2	12" Water Line	5,600	LF	\$ 120.00	\$ 672,000
3	Trench Safety	5,300	LF	\$ 2.00	\$ 10,600
4	Seed, Fertilizer and Erosion Control	5,300	LF	\$ 10.00	\$ 53,000
5	12" Gate Valve (1 per 500 lf of pipe)	12	EA	\$ 5,000.00	\$ 60,000
6	Fire Hydrant Assembly (1 per 500 lf of pipe)	12	EA	\$ 7,500.00	\$ 90,000
7	Bore with 24" Steel Casing	300	LF	\$ 600.00	\$ 180,000
8	Connect to Small Diameter Water Line	7	EA	\$ 5,000.00	\$ 35,000
9	Hydrostatic Testing and Disinfection (Short)	1	LS	\$ 10,000.00	\$ 10,000

Basis for Cost Projection:

- ☒ No Design Completed
☐ Preliminary Design
☐ Final Design

Subtotal:		\$ 1,110,600
Eng/Survey Fees (+/- %):	15	\$ 167,000
Contingency (+/- %):	25	\$ 279,400
Prop Acquisition:		\$ -
Total:		\$ 1,560,000

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

Client: Flower Mound	Date: 11/4/2020
Project: Water Master Plan Updates: Beyond 5-year CIP	Prepared By: MLD
KHA No.: 061000201	Checked By: KSS

Title: Pressure Reducing Valves	Sheet: 19
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Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	\$ 20,000.00	\$ 20,000
2	20" Pressure Reducing Valve	1	EA	\$ 30,000.00	\$ 30,000
3	20" Gate Valve	2	EA	\$ 40,000.00	\$ 80,000
4	Connect to Existing 20" Water Line	2	EA	\$ 15,000.00	\$ 30,000
5	Concrete Vault (15'x15')	1	EA	\$ 30,000.00	\$ 30,000
6	8" Bypass Line	1	EA	\$ 10,000.00	\$ 10,000
7	SCADA/Electrical	1	EA	\$ 25,000.00	\$ 25,000
8	16" Pressure Reducing Valve	1	EA	\$ 20,000.00	\$ 20,000
9	16" Gate Valve	2	EA	\$ 12,000.00	\$ 24,000
10	Connect to Existing 16" Water Line	2	EA	\$ 15,000.00	\$ 30,000
11	Concrete Vault (12'x12')	1	EA	\$ 20,000.00	\$ 20,000
12	6" Bypass Line	1	EA	\$ 5,000.00	\$ 5,000
13	SCADA/Electrical	1	EA	\$ 25,000.00	\$ 25,000
20	8" Pressure Reducing Valve	2	EA	\$ 15,000.00	\$ 30,000
21	8" Gate Valve	4	EA	\$ 3,500.00	\$ 14,000
22	Connect to Existing 8" Water Line	4	EA	\$ 5,000.00	\$ 20,000
23	Concrete Vault (10'x10')	2	EA	\$ 15,000.00	\$ 30,000
24	4" Bypass Line	2	EA	\$ 5,000.00	\$ 10,000
25	SCADA/Electrical	2	EA	\$ 25,000.00	\$ 50,000

Basis for Cost Projection:

- ☒ No Design Completed
☐ Preliminary Design
☐ Final Design

Subtotal:		\$ 503,000
Eng/Survey Fees (+/- %):	15	\$ 76,000
Contingency (+/- %):	25	\$ 127,000
Prop Acquisition:		\$ -
Total:		\$ 710,000



PLANNING AND ZONING COMMISSION

AGENDA ITEM NO: 6

REGULAR ITEM

DATE: November 7, 2020

FROM: Brian Waltenburg, P.E., Assistant Director of Engineering

ITEM: **Public Hearing to consider an ordinance amending Section 9.0 Wastewater Plan of the Master Plan (MPA20-0003 – Wastewater Plan) to adopt amendments and additions to the 2009 Wastewater Master Plan Update as a component of the Master Plan.**

I. ITEM SUMMARY

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 A1 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 7, 2020 Town Council Meeting. The impact fee update process will follow the approval of the amendment.

II. APPLICATION ANALYSIS

The purpose of this request is to amend Section 9.0 Wastewater Plan.

III. CORRESPONDENCE

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

IV. ATTACHMENTS

A. Proposed

1. Master Plan Section 9.0 Wastewater Plan Amendment

Technical Memorandum

Prepared for: Town of Flower Mound
Prepared by: Kimley-Horn and Associates, Inc.
Date: November 4, 2020



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.

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 2020. The 2009 Wastewater Master Plan and wastewater model done by KBR was previously updated by Kimley-Horn in 2015. This master plan updated the 2015 model based on current wastewater flows, demographics, future land uses and growth projections. This master plan projects growth and associated infrastructure needs for years 2025, 2030 and buildout.

As part of the model update, Kimley-Horn reconfigured the wastewater model to be directly linked to the Town's land use plan so that projected flows could be generated. In 2015, the Town's gravity sewer basin was modified slightly from the 2009 KBR model. The King tract, a tract which includes twelve single family residential lots, was incorporated into the Town's service area. Additionally, the Lewisville ISD property which already has sewer service and is included in the model was shown within the service boundary. See **Figure 1** (attached).

The Town has three large planning areas with potential future growth: the Lakeside District, the Denton Creek District, and the Prairie Vista District. In the 2015 master plan update, the Lakeside area land use was modified to include some residential in the Campus Commercial areas. Kimley-Horn worked with the Town's planning department to determine the projected wastewater demands for this area. Since that time, significant development has occurred in the Lakeside area with some parcels developing significantly denser than the Campus Commercial initially projected. A more detailed breakdown of the changes in the Lakeside area can be found in Section 3.5.1. The second area, Denton Creek, is currently being developed and will include a mix of residential and non-residential areas. The third area,



Prairie Vista, is planned to consist of mixed use and estate density residential developments. Denton Creek and Prairie Vista will be served by the Trinity River Authority for wastewater service. This report includes a section detailing the Trinity River Authority wastewater service area (Section 3.6). This section was not previously included in the 2009 KBR Wastewater Master Plan.

2.3.1 Calculation of System Loads (2020 Updates)

The previous model used an extended period simulation (EPS) analysis where residential and commercial loads were calculated separately and loaded using diurnal patterns. The 2020 master plan was updated to run in a steady state scenario. In a steady state scenario, the wastewater flow peaks throughout the system simultaneously and the scenario is not dependent on time. As a result, diurnal patterns are not applied to the commercial or residential loadings in a steady state scenario. Furthermore, it was assumed that all land uses within a specific sub-basin will have the same peaking factor based on the Harmon's Formula. Since diurnal patterns are no longer utilized and peaking factors are consistent across land uses, the commercial and residential loads were combined into a single load which reduces the complexity of the model. 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 (2020 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.

3.1.2 Dry Weather Modeling (2020 Updates)

As part of the model update, historical flow data was gathered and evaluated. Data used to generate dry weather flows was obtained from system flow meters, lift station data, and wastewater treatment plant data. Accurate flow meter data was difficult to obtain for a few of the meter stations. It was observed that some meters had inaccurate readings or unavailable data. Accurate meter data will be important for calibrating future models and determining observed flows. It is recommended to replace and/or relocate some of the existing meter stations according to revised sub basins. See Section 3.3 for more information on replacing and relocating meter stations. In determining dry weather flows, flow data was only used for meter stations where accurate data could be obtained. The available historical flow data indicated that the residential wastewater flows utilized in the 2015 model were appropriate; however, some of the non-residential flows were no longer accurate. The following non-



residential land use factors were updated to align with historical data in this model update: mixed use, office, commercial, institutional, hospital, park, utility, and retail.

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

Record information and/or pump curves were not provided by the Town for the following lift stations: Garden Ridge, Emerald Bay, and La Salle

3.2.2 Wet Weather Modeling (2020 Updates)

The 2009 model used historical data to generate a peaking factor for both I/I and domestic wastewater usage for each meter basin. Historical flow meter data was collected for the 2020 wet weather model calibration. However, as discussed in the section above, the available flow meter data was limited. Additionally, observed inflow rates at several of the Town's lift stations did not correlate well with projected modeled flows during wet weather conditions. Due to limited meter data and inconsistent observed flows, it was determined that the peaking factors and I&I factors previously utilized in the model could no longer be relied upon moving forward. As a result, the 2020 wet weather model was changed to utilize an alternate wet weather approach. This approach should allow for the sub-basin peaking factors to continually be calibrated and modified based on actual flow data during future model updates.

In the 2020 model, the Town's wastewater service area was divided into 12 different sub-basins based on existing wastewater infrastructure. See **Figure 2** for sub-basin boundaries. The wastewater sub-basins were divided in a way that will make it simple to collect flow meter data from each basin to calibrate future models. A peaking factor was calculated for each sub-basin using Harmon's Formula. 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:

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

P = Population in thousands

The 2020 model with updated peaking factors was compared to the previous model using KBR's wet weather approach to ensure significant flow discrepancies wouldn't exist. It was



determined that the model results were within a reasonable tolerance and appear to be valid for the Town's system. See **Table 3.2** for sub-basin peaking factors.

Table 3.2. Sub-Basin Peaking Factors

Sub-Basin	Peaking Factor
1	3.58
2	3.15
3	3.33
4	3.00
5	3.44
6	3.05
7	3.61
8	2.83
9	2.97
10	3.13
11	3.20
12	3.32

As discussed above, the 2020 model was run using a steady state analysis. The steady state scenario provides a more conservative analysis than the EPS scenario because it assumes that all flow throughout the wastewater system peaks simultaneously whereas the EPS scenario uses diurnal patterns for the wastewater loadings that do not always peak at the same time. In addition, the lift station operations in the steady state scenario assume that all lift stations are running at the same time. This can be difficult to capture in the EPS scenario as all of the lift stations in the system may not run simultaneously due to the different peaking times throughout the system. This additional conservatism will help ensure the Town's infrastructure is sized to meet future peak flow events.

3.3.1 Metering Stations (2020 Updates)

The Town currently has 10 permanent meter station sites. These sites are located throughout the Town and appear to be evenly distributed, as shown in **Figure 2**. When gathering historical flow meter data for model calibration, it was observed that some meter stations have limited available data or inaccurate flow readings. Meter data from stations 4 and 6 appear to surcharge at a high level on wet weather days and flow meter data was not available for stations 5, 7, and 9 on observed wet weather days. Furthermore, station 5 is no longer located at an applicable location due to the revised sub-basins that were developed as part of the 2020 model update. Because flow meter data was limited and historical peaking factors could



not be determined, the peaking factors developed using Harmon's Formula were not able to calibrated against actual flow data.

Accurate meter data will be important for calibrating future models and determining observed wet weather peaking factors for each sub-basin. 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. See **Figure 2** for sub-basin boundaries as well as existing and proposed meter station locations.

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. According to the Town, the treatment plant had a capacity of 9.5 million gallons a day (MGD) but was recently 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 9 MGD. The Texas Commission on Environmental Quality (TCEQ) requires an expansion on wastewater treatment plants that are at 75% capacity. Since the capacity of the wastewater treatment plant is now 8.7 MGD, 75% capacity is at 6.5 MGD. The model shows that the current average day wastewater flow into the treatment plant is 6.2 MGD. Additionally, field data indicated that the annual average flow ranged between 5.4 to 6.2 MGD depending on where in the plant the flow was measured. A study in the 5-year CIP window is recommended to determine if and when a plant expansion should be performed.

3.5.1 Lakeside Business District (2020 Updates)

The Lakeside Business District includes three land uses: Mixed Use, Campus Industrial and Campus Commercial. The Campus Industrial use is fairly developed, and this type of use historically generates low flows. For the remaining undeveloped portions of Campus Industrial areas, an average daily flow of 1,000 gallons per acre per day was assumed. Prior to the 2015 update, developers began approaching the Town with plans to pursue mixed use developments in this area that exceeded the density projections associated with Campus Commercial. Lakeside DFW was the first significant development to be approved and has since almost fully developed. As a result of this, Kimley-Horn worked with the Town's planning department to determine what wastewater demands should be utilized in this area to account for future 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 for an anticipated mixture of residential and non-residential uses.



Since then, several additional developments including Southgate, Lakeside Village, The Point, and Stryker have gone through the development review process and had their development plans approved with densities greater than that projected by Campus Commercial. These developments have been incorporated into the current model.

It is anticipated that the Town's Southside Lift Station will require pumping improvements in the future to accommodate the projected flows. In addition to these pumping 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.

In addition to the lift station and force main improvements, it appears that portions of the gravity system will need to be upsized to accommodate the future flows.

3.6 TRA Service Area

The Town currently has a contract with the Trinity River Authority (TRA) for wastewater service on the west side of the Town. The areas to be serviced by TRA are the Denton Creek and Prairie Vista areas. Denton Creek is currently being developed and will include a mix of residential and non-residential areas. The third area, Prairie Vista, is planned to consist of mixed use and estate density residential developments.

The TRA wastewater service area is currently not modeled since it does not affect the Town's CIP plan; however, it's important to understand the volume of flow discharged into TRA's system relative to the Town's contracted allowable. As part of the 2015 master plan update and subsequent model updates, the existing and projected buildout wastewater flows in the TRA service area have been calculated using a tracking spreadsheet. Prairie Vista is undeveloped and does not have an existing demand. The buildout wastewater flow from Prairie Vista is 4.26 MGD. The existing and the build out wastewater flows for the Denton Creek area are 1.19 MGD and 8.72 MGD respectively. The total projected buildout wastewater flow from the TRA service area is 12.97 MGD. **Figure 3** shows the TRA service area as well as the existing and buildout flow projections.

From conversations with the Town, there is a potential wastewater agreement with the Town of Argyle (Argyle). Argyle's wastewater will route through the TRA service area and ultimately will be served by TRA. Argyle is expected to contribute around 0.4 MGD through the system. The estimated buildout flows for Prairie Vista and Denton Creek include this contribution from Argyle.



4.1 Population Projections

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 Town's current land use plan.

4.2.A Land Use

Kimley-Horn worked with the Town's planning department to determine projected growths for the years 2025, 2030 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 (2025 Scenario)

1. Lift Station Improvements and Decommissioning Phase III

This project will include improvements to Kipling and Park Bend Lift Stations to add additional capacity.

Project Cost	\$980,000
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2. Oak Street Lift Station and Force Main Phase IV

This project will include replacing one of the existing small 3400 gpm, 77 hp submersible pumps with a large 7000 gpm, 215 hp pump with variable frequency drive, upgrading the lift station's mechanical piping, and installing control valves for three large pumps.

Project Cost	\$3,400,000
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3. 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	\$2,020,000
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4. 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 \$680,000

5. Southside Gravity Main Improvements

Approximately 2,970 LF of 15-inch wastewater main, and 620 LF 12-inch wastewater main is proposed to provide adequate capacity for density increases in the Lakeside area.

Project Cost \$1,570,000

6. Upper Timber Interceptor (College Parkway to Pecan Drive)

Approximately 1,240 LF of 15-inch wastewater main is proposed to replace the existing 12-inch wastewater line along Long Prairie Road south of College Parkway.

Project Cost \$480,000

7. Wastewater Treatment Plant Master Plan

This project is a capacity study on the Town's existing wastewater treatment plant to accommodate higher average influents than the current capacity of 8.7 MG.

Project Cost \$130,000

4.4 10-year CIP (2030 Scenario)

1. Riverwalk Collector (Morris Road to Windsor Drive)

Approximately 1,430 LF of 15-inch wastewater main is proposed running north and east from between FM 2499 and Morris Road to Morris Road, north of the intersection with Eaton. Inflow and infiltration monitoring of the existing line is recommended prior to construction.

Project Cost \$530,000

4.5 Buildout CIP

1. Upper Timber Interceptor (Morris Road to 1 Place Lane)

Approximately 3,700 LF of 30-inch wastewater main is proposed to replace the existing 27-inch wastewater line from Morris Road to 1 Place Lane.

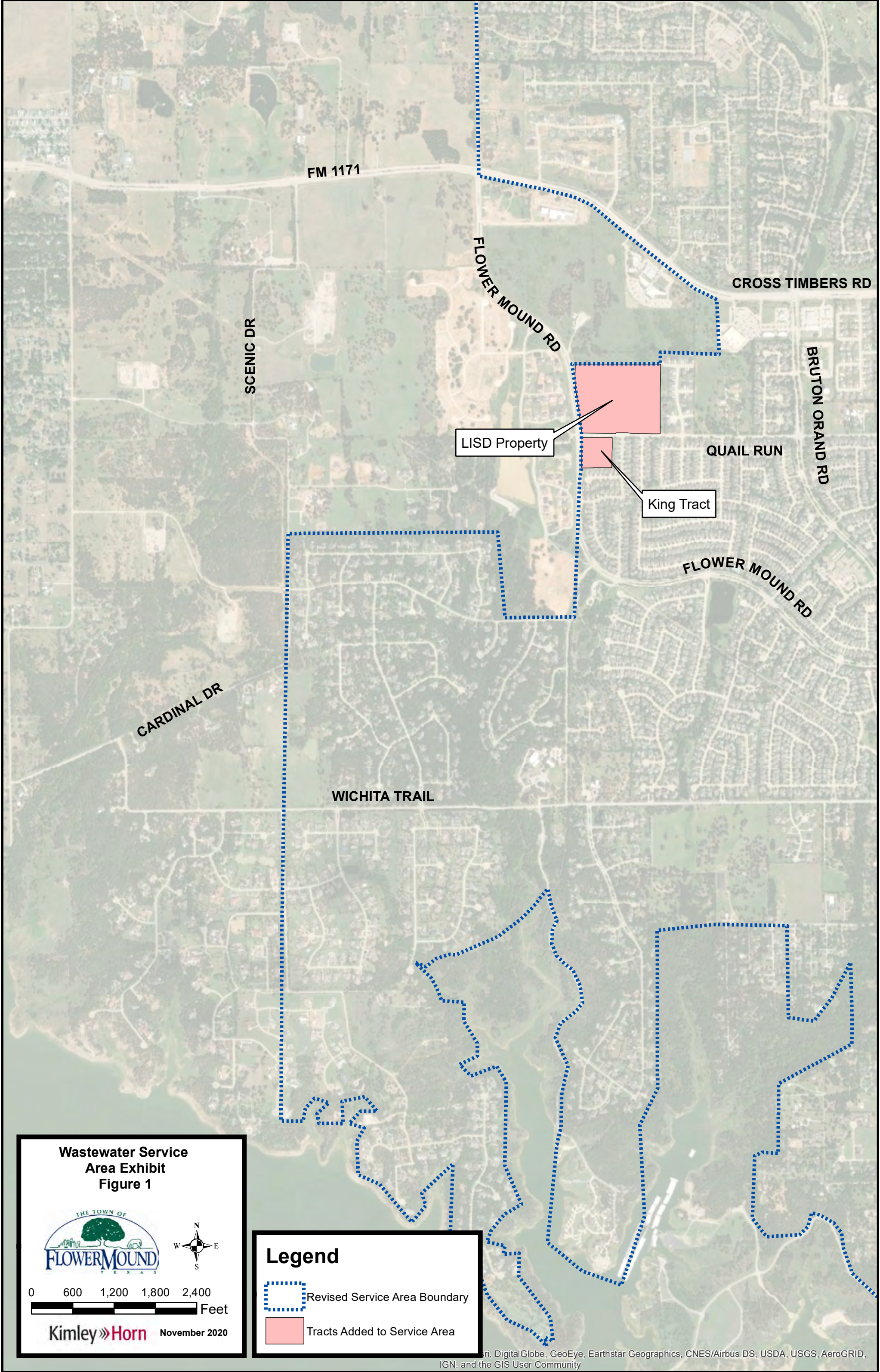
Project Cost \$2,170,000

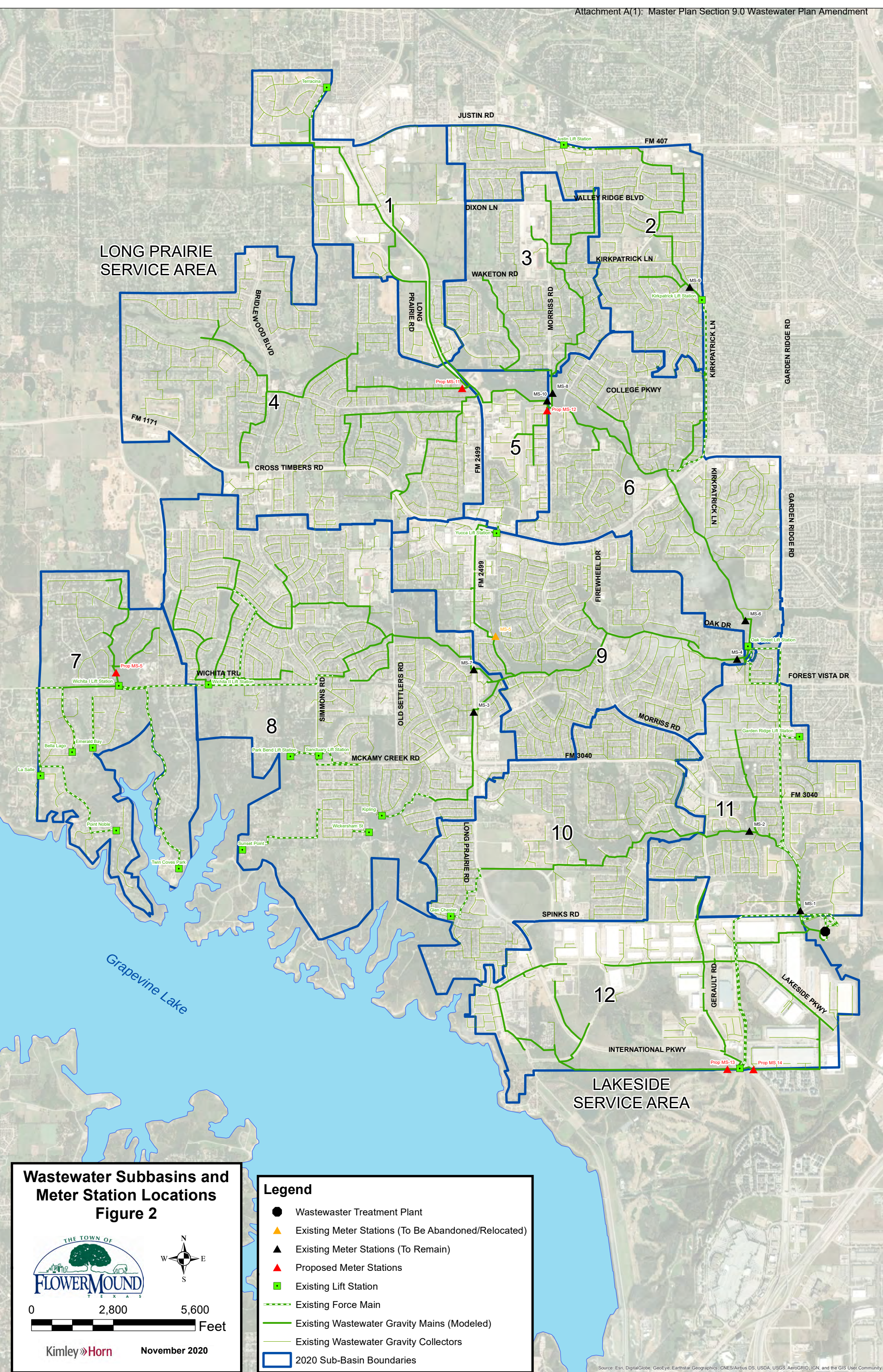
**2. Wastewater Treatment Plant Expansion**

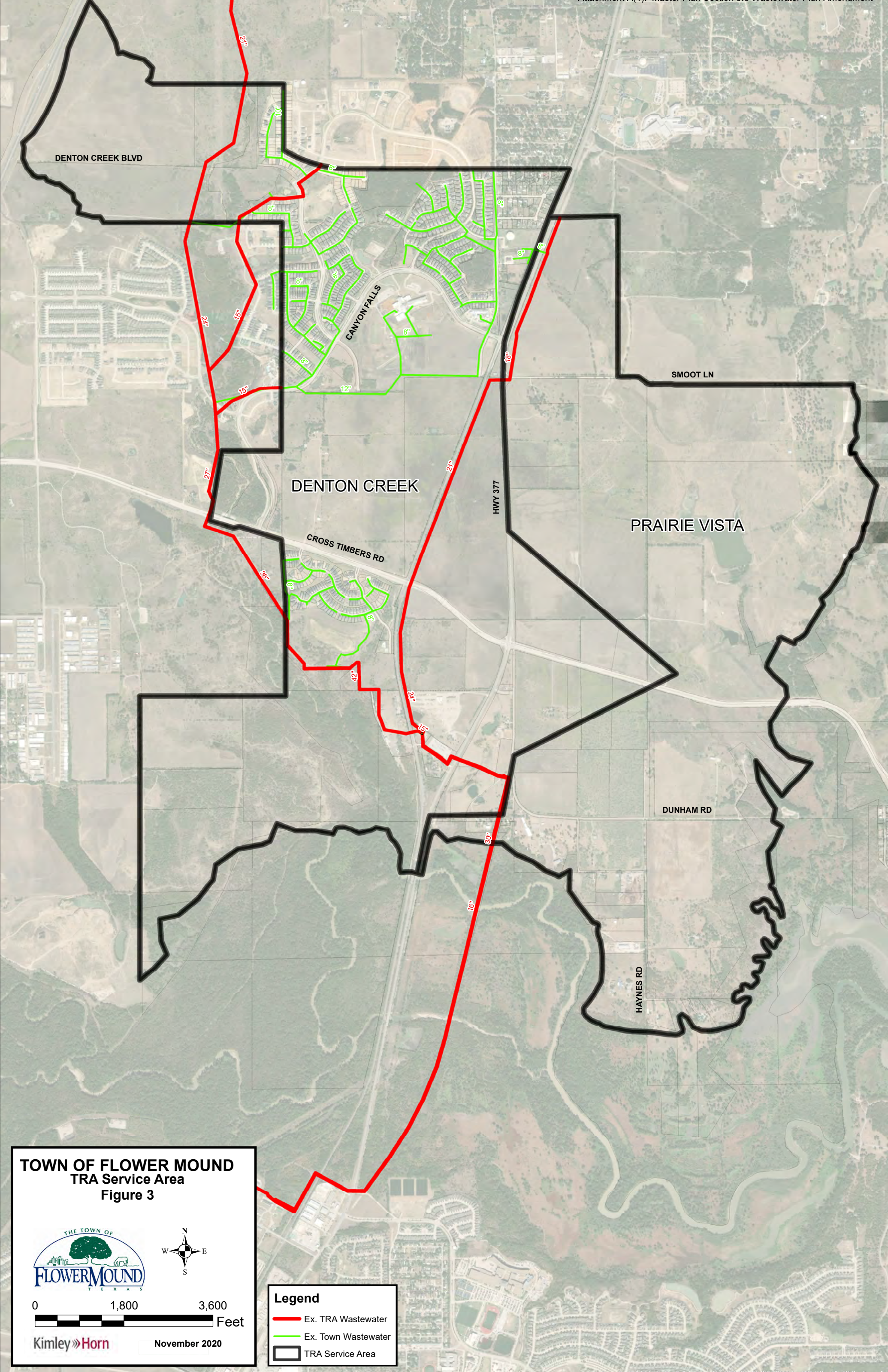
Upgrade the Town's existing wastewater treatment plant to accommodate higher average influents than the current capacity of 8.7 MG. The Wastewater Treatment Plant Capacity Study recommended in the 5-year CIP window will further determine the necessity of this project.

