

ORDINANCE NO. _____

AN ORDINANCE OF THE CITY OF DENTON, APPROVING A SETTLEMENT AGREEMENT AND MUTUAL RELEASE IMPLEMENTING THE TERMS OF THE SETTLEMENT IN LITIGATION STYLED "2020 LONG TAIL TRAIL INVESTMENTS, LLC V. THE CITY OF DENTON, TEXAS, ET AL." (CAUSE NO. 24-0075-431) PENDING IN THE 431ST DISTRICT COURT, DENTON COUNTY, TEXAS AND "CITY OF GRAND PRAIRIE, ET AL. V. THE STATE OF TEXAS, ET AL." (CAUSE NO. D-1-GN-23-007785) PENDING IN THE IN THE 261ST DISTRICT COURT, TRAVIS COUNTY, TEXAS; AND DIRECTING THE CITY MANAGER AND THE CITY'S ATTORNEYS TO EFFECTUATE AS NECESSARY AND APPROPRIATE THE TERMS OF A SETTLEMENT AGREEMENT AND RELEASE TO EFFECTUATE THIS APPROVAL; AND DECLARING AN EFFECTIVE DATE.

THE COUNCIL OF THE CITY OF DENTON HEREBY ORDAINS:

SECTION 1. The City Council hereby ratifies and approves the proposed settlement of litigation styled 2020 Long Tail Trail Investments, LLC v. the City of Denton, Texas, et al. (Cause No. 24-0075-431) pending in the 431st District Court, Denton County, Texas and City of Grand Prairie, et al. v. The State of Texas, et al. (Cause No. D-1-GN-23-007785) pending in the 261st District Court, Travis County, Texas, under terms set forth in the attached Settlement Agreement And Release.

SECTION 2. The City Manager and the City's Attorneys are hereby authorized to act on the City's behalf in approving and executing any and all documents necessary or appropriate to effectuate the terms of the settlement, and to take other actions necessary to finalize the settlement.

SECTION 3. This Ordinance shall become effective immediately upon its passage and approval.

The motion to approve this ordinance was made by _____ and seconded by _____. This Ordinance was passed and approved by the following vote [___ - ___]:

	Aye	Nay	Abstain	Absent
Mayor Gerard Hudspeth:	_____	_____	_____	_____
Vicki Byrd, District 1:	_____	_____	_____	_____
Brian Beck, District 2:	_____	_____	_____	_____
Suzi Rumohr, District 3:	_____	_____	_____	_____
Joe Holland, District 4:	_____	_____	_____	_____
Brandon Chase McGee, At Large Place 5:	_____	_____	_____	_____
Jill Jester, At Large Place 6:	_____	_____	_____	_____

PASSED AND APPROVED this the _____ day of _____, 2025.

GERARD HUDSPETH, MAYOR

ATTEST:
INGRID REX, INTERIM CITY SECRETARY

BY: _____

APPROVED AS TO LEGAL FORM:
MACK REINWAND, CITY ATTORNEY

BY: Devin Q. Alexander

EXHIBIT "A"

Settlement Agreement and Release

SETTLEMENT AGREEMENT AND MUTUAL RELEASE

This Settlement Agreement and Mutual Release (the “Agreement”) entered into, by and between 2020 Long Tail Trail, LLC (“Long Tail”) and the City of Denton, (the “City”) (hereinafter the City and Long Tail shall be referred to collectively as the “Parties,” and each a Party).

WHEREAS, disputes arose between the City and Long Tail related to SB 2038 and the release of its property and proposed development (the “Development”) located on Old Alton Road from the City’s Extraterritorial Jurisdiction (“ETJ”) 1 and also brought suit against the City in Cause Number 24-0075-431 in the 431st Judicial District Court of Denton County, Texas.

WHEREAS, the Lawsuit in Cause Number 24-0075-431 has remained largely inactive since the Parties filed a joint motion to stay on April 2, 2024, with the Parties’ Rule 11 Agreement (Exhibit A).