Project Cost

TBD







TOWN OF FLOWER MOUND

TRA Service Area

Figure 3



01,8003,600

Feet

Kimley»Horn

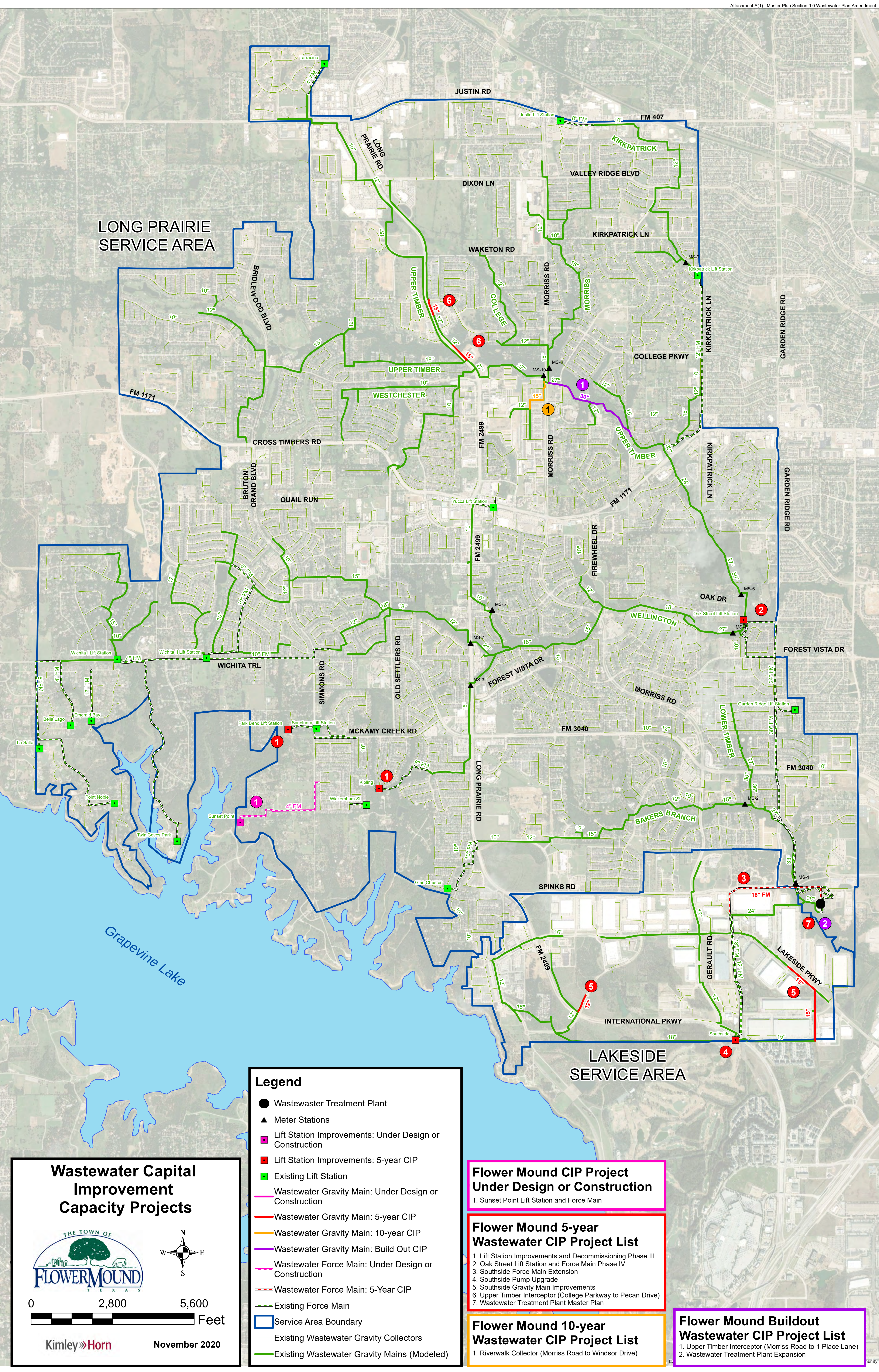
November 2020

Legend

Ex. TRA Wastewater

Ex. Town Wastewater

TRA Service Area



LONG PRAIRIE
SERVICE AREA

LAKESIDE
SERVICE AREA

Grapevine Lake

Legend

●

Wastewater Treatment Plant

▲

Meter Stations

■

Lift Station Improvements: Under Design or Construction

■

Lift Station Improvements: 5-year CIP

■

Existing Lift Station

—

Wastewater Gravity Main: Under Design or Construction

—

Wastewater Gravity Main: 5-year CIP

—

Wastewater Gravity Main: 10-year CIP

—

Wastewater Gravity Main: Build Out CIP

—

Wastewater Force Main: Under Design or Construction

—

Wastewater Force Main: 5-Year CIP

—

Existing Force Main

—

Service Area Boundary

—

Existing Wastewater Gravity Collectors

—

Existing Wastewater Gravity Mains (Modeled)

Flower Mound CIP Project Under Design or Construction
1. Sunset Point Lift Station and Force Main

Flower Mound 5-year Wastewater CIP Project List
1. Lift Station Improvements and Decommissioning Phase III
2. Oak Street Lift Station and Force Main Phase IV
3. Southside Force Main Extension
4. Southside Pump Upgrade
5. Southside Gravity Main Improvements
6. Upper Timber Interceptor (College Parkway to Pecan Drive)
7. Wastewater Treatment Plant Master Plan

Flower Mound 10-year Wastewater CIP Project List
1. Riverwalk Collector (Morriess Road to Windsor Drive)

Flower Mound Buildout Wastewater CIP Project List
1. Upper Timber Interceptor (Morriess Road to 1 Place Lane)
2. Wastewater Treatment Plant Expansion

Wastewater Capital Improvement Capacity Projects

THE TOWN OF
FLOWERMOUND
TEXAS

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S

02,8005,600
Feet

Kimley»Horn

November 2020

Town 5-year Wastewater CIP Estimate OPC Summary

Proj. #	Description	Total Project Cost
1	Lift Station Improvements and Decommissioning Phase III	\$ 980,000
2	Oak Street Lift Station and Force Main Phase IV	\$ 3,400,000
3	Southside Force Main Extension	\$ 2,020,000
4	Southside Pump Upgrade	\$ 680,000
5	Southside Gravity Main Improvements	\$ 1,570,000
6	Upper Timber Interceptor (College Parkway to Pecan Drive)	\$ 480,000
7	Wastewater Treatment Plant Master Plan	\$ 130,000
	Total	\$ 7,670,000

Town 10-year Wastewater CIP Estimate OPC Summary

Proj. #	Description	Total Project Cost
1	Riverwalk Collector (Morris Road to Windsor Drive)	\$ 530,000
	Total	\$ 530,000

Town Build Out Wastewater CIP Estimate OPC Summary

Proj. #	Description	Total Project Cost
1	Upper Timber Interceptor (Morris Road to 1 Place Lane)	\$ 2,170,000
2	Wastewater Treatment Plant Expansion	TBD
	Total	TBD

5-year CIP Total	\$	7,670,000
Beyond 5-year CIP Total (Not including future WWTP expansion)	\$	2,700,000
Grand Total (Not including future WWTP expansion)	\$	10,370,000

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

Client:	Flower Mound	Date:	8/10/2020
Project:	Wastewater Master Plan Updates: 5-year CIP	Prepared By:	JDJ
KHA No.:	061000201	Checked By:	KSS

Title:	Lift Station Improvements and Decommissioning Phase III	Sheet:	1
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Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Construction Costs	1	LS	\$ 980,000.00	\$ 980,000

Basis for Cost Projection:**Total:** \$ 980,000

- ☒ No Design Completed
- ☐ Preliminary Design
- ☐ Final Design

Kimley-Horn & Associates, Inc.

Opinion of Probable Construction Cost

Client:	Flower Mound	Date:	8/10/2020
Project:	Wastewater Master Plan Updates: 5-year CIP	Prepared By:	KSS
KHA No.:	061000201	Checked By:	KSS

Title:	Oak Street Lift Station and Force Main Phase IV	Sheet:	2
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Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization Bonds and Insurance	1	LS	\$ 90,000.00	\$ 90,000
	MECHANICAL				
2	7,000 gpm Submersible Pump and 215 HP Motor	1	EA	\$ 230,000.00	\$ 230,000
3	20"x12" Stainless Steel Reducing Elbow	3	EA	\$ 15,000.00	\$ 45,000
4	20" Stainless Steel Mechanical Piping	45	LF	\$ 1,000.00	\$ 45,000
5	20" Check Valve with Oil Cushion	3	EA	\$ 25,000.00	\$ 75,000
6	20" Harnessed Coupling	6	EA	\$ 5,000.00	\$ 30,000
7	20" Isolation Valve	3	EA	\$ 20,000.00	\$ 60,000
8	2" Air Release/Vacuum Valve	3	EA	\$ 5,000.00	\$ 15,000
9	Stainless Steel Pump Guide Rails	3	EA	\$ 10,000.00	\$ 30,000
10	Relocation of Existing 215 HP Pumps	2	EA	\$ 40,000.00	\$ 80,000
11	Remove and Dispose Existing Piping/Valves/Pump	1	LS	\$ 30,000.00	\$ 30,000
	YARD PIPING				
12	Bypass Pumping	1	LS	\$ 350,000.00	\$ 350,000
13	30" Discharge Header	60	LF	\$ 1,000.00	\$ 60,000
14	24" Gravity Line	30	LF	\$ 700.00	\$ 21,000
15	30" Gravity Line	30	LF	\$ 900.00	\$ 27,000
16	Connect to Existing Force Main	1	EA	\$ 10,000.00	\$ 10,000
17	Connect to Existing Gravity Main	2	EA	\$ 10,000.00	\$ 20,000
	SITE				
18	Splitter Box	1	EA	\$ 150,000.00	\$ 150,000
19	Grading, Erosion Control, Site Restoration	1	LS	\$ 50,000.00	\$ 50,000
20	Demolish Existing Electrical Building	1	LS	\$ 25,000.00	\$ 25,000
21	Move Equipment to New Electrical Building	1	LS	\$ 50,000.00	\$ 50,000
22	Remove Existing Hoist	1	LS	\$ 5,000.00	\$ 5,000
23	Install 5 Ton Bridge Crane	1	LS	\$ 75,000.00	\$ 75,000
24	Driveway Improvements	1	LS	\$ 15,000.00	\$ 15,000
	ELECTRICAL/SCADA				
20	Misc Electrical/SCADA/HVAC	1	LS	\$ 100,000.00	\$ 100,000
21	Motor Control Center	1	LS	\$ 100,000.00	\$ 100,000
22	Variable Frequency Drive	1	EA	\$ 75,000.00	\$ 75,000
23	400 KW Genset	1	EA	\$ 175,000.00	\$ 175,000
24	Automatic Transfer Switch and Switchgear Mods	1	LS	\$ 100,000.00	\$ 100,000
25	Temporary Power/Controls	1	LS	\$ 100,000.00	\$ 100,000
	STRUCTURAL				
26	New Electrical Building and Foundation	600	SF	\$ 300.00	\$ 180,000
Basis for Cost Projection:		Subtotal:			\$ 2,418,000
☒	No Design Completed	Eng/Survey Fees (+/- %):			\$ 363,000
☐	Preliminary Design	Contingency (+/- %):			\$ 619,000
☐	Final Design	Prop Acquisition:			\$ -
		Total			\$ 3,400,000

Kimley-Horn & Associates, Inc.

Opinion of Probable Construction Cost

Client:	Flower Mound	Date:	8/10/2020
Project:	Wastewater Master Plan Updates: 5-year CIP	Prepared By:	JDJ
KHA No.:	061000201	Checked By:	KSS

Title:	Southside Force Main Extension	Sheet:	3
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Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization Bonds and Insurance	1	LS	\$50,000.00	\$50,000
2	18" Ductile Iron Force Main	4,600	LF	\$200.00	\$920,000
3	Bore with 36" Steel Casing	400	LF	\$800.00	\$320,000
4	Connect to Headwork	1	EA	\$5,000.00	\$5,000
5	Trench Safety	4,600	LF	\$2.00	\$9,200
6	Seeding, Fertilizer and Erosion Control	4,600	EA	\$5.00	\$23,000
7	Air Release/Vacuum Valve	2	EA	\$20,000.00	\$40,000
8	Connect to Existing 18" Force Main	1	EA	\$15,000.00	\$15,000
9	Cathodic Protection	1	EA	\$55,000.00	\$55,000
Basis for Cost Projection:		Subtotal:			\$ 1,437,200
☒	No Design Completed	Eng/Survey Fees (+/- %): 15			\$ 216,000
☐	Preliminary Design	Contingency (+/- %): 25			\$ 366,800
☐	Final Design	Prop Acquisition:			\$ -
		Total:			\$ 2,020,000

Kimley-Horn & Associates, Inc.

Opinion of Probable Construction Cost

Client:	Flower Mound	Date:	7/21/2020
Project:	Wastewater Master Plan Updates: 5-year CIP	Prepared By:	KSS
KHA No.:	061000201	Checked By:	KSS

Title:	Southside Pump Upgrade	Sheet:	4
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Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization Bonds and Insurance	1	LS	\$20,000.00	\$20,000
2	1,500 GPM Submersible Pump and 85 HP Motor	2	EA	\$120,000.00	\$240,000
3	Electrical / SCADA	1	LS	\$12,500.00	\$12,500
4	Mechanical Piping	1	LS	\$50,000.00	\$50,000
5	Variable Frequency Drives	2	EA	\$65,000.00	\$130,000
6	Remove Existing Pumps	2	EA	\$10,000.00	\$20,000

Basis for Cost Projection:

- ☒ No Design Completed
☐ Preliminary Design
☐ Final Design

Subtotal:		\$	472,500
Eng/Survey Fees (+/- %):	15	\$	71,000
Contingency (+/- %):	25	\$	136,500
Prop Acquisition:		\$	-
Total:		\$	680,000

Kimley-Horn & Associates, Inc.

Opinion of Probable Construction Cost

Client:	Flower Mound	Date:	8/10/2020
Project:	Wastewater Master Plan Updates: 5-year CIP	Prepared By:	JDJ
KHA No.:	061000201	Checked By:	KSS

Title:	Southside Gravity Main Improvements	Sheet:	5
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Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization Bonds and Insurance	1	LS	\$40,000.00	\$40,000
	Eastern Improvements				
2	15" Wastewater Main	2,970	LF	\$ 155.00	\$460,350
3	4' Manhole (8" - 18" Main)	9	EA	\$ 10,000.00	\$90,000
4	Concrete Pavement Repair	267	SY	\$ 110.00	\$29,333
5	Bore with 36" Steel Casing	380	LF	\$ 850.00	\$323,000
6	Seeding, Fertilizer & Erosion Control	2,390	LF	\$ 10.00	\$23,900
7	Trench Safety	2,590	LF	\$ 2.00	\$5,180
8	TV Inspection	2,970	LF	\$ 2.00	\$5,940
9	Vacuum Testing of Sanitary Sewer Manholes	11	EA	\$ 500.00	\$5,500
10	Connect to Existing Manhole	2	EA	\$ 9,000.00	\$18,000
	<i>Subtotal</i>				<i>\$961,203</i>
	Western Improvements				
9	12" Wastewater Main	620	LF	\$ 130.00	\$80,600
10	4' Manhole (8" - 18" Main)	2	EA	\$ 10,000.00	\$20,000
11	Seeding, Fertilizer & Erosion Control	620	LF	\$ 10.00	\$6,200
12	Trench Safety	620	LF	\$ 2.00	\$1,240
13	TV Inspection	620	LF	\$ 2.00	\$1,240
14	Vacuum Testing of Sanitary Sewer Manholes	4	EA	\$ 500.00	\$2,000
15	Connect to Existing Manhole	2	EA	\$ 9,000.00	\$18,000
	<i>Subtotal</i>				<i>\$111,280</i>
Basis for Cost Projection:		Subtotal:			\$ 1,112,483
☒	No Design Completed	Eng/Survey Fees (+/- %):			15 \$ 167,000
☐	Preliminary Design	Contingency (+/- %):			25 \$ 290,517
☐	Final Design	Prop Acquisition:			\$ -
		Total:			\$ 1,570,000

Kimley-Horn & Associates, Inc.

Opinion of Probable Construction Cost

Client: Flower Mound	Date: 8/10/2020
Project: Wastewater Master Plan Updates: 5-year CIP	Prepared By: JDJ
KHA No.: 061000201	Checked By: KSS

Title: Upper Timber Interceptor (College Parkway to Pecan Drive)	Sheet: 6
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Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	\$ 10,000.00	\$ 10,000.00
2	15" Wastewater Main	1,240	LF	\$ 155.00	\$ 192,200
3	4' Manhole (8" - 18" Main)	5	EA	\$ 10,000.00	\$ 50,000
4	Seeding, Fertilizer & Erosion Control	1,180	LF	\$ 10.00	\$ 11,800
5	Concrete Pavement Repair	5	SY	\$ 110.00	\$ 550
6	Bore with 30" Steel Casing	60	LF	\$ 750.00	\$ 45,000
7	Trench Safety	1,180	LF	\$ 2.00	\$ 2,360
8	Vacuum Testing of Sanitary Sewer Manholes	7	EA	\$ 500.00	\$ 3,500
9	TV Inspection	1,240	LF	\$ 2.00	\$ 2,480
10	Connect to Existing Manhole	2	EA	\$ 9,000.00	\$ 18,000
Basis for Cost Projection:		Subtotal:			\$ 335,890
☒	No Design Completed	Eng/Survey Fees (+/- %): 15			\$ 51,000
☐	Preliminary Design	Contingency (+/- %): 25			\$ 93,110
☐	Final Design	Prop Acquisition:			\$ -
		Total:			\$ 480,000

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

Client:	Flower Mound	Date:	8/10/2020
Project:	Wastewater Master Plan Updates: Buildout CIP	Prepared By:	JDJ
KHA No.:	061000201	Checked By:	KSS

Title:	Wastewater Treatment Plant Master Plan	Sheet:	7
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Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Construction Costs	1	LS	\$ 130,000.00	\$ 130,000
Basis for Cost Projection:				Total:	\$ 130,000

- ☒ No Design Completed
☐ Preliminary Design
☒ Final Design

Kimley-Horn & Associates, Inc.

Opinion of Probable Construction Cost

Client:	Flower Mound	Date:	8/10/2020
Project:	Wastewater Master Plan Updates: 10-year CIP	Prepared By:	JDJ
KHA No.:	061000201	Checked By:	KSS

Title:	Riverwalk Collector (Morris Road to Windsor Drive)	Sheet:	1
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Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	\$ 10,000.00	\$ 10,000.00
2	15" Wastewater Main	1,430	LF	\$ 155.00	\$ 221,650
3	4' Manhole (8" - 18" Main)	6	EA	\$ 10,000.00	\$ 60,000
4	Seeding, Fertilizer & Erosion Control	800	LF	\$ 10.00	\$ 8,000
5	Concrete Pavement Repair	420	SY	\$ 110.00	\$ 46,200
6	Trench Safety	1,430	LF	\$ 2.00	\$ 2,860
7	TV Inspection	1,430	LF	\$ 2.00	\$ 2,860
8	Vacuum Testing of Sanitary Sewer Manholes	8	EA	\$ 500.00	\$ 4,000
9	Connect to Existing Manhole	2	EA	\$ 9,000.00	\$ 18,000
Basis for Cost Projection:					
☒	No Design Completed	Subtotal:			\$ 373,570
☐	Preliminary Design	Eng/Survey Fees (+/- %): 15			\$ 57,000
☐	Final Design	Contingency (+/- %): 25			\$ 99,430
		Prop Acquisition:			\$ -
		Total:			\$ 530,000

Kimley-Horn & Associates, Inc.

Opinion of Probable Construction Cost

Client: Flower Mound	Date: 8/10/2020
Project: Wastewater Master Plan Updates: Build Out CIP	Prepared By: JDJ
KHA No.: 061000201	Checked By: KSS

Title: Upper Timber Interceptor (Morriss Road to 1 Place Lane)	Sheet: 1
---	-----------------

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS	\$ 70,000.00	\$ 70,000.00
2	30" Wastewater Main	3,700	LF	\$ 300.00	\$ 1,110,000
3	5' Manhole (21" - 30" Main)	13	EA	\$ 17,500.00	\$ 227,500
4	Seeding, Fertilizer & Erosion Control	3,580	LF	\$ 10.00	\$ 35,800
5	Concrete Pavement Repair	10	SY	\$ 110.00	\$ 1,100
6	Bore with 48" Steel Casing	120	LF	\$ 1,200.00	\$ 144,000
7	Trench Safety	3,580	LF	\$ 2.00	\$ 7,160
8	Vacuum Testing of Sanitary Sewer Manholes	13	EA	\$ 500.00	\$ 6,500
9	TV Inspection	3,700	LF	\$ 2.00	\$ 7,400

Basis for Cost Projection:

- ☒ No Design Completed
☐ Preliminary Design
☐ Final Design

Subtotal:		\$ 1,539,460
Eng/Survey Fees (+/- %):	15	\$ 231,000
Contingency (+/- %):	25	\$ 399,540
Prop Acquisition:		\$ -
Total:		\$ 2,170,000

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

Client:	Flower Mound	Date:	8/10/2020
Project:	Wastewater Master Plan Updates: Build-Out CIP	Prepared By:	JDJ
KHA No.:	061000201	Checked By:	KSS

Title:	Wastewater Treatment Plant Expansion	Sheet:	2
---------------	---	---------------	----------

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Construction Costs	1	LS	TBD	TBD
Basis for Cost Projection:				Total:	TBD

- ☒ No Design Completed
☐ Preliminary Design
☐ Final Design



PLANNING AND ZONING COMMISSION

AGENDA ITEM NO: 7

REGULAR ITEM

DATE: November 9, 2020

FROM: Chuck Russell, Principal Planner

ITEM: Consider a request for a Development Plan (DP20-0004 – Grace Park) to develop a residential subdivision, with an exception to Section IV.C.5. of the Town's Engineering Design Criteria requirement to provide a wet retention pond, and an exception to the access management policy and criteria, regarding driveway spacing, contained in the Town's Engineering Design Criteria and Construction Standards adopted through Chapter 32 of the Code of Ordinances. The property is generally located south of Cross Timbers Road and east of Regency Park Court.

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, which is scheduled for December 7, 2020.

II. APPLICATION ANALYSIS

A development plan is intended to show all the planning factors necessary to determine whether the proposed plan for land development is satisfactory from the standpoint of public health, safety and welfare and is in accordance with the general guidance provided by the comprehensive master plan. The purpose of this application is to obtain design approval for 20 buildable, single-family lots with a minimum lot size of 15,000 square feet. The site contains an approximately 9.796-acre parcel of land.

As part of the request, the applicant has asked for two exceptions to the Code of Ordinances, (see Section III below for additional information).

Exceptions:

- **Detention Pond:** The applicant is proposing to provide a dry detention pond in lieu of the required wet retention pond.
- **Driveway Spacing:** The proposed access point on Cross Timbers Road does not comply with the Town's required distance spacing from two existing driveways.

The development will provide for two points of ingress/egress; one along the south line of Cross timbers Road and one along the east side of the site connecting to an existing

stub out at Ida Lane, which will provide connectivity to the Flower Mound Woods subdivision. In addition to the proposed 20 buildable lots, the development plan depicts three open space lots, including a 25-foot landscape buffer along Cross Timbers Road. The proposed development is in compliance with the Town's landscaping standards. There are three specimen trees located on the site. All three specimen trees are proposed to be saved.

On September 21, 2020, the Town Council approved a request on the subject property for rezoning (Z20-0006 – Grace Park Residential) from Agricultural District (A) to Single-Family District-15 (SF-15). The proposed development plan is in compliance with the existing zoning as well as the Town's Master Plan designation for Low Density Residential uses.

III. EXCEPTIONS

A. Detention Pond

Section IV.C.5. of the Town's Engineering Design Criteria requires the construction of a wet retention pond for the proposed development. The applicant is requesting to provide a dry detention pond instead, located on Lot 6X of the attached development plan.

B. Driveway Spacing

The Town's Engineering Design Criteria and Construction Standards adopted through Chapter 32 of the Code of Ordinances require driveway openings to be spaced a minimum of 360 feet apart on Major Arterials such as Cross Timbers Road. The applicant is proposing a driveway connection on Cross Timbers Road that will be approximately 238 feet from the nearest driveway to the west and approximately 144 feet from the existing driveway to the east.

IV. PARKS BOARD

On March 5, 2020, the Parks Board voted to recommend acceptance of cash, in the amount of \$101,422.00, in lieu of the otherwise required Park Land Dedication, and Park Development Fees in the amount of \$37,476.00. The March 5, 2020 Parks Board meeting can be viewed here:

<https://flowermoundtx.swagit.com/play/03052020-969/22/>

This recommendation was based on the 27 lots proposed at the time. The number of lots has since been reduced to 20, therefore the new figures for Town Council consideration are cash, in the amount of \$74,875.58, be accepted in lieu of the otherwise required Park Land Dedication, and Park Development Fees in the amount of \$27,760.00.

IV. ATTACHMENTS

A. Background Information

1. Vicinity Map
2. Letter of Intent

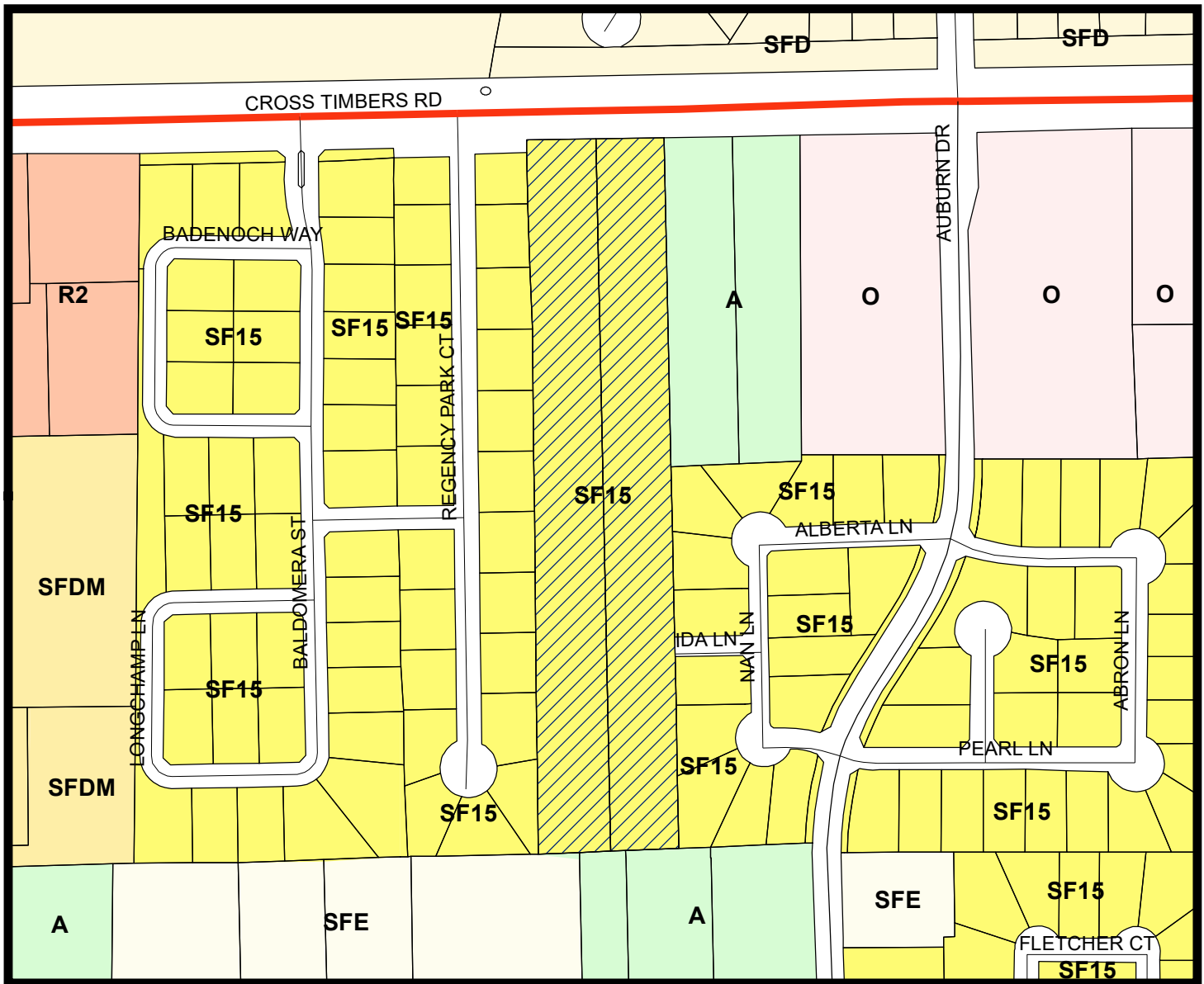
B. Application Details

1. Development Plan Exhibit

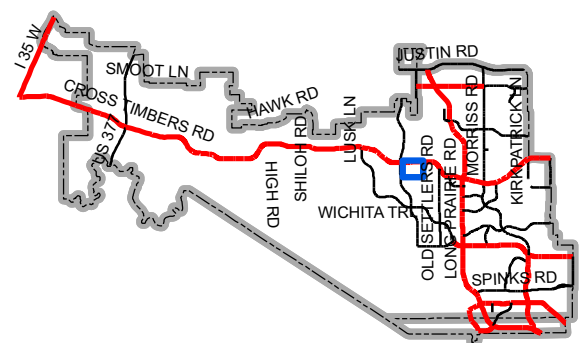
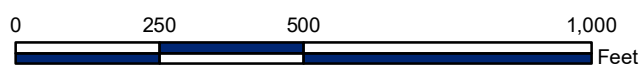
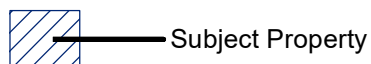
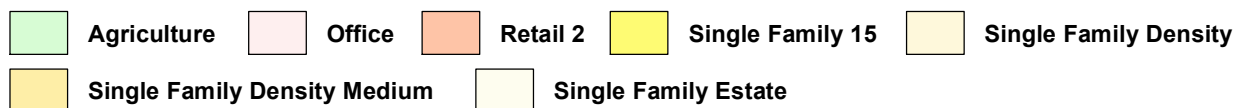


Vicinity Map

Reference Project: DP20-0004



LEGEND



Map Location



Rembert Enterprises, Inc.

3625 Bonanza Lane Flower Mound, TX 75022

September 22, 2020

Planning Division
2121 Cross Timbers Road
Flower Mound, TX 75028

RE: Grace Park (Community)
Flower Mound, Texas

To: Planning Director (Lexin Murphy)

Please accept this as our formal Letter of Intent to describe the requested Development Plan.

In October of 2019, we began the process of planning this +/- 9.796 acre tract of land near the Intersection of Regency Park Ct. and FM 1171 (also known as Cross Timbers Road, a public roadway), by meeting with the Town's Development Review Committee (DRC). This tract of land is surrounded by two (2) Low-Density Residential communities.

The current zoning for the property is SF-15, low-density residential. The proposed use is consistent with the Master Plan, zoning and density of the surrounding subdivisions.

G. Exceptions. The following exceptions to the Town's Ordinances shall apply to this Development Plan

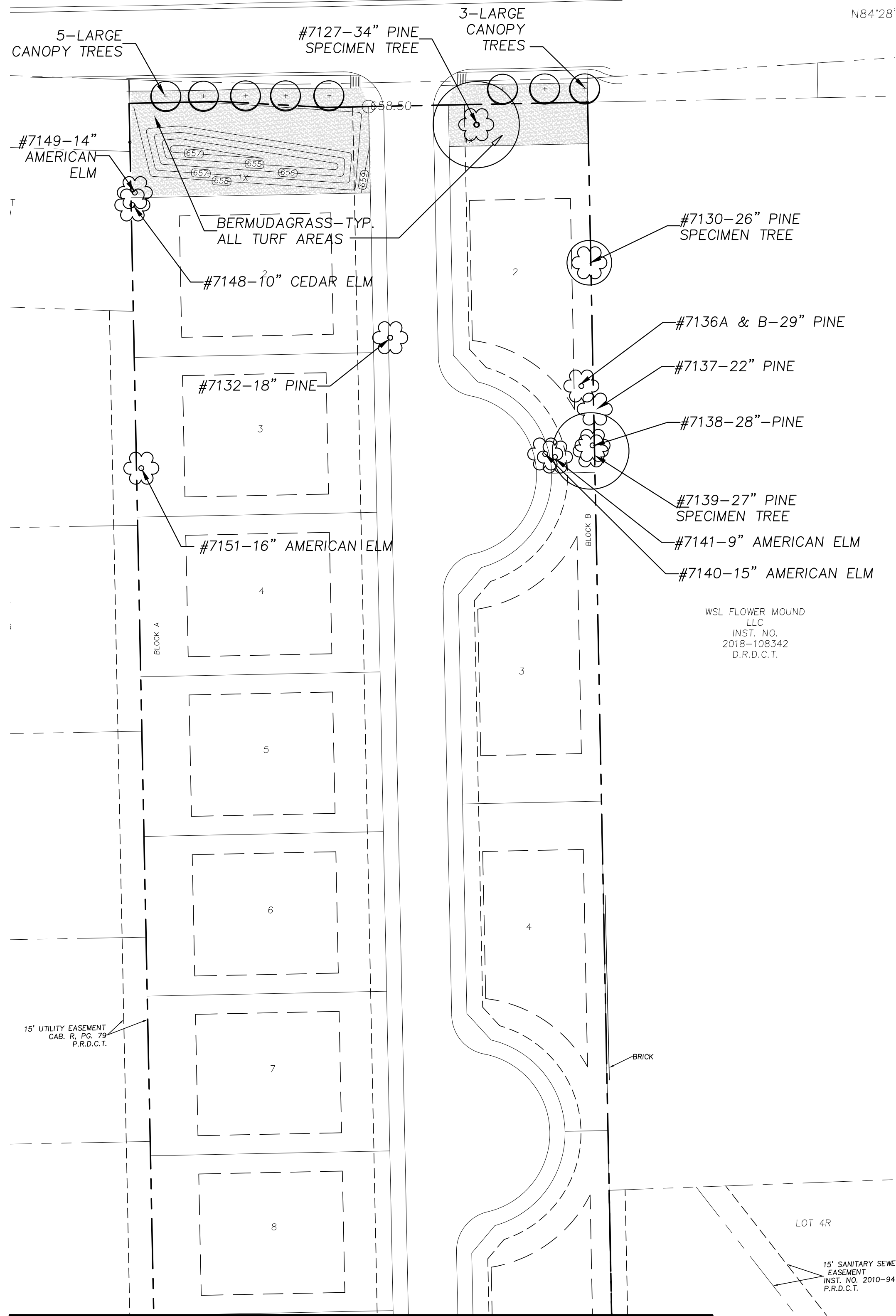
1. An exception to Section IV.C.5. of the Town's Engineering Design Criteria requirement to provide a wet retention pond. A dry detention area is provided on lot 6x Block B
2. An exception to the access management policy and criteria regarding driveway spacing contained in the Town's Engineering Design Criteria and Construction Standards adopted through Chapter 32 of the Code of Ordinances.

We appreciate your consideration of our project and should you have any questions, please feel free to contact us.

Sincerely,

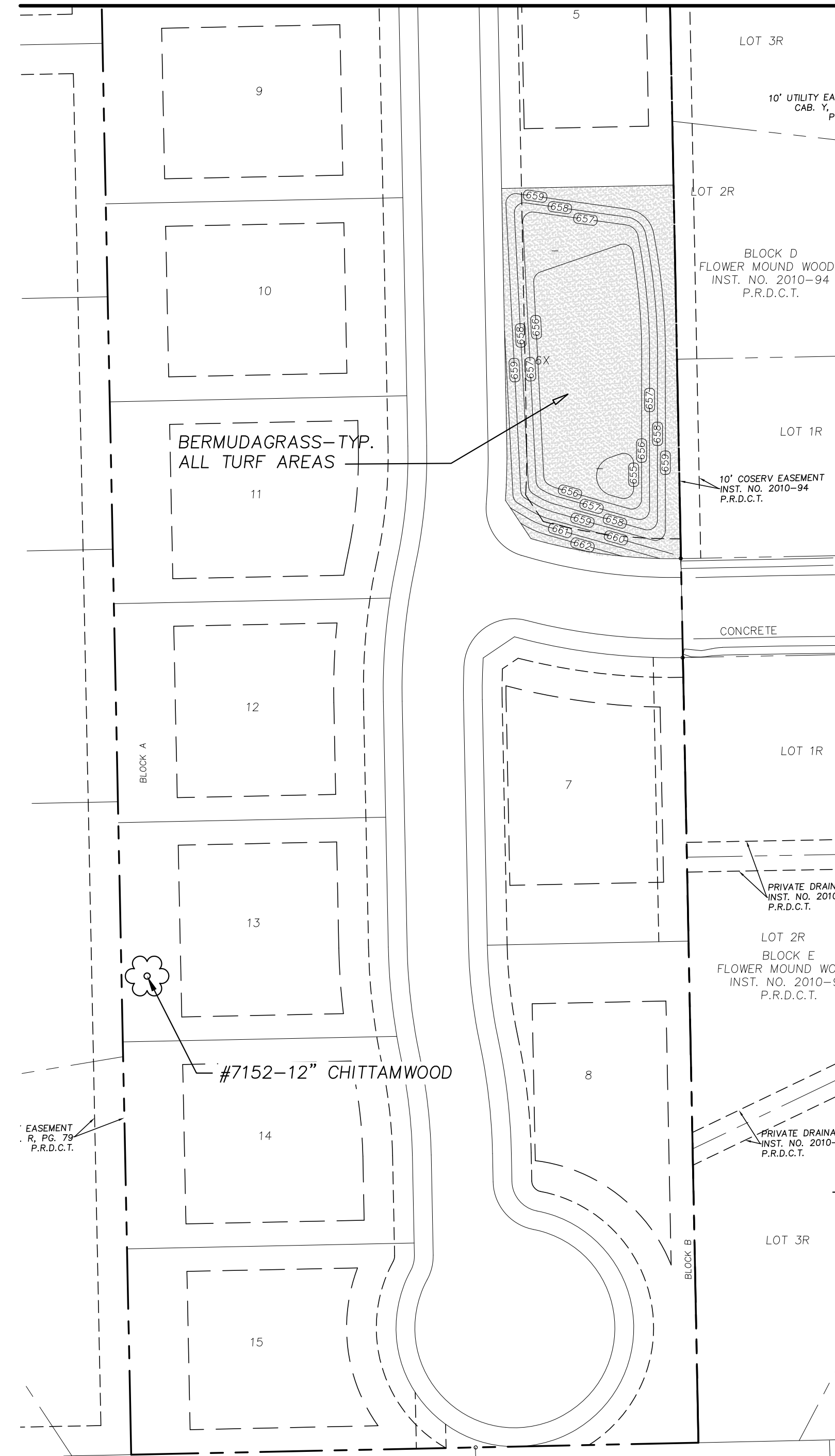
Reginald Rembert
Rembert Enterprises, Inc.

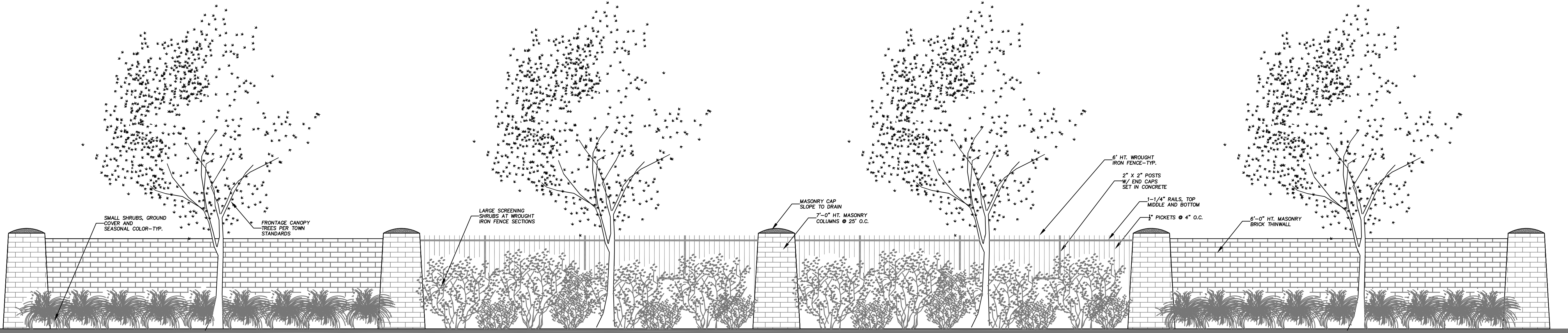
F.M. 1171
(CROSS TIMBERS ROAD)
(VARIABLE WIDTH RIGHT-OF-WAY)



TAG #	SPECIES	DBH	CANOPY RADIUS	CANOPY SQ. FT.	CONDITION	NOTES	NOTES	REMARKS
7127	PINE, PINUS ELLIOTII	34"	27'	615	GOOD		PRESERVE	SPECIMEN
7130	PINE, PINUS ELLIOTII	26"	14'	615	FAIR	POWER LINES	PRESERVE	SPECIMEN
7132	PINE, PINUS ELLIOTII	18"	18'	1017	GOOD		REMOVE	PROTECTED
7141	AMERICAN ELM, ULMUS AMERICANA	9"	7'	154	GOOD		REMOVE	PROTECTED
7140	AMERICAN ELM, ULMUS AMERICANA	15"	12'	452	GOOD	POWER LINES	REMOVE	PROTECTED
7139	PINE, PINUS ELLIOTII	27"	24'	907	FAIR	DECLINE	PRESERVE	PROTECTED
7138	PINE, PINUS ELLIOTII	28"	5'	79	POOR	CANOPY DAMAGE	PRESERVE	SPECIMEN
7137	PINE, PINUS ELLIOTII	22"	12'	452	FAIR	VINES	PRESERVE	PROTECTED
7136A	PINE, PINUS ELLIOTII	20"	9'	254	FAIR	CODOMINATE STEM	PRESERVE	PROTECTED
7136B	PINE, PINUS ELLIOTII	19"	12'	452	FAIR	CODOMINATE STEM	PRESERVE	PROTECTED
7148	CEDAR ELM, ULMUS CRASSIFOLIA	10"	8'	201	GOOD		PRESERVE	PROTECTED
7149	AMERICAN ELM, ULMUS AMERICANA	14"	10'	3141	FAIR	FENCELINE	PRESERVE	PROTECTED
7151	AMERICAN ELM, ULMUS AMERICANA	16"	15'	707	POOR	FENCELINE, IRREGULAR CANOPY	PRESERVE	PROTECTED
7152	CHITTAMWOOD, BUMELIA LANGUINOSA	12"	6'	113	FAIR	IRREGULAR CANOPY	PRESERVE	PROTECTED

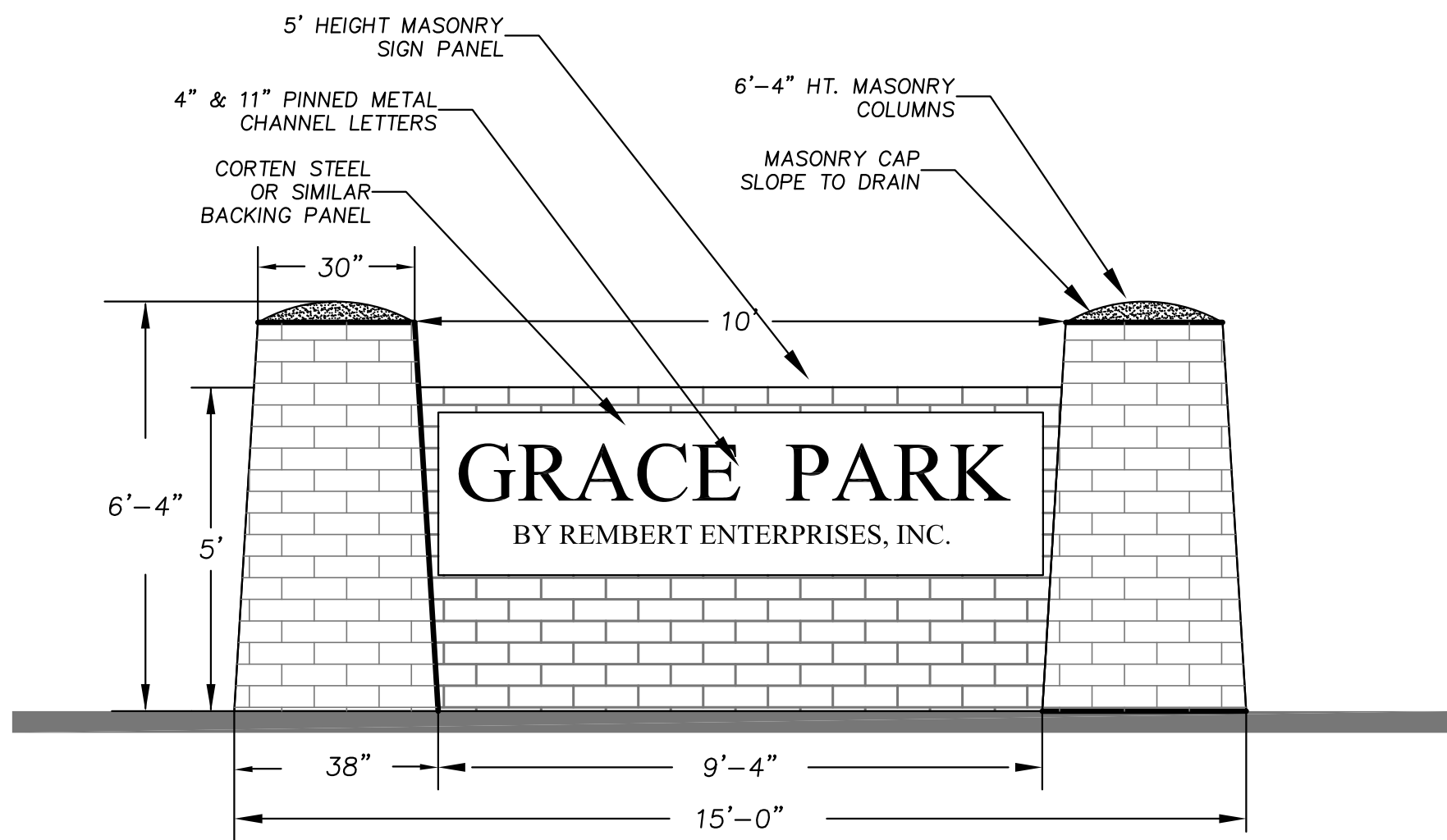
MATCHLINE





WALL AND FENCE ELEVATION (EACH SIDE OF ENTRY DRIVE)

NOT TO SCALE



ENTRY SIGNAGE

NOT TO SCALE

ST. CLAIR DESIGN GROUP, INC

Landscape Architecture

P. O. Box 12519
Dallas, Texas 75225
T. 214-454-9934

DATE SEALED: OCTOBER 23, 2020

DESIGN BY: JBS
DRAWN BY: JBS
CHECKED BY: SCDDG
DATE: NOVEMBER 7, 2019

DEVELOPMENT
LANDSCAPE PLAN DETAILS
GRACE PARK
RESIDENTIAL SUBDIVISION
9.796 acres Situated in the
P. Malone Survey, Abstract No. 836
in the
Town of Flower Mound
Denton County, Texas

Scale: NOT TO SCALE
Designed by: JBS
Drawn by: JBS
Checked by: SCDDG
Date: OCTOBER 23, 2020
Project No. 035-030

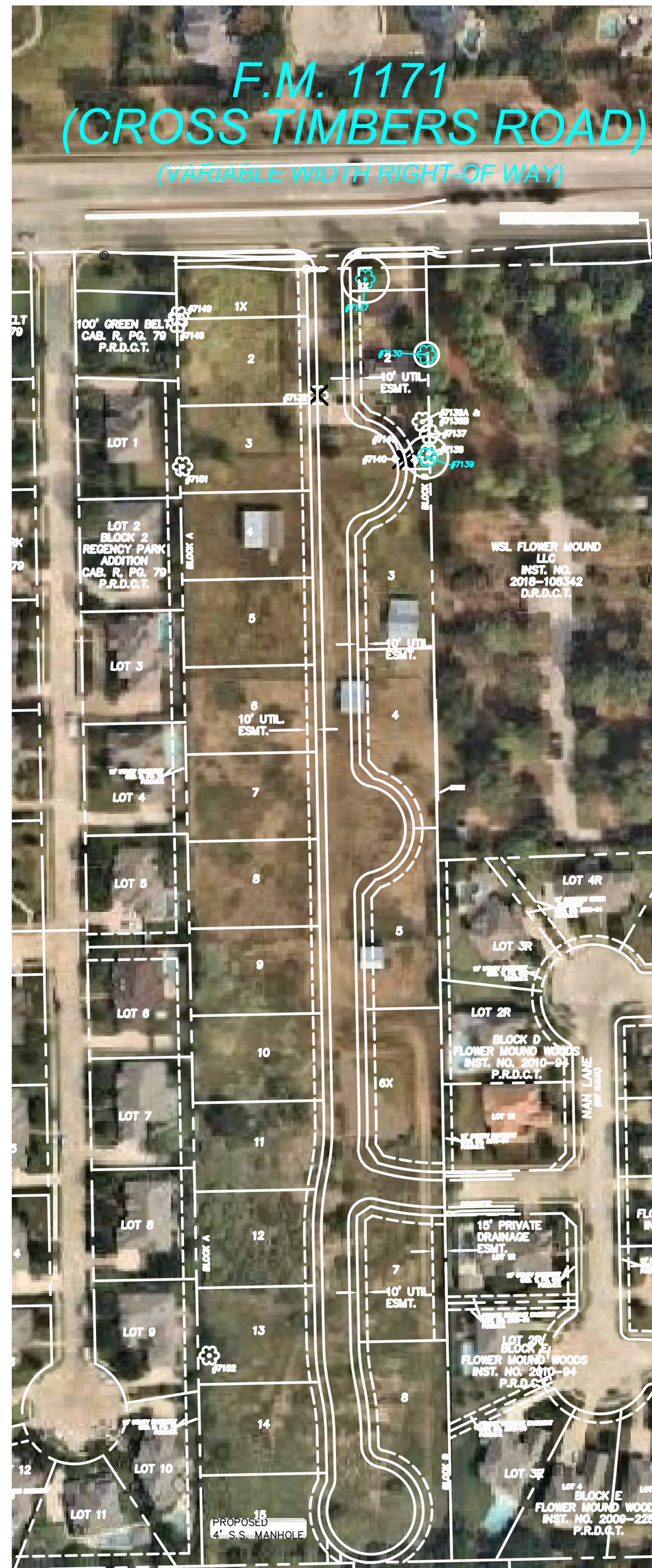
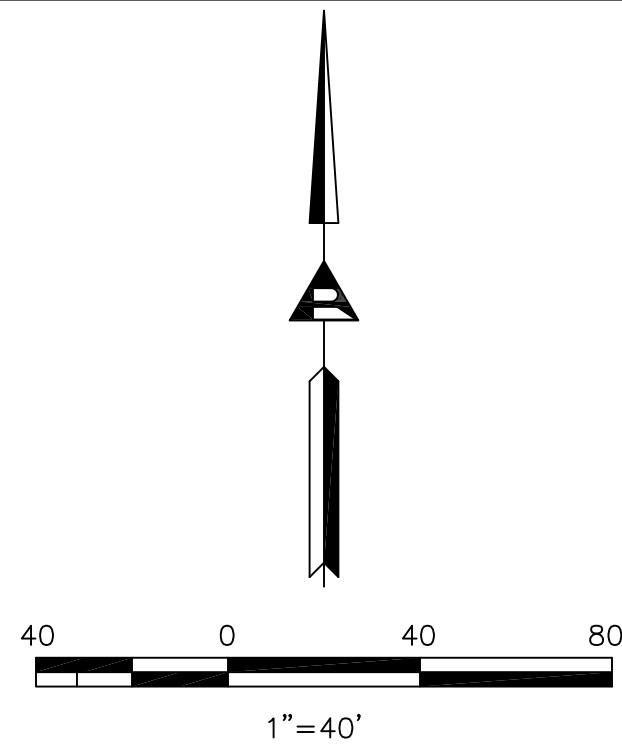
GRACE PARK
RESIDENTIAL SUBDIVISION
FLOWER MOUND, TEXAS

DEVELOPMENT
LANDSCAPE PLAN
DETAILS

Ridinger
Associates, Inc.
Civil Engineers - Planners

EST. 1989
Firm No. 1000
1000
Suite 101
Lewisville, Texas 75067
Tel. No. (972) 353-8000
Fax No. (972) 353-8011

No. Date Revisions App.



TREE LEGEND
 SPECIMEN TREE
 SPECIMEN TREE CANOPY
 PROTECTED TREE TO REMAIN
 PROTECTED TO TO BE REMOVED



GRACE PARK
RESIDENTIAL SUBDIVISION
Being 20 Buildable Lots & 3 X-Lots
9.796 acres Situated in the
P. Malone Survey, Abstract No. 836
in the
Town of Flower Mound
Denton County, Texas

No.	Date	Revisions		App.



***Ridinger
Associates, Inc.***
Civil Engineers - Planners

Firm No. 1969
550 S. Edmonds
Lewisville, Texas 75067

Tel. No. (972) 353-8000
Fax No. (972) 353-8011

GRACE PARK
RESIDENTIAL SUBDIVISION
FLOWER MOUND, TEXAS

TREE SURVEY

Scale: 1" = 100'
Designed by: LDR
Drawn by: JWH
Checked by: LDR
Date: OCTOBER 23, 2010
Project No. 035-030

SHEET
TS-1



PLANNING AND ZONING COMMISSION

AGENDA ITEM NO: 8

REGULAR ITEM

DATE: November 9, 2020

FROM: Chuck Russell, Principal Planner

ITEM: **Public Hearing to consider an ordinance amending the zoning (ZPD20-0005 - Niagara Conservation) from an Agricultural (A) Zoning district to Planned Development District No.179 (PD-179) with Campus Industrial uses, with certain waivers, exceptions and modifications to the Code of Ordinances. The property is generally located north of Enterprise Road and east of Old Gerault Road.**

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, which is scheduled for December 7, 2020.

II. APPLICATION ANALYSIS

The purpose of this application is to request approval of a Planned Development District (PD) to provide for an office, warehouse and distribution facility on a 7.59 acre unplatted parcel of land. The base zoning district for the proposed PD will be Campus Industrial District (CI), which is compatible with the existing Master Plan land use designation of Campus Industrial uses.

As part of the request, the applicant has asked for an exception to the Code of Ordinances (see Section III below, for detail):

Exception:

- **Underground Utilities:** The applicant is requesting an exception to Section 82-376 of the Town Code that requires overhead utilities to be placed underground.

The conceptual site plan provides for one 127,810 square-foot one-story building. Two points of access are being provided from Old Gerault Road, and the applicant is providing 80 of the required 100 parking spaces which is within the Town's allowable 20% deviation.

The conceptual plans [see Attachment B(1)] provide for a proposed development that complies with the development standards in the PD base zoning district (CI), as well as

required landscaping and buffering. The proposed conceptual elevations are in compliance with the Urban Design Plan

III. EXCEPTION

A. Exception to Section 82-376, Underground Utilities

Section 82-376 states that all existing overhead utilities, save and except transmission facilities identified in the Town Code, shall be placed underground in conjunction with the development of property, and prior to the Town's acceptance of the subdivision, subject to the certain provisions. Approximately 710 linear feet of overhead utility lines are located along the Old Gerault Road frontage.

IV. ENVIRONMENTAL CONSERVATION COMMISSION

On November 4, 2020, the Environmental Conservation Commission (ECC) recommended approval of the removal of 25 specimen trees on the subject property. The item will be forwarded to the Town Council for consideration at the same time as the subject project. The November 4, 2020 ECC meeting can be viewed here:

<https://flowermoundtx.swagit.com/play/11042020-1046/6/>

V. CORRESPONDENCE

The Town Code requires both public notice in a newspaper of general circulation (Denton Record Chronicle) and notification of the property owners within 200 feet of the subject property for all Zoning Amendment requests. Project No. ZPD20-0005 had a total of 39 Property Owner Notifications mailed. At the time this report was written, the Town had not received any items of correspondence in support or in opposition to the request.

VI. ATTACHMENTS

A. Background Information

1. Vicinity Map
2. Letter of Intent

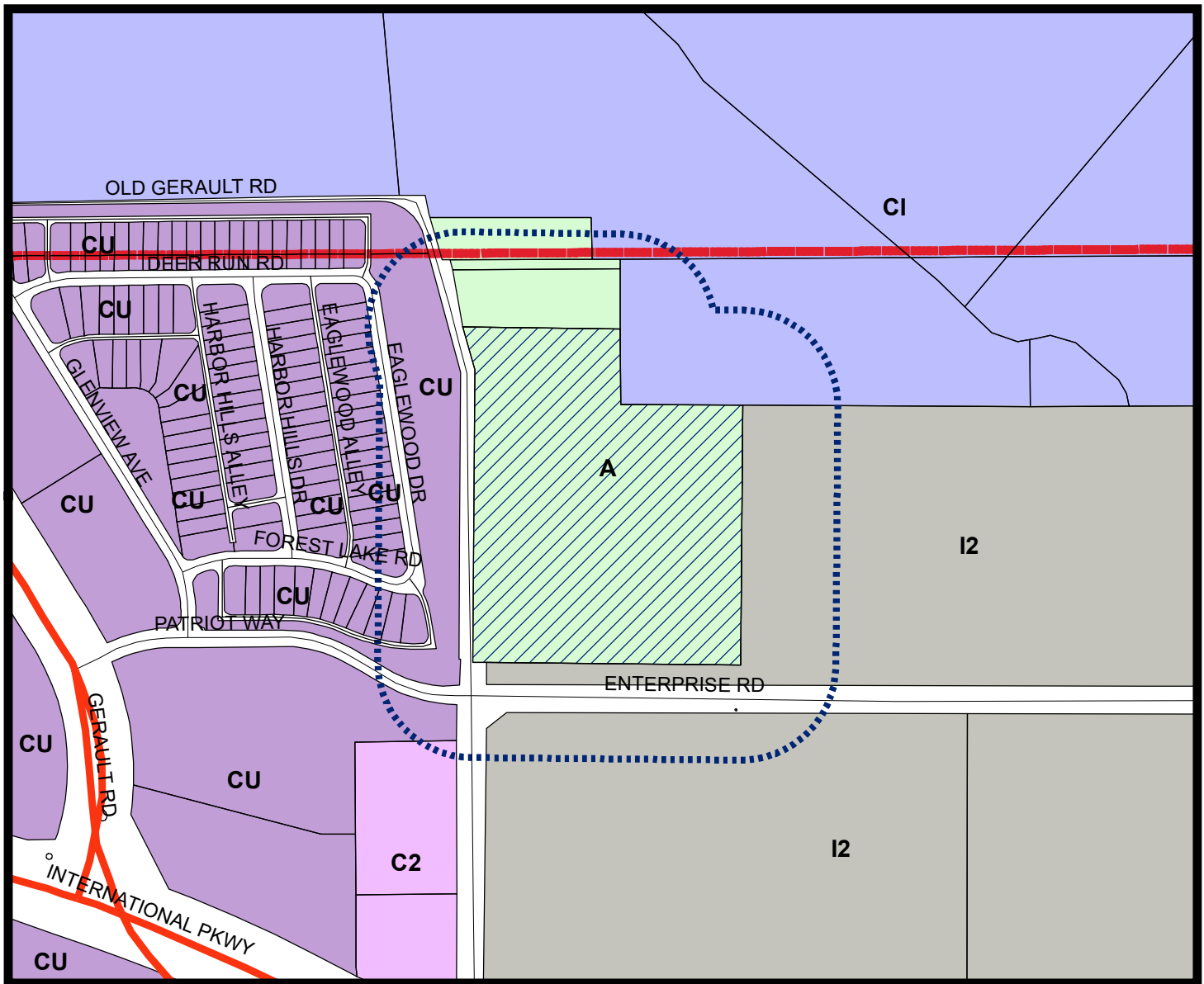
B. Application Details

1. Planned Development Zoning Package
2. Draft Planned Development (PD) Standards

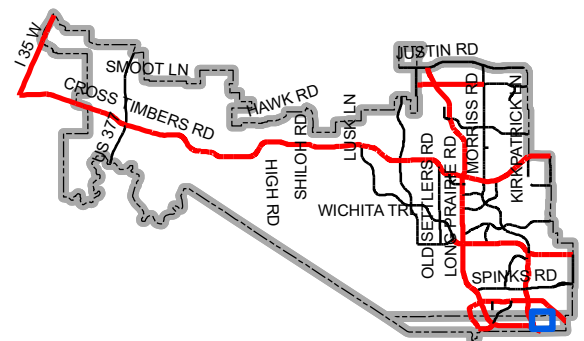
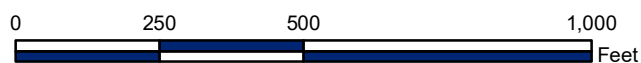
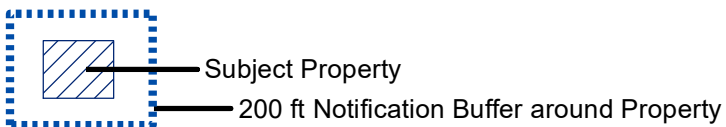
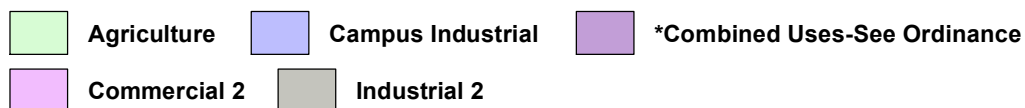


Vicinity Map

Reference Project: ZPD20-0005



LEGEND



Map Location



September 4, 2020

Mr. Chuck Russell, AICP
Principal Planner
Planning Services Division
Town of Flower Mound
2121 Cross Timbers Road
Flower Mound, TX 75028

Re: Letter of Intent – Niagara
300 Old Gerault Road, Flower Mound, TX

Dear Mr. Russell:

We want to thank you and your staff at the city for working so diligently with us to accelerate this complex project. As you know we are honored to be teaming up with the “best of the best” being Meinhardt & Associates, Pacheco Koch and Bella Firma. Our team in the past has had great success with the city and acknowledge you are an instrumental part of that process.