WHEREAS, the Rule 11 Agreement between the Parties allowed for Long Tail to intervene in Cause Number D-1GN-23-007785 in the 261st Judicial District Court of Travis County, asserting limited arguments and participating in appellate proceedings.

WHEREAS, in exchange for the City’s preliminary conditional approval of Long Tail’s proposed engineering and development plans, which consist of the plat and engineering plans attached to this Agreement as Exhibit B (“Development Plan”), Long Tail agrees:

1. to its Development not being released and remaining within the City’s ETJ;
2. to not file, petition, or seek further removal of its Development from the City’s ETJ;
3. to immediately non-suit on the day this agreement is approved by the Denton City Council in Cause Numbers 24-0075-431 in the 431st Judicial District Court of Denton County, Texas, and D-1GN-23-007785 in the 261st Judicial District Court of Travis County, which shall include the withdrawal of any and all appellate briefing and requests for relief;
4. to assume all costs and burdens incurred by the City and reimburse the City for any time used in negotiating or acquiring any easement(s) on its behalf;
5. to assume all costs and burdens relating to environmental hazards, dangers, impediments, improvements, and studies for its Development Plan;
6. to assume all costs and burdens relating to the construction, implementation, and approval of its Development Plan;

7. to no longer utilize any existing aerial crossings and not to utilize new water or wastewater aerial crossings as discouraged by United States Army Corps of Engineers ;
8. to acquire right-of-way permit(s) from the City as needed;
9. that all improvements, regardless of their designation as public or private, (1) must meet City standards, (2) are subject to City review and inspection, and (3) acceptance of improvements are subject to City's reasonable discretion; and
10. to adhere, avail, and follow the City's Development Process, as applicable to developments within the City's extraterritorial jurisdiction, which includes but is not limited to plat, wastewater, and certain infrastructure improvements as set forth in the Denton Development Code.

WHEREAS, in exchange for Long Tail remaining within the City's ETJ and non-suit in Cause Numbers 24-0075-431 in the 431st Judicial District Court of Denton County, Texas, and D-1GN-23-007785 in the 261st Judicial District Court of Travis County, which shall include the withdrawal of any and all appellate briefing and requests for relief, the City agrees as follows:

1. subject to the terms herein, and Long Tail adhering, availing, and following the City's Development Process, Long Tail's proposed Development Plan is preliminarily and conditionally approved; and
2. subject to forces outside of the City's control including but not limited to material changes in law, another entities' refusal or rejection of Long Tail's Development Plan or requests for easement in part or whole, and material unilateral changes to Long Tail's Development Plan, the City will not unreasonably withhold Final Approval ("Final Approval" shall mean the recordation of the Final Plat for the Development that complies with state law and the Denton Development Code, as approved by the City's Planning and Zoning Commission, in the plat records of Denton County) of Long Tail's proposed Development Plan at the conclusion of the Development Process.

WHEREAS, the Parties mutually agree to act reasonably and cooperate in the approval process.

WHEREAS, upon the City's Final Approval of the Development Plans, the Parties mutually agree to release all claims related in any way to the release of Long Tail's Property pursuant to SB 2038, or that were or could have been asserted in the Lawsuit.

WHEREAS, the Parties have agreed to resolve their disputes and to memorialize their respective rights and obligations as set forth in this Agreement.

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein, which constitute good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties further agree as follows:

1. **Incorporation**. The premises and recitations stated above are incorporated by reference in their entirety as if fully set forth herein.

2. **Releases**.