The intent of this letter is to begin the approval process as it pertains to a Site Plan Approval so that our client, Niagara, can fully understand development requirements prior to closing on the referenced property. Niagara is pleased to have the opportunity to continue to operate their business and work with the Town of Flower Mound with the mission of relocating and making it the location of their Headquarters.

Below are bullet points of related to the subject property:

- 7.53 acres (328,006 sq.ft.)
- Will need to be rezoned to Campus Industrial for Niagara’s 127,810 square foot building.
- Site is currently zoned for agricultural in agricultural district.

The challenges the site poses are listed below:

- Tree Mitigation.
- Retaining Wall.
- Powerlines.
- Construction of Old Gerault Road.
- Topography and drainage issues.

As our plan is not to have the development consist of building in phases, but all at once, we would like the Town of Flower Mound to consider these special considerations: rezoning, set back variance, sewer, power line variance and a town tax break on shared road.

With the Town’s assistance, we are confident we can make Niagara’s Headquarters a permanent home in Flower Mound.

Sincerely,

Tom Smolik

Tom C. Smolik, SIOR

TIG Real Estate Services, Inc.
4350 Beltway Dr, Addison, TX 75001
www.tigusa.com
Trusted Partner in Commercial Real Estate for 25 Years

Senior Vice President, Principal
214 697 9878 (C) | 972 661 0232 (O)
tsmolik@tigusa.com

cc: Kyle Cutler
Alex Flores



BUILD TO SUIT For
NIAGARA CONSERVATION ON OLD GERAULT
FLOWER MOUND, TEXAS

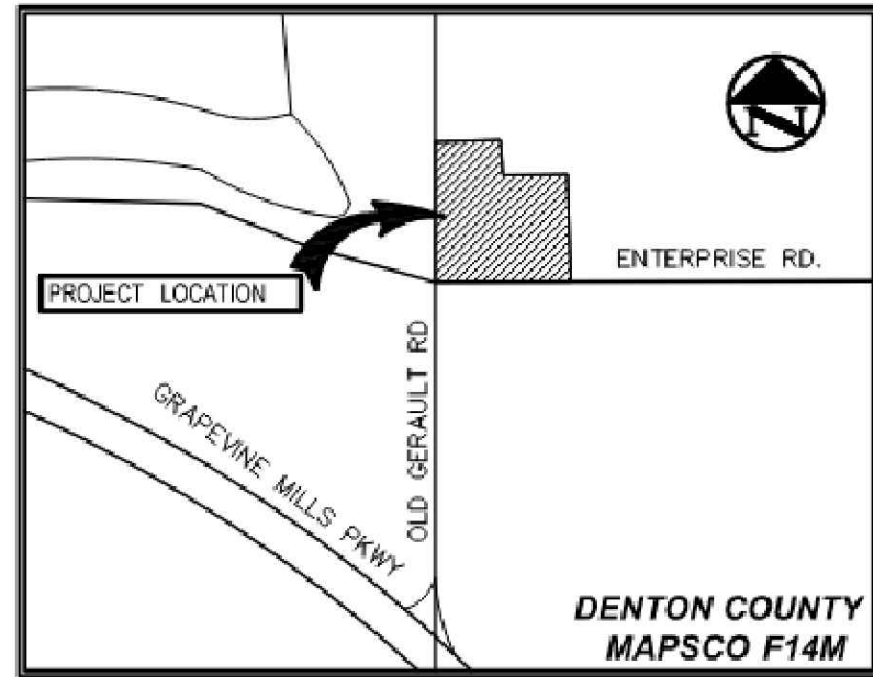


MEINHARDT & ASSOCIATES
ARCHITECTS, P.L.L.C.
1860 DALLAS PARKWAY
SUITE 500
DALLAS, TEXAS 75254
972.980.0880

NOT FOR REGULATORY
APPROVAL, PERMITTING,
OR CONSTRUCTION

DATE: 09.04.2020
JOB # 20-204
SITE PLAN
SHEET:

A1.00



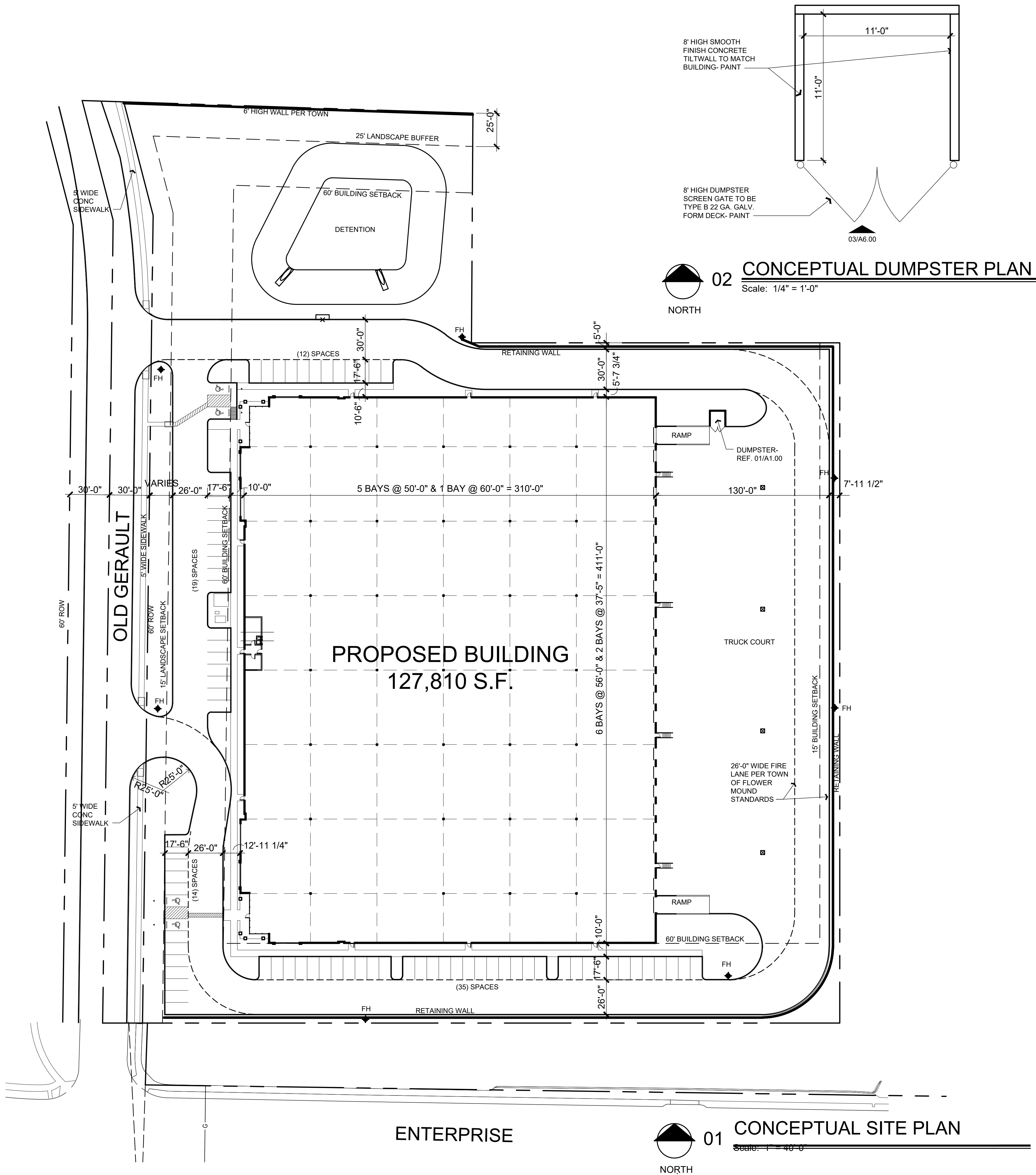
VICINITY MAP
(NOT TO SCALE)

GENERAL NOTES

- ALL EXPOSED CONCRETE, INCLUDING BUT NOT LIMITED TO RETAINING/DETAINING WALLS, TURN-DOWN CURBS, AND TREE RETAINING WALLS, SHALL BE CLAD IN A MATERIAL TO MATCH THE MATERIALS ON THE MAIN BUILDING ON THE SITE.
- OR ALL RETAINING/DETAINING WALLS SHALL BE CLAD IN A MATERIAL TO COMPLEMENT THE MATERIALS AND COLORS WITHIN THIS DEVELOPMENT.
- ALL GROUND BASED MECHANICAL UNITS AND/OR EQUIPMENT SHALL BE SCREENED WITH LIVE SCREENING OR MASONRY ENCLOSURE. MASONRY ENCLOSURE SHALL BE CLAD IN A MATERIAL TO MATCH THE MATERIALS ON THE BUILDING.
- ALL ROOF-MOUNTED MECHANICAL UNITS AND/OR EQUIPMENT SHALL BE SCREENED FROM VIEW IN ACCORDANCE WITH SECTION 82-273 OF THE LAND DEVELOPMENT REGULATIONS.
- 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.

SITE DATA TABLE

PHYSICAL ADDRESS	XX OLD GERAULT	
GROSS SITE AREA	7.59 AC and 330,789 SF	
NET SITE AREA	4.66 AC and 202,979 SF	
ZONING	CI (CAMPUS INDUSTRIAL)	
CURRENT USE	AGRICULTURAL	
LOT COVERAGE DATA		
BUILDING COVERAGE	41% / 127,810 S.F.	
IMPERVIOUS AREA	40% / 122,102 S.F.	
PERVIOUS AREA	19% / 59,967 S.F.	
PARKING SUMMARY	REQUIRED	PROVIDED
SURFACE PARKING		
OFFICE	42.6	43
WAREHOUSE	57.5	57
SUB TOTAL PARKING	100.1	
20% REDUCTION	-20	-20
TOTAL PARKING	80	80
BUILDING DATA		
BUILDING	1 STORY	
PEAK HEIGHT	45 FEET and 0 INCHES	
MEAN HEIGHT	40 FEET and 3 INCHES	
TOTAL SQUARE FOOTAGE	127,810 SF	



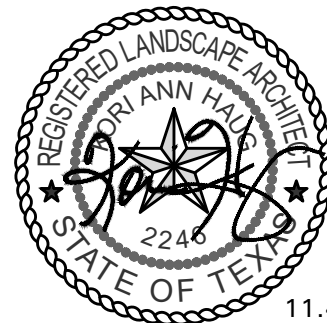


BUILT TO SUIT FOR
NIAGARA CONSERVATION ON OLD GERAULT
TEXAS
FLOWER MOUND,



MEINHARDT & ASSOCIATES
ARCHITECTS, P.L.L.C.

1440 DALLAS PARKWAY
SUITE 501
DALLAS, TEXAS 75244
(214) 865-0885



11.4.20

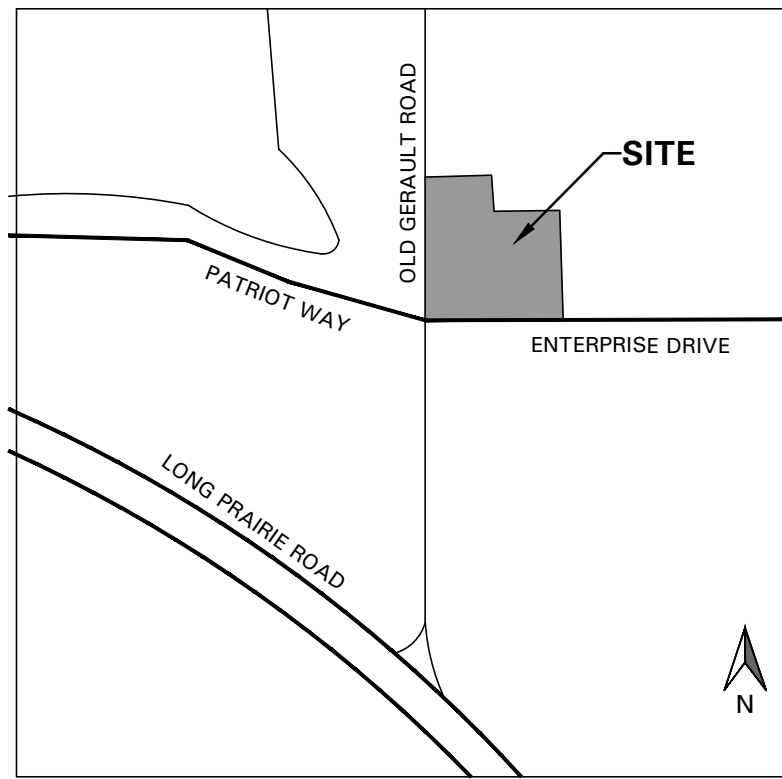
DATE: 08.03.2020

JOB # 20-204
CONCEPTUAL
LANDSCAPE PLAN
SHEET:

L2.01

• 4245 North Central Expy
• Suite 501
• Dallas, Texas 75205
• 214.865.7192 office

VICINITY MAP
NOT TO SCALE



GENERAL LAWN NOTES

- CONTRACTOR SHALL COORDINATE OPERATIONS AND AVAILABILITY OF EXISTING TOPSOIL WITH ON-SITE CONSTRUCTION MANAGER.
- CONTRACTOR SHALL LEAVE LAWN AREAS 1" BELOW FINAL FINISHED GRADE PRIOR TO TOPSOIL INSTALLATION.
- CONTRACTOR SHALL FINE GRADE AREAS TO ACHIEVE FINAL CONTOURS AS INDICATED ON CIVIL PLANS. ADJUST CONTOURS TO ACHIEVE POSITIVE DRAINAGE AWAY FROM BUILDINGS. PROVIDE UNIFORM ROUNDING AT TOP AND BOTTOM OF SLOPES AND OTHER BREAKS IN GRADE. CORRECT IRREGULARITIES AND AREAS WHERE WATER MAY STAND.
- ALL LAWN AREAS SHALL BE FINE GRADED, IRRIGATION TRENCHES COMPLETELY SETTLED AND FINISH GRADE APPROVED BY THE OWNER'S CONSTRUCTION MANAGER OR LANDSCAPE ARCHITECT PRIOR TO LAWN INSTALLATION.
- CONTRACTOR SHALL REMOVE ALL ROCKS, 3/4" DIAMETER AND LARGER, DIRT CLODS, STICKS, CONCRETE SPOILS, ETC. PRIOR TO PLACING TOPSOIL AND LAWN INSTALLATION.
- CONTRACTOR SHALL MAINTAIN ALL LAWN AREAS UNTIL FINAL ACCEPTANCE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: MOWING, WATERING, WEEDING, CULTIVATING, CLEANING AND REPLACING DEAD OR BARE AREAS TO KEEP PLANTS IN A VIGOROUS, HEALTHY CONDITION.
- CONTRACTOR SHALL GUARANTEE ESTABLISHMENT OF ACCEPTABLE TURF AREA AND SHALL PROVIDE REPLACEMENT FROM LOCAL SUPPLY IF NECESSARY.

SOLID SOD NOTES

- PLANT SOD BY HAND TO COVER INDICATED AREAS COMPLETELY. ENSURE EDGES OF SOD ARE TOUCHING. TOP DRESS JOINTS BY HAND WITH TOPSOIL TO FILL VOIDS.
- ROLL GRASS AREAS TO ACHIEVE A SMOOTH, EVEN SURFACE, FREE FROM UNNATURAL UNDULATIONS.
- WATER SOD THOROUGHLY AS SOD OPERATION PROGRESSES.
- IF INSTALLATION OCCURS BETWEEN SEPTEMBER 1 AND MARCH 1, OVER-SEED BERMUDAGRASS SOD WITH WINTER RYEGRASS, AT A RATE OF FOUR (4) POUNDS PER ONE THOUSAND (1000) SQUARE FEET.

LANDSCAPE NOTES

- CONTRACTOR SHALL VERIFY ALL EXISTING AND PROPOSED SITE ELEMENTS AND NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES. SURVEY DATA OF EXISTING CONDITIONS WAS SUPPLIED BY OTHERS.
- CONTRACTOR SHALL LOCATE ALL EXISTING UNDERGROUND UTILITIES AND NOTIFY LANDSCAPE ARCHITECT OF ANY CONFLICTS. CONTRACTOR SHALL EXERCISE CAUTION WHEN WORKING IN THE VICINITY OF UNDERGROUND UTILITIES.
- CONTRACTOR SHALL PROVIDE A MINIMUM 2% SLOPE AWAY FROM ALL STRUCTURES.
- CONTRACTOR SHALL FINE GRADE AREAS TO ACHIEVE FINAL CONTOURS AS INDICATED. LEAVE AREAS TO RECEIVE TOPSOIL 3" BELOW FINAL FINISHED GRADE IN PLANTING AREAS AND 1" BELOW FINAL FINISHED GRADE IN LAWN AREAS.
- ALL PLANTING BEDS AND LAWN AREAS SHALL BE SEPARATED BY STEEL EDGING. NO STEEL EDGING SHALL BE INSTALLED ADJACENT TO BUILDINGS, WALKS, OR CURBS. CUT STEEL EDGING AT 45 DEGREE ANGLE WHERE IT INTERSECTS WALKS AND CURBS.
- TOP OF MULCH SHALL BE 1/2" MINIMUM BELOW THE TOP OF WALKS AND CURBS.
- ALL LAWN AREAS SHALL BE SOLID SOD BERMUDAGRASS, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- ALL REQUIRED LANDSCAPE AREAS SHALL BE PROVIDED WITH AN AUTOMATIC UNDERGROUND IRRIGATION SYSTEM WITH AND FREEZE SENSORS AND EVAPOTRANSPIRATION (ET) WEATHER-BASED CONTROLLERS AND SAID IRRIGATION SYSTEM SHALL BE DESIGNED BY A QUALIFIED PROFESSIONAL AND INSTALLED BY A LICENSED IRRIGATOR.
- CONTRACTOR SHALL PROVIDE BID PROPOSAL LISTING UNIT PRICES FOR ALL MATERIAL PROVIDED.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED LANDSCAPE AND IRRIGATION PERMITS.

MAINTENANCE NOTES

- THE OWNER, TENANT AND THEIR AGENT, IF ANY, SHALL BE JOINTLY AND SEVERALLY RESPONSIBLE FOR THE MAINTENANCE OF ALL LANDSCAPE.
- ALL LANDSCAPE SHALL BE MAINTAINED IN A NEAT AND ORDERLY MANNER AT ALL TIMES. THIS SHALL INCLUDE MOWING, EDGING, PRUNING, FERTILIZING, WATERING, WEEDING AND OTHER SUCH ACTIVITIES COMMON TO LANDSCAPE MAINTENANCE.
- ALL LANDSCAPE AREAS SHALL BE KEPT FREE OF TRASH, LITTER, WEEDS AND OTHER SUCH MATERIAL OR PLANTS NOT PART OF THIS PLAN.
- ALL PLANT MATERIAL SHALL BE MAINTAINED IN A HEALTHY AND GROWING CONDITION AS IS APPROPRIATE FOR THE SEASON OF THE YEAR.
- ALL PLANT MATERIAL WHICH DIES SHALL BE REPLACED WITH PLANT MATERIAL OF EQUAL OR BETTER VALUE.
- CONTRACTOR SHALL PROVIDE SEPARATE BID PROPOSAL FOR ONE YEAR'S MAINTENANCE TO BEGIN AFTER FINAL ACCEPTANCE.

PLANT LIST

SYMBOL	BOTANICAL NAME	COMMON NAME	QTY.	SIZE	REMARKS
TREES					
AP	<i>Pinus nigra</i>	Austrian Pine	6	6' ht.	B&B or container grown, full to base, 3' spread
BC	<i>Taxodium distichum</i>	Bald Cypress	5	3" cal.	container grown, 12' ht., 4' spread, 4' branching ht., matching
BO	<i>Quercus macrocarpa</i>	Bur Oak	4	3" cal.	container grown, 12' ht., 4' spread, 4' branching ht., matching
CE	<i>Ulmus crassifolia</i>	Cedar Elm	8	3" cal.	B&B, 12' ht., 4' spread, 4' branching ht., matching
ERC	<i>Juniperus virginiana</i>	Eastern Redcedar	7	6' ht.	container grown, full to base, 3' spread
LE	<i>Ulmus parvifolia</i> 'Sempervirens'	Lacebark Elm	8	3" cal.	container grown, 12' ht., 4' spread, 4' branching ht., matching
LO	<i>Quercus virginiana</i>	Live Oak	8	3" cal.	container grown, 12' ht., 4' spread, 4' branching ht., matching
SO	<i>Quercus shumardii</i>	Shumard Red Oak	8	3" cal.	container grown, 12' ht., 4' spread, 4' branching ht., matching
SHRUBS/GROUND COVER					
DBH	<i>Ilex cornuta</i> 'Dwarf Burford'	Dwarf Burford Holly	120	5 gal.	container full, 24" spread, 36" o.c.
IH	<i>Raphiolepis indica</i> 'Jack Evans'	Indian Hawthorne 'Jack Evans'	85	5 gal.	container full, 20" spread, 36" o.c.
LOR	<i>Loropetalum chinensis</i> 'Plum Delight'	Loropetalum 'Plum Delight'	85	5 gal.	container full, 20" spread, 36" o.c.
MIS	<i>Miscanthus sinensis</i> 'Adagio'	Miscanthus 'Adagio'	39	5 gal.	container full, 36" o.c.
NRS	<i>Ilex spp.</i> 'Nellie R. Stevens'	Nellie R. Stevens Holly	8	7 gal.	container full to base, 36" ht., 36" o.c.
NR-6	<i>Ilex spp.</i> 'Nellie R. Stevens'	Nellie R. Stevens Holly	65	15 gal.	container full to base, 36" ht., 48" o.c.
SG	<i>Salvia greggii</i> 'Red'	Salvia Greggii	84	5 gal.	container full, 20" spread 24" o.c.

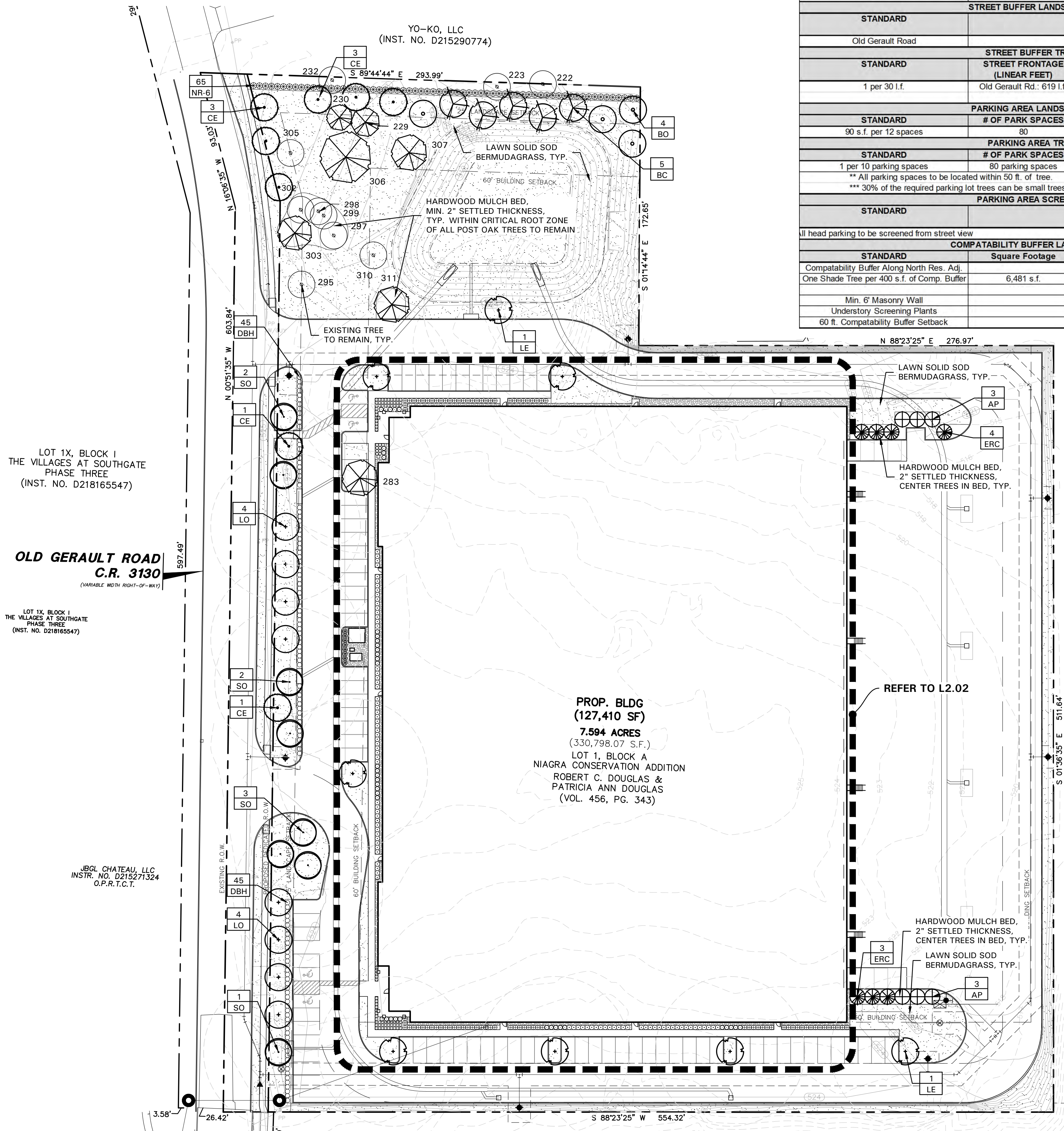
NOTE: ALL TREES SHALL HAVE STRAIGHT TRUNKS AND BE MATCHING WITHIN VARIETIES.
PLANT LIST IS AN AID TO BIDDERS ONLY. CONTRACTOR SHALL VERIFY ALL QUANTITIES ON PLAN.
ALL HEIGHTS AND SPREADS ARE MINIMUMS. ALL PLANT MATERIAL SHALL MEET OR EXCEED REMARKS AS INDICATED.