2.1 **City Release**. Once Final Approval occurs, and without taking further action under this agreement after its execution, the City, on behalf of itself and all departments, assigns, affiliates, related entities, predecessors, successors, employees, officers, directors, members, managers, representatives, trustees, receivers, attorneys, agents, and any other persons or entities acting on behalf of it or with its authority (the "City Releasing Entities"), hereby fully and forever releases and discharges Long Tail and any and all of their respective parents, shareholders, subsidiaries, licensees, partners, assigns, affiliates, related entities, predecessors, successors, employees, officers, directors, members, managers, representatives, trustees, receivers, attorneys, and agents, (collectively, the "City Released Entities") from any and all claims, demands, liabilities, damages, losses, indebtedness, costs, attorneys' fees, expenses, injunctive relief, actions and causes of action, suits, proceedings, controversies, agreements and/or obligations of any nature whatsoever that the City Releasing Entities may have held, or now hold, whether known or unknown, against the City Released Entities arising out of any acts, events, incidents, occurrences, omissions or transactions related in any way to the release of Long Tail's Property pursuant to SB 2038, or that were or could have been asserted in the Lawsuit.

2.2 **Long Tail Release**. Once Final Approval occurs, and without taking further action under this agreement after its execution, 2020 Long Tail Trail, LLC, on behalf of themselves and all of their respective parents, shareholders, subsidiaries, licensees, partners, assigns, affiliates, related entities, predecessors, successors, employees, officers, directors, members, managers, representatives, trustees, receivers, attorneys, agents, and any other persons or entities acting on behalf of any of them or with their authority (the "Long Tail Releasing Entities"), hereby fully and forever release and discharge the City, and all of its departments, assigns, affiliates, related entities, predecessors, successors, employees, officers, directors, members, managers, representatives, trustees, receivers, attorneys, and agents (collectively, the "Long Tail Released Entities") from any and all claims, demands, liabilities,

damages, losses, indebtedness, costs, attorneys' fees, expenses, injunctive relief, actions and causes of action, suits, proceedings, controversies, agreements and/or obligations of any nature whatsoever that the Long Tail Releasing Entities may have held, or now hold, whether known or unknown, against the Long Tail Released Entities arising out of any acts, events, incidents, occurrences, omissions or transactions related in any way to the release of its Property pursuant to SB 2038, or that were or could have been asserted in the Lawsuit.

3. **Entire Agreement.** This Agreement constitutes the entire agreement between the Parties with respect to the subject matter hereof and supersedes all prior agreements, understanding, expectations, and discussions of the Parties, whether oral or written, and there are no representations or other agreements between the Parties in connection with the subject matter hereof except as specifically set forth in this Agreement. No amendment, modification, waiver, or termination of this Agreement shall be binding unless executed in writing and signed by each and every Party to this Agreement.
4. **Governing Law and Venue.** This Agreement will be governed by and construed in accordance with the substantive laws of the State of Texas without regard to conflict of laws and all disputes arising under or relating to this letter agreement shall be brought and resolved solely and exclusively in a state or federal court of competent jurisdiction located in Denton County, Texas.
5. **Authorization.** Each person signing below is an official or representative of the Authority and the Authority warrants that he or she is duly authorized to act for his or her principal as indicated below and that he or she is acting when signing.
6. **Attorneys and Experts' Fees to Date.** The Parties shall bear their own costs, expenses, and attorneys and experts' fees incurred in or arising out of or in any way related to the matters released herein.
7. **Severability.** If any provision of this Agreement is determined to be invalid or unenforceable, in whole or part, this determination will not affect any other provision of this Agreement and the provision in question shall be modified by the court so as to be rendered enforceable.
8. **Drafting of Agreement.** For purposes of construction, this Agreement shall not be deemed to be drafted by any Party, and any ambiguity shall not be construed against any Party.

9. **Counterparts.** This Agreement may be executed in counterparts, each of which shall be deemed an original, all of which together shall constitute one and the same instrument.

[Remainder of Page Intentionally Left Blank]

WHEREOF, the Parties have signed this Agreement, which is effective as of the date of the last signature required below.

2020 LONG TAIL TRAIL 2020, LLC

SIGNATURE:

[Signature] Date of Signature: 11-6-2025
AUTHORIZED REPRESENTATIVE OF
2020 LONG TAIL TRAIL 2020, LLC

BEFORE ME, the undersigned authority, on this day personally appeared James Hiles, who is known to me to be the person whose name is subscribed to the foregoing instrument, who is personally known by me or by providing driver license as qualifying identification.

GIVEN UNDER MY HAND AND SEAL OF OFFICE THIS 6th DAY OF November, 2025.

Nickelle Benson
Notary Public – State of Texas

APPROVED AS TO LEGAL FORM:

[Signature]
COUNSEL



CITY OF DENTON, TEXAS

SIGNATURE:

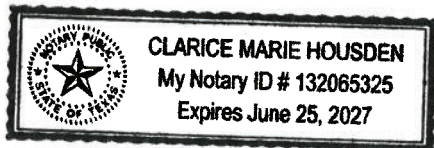
Sara Hensley

On behalf of the City of Denton, Texas
Per delegated authority

Date of Signature: 11/12/25

BEFORE ME, the undersigned authority, on this day personally appeared Sara Hensley, known to me to be the person whose name is subscribed to the foregoing instrument, who is personally known to me or by providing _____ as qualifying identification.

GIVEN UNDER MY HAND AND SEAL OF OFFICE THIS 12th DAY OF November, 2025.



Clarice Housden
Notary Public – State of Texas

APPROVED AS TO LEGAL FORM
MACK REINWAND. CITY ATTORNEY

BY: Devin Q. Alexander
DEVIN Q. ALEXANDER

EXHIBIT A

Cause No. 24-0075-431

2020 Long Tail Trail Investments,
LLC,

Plaintiff,

v.

The City of Denton, Texas; Mayor
Gerard Hudspeth, in his official
capacity as Mayor of Denton; Vicki
Byrd, in her official capacity as
Denton City Council Member;
Brian Beck, in his official capacity
as Denton City Council Member;
Paul Meltzer, in his official capacity
as Denton City Council Member;
Joe Holland, in his official capacity
as Denton City Council Member;
Brandon Chase McGee, in his
official capacity as Denton City
Council Member; Chris Watts, in
his official capacity as Denton City
Council Member; Sara Hensley, in
her official capacity as Denton City
Manager,

Defendants.

In the District Court

Denton County, Texas

In the 431 Judicial District

Joint Motion to Stay Proceedings

Plaintiff and Defendants file this Joint Motion to Stay Proceedings pursuant to the Rule 11 Agreement between the parties, which is incorporated into this Motion and attached as Exhibit A. This case revolves, in part, on the constitutionality, validity, and applicability of Senate Bill 2038 (“SB 2038”). One of the Defendants in this matter—the City of Denton—is a plaintiff in a separate case pending in Travis County District Court (Cause No. D-1-GN-23-007785) that may resolve the constitutionality, applicability, and validity of SB 2038 (the “Travis County Case”). In order to avoid duplicative litigation over the constitutionality, validity, and applicability of SB 2038, the parties here have agreed to stay proceedings in this case, which will be lifted based on the terms of the parties’ agreement. Pursuant to their agreement, Defendants hereby withdraw their pending motions to dismiss, and Plaintiff will intervene in the Travis County Case.

PRAYER

Plaintiff and Defendants respectfully request that the Court enter the attached proposed order, staying this case and dismissing Defendants’ motions to dismiss as moot, pursuant to the parties’ attached agreement.

Dated: April 5, 2024

Respectfully submitted,

/s/ Todd Disher

Todd Disher

Texas Bar No. 24081854

todd@lkcfirm.com

William T. Thompson

Texas Bar No. 24088531

will@lkcfirm.com

LEHOTSKY KELLER COHN LLP

408 W. 11th Street, 5th Floor

Austin, TX 78701

Tel. (512) 840-9370

Fax. (512) 727-4755

*Counsel for Plaintiff 2020 Long Tail
Trail Investment, LLC*

/s/ Devin Q. Alexander

DEVIN Q. ALEXANDER

Denton City Attorney's Office

215 East McKinney

Denton, Texas 76201

(940) 349-8333

(940) 382-7923 Facsimile

For email contact and service regarding this case, please include email addresses for all listed attorneys in the To: field, and include amy.hoffee@cityofdenton.com in the Cc: field, until requested otherwise.