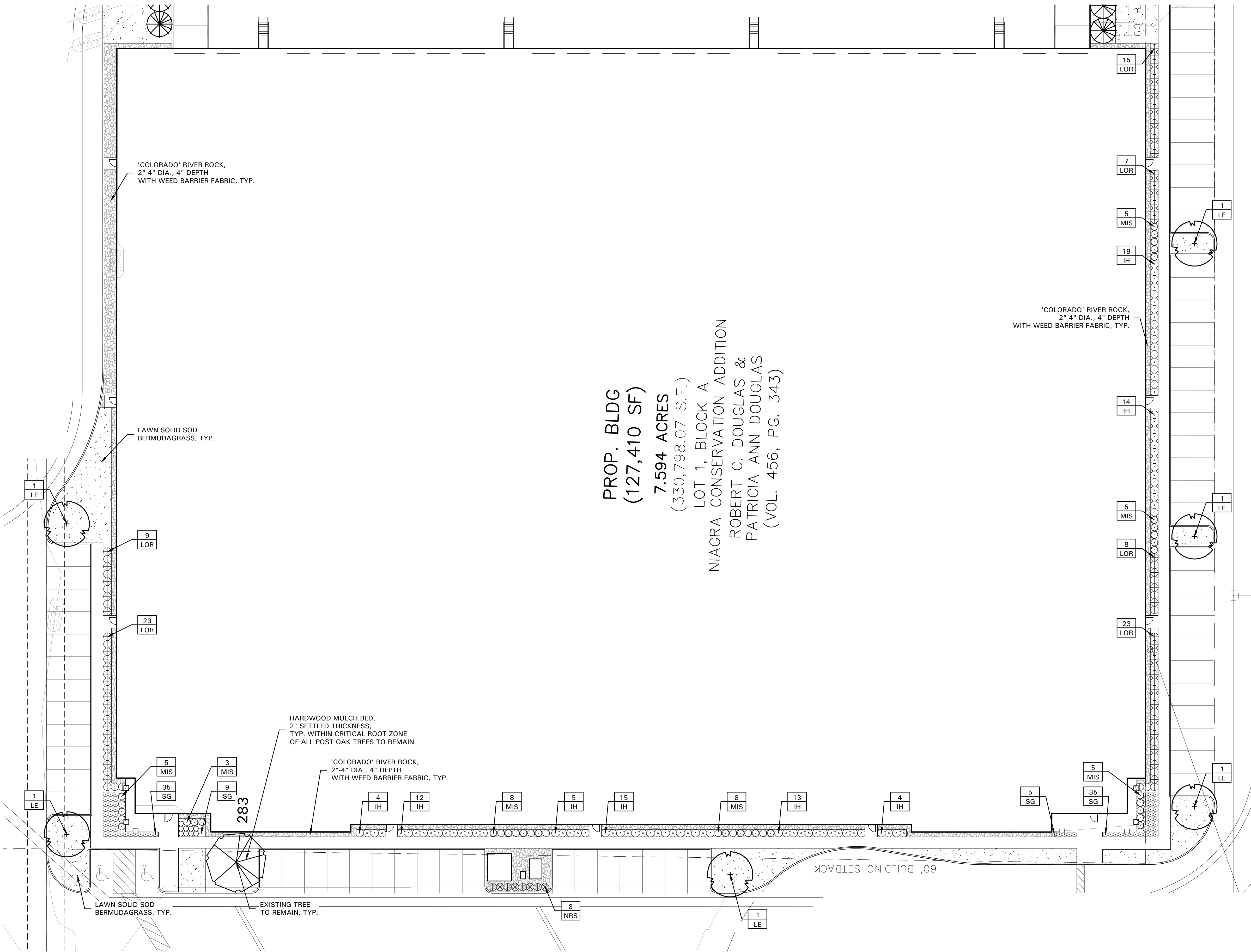


SCALE: 1" = 40'-0"
0 20 40 80

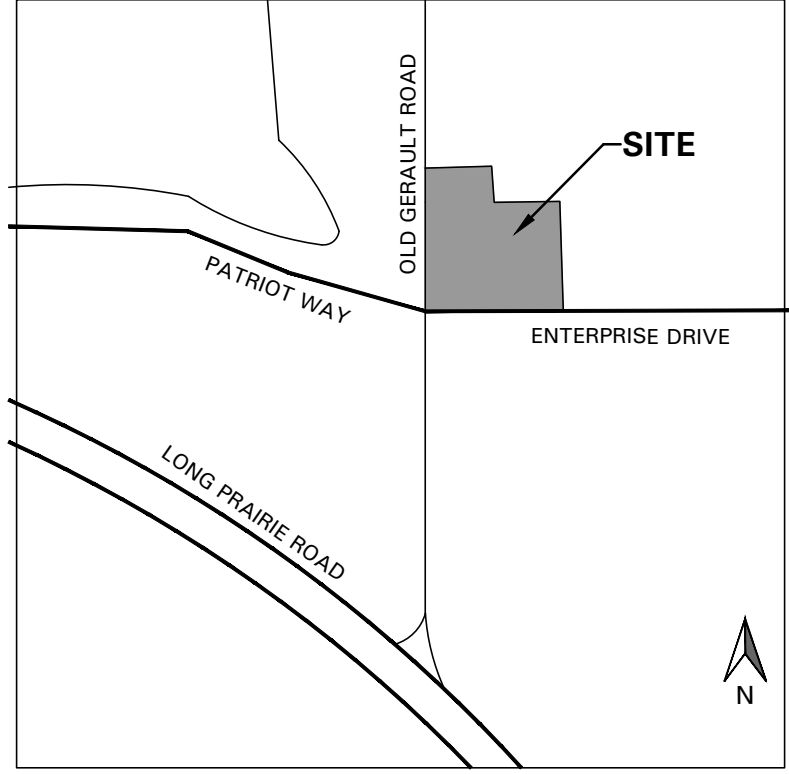


THE TOWN OF FLOWER MOUND - LANDSCAPE CONFORMANCE CHART			
STREET YARD LANDSCAPING			
STANDARD	TOTAL STREET YARD	REQUIRED	PROVIDED
Min. 20% of street yard	48,492 s.f.	9,698 s.f. 20%	23,144 s.f. 47%
STREET YARD TREES			
STANDARD	TOTAL STREET YARD (SQUARE FEET)	REQUIRED	PROVIDED
Between 10,000 and 110,000 s.f. = 10 Trees + 1 Tree for every 2,500 s.f. over 10,000 s.f.	50,590 s.f. of Street Yard	26 Trees, 3" cal.	26 Trees, 3" cal.
STREET BUFFER LANDSCAPING			
STANDARD		REQUIRED BUFFER WIDTH	PROVIDED
Old Gerault Road		15 ft.	15 ft.
STREET BUFFER TREES			
STANDARD	STREET FRONTAGE (LINEAR FEET)	REQUIRED	PROVIDED
1 per 30 l.f.	Old Gerault Rd.: 619 l.f.	21 Trees, 3" cal.	18 Trees, 3" cal. 3 existing trees
PARKING AREA LANDSCAPING			
STANDARD	# OF PARK SPACES	REQUIRED	PROVIDED
90 s.f. per 12 spaces	80	600 s.f.	2,478 s.f.
PARKING AREA TREES			
STANDARD	# OF PARK SPACES	REQUIRED	PROVIDED
1 per 10 parking spaces	80 parking spaces	8 trees, 3" cal.	9 trees, 3" cal. 1 existing tree
** All parking spaces to be located within 50 ft. of tree. *** 30% of the required parking lot trees can be small trees.			
PARKING AREA SCREENING			
STANDARD		Landscape berm or screening shrubs	PROVIDED
All head parking to be screened from street view		3' ht. Screen	Screening shrubs (3' ht.)
COMPATIBILITY BUFFER LANDSCAPING			
STANDARD	Square Footage	REQUIRED	PROVIDED
Compatibility Buffer Along North Res. Adj.		25 ft.	25 ft.
One Shade Tree per 400 s.f. of Comp. Buffer	6,481 s.f.	16 trees, 3" cal.	13 trees, 3" cal. 3 existing trees
Min. 6' Masonry Wall		6 ft. masonry wall	6 ft. masonry wall
Understory Screening Plants		6' Screening Shrubs	6' Screening Shrubs
60 ft. Compatibility Buffer Setback		60 ft.	60 ft.

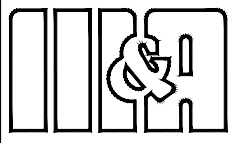




VICINITY MAP
NOT TO SCALE

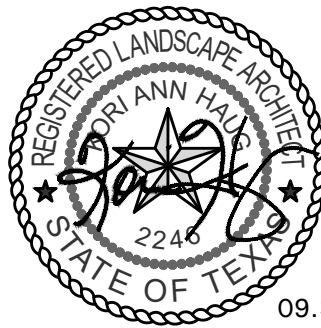


BUILT TO SUIT For
NIAGARA CONSERVATION ON OLD GERAULT
FLOWER MOUND, TEXAS



MEINHARDT & ASSOCIATES
ARCHITECTS, P.L.L.C.

1440 DALLAS PARKWAY
SUITE 400
DALLAS, TEXAS 75244
(972) 960-0800



PLANT LEGEND

SYMBOL	COMMON NAME
AP	Austrian Pine
BC	Bald Cypress
BO	Bur Oak
CE	Cedar Elm
ERC	Eastern Redcedar
LE	Lacebark Elm
LO	Live Oak
SO	Shumard Red Oak
DBH	Dwarf Burford Holly
IH	Indian Hawthorne 'Jack Evans'
LOR	Loropetalum 'Plum Delight'
MIS	Miscanthus 'Adagio'
NRS	Nellie R. Stevens Holly
NR-6	Nellie R. Stevens Holly
SG	Salvia Greggii

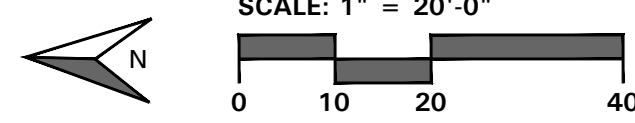
REFER TO L2.01 FOR PLANT LIST

DATE: 08.03.2020

JOB # 20-204
**CONCEPTUAL LANDSCAPE
ENLARGEMENT PLAN**
SHEET:

L2.02

- 4245 North Central Expy
- Suite 501
- Dallas, Texas 75205
- 214.865.7192 office



SECTION 32 9300 - LANDSCAPE

PART 1 - GENERAL

1.1 REFERENCED DOCUMENTS

- A. Refer to Landscape Plans, notes, details, bidding requirements, special provisions, and schedules for additional requirements.

1.2 DESCRIPTION OF WORK

- A. Work included: Furnish all supervision, labor, materials, services, equipment and appliances required to complete the work covered in conjunction with the landscaping covered in these specifications and landscaping plans, including:

1. Planting (trees, shrubs and grasses)
2. Bed preparation and fertilization
3. Notification of sources
4. Water and maintenance until final acceptance
5. Guarantee

1.3 REFERENCE STANDARDS

- A. American Standard for Nursery Stock published by American Association of Nurserymen: April 14, 2014 Edition; by American National Standards Institute, Inc. (Z60.1) – plant material
- B. American Joint Committee on Horticultural Nomenclature: 1942 Edition of Standardized Plant Names.
- C. Texas Association of Nurserymen, Grades and Standards
- D. Hortis Third, 1976 - Cornell University

1.4 NOTIFICATION OF SOURCES AND SUBMITTALS

- A. Samples: Provide representative quantities of sandy loam soil, mulch, bed mix material, gravel, crushed stone, steel edging and tree stakes. Samples shall be approved by Owner's Authorized Representative before use on the project.

1.5 JOB CONDITIONS

- A. General Contractor to complete the following punch list: Prior to Landscape Contractor initiating any portion of landscape installation, General Contractor shall leave planting bed areas three (3") inches below final finish grade of sidewalks, drives and curbs as shown on the drawings. All lawn areas to receive solid sod shall be left one (1") inch below the final finish grade of sidewalks, drives and curbs. All construction debris shall be removed prior to Landscape Contractor beginning any work.
- B. Storage of materials and equipment at the job site will be at the risk of the Landscape Contractor. The Owner cannot be held responsible for theft or damage.

1.6 MAINTENANCE AND GUARANTEE

- A. Maintenance:
1. The Landscape Contractor shall be held responsible for the maintenance of all work from the time of planting until final acceptance by the Owner. No trees, shrubs, groundcover or grass will be accepted unless they show healthy growth and satisfactory foliage conditions.
 2. Maintenance shall include watering of trees and plants, cultivation, weeding spraying, edging, pruning of trees, mowing of grass, cleaning up and all other work necessary of maintenance.
 3. A written notice requesting final inspection and acceptance should be submitted to the Owner at least seven (7) days prior to completion. An on-site inspection by the Owner's Authorized Representative will be completed prior to written acceptance.
- B. Guarantee:

1. Trees, shrubs and groundcover shall be guaranteed for a twelve (12) month period after final acceptance. The Contractor shall replace all dead materials as soon as weather permits and upon notification of the Owner. Plants, including trees, which have partially died so that shape, size, or symmetry have been damaged, shall be considered subject to replacement. In such cases, the opinion of the Owner shall be final.

- a. Plants used for replacement shall be of the same size and kind as those originally planted and shall be planted as originally specified. All work, including materials, labor and equipment used in replacements, shall carry a twelve (12) month guarantee. Any damage, including ruts in lawn or bed areas, incurred as a result of making replacements shall be immediately repaired.

- b. At the direction of the Owner, plants may be replaced at the start of the next year's planting season. In such cases, dead plants shall be removed from the premises immediately.

- c. When plant replacements are made, plants, soil mix, fertilizer and mulch are to be utilized as originally specified and re-inspected for full compliance with the contract requirements. All replacements are to be included under "Work" of this section.

2. The Owner agrees that for the guarantee to be effective, he will water plants at least twice a week during dry periods and cultivate beds once a month after final acceptance.

3. The above guarantee shall not apply where plants die after acceptance because of injury from storms, hail, freeze, insects, diseases, injury by humans, machines or theft.

4. Acceptance for all landscape work shall be given after final inspection by the Owner provided the job is in a complete, undamaged condition and there is a stand of grass in all lawn areas. At that time, the Owner will assume maintenance on the accepted work.

- C. Repairs: Any necessary repairs under the Guarantee must be made within ten (10) days after receiving notice, weather permitting. In the event the Landscape Contractor does not make repairs accordingly, the Owner, without further notice to Contractor, may provide materials and men to make such repairs at the expense to the Landscape Contractor.

1.7 QUALITY ASSURANCE

- A. General: Comply with applicable federal, state, county and local regulations governing landscape materials and work.

- B. Personnel: Employ only experienced personnel who are familiar with the required work. Provide full time supervision by a qualified foreman acceptable to Landscape Architect.

- C. Selection of Plant Material:
1. Make contact with suppliers immediately upon obtaining notice of contract acceptance to select and book materials. Develop a program of maintenance (pruning and fertilization) which will ensure the purchased materials will meet and / or exceed project specifications.

2. Substitutions: Do not make plant material substitutions. If the specified landscape material is not obtainable, submit proof of non-availability to Landscape Architect, together with proposal for use of equivalent material. At the time bids are submitted, the Contractor is assumed to have located the materials necessary to complete the job as specified.

3. Landscape Architect will provide a key identifying each tree located on site. Written verification will be required to document material selection, source and delivery schedules to site.

4. Measurements: Measure trees with branches and trunks or canes in their normal position. Do not prune to obtain required sizes. Take caliper measurements six inches above ground for trees up to and including 4" caliper size, and twelve inches above ground for larger sizes. Measure main body of all plant material of height and spread dimensions,

do not measure from branch or root tip-to-tip.

5. Owner's Authorized Representative shall inspect all plant material with requirements for genus, species, cultivar / variety size and quality.

6. Owner's Authorized Representative retains the right to further inspect all plant material upon arrival to the site and during installation for size and condition of root balls and root systems, limbs, branching habit, insects, injuries and latent defects.

7. Owner's Authorized Representative may reject unsatisfactory or defective material at any time during the process work. Remove rejected materials immediately from the site and replace with acceptable material at no additional cost to the Owner. Plants damaged in transit or at job site shall be rejected.

1.8 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Preparation:

1. Balled and Burlapped (B&B) Plants: Dig and prepare shipment in a manner that will not damage roots, branches, shape and future development.

2. Container Grown Plants: Deliver plants in rigid container to hold ball shape and protect root mass.

B. Delivery:

1. Deliver packaged materials in sealed containers showing weight, analysis and name of manufacturer. Protect materials from deterioration during delivery and while stored on site.

2. Deliver only plant materials that can be planted in one day unless adequate storage and watering facilities are available on job site.

3. Protect root balls by heeling in with sawdust or other approved moisture retaining material if not planted within 24 hours of delivery.

4. Protect plants during delivery to prevent damage to root balls or desiccation of leaves. Keep plants moist at all times. Cover all materials during transport.

5. Notify Owner's Authorized Representative of delivery schedule 72 hours in advance job site.

6. Remove rejected plant material immediately from job site.

7. To avoid damage or stress, do not lift, move, adjust to plumb, or otherwise manipulate plants by trunk or stems.

PART 2 - PRODUCTS

2.1 PLANTS

- A. General: Well-formed No. 1 grade or better nursery grown stock. Listed plant heights are from tops of root balls to nominal tops of plants. Plant spread refers to nominal outer width of the plant, not to the outer leaf tips. Plants will be individually approved by the Owner's Authorized Representative and his decision as to their acceptability shall be final.

- B. Quantities: The drawings and specifications are complimentary. Anything called for on one and not the other is as binding as if shown and called for on both. The plant schedule is an aid to bidders only. Confirm all quantities on plan.

- C. Quality and size: Plant materials shall conform to the size given on the plan, and shall be healthy, symmetrical, well-shaped, full branched and well rooted. The plants shall be free from injurious insects, diseases, injuries to the bark or roots, broken branches, objectionable disfigurements, insect eggs and larvae, and are to be of specimen quality.

- D. Approval: All plants which are found unsuitable in growth, or are in any unhealthy, badly shaped or undersized condition will be rejected by the Owner's Authorized Representative either before or after planting and shall be removed at the expense of the Landscape Contractor and replaced with acceptable plant as

specified at no additional cost to the Owner.

- E. Trees shall be healthy, full-branched, well-shaped, and shall meet the minimum trunk and diameter requirements of the plant schedule. Balls shall be firm, neat, slightly tapered and well wrapped in burlap. Any tree loose in the ball or with a broken root ball at time of planting will be rejected. Balls shall be ten (10") inches in diameter for each one (1") inch of trunk diameter, and measured six (6") inches above ball. (Nomenclature conforms to the customary nursery usage. For clarification, the term "multi-trunk" defines a plant having three (3) or more trunks of nearly equal diameter.)

- F. Pruning: All pruning of trees and shrubs, as directed by the Landscape Architect prior to final acceptance, shall be executed by the Landscape Contractor at no additional cost to the Owner.

2.2 SOIL PREPARATION MATERIALS

A. Sandy Loam:

1. Friable, fertile, dark, loamy soil, free of clay lumps, subsoil, stones and other extraneous material and reasonably free of weeds and foreign grasses. Loam containing Dallasgrass or Nutgrass shall be rejected.

2. Physical properties as follows:
 - a. Clay – between 7-27 percent
 - b. Silt – between 15-25 percent
 - c. Sand – less than 52 percent

3. Organic matter shall be 3%-10% of total dry weight.

4. If requested, Landscape Contractor shall provide a certified soil analysis conducted by an approved soil testing laboratory verifying that sandy loam meets the above requirements.

- B. Organic Material: Compost with a mixture of 80% vegetative matter and 20% animal waste. Ingredients should be a mix of course and fine textured material.

- C. Premixed Bedding Soil as supplied by Vital Earth Resources, Gladewater, Texas; Professional Bedding Soil as supplied by Living Earth Technology, Dallas, Texas or Acid Gro Municipal Mix as supplied by Soil Building Systems, Dallas, Texas or approved equal.

- D. Sharp Sand: Sharp sand must be free of seeds, soil particles and weeds.

- E. Mulch: Double Shredded Hardwood Mulch, partially decomposed, dark brown. Living Earth Technologies or approved equal.

- F. Organic Fertilizer: Fertilaid, Sustane, or Green Sense or equal as recommended for required applications. Fertilizer shall be delivered to the site in original unopened containers, each bearing the manufacturer's guaranteed statement of analysis.

- G. Commercial Fertilizer: 10-20-10 or similar analysis. Nitrogen source to be a minimum 50% slow release organic Nitrogen (SCU or UF) with a minimum 8% sulfur and 4% iron, plus micronutrients.

- H. Peat: Commercial sphagnum peat moss or partially decomposed shredded pine bark or other approved organic material.

2.3 MISCELLANEOUS MATERIALS

- A. Steel Edging: All steel edging shall be 3/16" thick x 4" deep x 16' long with 6 stakes per section, painted black at the factory as manufactured by The J.D. Russell Company and under its trade name DURAEDEGE Heavy Duty Steel.

- B. Staking Material for Shade Trees: refer to details.

- C. Gravel: Washed native pea gravel, graded 1 inch to 1-1/2 inch.

- D. Filter Fabric: 'Mirafi Mirascape' by Mirafi Construction Products available at Lone Star Products, Inc., (469) 523-0444 or approved equal.

- E. River Rock: "Colorado" or native river rock, 2" - 4" dia.

- F. Decomposed Granite: Base material shall consist of a natural material mix of granite aggregate not to exceed 1/8" diameter in size and shall be composed of various stages of decomposed earth base.

PART 3 - EXECUTION

3.1 BED PREPARATION & FERTILIZATION

- A. Landscape Contractor to inspect all existing conditions and report any deficiencies to the Owner.

- B. All planting areas shall be conditioned as follows:

1. Prepare new planting beds by scraping away existing grass and weeds as necessary. Till existing soil to a depth of six (6") inches prior to placing compost and fertilizer. Apply fertilizer as per Manufacturer's recommendations. Add six (6") inches of compost and till into a depth of six (6") inches of the topsoil. Apply organic fertilizer such as Sustane or Green Sense at the rate of twenty (20) pounds per one thousand (1,000) square feet.

2. All planting areas shall receive a two (2") inch layer of specified mulch.

3. Backfill for tree pits shall be as follows: Use existing top soil on site (use imported topsoil as needed) free from large clumps, rocks, debris, caliche, subsoils, etc., placed in nine (9") inch layers and watered in thoroughly.

C. Grass Areas:

1. Blocks of sod should be laid joint to joint (staggered joints) after fertilizing the ground first. Roll grass areas to achieve a smooth, even surface. The joints between the blocks of sod should be filled with topsoil where they are evidently gaped open, then watered thoroughly.

3.2 INSTALLATION

- A. Maintenance of plant materials shall begin immediately after each plant is delivered to the site and shall continue until all construction has been satisfactorily accomplished.

- B. Plant materials shall be delivered to the site only after the beds are prepared and areas are ready for planting. All shipments of nursery materials shall be thoroughly protected from the drying winds during transit. All plants which cannot be planted at once, after delivery to the site, shall be well protected against the possibility of drying by wind and Balls of earth of B & B plants shall be kept covered with soil or other acceptable material. All plants remain the property of the Contractor until final acceptance.

- C. Position the trees and shrubs in their intended location as per plan.

- D. Notify the Owner's Authorized Representative for inspection and approval of all positioning of plant materials.

- E. Excavate pits with vertical sides and horizontal bottom. Tree pits shall be large enough to permit handling and planting without injury to balls of earth or roots and shall be of such depth that, when planted and settled, the crown of the plant shall bear the same relationship to the finish grade as it did to soil surface in original place of growth.

- F. Shrub and tree pits shall be no less than twenty-four (24") inches wider than the lateral dimension of the earth ball and six (6") inches deeper than it's vertical dimension. Remove and haul from site all rocks and stones over three-quarter (¾") inch in diameter. Plants should be thoroughly moist before removing containers.

- G. Dig a wide, rough sided hole exactly the same depth as the height of the ball, especially at the surface of the ground. The sides of the hole should be rough and jagged, never slick or glazed.

- H. Percolation Test: Fill the hole with water. If the water level does not percolate within 24 hours, the tree needs to move to another location or have drainage added. Install a PVC stand pipe per

tree planting detail as approved by the Landscape Architect if the percolation test fails.

- I. Backfill only with 5 parts existing soil or sandy loam and 1 part bed preparation. When the hole is dug in solid rock, topsoil from the same area should not be used. Carefully settle by watering to prevent air pockets. Remove the burlap from the top ½ of the ball, as well as all nylon, plastic string and wire. Container trees will usually be root bound, if so follow standard nursery practice of "root scoring".

- J. Do not wrap trees.

- K. Do not over prune.

- L. Mulch the top of the ball. Do not plant grass all the way to the trunk of the tree. Leave the area above the top of the ball and mulch with at least two (2") inches of specified mulch.

- M. All plant beds and trees to be mulched with a minimum settled thickness of two (2") inches over the entire bed or pit.

- N. Obstruction below ground: In the event that rock, or underground construction work or obstructions are encountered in any plant pit excavation work to be done under this section, alternate locations may be selected by the Owner. Where locations cannot be changed, the obstructions shall be removed to a depth of not less than three (3") feet below grade and no less than six (6") inches below the bottom of ball when plant is properly set at the required grade. The work of this section shall include the removal from the site of such rock or underground obstructions encountered at the cost of the Landscape Contractor.

- O. Trees and large shrubs shall be staked as site conditions require. Position stakes to secure trees against seasonal prevailing winds.

- P. Pruning and Mulching: Pruning shall be directed by the Landscape Architect and shall be pruned in accordance with standard horticultural practice following Fine Pruning, Class I pruning standards provided by the National Arborist Association.

1. Dead wood, suckers, broken and badly bruised branches shall be removed. General tipping of the branches is not permitted. Do not cut terminal branches.

2. Pruning shall be done with clean, sharp tools.

3. Immediately after planting operations are completed, all tree pits shall be covered with a layer of organic material two (2") inches in depth. This limit of the organic material for trees shall be the diameter of the plant pit.

- Q. Steel Curbing Installation:

1. Curbing shall be aligned as indicated on plans. Stake out limits of steel curbing and obtain Owners approval prior to installation.

2. All steel curbing shall be free of kinks and abrupt bends.

3. Top of curbing shall be ½" maximum height above final finished grade.

4. Stakes are to be installed on the planting bed side of the curbing, as opposed to the grass side.

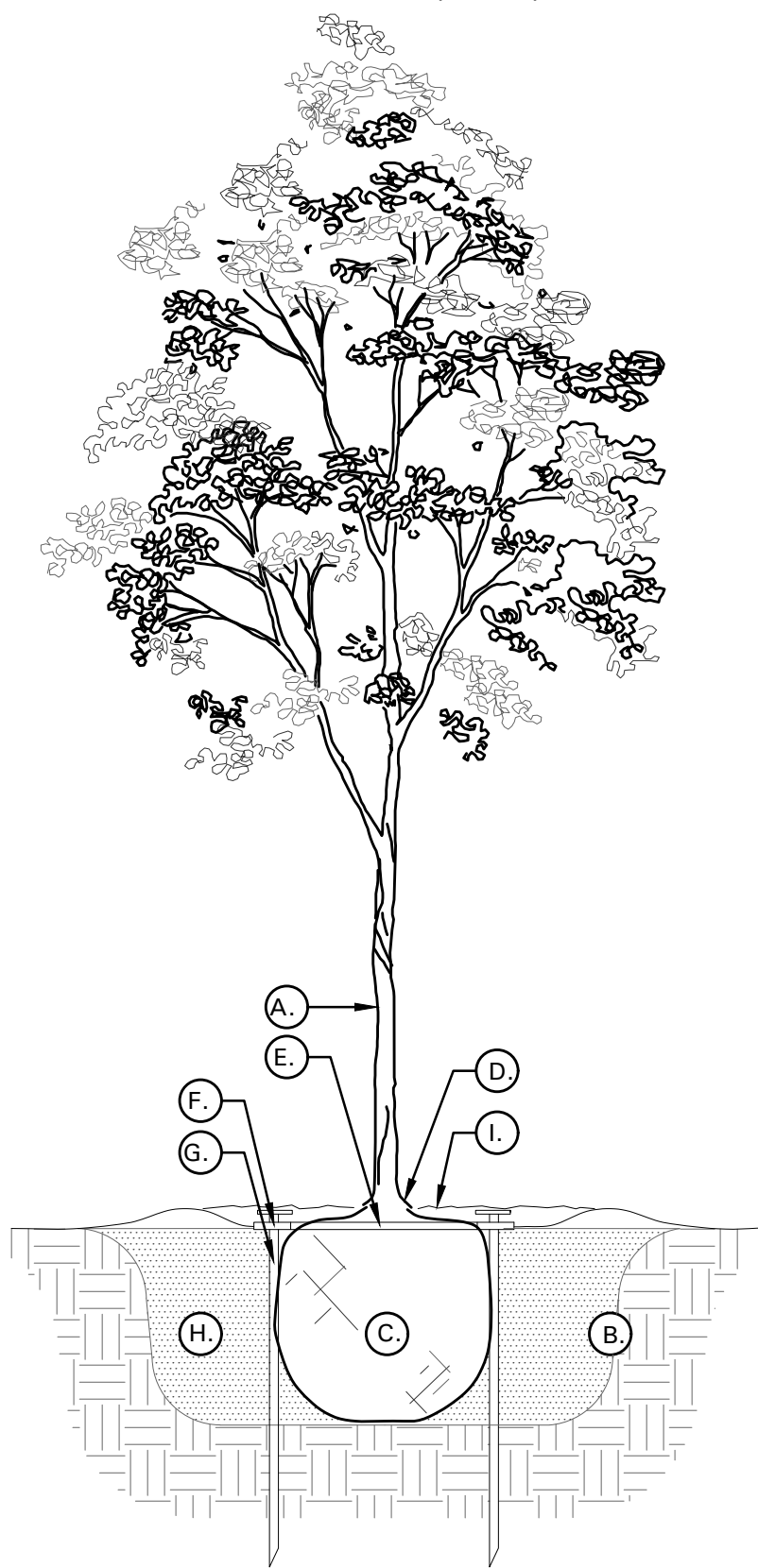
5. Do not install steel edging along sidewalks or curbs.

6. Cut steel edging at 45 degree angle where edging meets sidewalks or curbs.

3.3 CLEANUP AND ACCEPTANCE

- A. Cleanup: During the work, the premises shall be kept neat and orderly at all times. Storage areas for all materials shall be so organized so that they, too, are neat and orderly. All trash and debris shall be removed from the site as work progresses. Keep paved areas clean by sweeping or hosing them at end of each work day.

END OF SECTION



01 TREE PLANTING DETAIL
NOT TO SCALE

TREE PLANTING DETAIL LEGEND
AND NOTES

- A. TREE: TREES SHALL CONFORM WITH LATEST AMERICAN STANDARD FOR NURSERY STOCK. www.anla.org

- B. TREE PIT: WIDTH TO BE AT LEAST TWO (2) TIMES THE DIAMETER OF THE ROOT BALL CENTER TREE IN HOLE & REST ROOT BALL ON UNDISTURBED NATIVE SOIL.

- C. ROOT BALL: REMOVE TOP ½ BURLAP AND ANY OTHER FOREIGN OBJECT; CONTAINER GROWN STOCK TO BE INSPECTED FOR GIRDLING ROOTS.

- D. ROOT FLARE: ENSURE THAT ROOT FLARE IS EXPOSED, FREE FROM MULCH, AND AT LEAST TWO INCHES ABOVE GRADE. TREES SHALL BE REJECTED WHEN GIRDLING ROOTS ARE PRESENT & ROOT FLARE IS NOT APPARENT.