Mack Reinwand

City Attorney

State Bar No. 24056195

Email: mack.reinwand@cityofdenton.com

Devin Alexander

Deputy City Attorney

State Bar No. 24104554

Email: devin.alexander@cityofdenton.com

ATTORNEYS FOR DEFENDANTS

EXHIBIT A

LEHOTSKY KELLER COHN LLP

Todd Disher

408 W. 11th Street, 5th Floor

Austin, TX 78701

April 2, 2024

Devin Alexander

Deputy City Attorney City

of Denton

devin.alexander@cityofdenton.com

via email

RE: Agreement Pursuant to Texas Rule of Civil Procedure 11

Devin:

Thank you for the continued dialogue with your office. As you know, we represent 2020 Long Tail Trail Investments, LLC. We filed a petition to release certain property owned by our client from the extraterritorial jurisdiction of the City of Denton pursuant to the procedure set by Senate Bill 2038, passed by the Texas Legislature in 2023 ("SB 2038").

My client has now sued the City of Denton and its city officials (collectively, "the City of Denton") seeking, among other things, a declaration that its property has been released from Denton's extraterritorial jurisdiction. That case is pending as Cause No. 24-0075-431 in the 431st Judicial District, Denton County, Texas (the "Denton County Case").

The City of Denton is also a plaintiff in a lawsuit challenging the constitutionality, validity, applicability, and/or severability of SB 2038. That case is pending as Cause No. D-1-GN-23-007785 in the 261st District Court, Travis County, Texas (the "Travis County Case").

Given the overlap of the issues between the two cases, we have agreed to stay Denton County Case pending the resolution of the Travis County Case. In return, the City of Denton agrees that it will not oppose or challenge my client's intervention into the Travis County Case. My client agrees that in the Travis County Case it (1) will only contest the constitutionality, validity, applicability, and/or severability of SB 2038, (2) will not assert a separate claim for declaratory judgment regarding Resolution No. 23-2356, (3) will not

seek a declaration or injunction regarding the validity of Resolution No. 23-2356, (4) will not assert any ultra vires claims, (5) will not seek any declaratory or injunctive relief as to any ultra vires claims, and (6) will not oppose the City of Denton's ability to use the alleged unconstitutionality, invalidity, inapplicability, and/or inseverability of SB 2038 to defend against the declaratory judgment my client will seek. The intent my client and the City of Denton in the Travis County Case is to get ruling on the merits of whether SB 2038 is constitutional, valid, applicable, and/or severable.

Should the Travis County Case result in a final resolution of that question (*i.e.*, a final, unappealable judgment or a precedential ruling from the Texas Supreme Court deciding the constitutionality, validity, applicability, and/or severability of SB 2038), the parties to the Denton County Case will agree that the final resolution is binding on them in the Denton County Case to the extent that the Legislature does not rescind or amend SB 2038 and any related laws in a material way that affect its application.

If the Travis County Case results in a final resolution that SB 2038 is constitutional, valid, and applicable, the City of Denton will agree to a declaratory judgment in the Denton County Case that my client's property has been released from the City's extraterritorial jurisdiction. If the Travis County Case results in a final resolution that SB 2038 is unconstitutional, invalid, or inapplicable, my client will dismiss its claims with prejudice in the Denton County Case. If SB 2038 is rescinded at any time after the Travis County Case reaches a final resolution on the constitutionality, validity, applicability, and/or severability of SB 2038, this agreement nor any agreed declaratory judgment shall prohibit the City's future ability to seek remedies provided by any new legislation.

During this stay, all deadlines in the Denton County Case are tolled. The defendants agree to withdraw their pending motions to dismiss, and we will not file a motion for summary judgment. The stay in the Denton County Case is lifted upon final resolution on the constitutionality, validity, applicability, and/or severability of SB 2038 in the Travis County Case. Should a party wish to lift the stay prior to that, then the stay can only be lifted by a mutual agreement of the parties or by court order granted for good cause. If the parties mutually agree to lift the stay prior to a final resolution on the validity of SB 2038, my client agrees that it will not assert in the trial court or on appeal that the Defendants' Rule 91a Motions to Dismiss are untimely or do not comply with the timeline set forth in the applicable statute.