- E. ROOTBALL ANCHOR RING: REFER TO MANUFACTURER'S GUIDELINES FOR SIZING. PLACE ROOTBALL ANCHOR RING ON BASE OF ROOTBALL. TRUNK SHOULD BE IN THE CENTER OF THE RING.

- F. ROOT ANCHOR BY TREE STAKE SOLUTIONS.

- G. NAIL STAKE: REFER TO MANUFACTURER'S GUIDELINES FOR SIZING. INSTALL NAIL STAKES WITH HAMMER OR Mallet FIRMLY INTO UNDISTURBED GROUND. DRIVE NAIL STAKES FLUSH WITH "U" BRACKET ADJACENT TO ROOTBALL (DO NOT DISTURB ROOTBALL).

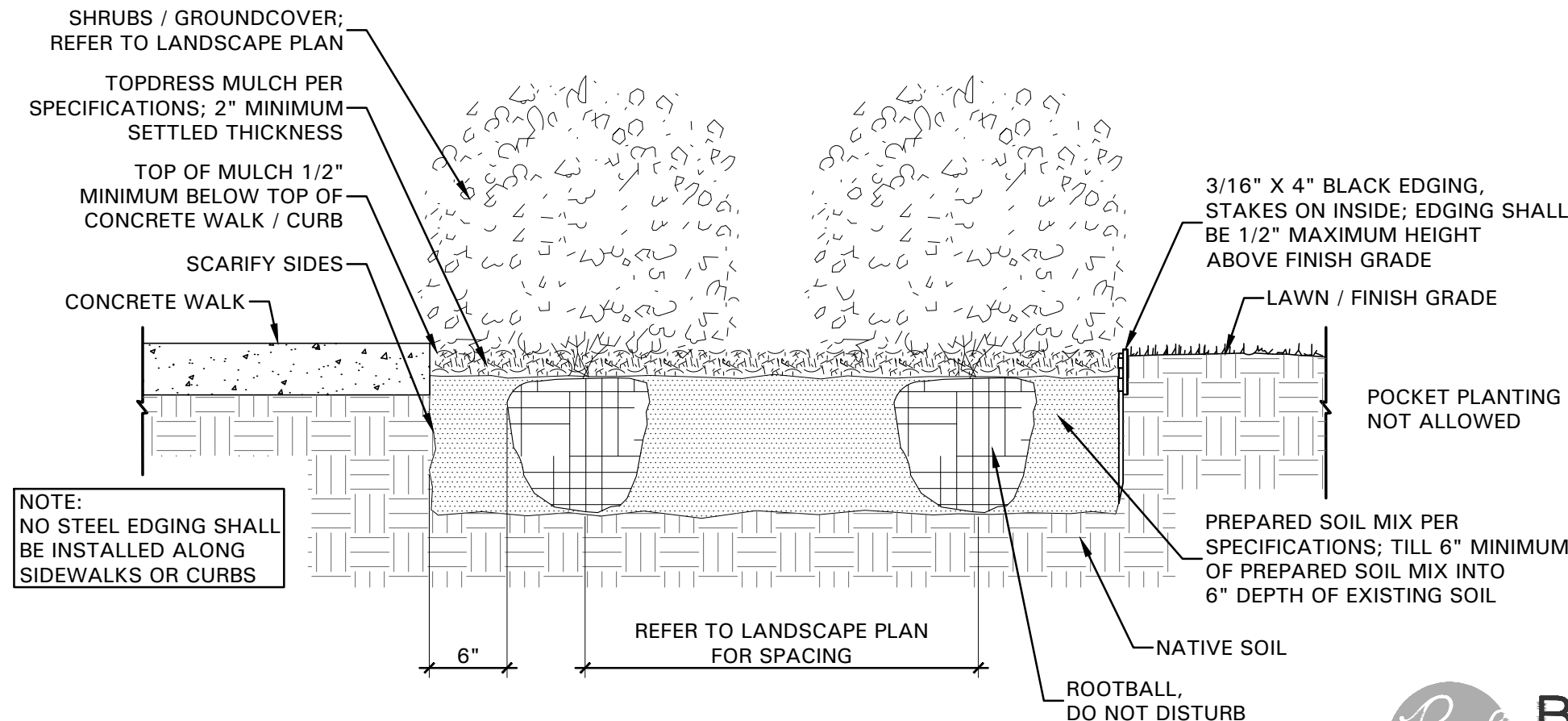
- H. BACKFILL: USE EXISTING NATIVE SOIL (no amendments) WATER THOROUGHLY TO ELIMINATE AIR POCKETS.

- I. MULCH: DOUBLE SHREDDED HARDWOOD MULCH 2 INCH SETTLED THICKNESS, WITH 2" HT. WATERING RING; ENSURE THAT ROOT FLARE IS EXPOSED. BELOW GROUND STAKE SHOULD NOT BE VISIBLE.

- J. TREE STAKES: TREE STAKE SOLUTIONS 'SAFETY STAKE' BELOW GROUND MODEL AVAILABLE FROM: Tree Stake Solutions ATTN: Jeff Tuley (903) 676-6143 jeff@treestakesolutions.com www.treestakesolutions.com

- K. OR APPROVED EQUAL. TREES SHALL BE STAKED BELOW GROUND WHERE NECESSARY; ABOVE GROUND STAKING IS EXPRESSLY PROHIBITED.

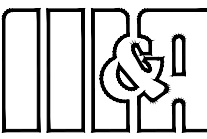
- L. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN A COPY OF THE MANUFACTURER'S SPECIFICATIONS PRIOR TO INSTALLATION OF TREE STAKES. CONTRACTOR SHALL ADHERE TO MANUFACTURER'S INSTALLATION GUIDELINES, SPECIFICATIONS, AND OTHER REQUIREMENTS FOR TREE STAKE INSTALLATION.



02 SHRUB / GROUNDCOVER DETAIL
NOT TO SCALE

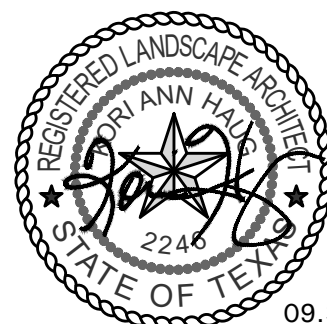


BUILD TO SUIT FOR
NIAGARA CONSERVATION ON OLD GERAULT
FLOWER MOUND,
TEXAS



MEINHARDT & ASSOCIATES
ARCHITECTS, P.L.L.C.

1440 DALLAS PARKWAY
SUITE 500
DALLAS TEXAS 75244
972.960.0880



DATE: 08.03.2020

JOB # 20-204
LANDSCAPE SPECIFICATIONS
AND DETAILS
SHEET:

L2.03



• 4245 North Central Expy
• Suite 501
• Dallas, Texas 75205
• 214.865.7192 office

..\\..\\ITIG_logo3.png

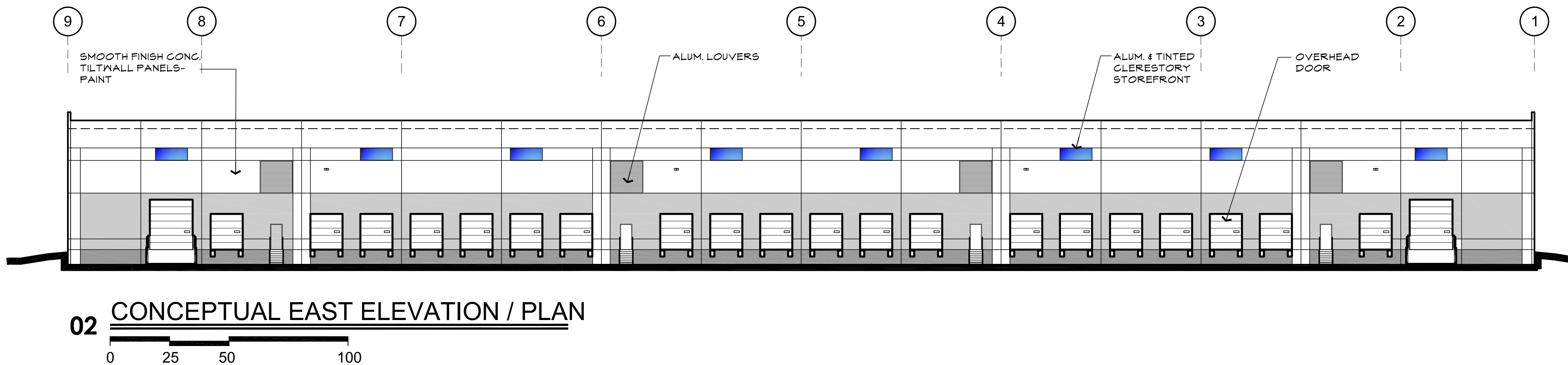
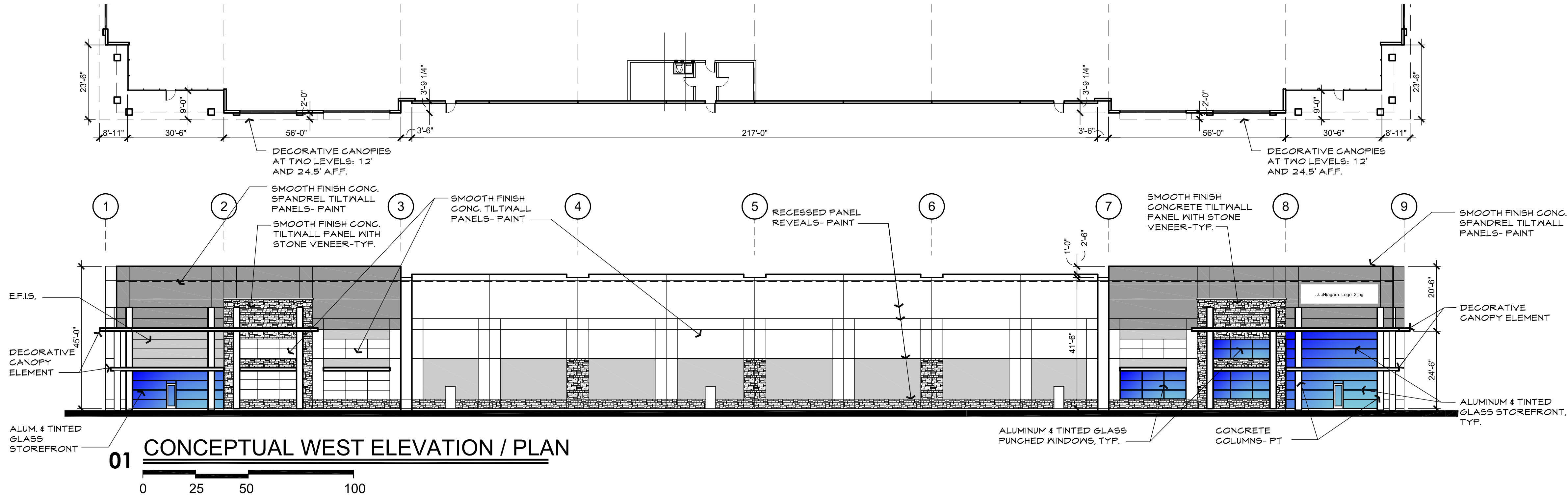
BUILT TO SUIT FOR
NIAGARA CONSERVATION ON OLD GERAULT
TEXAS
FLOWER MOUND,

MEINHARDT & ASSOCIATES
ARCHITECTS, P.L.L.C.
14443 DALLAS PARKWAY
SUITE 100
DALLAS, TEXAS 75244
(214) 343-0000

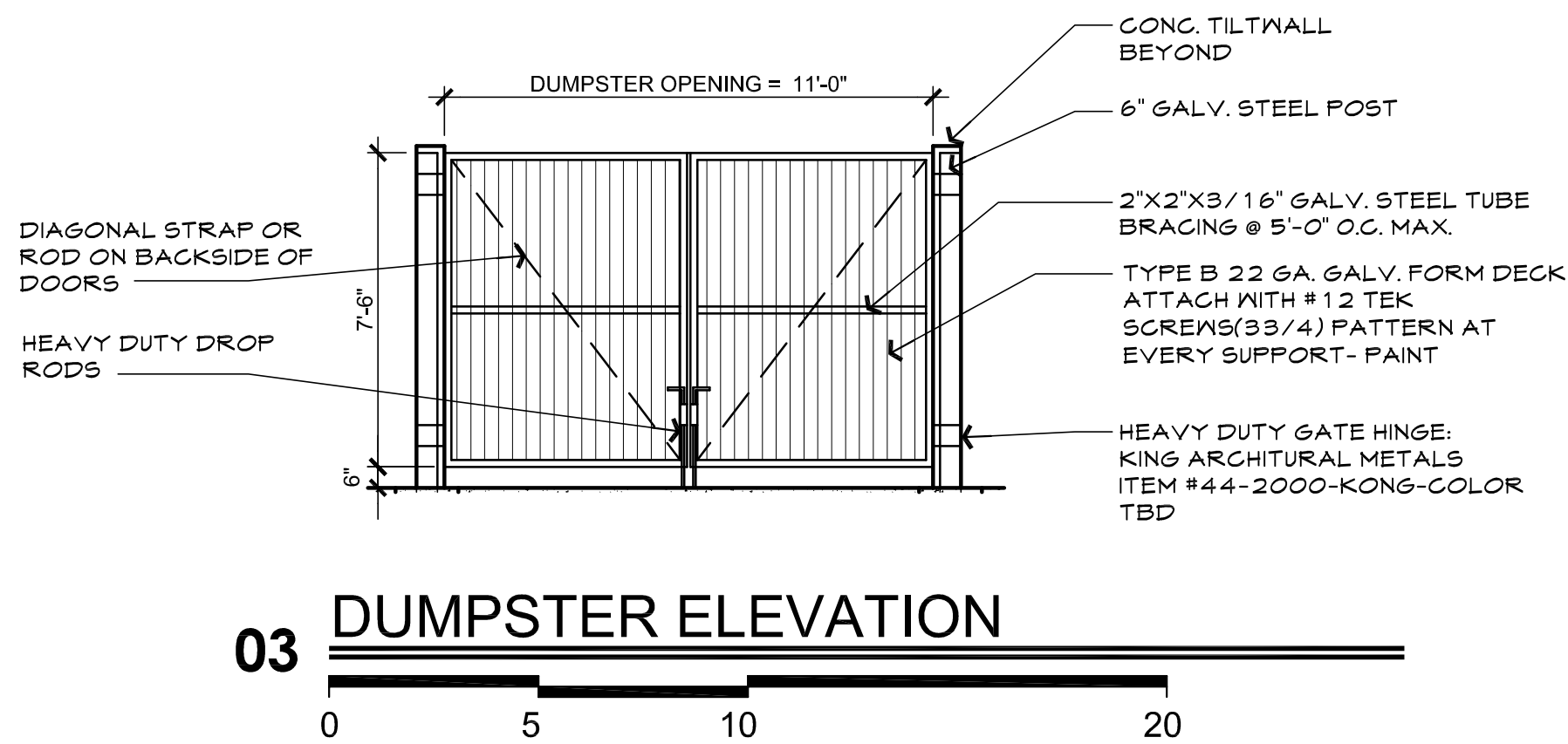
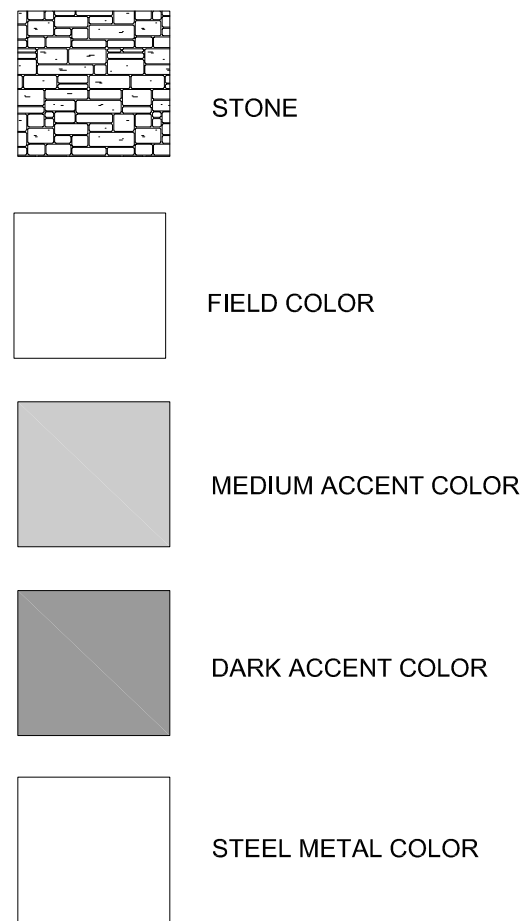
NOT FOR REGULATORY
APPROVAL, PERMITTING,
OR CONSTRUCTION

DATE: 11.03.2020
JOB # 20-204
EXTERIOR ELEVATIONS
SHEET:

A6.00



COLOR SELECTION KEY



MATERIAL USE TABLE

MATERIAL	NORTH ELEV.	SOUTH ELEV.	EAST ELEV.	WEST ELEV.
1. TOTAL FACADE S.F.	12,957 S.F.	12,957 S.F.	15,085 S.F.	18,112 S.F.
2. FACADE (EXCLUSIVE OF DOOR AND WINDOWS)	12,623 S.F.	12,205 S.F.	12,699 S.F.	16,517 S.F.
3. DOORS AND WINDOWS S.F.	334 S.F.	752 S.F.	2,386 S.F.	1,595 S.F.
4. PRIMARY MASONRY TOTALS - (MIN. 80%)	12,362 S.F. and 98%	12,127 S.F. and 99.5%	12,699 S.F. and 100%	15,922 S.F. and 96%
*TILT WALL S.F.	11,842 S.F. and 94%	10,576 S.F. and 87%	12,699 S.F. and 100%	14,043 S.F. and 85%
*TEXTURED STONE S.F.	520 S.F. and 4%	1,551 S.F. and 12.5%		1,879 S.F. and 11%
5. SECONDARY TOTALS - (MAX. 20%)	261 S.F. and 2%	78 S.F. and .5%		595 S.F. and 4%
*METAL ACCENT S.F.	94 S.F. and 1%	78 S.F. and .5%		250 S.F. and 2%
*EIFS (STUCCO)	167 S.F. and 1%			345 S.F. and 2%

NOTE:
ANY EXTERNAL ELECTRICAL PANELS WILL BE PAINTED/TEXTURED TO MATCH THE MATERIAL AND COLOR OF THE BUILDING.

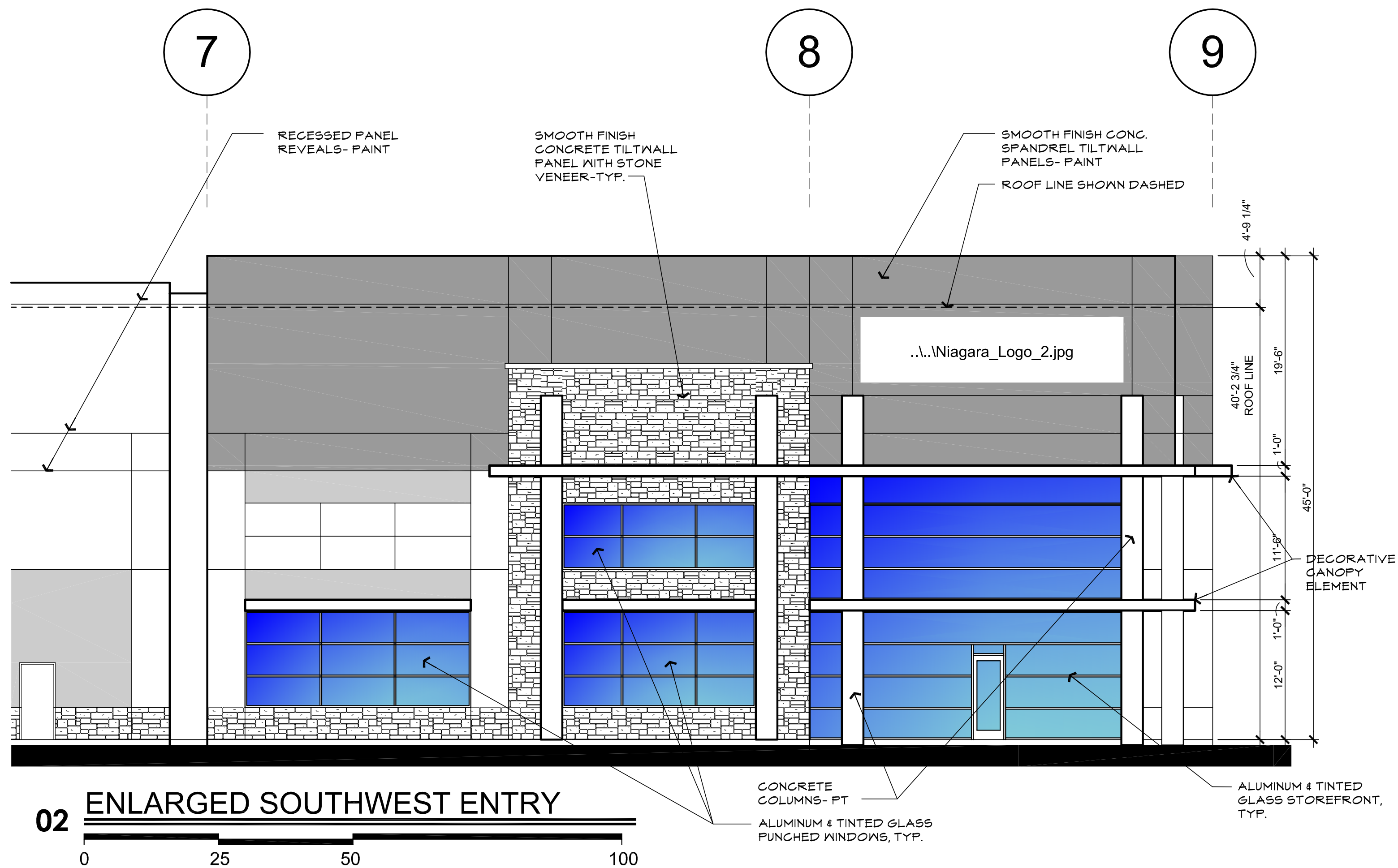
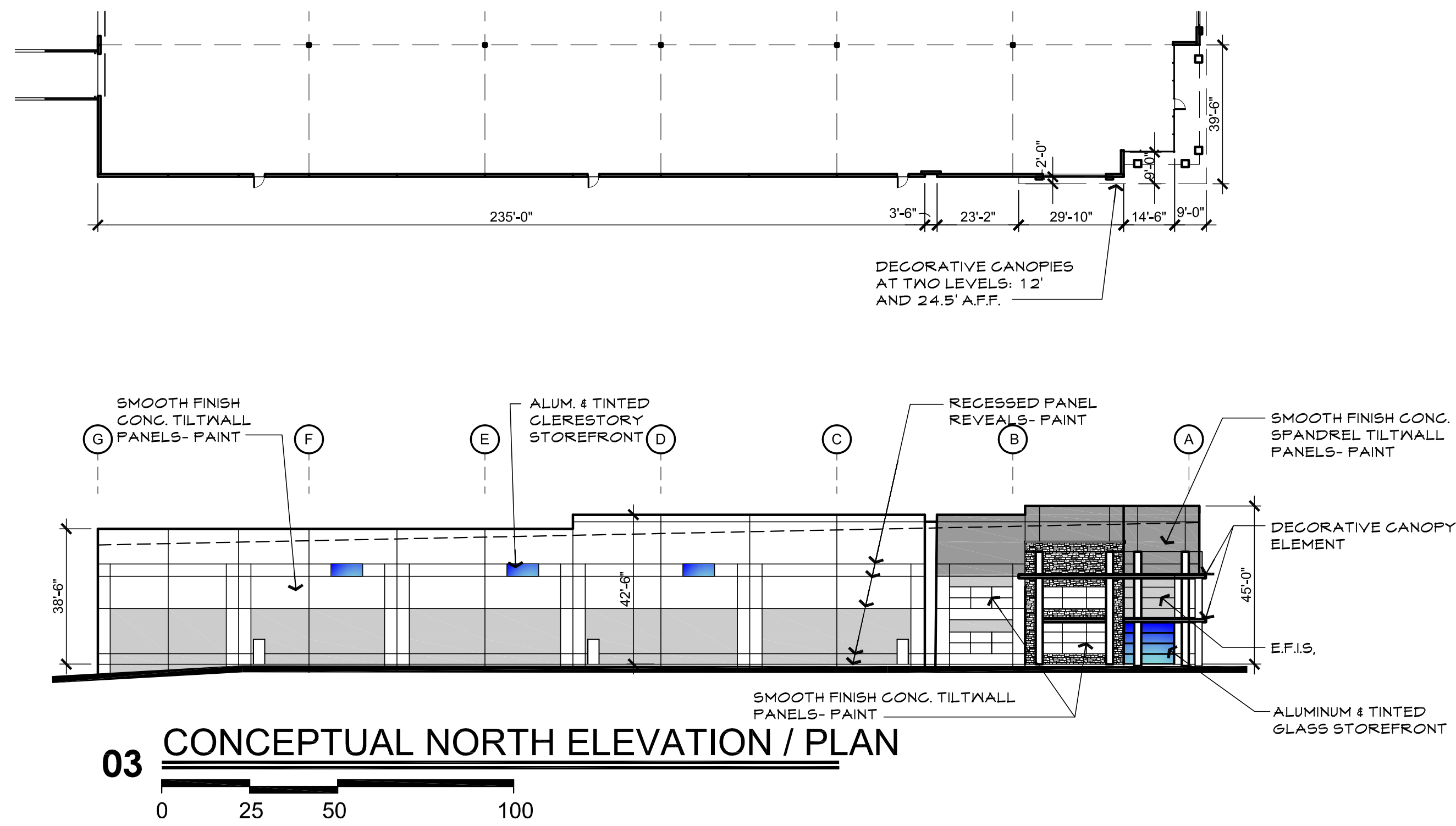
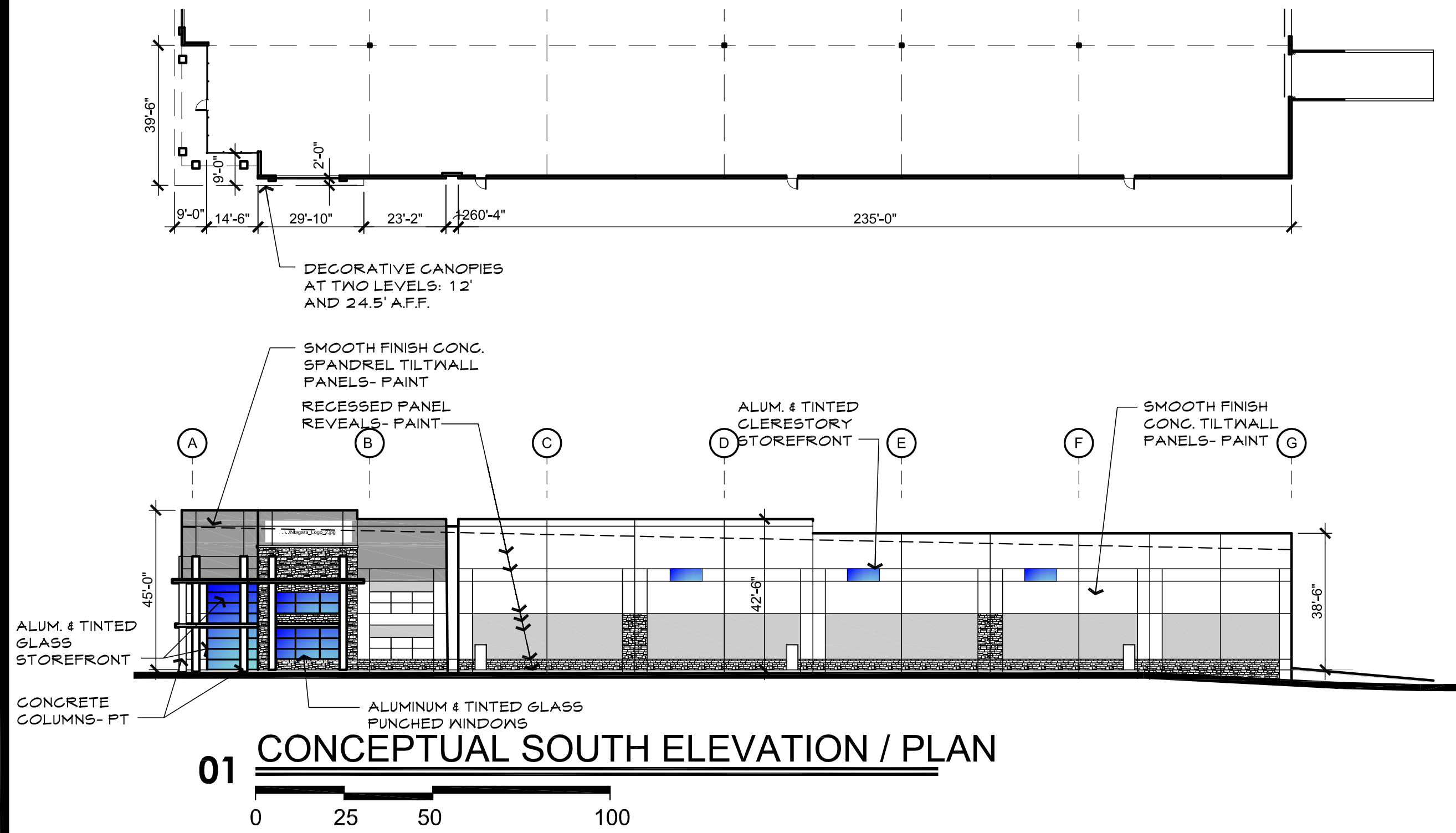
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BUILT TO SUIT FOR
NIAGARA CONSERVATION ON OLD GERAULT
FLOWER MOUND, TEXAS