Please return an executed copy of this letter back to me if you agree. As always, don't hesitate to reach out should you have any questions regarding the above.

Sincerely,

A handwritten signature in black ink, appearing to read 'T.D.' with a stylized flourish extending to the right.

Todd Disher

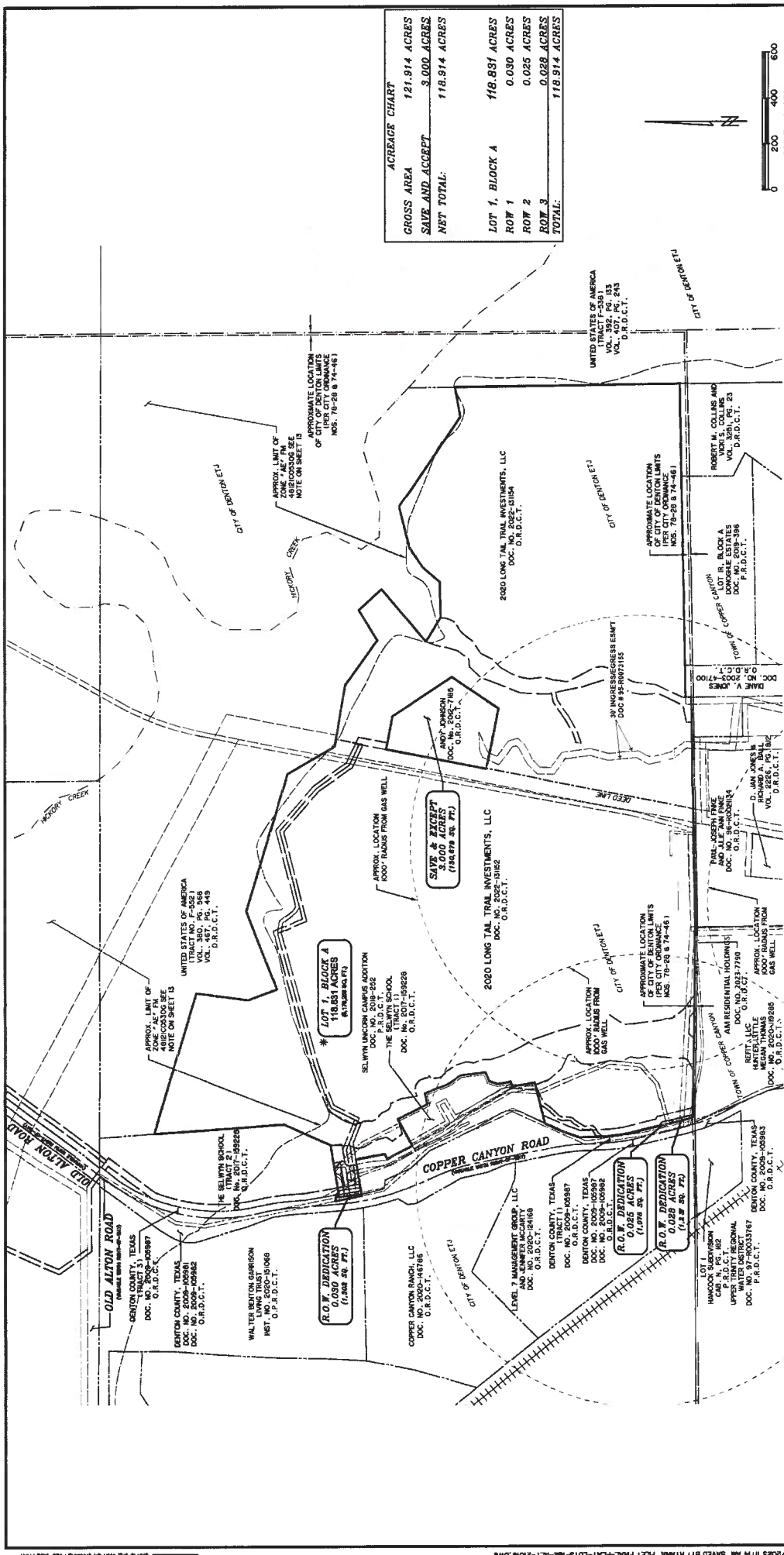
Agreed:

A handwritten signature in black ink, appearing to read 'D. Alexander' with a long horizontal flourish extending to the right.