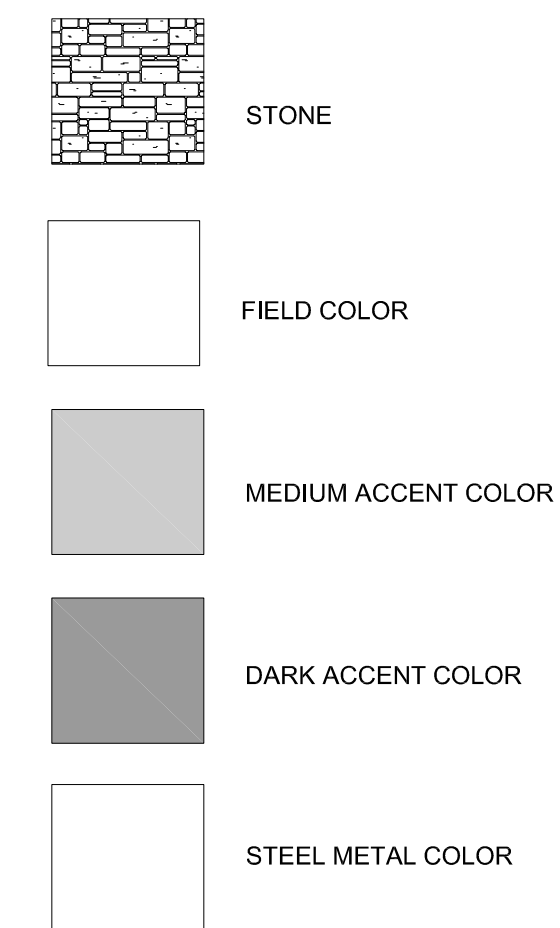
MEINHARDT & ASSOCIATES
ARCHITECTS, P.L.L.C.
1400 DALLAS PARKWAY
SUITE 200
DALLAS, TEXAS 75244
(214) 966-0000

NOT FOR REGULATORY
APPROVAL, PERMITTING,
OR CONSTRUCTION

DATE: 11.03.2020
JOB # 20-204
EXTERIOR ELEVATIONS
SHEET:



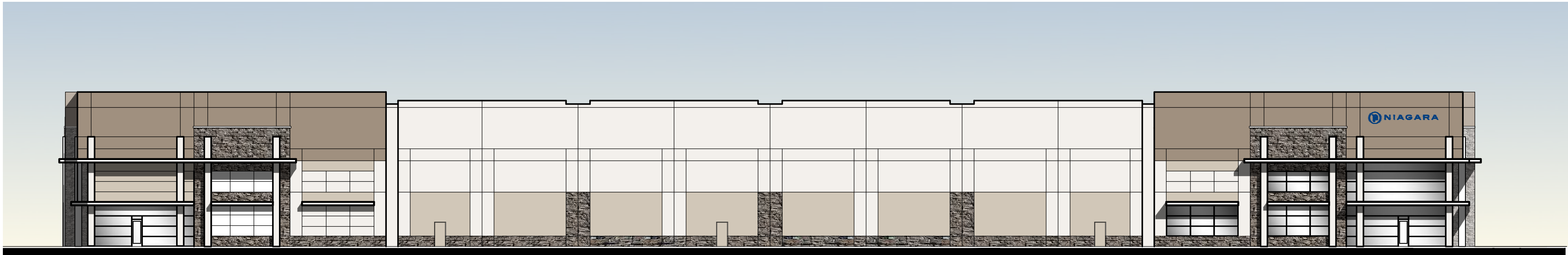
COLOR SELECTION KEY



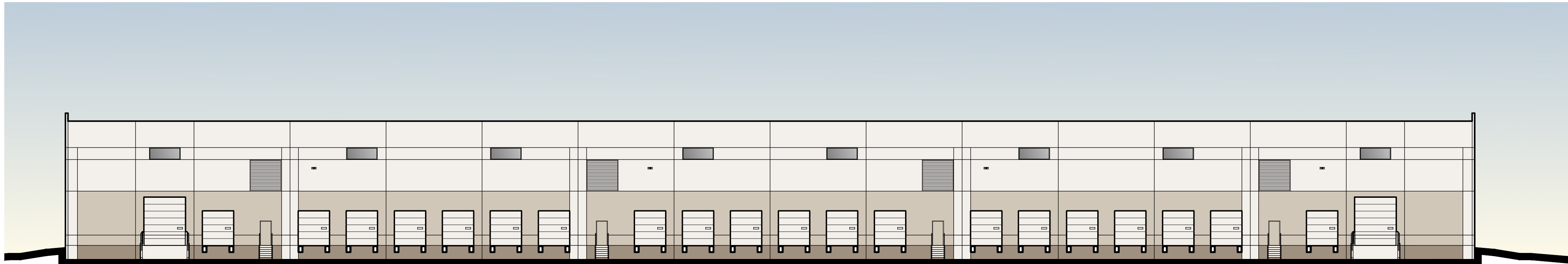
MATERIAL USE TABLE

	MATERIAL	NORTH ELEV.	SOUTH ELEV.	EAST ELEV.	WEST ELEV.
1.	TOTAL FACADE S.F.	12,957 S.F.	12,957 S.F.	15,085 S.F.	18,112 S.F.
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3.	DOORS AND WINDOWS S.F.	334 S.F.	752 S.F.	2,386 S.F.	1,595 S.F.
4.	PRIMARY MASONRY TOTALS- (MIN. 80%)	12,362 S.F. and 98%	12,127 S.F. and 99.5%	12,699 S.F. and 100%	15,922 S.F. and 96%
	*TILT WALL S.F.	11,842 S.F. and 94%	10,576 S.F. and 87%	12,699 S.F. and 100%	14,043 S.F. and 85%
	*TEXTURED STONE S.F.	520 S.F. and 4%	1,551 S.F. and 12.5%		1,879 S.F. and 11%
5.	SECONDARY TOTALS - (MAX. 20%)	261 S.F. and 2%	78 S.F. AND .5%		595 S.F. and 4%
	*METAL ACCENT S.F.	94 S.F. and 1%	78 S.F. and .5%		250 S.F. and 2%
	*EIFS (STUCCO)	167 S.F. and 1%			345 S.F. and 2%

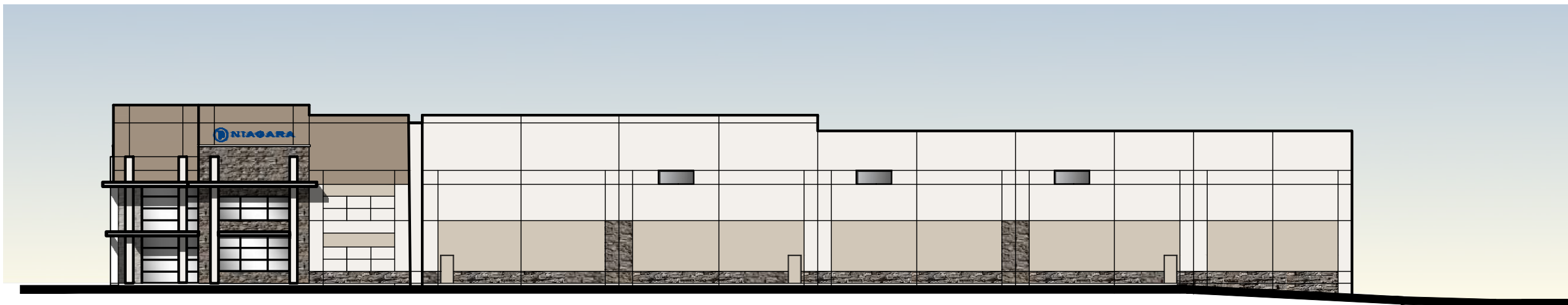
NOTE:
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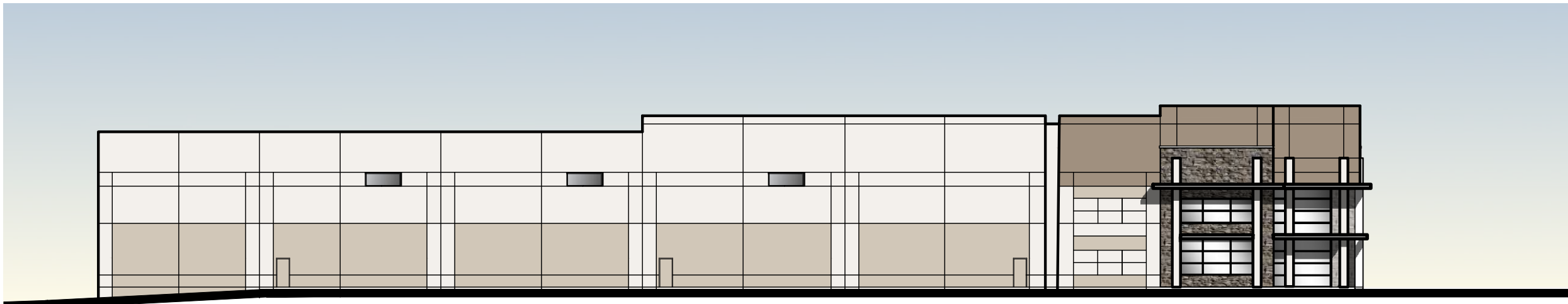
01 WEST ELEVATION



02 EAST ELEVATION



03 SOUTH ELEVATION



04 NORTH ELEVATION



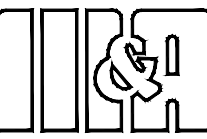
05 ENLARGED SOUTHWEST ENTRY

COLOR SELECTION KEY

	CORONADO STONE ARTISAN LEDGE - FALMOUTH
	SHERWIN WILLIAMS 7036 ACCESSIBLE BEIGE FIELD COLOR
	SHERWIN WILLIAMS 7037 BALANCED BEIGE
	SHERWIN WILLIAMS 9174 MOTH WING



BUILT TO SUIT FOR
NIAGARA CONSERVATION ON OLD GERAULT
FLOWER MOUND,
TEXAS



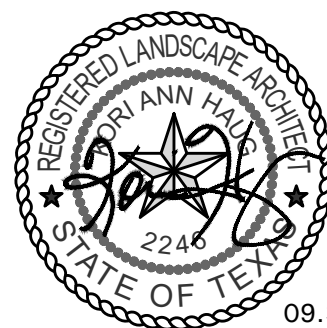
MEINHARDT & ASSOCIATES
ARCHITECTS, P.L.L.C.
1400 DALLAS PARKWAY
SUITE 400
DALLAS, TEXAS 75244
(214) 594-5400

DATE: 09.04.2020
JOB # 20-204
P.O.D. ELEVATIONS
SHEET:



BUILD TO SUIT FOR
NIAGARA CONSERVATION ON OLD GERAULT
TEXAS
FLOWER MOUND,

MEINHARDT & ASSOCIATES
ARCHITECTS, P.L.L.C.
14415 DALLAS PARKWAY
SUITE 400
DALLAS, TEXAS 75244
(214) 690-0800

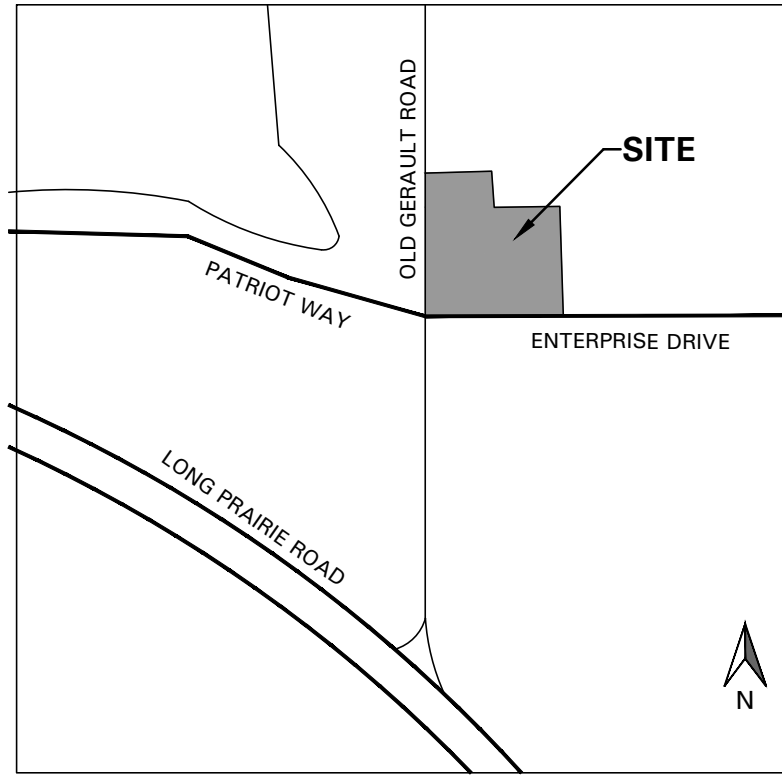


DATE: 08.03.2020
JOB # 20-204
SPECIMEN TREE PLAN
SHEET:

L1.00

• 4245 North Central Expy
• Suite 501
• Dallas, Texas 75205
• 214.865.7192 office

VICINITY MAP
NOT TO SCALE



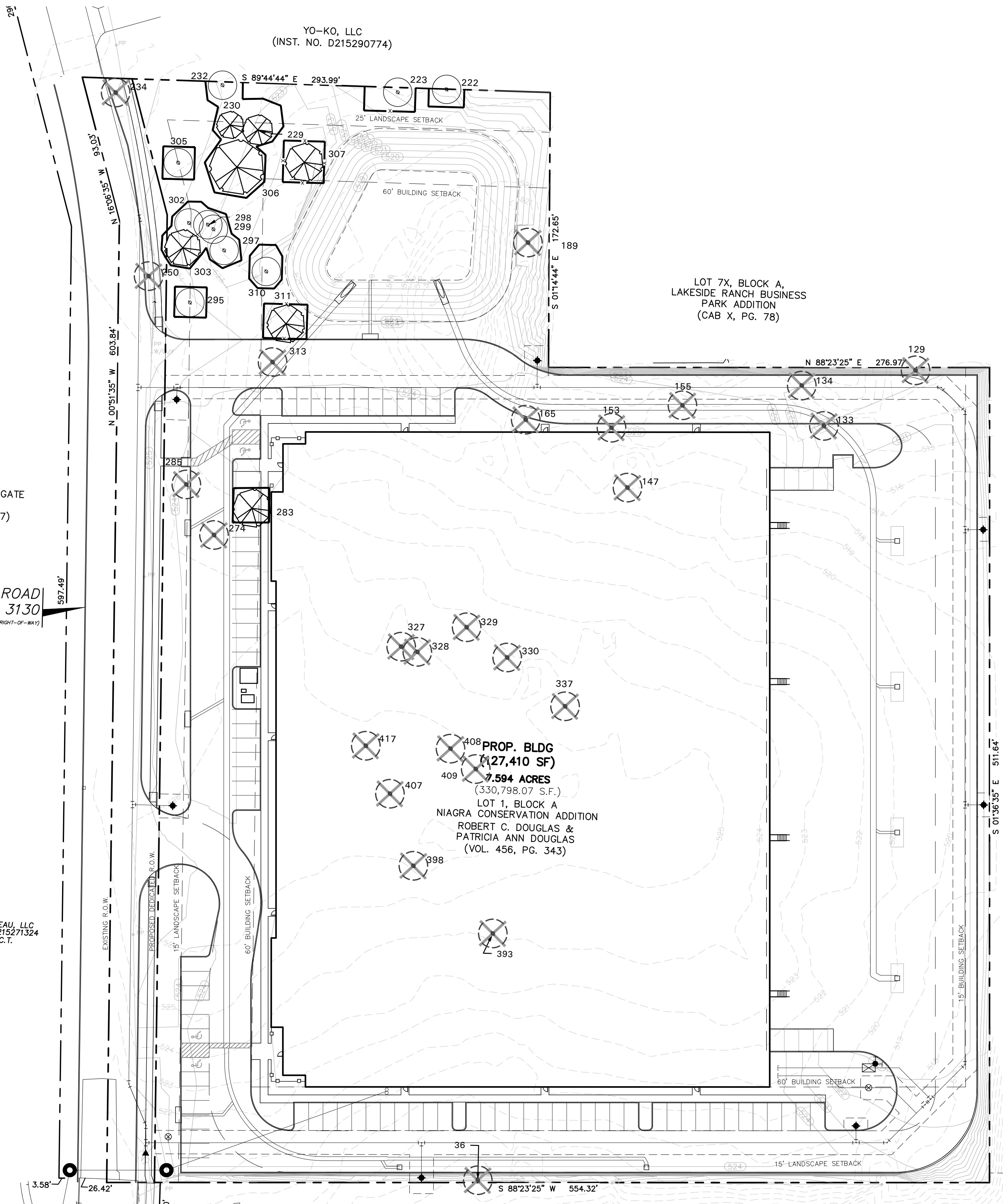
TREE SURVEY FIELD DATA								
No.	Dia. (inches)	Species (common name)	Species (botanical name)	Status	Protected	Health	Tree Credits	Remarks
36	19	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
129	20.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
133	25.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
134	19.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
147	20	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
153	19	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
155	19.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
165	24	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
189	28	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
229	26	CEDAR ELM	ULMUS CRASSIFOLIA	TO REMAIN	PROTECTED-SPECIMEN	GOOD	5	BUILDABLE AREA
230	23	CEDAR ELM	ULMUS CRASSIFOLIA	TO REMAIN	PROTECTED-SPECIMEN	GOOD	4	BUILDABLE AREA
234	30	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
250	28	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED-SPECIMEN	POOR		
274	19.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED-SPECIMEN	FAIR		
283	31.5	POST OAK	QUERCUS STELLATA	TO REMAIN	PROTECTED-SPECIMEN	GOOD	6	BUILDABLE AREA
285	31	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
303	24	POST OAK	QUERCUS STELLATA	TO REMAIN	PROTECTED-SPECIMEN	FAIR	1	
306	36	CEDAR ELM	ULMUS CRASSIFOLIA	TO REMAIN	PROTECTED-SPECIMEN	GOOD	6	BUILDABLE AREA
307	23.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO REMAIN	PROTECTED-SPECIMEN	GOOD	4	BUILDABLE AREA
311	30.5	POST OAK	QUERCUS STELLATA	TO REMAIN	PROTECTED-SPECIMEN	GOOD	6	BUILDABLE AREA
313	32.2	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
327	24.5	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
328	22.5	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
329	25.5	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
330	33.5	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
337	26	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
393	33	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED-SPECIMEN	FAIR		
398	27	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
407	31	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
408	30.5	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
409	23	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
417	22	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED-SPECIMEN	POOR		Measurement taken at 1' ht.
Total Caliper Inches of Specimen Trees on Site to be Removed (Total: 33 Specimen Trees)							828.7	
Total Caliper Inches of Specimen Trees to be Removed							634.2	
Total Mitigation Required for Specimen Trees Removed							1,268.4	
Replacement Trees Required for Specimen Trees to be Removed							422.8	
Total Tree Credits for Specimen Trees to Remain							32.0	
Total Protected Trees on Site							164.0	

EXISTING TREE LEGEND

- SPECIMEN TREE TO REMAIN
- SPECIMEN TREE TO BE REMOVED
- TREE PROTECTION FENCING TO REMAIN



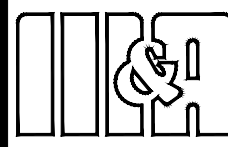
SCALE: 1" = 40'-0"
0 20 40 80



60' BUILDING SETBACK LINE
(CAB. U, PAGE. 484)

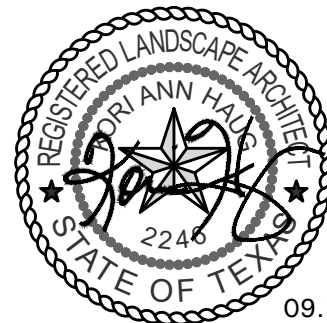


BUILT TO SUIT FOR
NIAGARA CONSERVATION ON OLD GERAULT
TEXAS
FLOWER MOUND,



MEINHARDT & ASSOCIATES
ARCHITECTS, P.L.L.C.

1440 DALLAS PARKWAY
SUITE 501
DALLAS, TEXAS 75204
(214) 865-0880



09.30.20

DATE: 08.03.2020

JOB # 20-204

**TREE PRESERVATION
PLAN**
SHEET:

L1.01

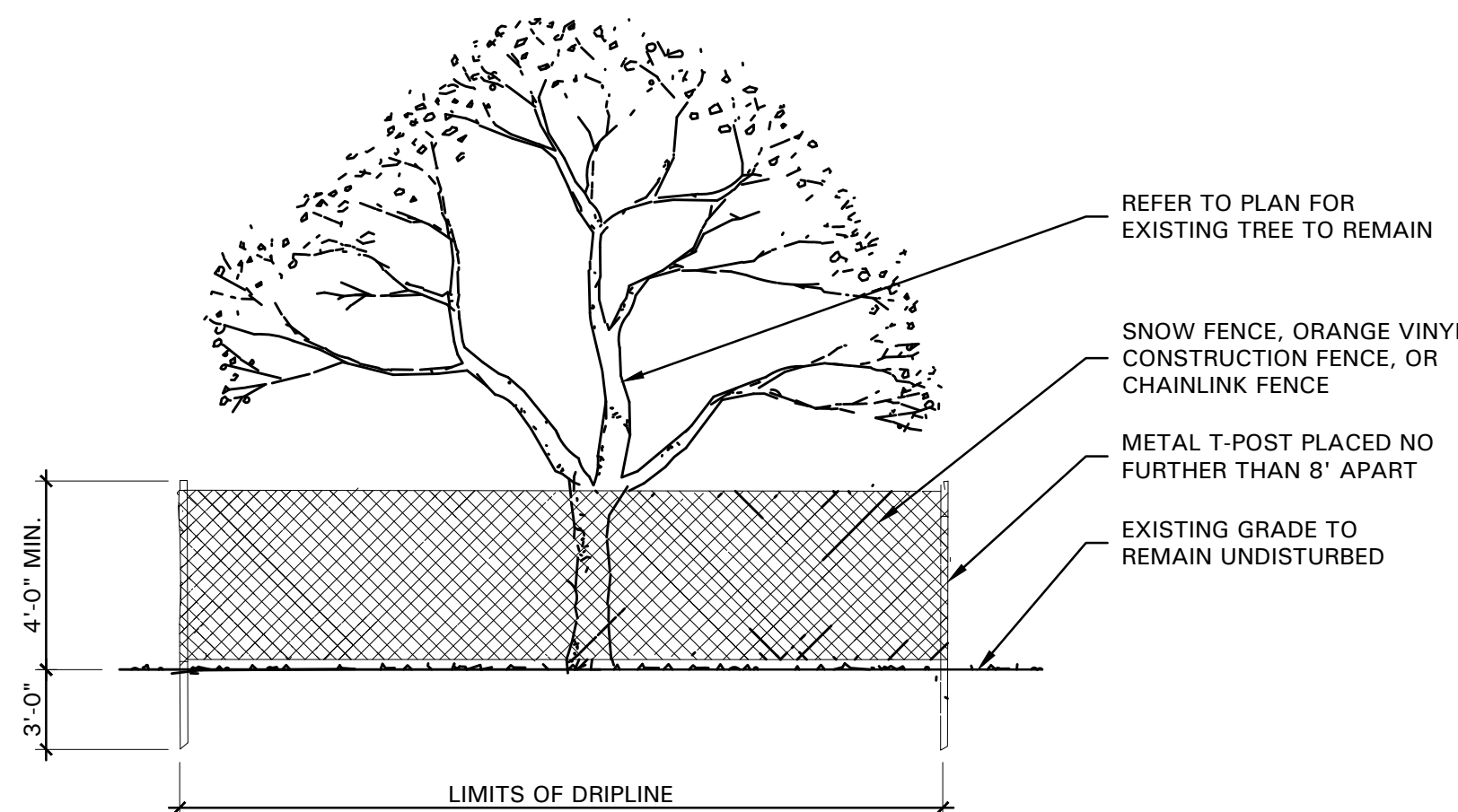
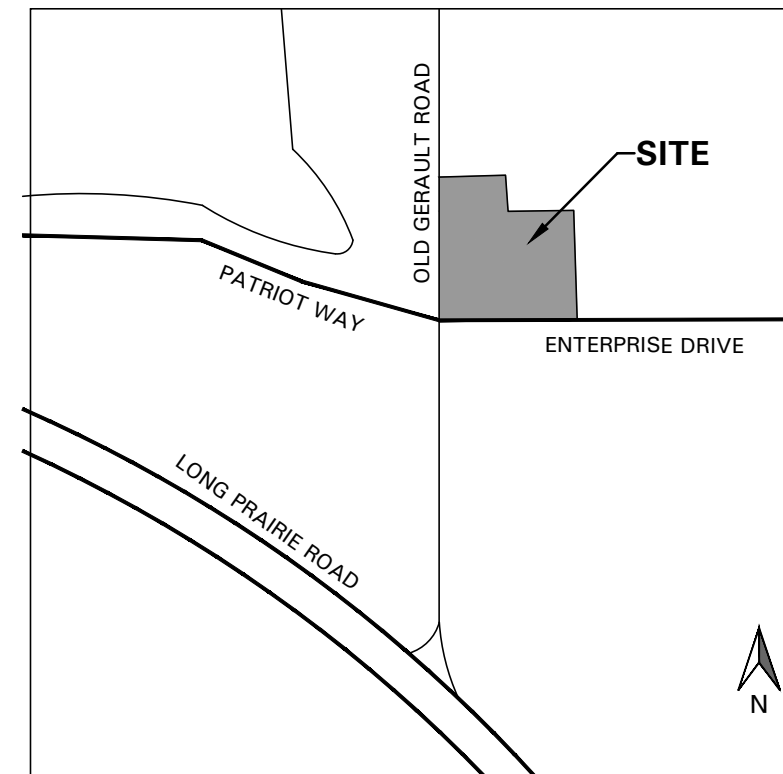
• 4245 North Central Expy
• Suite 501
• Dallas, Texas 75205
• 214.865.7192 office



SCALE: 1" = 40'-0"



VICINITY MAP
NOT TO SCALE



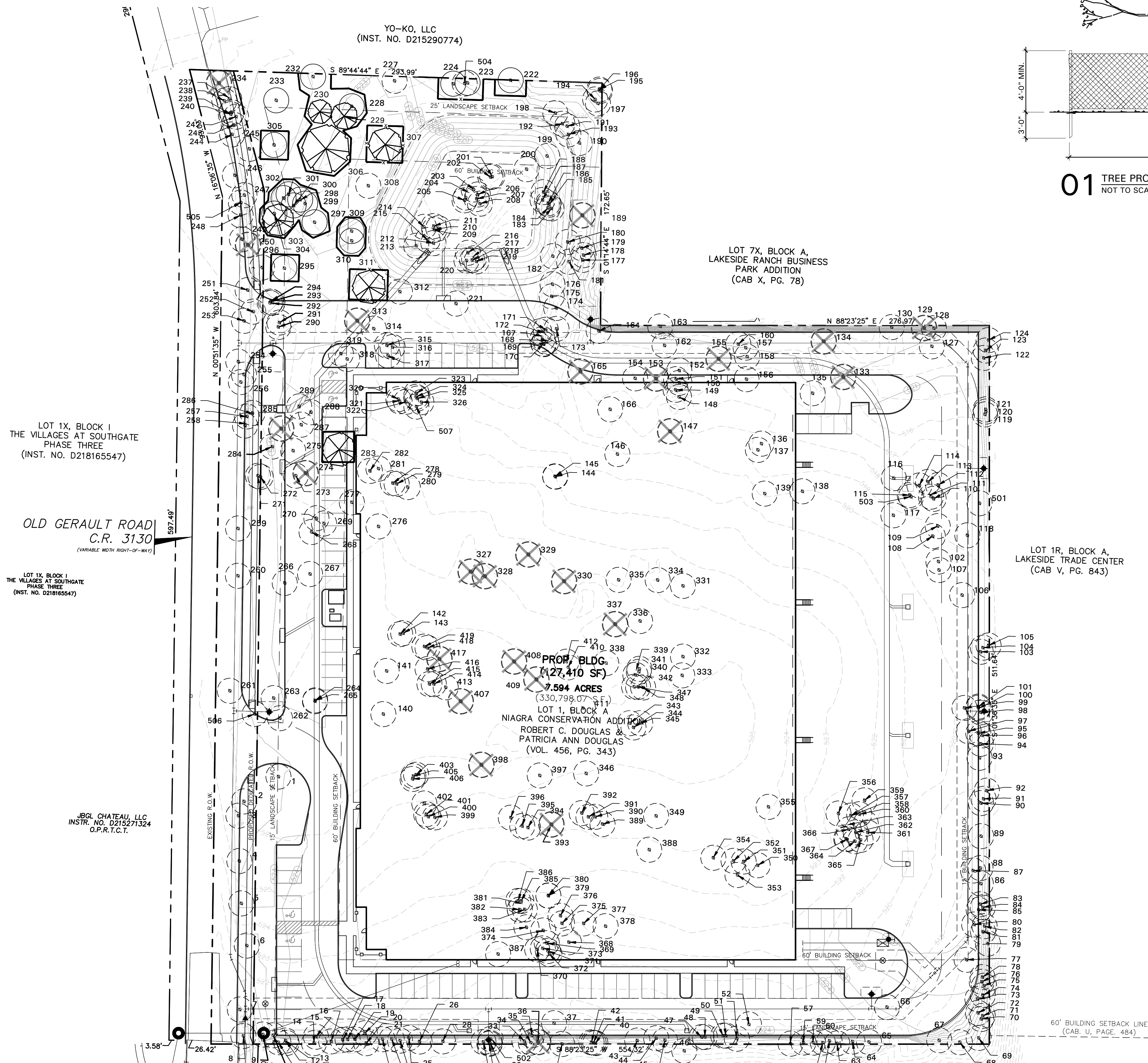
01 TREE PROTECTIVE FENCING
NOT TO SCALE

EXISTING TREE LEGEND

- SPECIMEN TREE TO REMAIN
- SPECIMEN TREE TO BE REMOVED
- EXISTING TREE TO REMAIN
- EXISTING TREE TO TO BE REMOVED
- TREE PROTECTION FENCING TO REMAIN DURING CONSTRUCTION, REFER TO L1.01

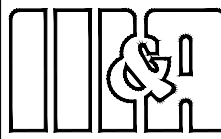
TREE PRESERVATION NOTES

- EXISTING TREES TO REMAIN SHALL BE PROTECTED DURING CONSTRUCTION FROM TREE STRUCTURE DAMAGE AND COMPACTION OF SOIL UNDER AND AROUND DRIP LINE (CANOPY) OF TREE.
- IF ANY ROOT STRUCTURE IS DAMAGED DURING ADJACENT EXCAVATION / CONSTRUCTION, NOTIFY OWNER'S AUTHORIZED REPRESENTATIVE IMMEDIATELY. IT IS RECOMMENDED THAT A LICENSED ARBORIST BE SECURED FOR THE TREATMENT OF ANY POSSIBLE TREE WOUNDS.
- NO DISTURBANCE OF THE SOIL GREATER THAN 4" SHALL BE LOCATED CLOSER TO THE TREE TRUNK THAN 1/2 THE DISTANCE OF THE DRIP LINE TO THE TREE TRUNK. A MINIMUM OF 75% OF THE DRIP LINE AND ROOT ZONE SHALL BE PRESERVED AT NATURAL GRADE.
- ANY FINE GRADING DONE WITHIN THE CRITICAL ROOT ZONES OF THE PROTECTED TREES MUST BE DONE WITH LIGHT MACHINERY SUCH AS A BOBCAT OR LIGHT TRACTOR. NO EARTH MOVING EQUIPMENT WITH TRACKS IS ALLOWED WITHIN THE CRITICAL ROOT ZONE OF THE TREES.
- NO MATERIALS INTENDED FOR USE IN CONSTRUCTION OR WASTE MATERIALS ACCUMULATED DUE TO EXCAVATION OR DEMOLITION SHALL BE PLACED WITHIN THE LIMITS OF THE DRIP LINE OF ANY TREE.
- NO EQUIPMENT MAY BE CLEANED OR TOXIC SOLUTIONS, OR OTHER LIQUID CHEMICALS, SHALL BE DEPOSITED WITHIN THE LIMITS OF THE DRIP LINE OF A TREE, INCLUDING BUT NOT LIMITED TO: PAINT, OIL, SOLVENTS, ASPHALT, CONCRETE, MORTAR, PRIMERS, ETC.
- NO SIGNS, WIRES OR OTHER ATTACHMENTS, OTHER THAN THOSE OF A PROTECTIVE NATURE, SHALL BE ATTACHED TO ANY TREE.
- NO VEHICULAR / CONSTRUCTION EQUIPMENT TRAFFIC OR PARKING IS ALLOWED WITHIN THE LIMITS OF THE DRIP LINE OF TREES.
- BORING OF UTILITIES MAY BE PERMITTED UNDER PROTECTED TREES IN CERTAIN CIRCUMSTANCES. THE MINIMUM LENGTH OF THE BORE SHALL BE THE WIDTH OF THE TREE'S CANOPY AND SHALL BE A MINIMUM DEPTH OF FORTY-EIGHT (48") INCHES.
- IRRIGATION TRENCHING WHICH MUST BE DONE WITHIN THE CRITICAL ROOT ZONE OF A TREE SHALL BE DUG BY HAND AND ENTER THE AREA IN A RADIAL MANNER.
- ALL TREES TO BE REMOVED FROM THE SITE SHALL BE FLAGGED BY THE CONTRACTOR WITH BRIGHT RED VINYL TAPE (3" WIDTH) WRAPPED AROUND THE MAIN TRUNK AT A HEIGHT OF FOUR (4') FEET ABOVE GRADE. FLAGGING SHALL BE APPROVED BY OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO ANY TREE REMOVAL. CONTRACTOR SHALL CONTACT OWNER'S AUTHORIZED REPRESENTATIVE WITH 72 HOURS NOTICE TO SCHEDULE ON-SITE MEETING.
- ALL TREES TO REMAIN, AS NOTED ON DRAWINGS, SHALL HAVE PROTECTIVE FENCING LOCATED AT THE TREE'S DRIP LINE. THE PROTECTIVE FENCING MAY BE COMPRISED OF SNOW FENCING, ORANGE VINYL CONSTRUCTION FENCING, CHAIN LINK FENCE OR OTHER SIMILAR FENCING WITH A FOUR (4') FOOT APPROXIMATE HEIGHT. THE PROTECTIVE FENCING SHALL BE LOCATED AS INDICATED ON THE TREE PROTECTION DETAIL.
- WHEN A LOW HANGING LIMB IS BROKEN DURING THE COURSE OF CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE OWNER'S AUTHORIZED REPRESENTATIVE IMMEDIATELY. UNDER NO CIRCUMSTANCE SHALL THE CONTRACTOR PRUNE ANY PORTION OF THE DAMAGED TREE WITHOUT THE PRIOR APPROVAL BY THE OWNER'S AUTHORIZED REPRESENTATIVE.



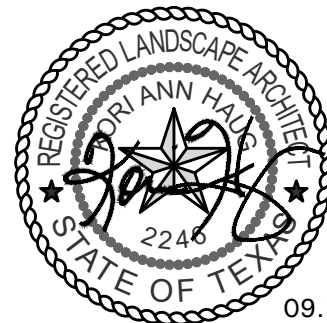


BUILT TO SUIT FOR
NIAGARA CONSERVATION ON OLD GERAULT
TEXAS
FLOWER MOUND,



MEINHARDT & ASSOCIATES
ARCHITECTS, P.L.L.C.

1401 DALLAS FORTWORTH
2010 FIVE
DALLAS TEXAS 75204
972.986.0885



09.30.20

DATE: 08.03.2020

JOB # 20-204
TREE SURVEY
DATA
SHEET:

L1.02

- 4245 North Central Expy
- Suite 501
- Dallas, Texas 75205
- 214.865.7192 office

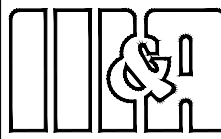


TREE SURVEY FIELD DATA								
No.	Dia. (inches)	Species (common name)	Species (botanical name)	Status	Protected	Health	Tree Credits	Remarks
1	19.5	GUM BUMELIA	SIDEROXYLON LANUGINOSUM	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
2	13.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		DEDICATED R.O.W. BUILDABLE AREA
3	16	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		DEDICATED R.O.W. BUILDABLE AREA
4	6	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		DEDICATED R.O.W. BUILDABLE AREA
5	9	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		POOR		
6	13	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
7	11	GREEN ASH	FRAXINUS PENNSYLVANICA	TO BE REMOVED	PROTECTED	GOOD		DEDICATED R.O.W. BUILDABLE AREA
8	21.5	EASTERN RED CEDAR	JUNIPERUS VIRGINIANA	TO BE REMOVED		GOOD		
9	11	GREEN ASH	FRAXINUS PENNSYLVANICA	TO BE REMOVED	PROTECTED	GOOD		OUTSIDE BUILABLE AREA
10	11	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
11	6.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
12	14.5	GREEN ASH	FRAXINUS PENNSYLVANICA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
13	11.5	GREEN ASH	FRAXINUS PENNSYLVANICA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
14	17	GREEN ASH	FRAXINUS PENNSYLVANICA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
15	6	GREEN ASH	FRAXINUS PENNSYLVANICA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
16	6.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
17	6	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
18	13.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
19	8.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
20	10	GREEN ASH	FRAXINUS PENNSYLVANICA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
21	9.5	EVE'S NECKLACE	SOPHORA AFFINIS	TO BE REMOVED		GOOD		
22	36.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
23	6	EVE'S NECKLACE	SOPHORA AFFINIS	TO BE REMOVED		GOOD		
24	10	GREEN ASH	FRAXINUS PENNSYLVANICA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
25	9.5	GREEN ASH	FRAXINUS PENNSYLVANICA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
26	7	EVE'S NECKLACE	SOPHORA AFFINIS	TO BE REMOVED		GOOD		
28	13	GREEN ASH	FRAXINUS PENNSYLVANICA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
30	12.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
31	7.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
32	6	GUM BUMELIA	SIDEROXYLON LANUGINOSUM	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
33	8.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
34	10.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
35	17	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
36	19	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
37	6.5	CHINESE ELM	ULMUS PARVIFOLIA	TO BE REMOVED		GOOD		
38	15.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
40	15.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
41	14	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
42	12.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
43	9	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
44	8	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
45	13.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
46	13	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
47	15	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		POOR		
48	19	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
49	7	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
50	12	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
51	6.5	EASTERN RED CEDAR	JUNIPERUS VIRGINIANA	TO BE REMOVED		GOOD		
52	6.5	HERCULES' CLUB	ZANTHOXYLUM CLAVA-HERCULIS	TO BE REMOVED		GOOD		
57	9	BOXELDER	ACER NEGUNDO	TO BE REMOVED		POOR		
59	10	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
60	6.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
61	8	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
62	13	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
63	15	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
64	12	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
65	7	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
66	7	HERCULES' CLUB	ZANTHOXYLUM CLAVA-HERCULIS	TO BE REMOVED		GOOD		
67	18	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
68	17	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
69	7	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
70	11	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
71	10	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		POOR		
72	25.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
73	8	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
74	6.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
75	6	GUM BUMELIA	SIDEROXYLON LANUGINOSUM	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
76	7	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
77	7	EASTERN RED CEDAR	JUNIPERUS VIRGINIANA	TO BE REMOVED		GOOD		
78	10	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		POOR		
79	8.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
80	11	EASTERN RED CEDAR	JUNIPERUS VIRGINIANA	TO BE REMOVED		GOOD		
81	6	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
82	10	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
83	7	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
84	7	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
85	8.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
86	8	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
87	10	EASTERN RED CEDAR	JUNIPERUS VIRGINIANA	TO BE REMOVED		GOOD		
88	10	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
89	6	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
90	9.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
91	16.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		POOR		
92	8	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
93	11	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
94	23	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		POOR		
95	18	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
96	9.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
97	7	EASTERN RED CEDAR	JUNIPERUS VIRGINIANA	TO BE REMOVED		GOOD		
98	13.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		POOR		
99	8.5	EASTERN RED CEDAR	JUNIPERUS VIRGINIANA	TO BE REMOVED		GOOD		
100	8	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
101	10	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
102	10	EASTERN RED CEDAR	JUNIPERUS VIRGINIANA	TO BE REMOVED		GOOD		
103	10	EASTERN RED CEDAR	JUNIPERUS VIRGINIANA	TO BE REMOVED		GOOD		
104	17	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		POOR		
105	14	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
106	7	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
107	8	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
108	15.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
109	7.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
110	7	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
111	15	OSAGE ORANGE	MACLURA POMIFERA	TO BE REMOVED		GOOD		
112	9.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
113	7	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
114	7.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
115	22.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		

TREE SURVEY FIELD DATA								
No.	Dia. (inches)	Species (common name)	Species (botanical name)	Status	Protected	Health	Tree Credits	Remarks
116	14.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
117	11.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
118	6.5	GREEN ASH	FRAXINUS PENNSYLVANICA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
119	12	GREEN ASH	FRAXINUS PENNSYLVANICA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
120	6	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
121	9	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
122	11.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
123	15.5	GREEN ASH	FRAXINUS PENNSYLVANICA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
124	15.5	GREEN ASH	FRAXINUS PENNSYLVANICA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
127	7	GREEN ASH	FRAXINUS PENNSYLVANICA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
128	11	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
129	20.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
130	9.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
133	25.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
134	19.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
135	7	HERCULES' CLUB	ZANTHOXYLUM CLAVA-HERCULIS	TO BE REMOVED		GOOD		
136	9.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
137	7	CHINESE PISTACHE	PISTACIA CHINENSIS	TO BE REMOVED		GOOD		
138	8.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
139	16.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		POOR		
140	20.5	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
141	22.5	OSAGE ORANGE	MACLURA POMIFERA	TO BE REMOVED		GOOD		
142	13	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
143A	14	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
143B	13	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
146A	18	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
146B	13	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
144	9.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
145	10.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
147	20	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
148	10	GUM BUMELIA	SIDEROXYLON LANUGINOSUM	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
149	6	GUM BUMELIA	SIDEROXYLON LANUGINOSUM	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
150	8.5	GUM BUMELIA	SIDEROXYLON LANUGINOSUM	TO BE REMOVED	PROTECTED	POOR		BUILDABLE AREA
151	6.6	GUM BUMELIA	SIDEROXYLON LANUGINOSUM	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
152	16.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
153	19	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
154	24.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED		HAZARD		
155	19.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
156	6.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
157	18	GUM BUMELIA	SIDEROXYLON LANUGINOSUM	TO BE REMOVED	PROTECTED	POOR		BUILDABLE AREA
158	11.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
160	15.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
162	15	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
163	14	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
164	16	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
165	24	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
166	26	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		POOR		
167	10	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
168	10	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
169	11	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
170	6.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
171	15	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
172	8	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
173	8	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
174	10	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
175	12	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
176	7.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
177	9.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
178	6	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
179	5.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
180	12.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
181	11.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
182	12	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
183	9	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
184	6	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
185	6	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
186	7	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
187	11	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
188	8	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
189	28	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
190	6	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
191	6	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
192	7	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
193	11.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
194	7	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
195	6	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
196	7	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
197	7	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
198	16.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
199	9	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
200	6	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
201	11	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
202	10	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
203	9	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
204	13	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
205	7	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
206	7	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
207	10	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
208	6	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
209	13	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
210	8	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
211	7	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
212	11	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
213	11.5	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
214	9	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
215	6	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
216	9	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
217	8	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
218	7.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
219	8	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
220	7	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
221	8	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
222	11.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO REMAIN	PROTECTED	GOOD	1	BUILDABLE AREA
223	9	CEDAR ELM	ULMUS CRASSIFOLIA	TO REMAIN	PROTECTED	GOOD	1	BUILDABLE AREA
224	10	HACKBERRY	CELTIS LAEVIGATA	TO REMAIN		GOOD		
227	8.5	HERCULES' CLUB	ZANTHOXYLUM CLAVA-HERCULIS	TO BE REMOVED		GOOD		
228	7	HACKBERRY	CELTIS LAEVIGATA	TO REMAIN		GOOD		

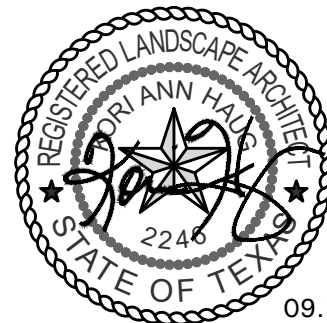


BUILT TO SUIT FOR
NIAGARA CONSERVATION ON OLD GERAULT
TEXAS
FLOWER MOUND,



MEINHARDT & ASSOCIATES
ARCHITECTS, P.L.L.C.

1440 DALLAS PARKWAY
SUITE 500
DALLAS TEXAS 75244
(972) 968-0880



09.30.20

DATE: 08.03.2020

JOB # 20-204

TREE SURVEY
DATA
SHEET:

L1.03

- 4245 North Central Expy
- Suite 501
- Dallas, Texas 75205
- 214.865.7192 office



TREE SURVEY FIELD DATA								
No.	Dia. (inches)	Species (common name)	Species (botanical name)	Status	Protected	Health	Tree Credits	Remarks
229	26	CEDAR ELM	ULMUS CRASSIFOLIA	TO REMAIN	PROTECTED-SPECIMEN	GOOD	5	BUILDABLE AREA
230	23	CEDAR ELM	ULMUS CRASSIFOLIA	TO REMAIN	PROTECTED-SPECIMEN	GOOD	4	BUILDABLE AREA
232	10	CEDAR ELM	ULMUS CRASSIFOLIA	TO REMAIN	PROTECTED	GOOD	1	BUILDABLE AREA
233	10	HACKBERRY	CELTIS LAEVIGATA	TO REMAIN		GOOD		
234	30	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
237	12	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		DEDICATED R.O.W. BUILDABLE AREA
238	8	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		DEDICATED R.O.W. BUILDABLE AREA
239	8.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		DEDICATED R.O.W. BUILDABLE AREA
240	6.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		DEDICATED R.O.W. BUILDABLE AREA
242	8	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		DEDICATED R.O.W. BUILDABLE AREA
243	8	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		DEDICATED R.O.W. BUILDABLE AREA
244	12	BLACKJACK OAK	QUERCUS MARILANDICA	TO BE REMOVED	PROTECTED	GOOD		DEDICATED R.O.W. BUILDABLE AREA
245	17	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		DEDICATED R.O.W. BUILDABLE AREA
246	10	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED	GOOD		DEDICATED R.O.W. BUILDABLE AREA
247	7	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
248	9.5	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED	GOOD		DEDICATED R.O.W. BUILDABLE AREA
249	6	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		POOR		
250	28	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED-SPECIMEN	POOR		
251	17.5	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
252	6	GREEN ASH	FRAXINUS PENNSYLVANICA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
253	6.5	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
254	13.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
255	6.5	BLACKJACK OAK	QUERCUS MARILANDICA	TO BE REMOVED	PROTECTED	GOOD		DEDICATED R.O.W. BUILDABLE AREA
256	13	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED	GOOD		DEDICATED R.O.W. BUILDABLE AREA
257	9	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		DEDICATED R.O.W. BUILDABLE AREA
258	6	OSAGE ORANGE	MACLURA POMIFERA	TO BE REMOVED		POOR		
259	7.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		DEDICATED R.O.W. BUILDABLE AREA
260	7	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		DEDICATED R.O.W. BUILDABLE AREA
261	8	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		DEDICATED R.O.W. BUILDABLE AREA
262	7	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
263	6	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		OUTSIDE BUILDABLE AREA
264	9.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
265	11	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
266	8.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
267	10.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
268	7.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
269	14	CHINABERRY	MELIA AZEDARACH	TO BE REMOVED		GOOD		
270	7.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
271	8.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		DEDICATED R.O.W. BUILDABLE AREA
272	9	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED	GOOD		DEDICATED R.O.W. BUILDABLE AREA
273	8.5	EASTERN RED CEDAR	JUNIPERUS VIRGINIANA	TO BE REMOVED		GOOD		
274	19.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED-SPECIMEN	FAIR		
275	6	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
276	7	GUM BUMELIA	SIDEROXYLON LANUGINOSUM	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
277	7.5	EASTERN RED CEDAR	JUNIPERUS VIRGINIANA	TO BE REMOVED		GOOD		
278	7	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
279	6.5	GUM BUMELIA	SIDEROXYLON LANUGINOSUM	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
280	10.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
281	8.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
282	15	OSAGE ORANGE	MACLURA POMIFERA	TO BE REMOVED		POOR		
283	31.5	POST OAK	QUERCUS STELLATA	TO BE REMAIN	PROTECTED-SPECIMEN	GOOD	6	BUILDABLE AREA
284	6	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		OUTSIDE BUILDABLE AREA
285	31	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
286	7	GREEN ASH	FRAXINUS PENNSYLVANICA	TO BE REMOVED	PROTECTED	POOR		DEDICATED R.O.W. BUILDABLE AREA
287	6	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
288	6.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
289	20	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
290	14	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
291	8	EASTERN RED CEDAR	JUNIPERUS VIRGINIANA	TO BE REMOVED		GOOD		
292	6.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
293	6	OSAGE ORANGE	MACLURA POMIFERA	TO BE REMOVED		GOOD		
294	14	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
295	11	CEDAR ELM	ULMUS CRASSIFOLIA	TO REMAIN	PROTECTED	GOOD	1	
296	10.5	EASTERN RED CEDAR	JUNIPERUS VIRGINIANA	TO BE REMOVED		GOOD		
297	10	CEDAR ELM	ULMUS CRASSIFOLIA	TO REMAIN	PROTECTED	GOOD	1	BUILDABLE AREA
298	7	CEDAR ELM	ULMUS CRASSIFOLIA	TO REMAIN	PROTECTED	GOOD	1	BUILDABLE AREA
299	10	CEDAR ELM	ULMUS CRASSIFOLIA	TO REMAIN	PROTECTED	GOOD	1	BUILDABLE AREA
300	6.5	EASTERN RED CEDAR	JUNIPERUS VIRGINIANA	TO REMAIN		GOOD		
301	6.5	HACKBERRY	CELTIS LAEVIGATA	TO REMAIN		GOOD		
302	10	CEDAR ELM	ULMUS CRASSIFOLIA	TO REMAIN	PROTECTED	GOOD	1	BUILDABLE AREA
303	24	POST OAK	QUERCUS STELLATA	TO REMAIN	PROTECTED-SPECIMEN	FAIR	1	
304	6	HACKBERRY	CELTIS LAEVIGATA	TO REMAIN		GOOD		
305	16	CEDAR ELM	ULMUS CRASSIFOLIA	TO REMAIN	PROTECTED	GOOD	1	BUILDABLE AREA
306	36	CEDAR ELM	ULMUS CRASSIFOLIA	TO REMAIN	PROTECTED-SPECIMEN	GOOD	6	BUILDABLE AREA
307	23.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO REMAIN	PROTECTED-SPECIMEN	GOOD	4	BUILDABLE AREA
308	33.5	POST OAK	QUERCUS STELLATA	TO BE REMOVED		DEAD		
309	8.5	EASTERN RED CEDAR	JUNIPERUS VIRGINIANA	TO BE REMOVED		GOOD		
310	13.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO REMAIN	PROTECTED	GOOD	1	BUILDABLE AREA
311	30.5	POST OAK	QUERCUS STELLATA	TO REMAIN	PROTECTED-SPECIMEN	GOOD	6	BUILDABLE AREA
312	10	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
313	32.2	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
314	9	GREEN ASH	FRAXINUS PENNSYLVANICA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
315	7	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
316	6	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
317	8	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
318	6	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
319	8	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
320	13	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
321	7	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
322	6.5	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
323	7	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
324	16	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
325	7	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
326	10	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
327	24.5	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
328	22.5	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
329	25.5	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
330	33.5	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
331	9	PECAN	CARYA ILLINOINENSIS	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
332	9.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
333	6	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
334	7	PECAN	CARYA ILLINOINENSIS	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
335	6	JAPANESE PRIVET	LIGUSTRUM JAPONICUM	TO BE REMOVED		GOOD		
336	15	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
337	26	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
338	23	JAPANESE PRIVET	LIGUSTRUM JAPONICUM	TO BE REMOVED		GOOD		
339	11	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		

TREE SURVEY FIELD DATA								
No.	Dia. (inches)	Species (common name)	Species (botanical name)	Status	Protected	Health	Tree Credits	Remarks
340	6	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
341	7	JAPANESE PRIVET	LIGUSTRUM JAPONICUM	TO BE REMOVED		GOOD		
342	9	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
343	10.5	JAPANESE PRIVET	LIGUSTRUM JAPONICUM	TO BE REMOVED		GOOD		
344	8	OSAGE ORANGE	MACLURA POMIFERA	TO BE REMOVED		GOOD		
345	10.5	OSAGE ORANGE	MACLURA POMIFERA	TO BE REMOVED		GOOD		
346	8.5	CHINESE PISTACHE	PISTACIA CHINENSIS	TO BE REMOVED		GOOD		
347	7	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
348	6	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
349	8	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
350	15	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
351	12.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
352	16.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
353	16	GREEN ASH	FRAXINUS PENNSYLVANICA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
354	11	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
355	9	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
356	9	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
357	6	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
358	9	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
359	6	HERCULES' CLUB	ZANTHOXYLUM CLAVA-HERCULIS	TO BE REMOVED		GOOD		
360	16.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
361	12	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		POOR		
362	19	OSAGE ORANGE	MACLURA POMIFERA	TO BE REMOVED		GOOD		
363	17	OSAGE ORANGE	MACLURA POMIFERA	TO BE REMOVED		GOOD		
364	16	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
365	6	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		POOR		
366	7	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		POOR		
367	7	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
368	7.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
369	9	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		POOR		
370	6	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		POOR		
371	17.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
372	9	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
373	6	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
374	11	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
375	8.5	OSAGE ORANGE	MACLURA POMIFERA	TO BE REMOVED		POOR		
376	18	OSAGE ORANGE	MACLURA POMIFERA	TO BE REMOVED		GOOD		
377	7.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
378	8.5	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
379	6	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
380	7	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
381	10	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
382	8	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
383	7	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
384	12	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
385	8	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
386	7	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
387	6	HERCULES' CLUB	ZANTHOXYLUM CLAVA-HERCULIS	TO BE REMOVED		GOOD		
388	6	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
389	9	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
390	15.5	JAPANESE PRIVET	LIGUSTRUM JAPONICUM	TO BE REMOVED		GOOD		
391	18	JAPANESE PRIVET	LIGUSTRUM JAPONICUM	TO BE REMOVED		GOOD		
392	15	JAPANESE PRIVET	LIGUSTRUM JAPONICUM	TO BE REMOVED		GOOD		
393	33	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED-SPECIMEN	FAIR		
394	9	JAPANESE PRIVET	LIGUSTRUM JAPONICUM	TO BE REMOVED		GOOD		
395	11	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
396	8.5	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
397	11	BRADFORD PEAR	PYRUS CALLERYANA	TO BE REMOVED		POOR		
398	27	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
399	8	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
400	12	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
401	10	GUM BUMELIA	SIDEROXYLON LANUGINOSUM	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
402	7	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
403	7	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
405	11	BLACKJACK OAK	QUERCUS MARILANDICA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
406	6	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
407	31	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
408	30.5	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
409	23	POST OAK	QUERCUS STELLATA	TO BE REMOVED	PROTECTED-SPECIMEN	GOOD		
410	13	JAPANESE PRIVET	LIGUSTRUM JAPONICUM	TO BE REMOVED		GOOD		
411	14	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
412	7	HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		GOOD		
413	16.5	JAPANESE PRIVET	LIGUSTRUM JAPONICUM	TO BE REMOVED		GOOD		
414	7	JAPANESE PRIVET	LIGUSTRUM JAPONICUM	TO BE REMOVED		GOOD		
415	14.5	JAPANESE PRIVET	LIGUSTRUM JAPONICUM	TO BE REMOVED		GOOD		
416	6	GREEN ASH	FRAXINUS PENNSYLVANICA	TO BE REMOVED		GOOD		
417	22	CEDAR ELM	ULMUS CRASSIFOLIA	TO BE REMOVED	PROTECTED-SPECIMEN	POOR		Measured at 1"
418	5	GREEN ASH	FRAXINUS PENNSYLVANICA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
419	8	GREEN ASH	FRAXINUS PENNSYLVANICA	TO BE REMOVED	PROTECTED	GOOD		BUILDABLE AREA
501				TO BE REMOVED		DEAD		
502		HACKBERRY	CELTIS LAEVIGATA	TO BE REMOVED		DEAD		
503		OSAGE ORANGE	MACLURA POMIFERA	TO BE REMOVED		DEAD		
504		HERCULES' CLUB	ZANTHOXYLUM CLAVA-HERCULIS	TO BE REMOVED		DEAD		
505		GREEN ASH	FRAXINUS PENNSYLVANICA	TO BE REMOVED		DEAD		
506		POST OAK	QUERCUS STELLATA	TO BE REMOVED		DEAD		
507				TO BE REMOVED		DEAD		

Development Standards

Planned Development District - 179 (PD-179) Niagara Conversation

The development on the property comprising approximately 7.594 acres of land within the corporate limits of the Town of Flower Mound ("Town") shall be in accordance with the Town of Flower Mound *Master Plan* and the Land Development Regulations of the Town of Flower Mound, Texas, as amended, and shall be subject to the following conditions and requirements:

A. EXHIBITS.

1. The following Exhibits are incorporated into this planned development.

- a. Exhibit "C": Conceptual Site Plan.
- b. Exhibit "D": Conceptual Landscape Plan.
- c. Exhibit "E": Conceptual Elevations.

B. PERMITTED USES. The uses listed as Permitted Uses in the Campus Industrial District (CI) in the Town's Zoning Ordinance shall be permitted in the area designated on Exhibit "C".

C. SPECIFIC USES. The uses listed as Specific Uses in the Campus Industrial District (CI) in the Town's Zoning Ordinance shall be permitted in the area designated on Exhibit "C" with a Specific Use Permit (SUP) approved by the Town Council.

D. TEMPORARY USES. The uses listed as Temporary Uses in the Campus Industrial District (CI) in the Town's Zoning Ordinance shall be permitted in the area designated on Exhibit "C" as only upon approval of a temporary use permit in accordance with the procedures and standards of 78-87 of the Land Development Code, "Temporary Use Permits".

E. DIMENSIONAL REGULATIONS. The dimensional regulations listed in the Campus Industrial District (CI) in the Town's Zoning Ordinance shall be required for this Planned Development.

F. EXCEPTIONS. The following exceptions to the Town's Ordinances shall apply to this Planned Development.

- 1. An exception to Section 82-376 of the Town Code that requires overhead utilities to be placed underground is granted.