Devin Alexander

Counsel for Defendants in the Denton County Case

EXHIBIT B



ACREAGE CHART	
GROSS AREA	121.914 ACRES
SAVE AND ACCEPT	3.000 ACRES
NET TOTAL:	118.914 ACRES
LOT 1, BLOCK A	118.891 ACRES
ROW 1	0.030 ACRES
ROW 2	0.025 ACRES
ROW 3	0.028 ACRES
TOTAL:	118.914 ACRES



THE PURPOSE OF THIS PLAT IS TO CREATE ONE PLATTED LOT AND ASSOCIATED EASEMENTS. CITY PROJECT No. FP23-2023

FINAL PLAT LOT 1, BLOCK A, MANSIONS OF DENTON ADDITION

AN ADDITION TO THE CITY OF DENTON, DENTON COUNTY, TEXAS BEING 118.914 ACRES OF LAND LOCATED IN THE ALEXANDER E. CANYON SURVEY, ABSTRACT No. 532, DENTON COUNTY, TEXAS

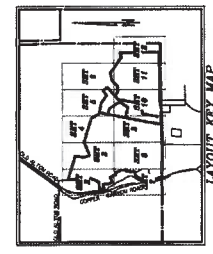
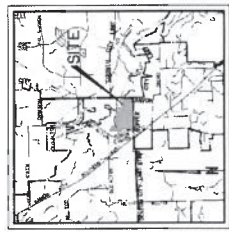
WMA WEBB & ASSOCIATES, INC.
ENGINEERS, SURVEYORS, LAND PLANNERS
2501 E. LAMAR BLVD., SUITE 200, ARLINGTON, TEXAS 76010
TEL: 817.467.7100
FAX: 817.467.7101
WWW.WMA-INC.COM

SHEET 1 OF 13 DATE: 1/12/2023 W.A. No. 2018

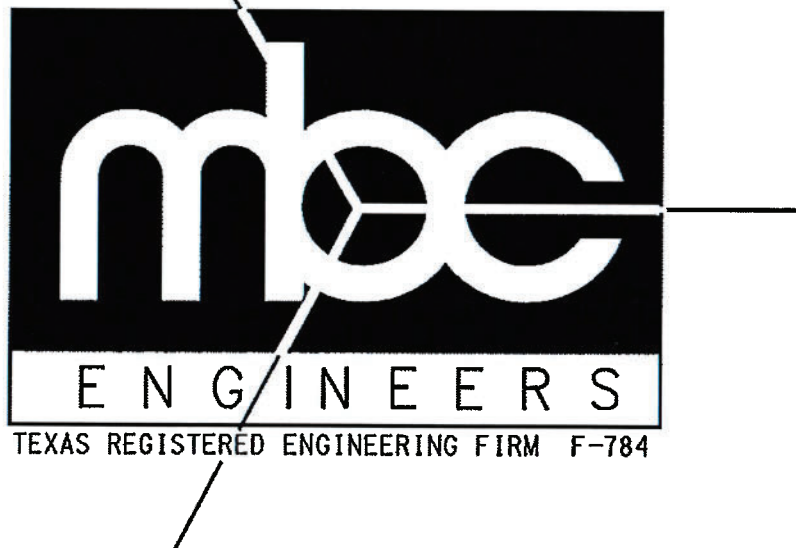
OWNER / DEVELOPER
2020 LONG TAIL TRAIL INVESTMENTS, LLC
2505 N. STATE HWY 160, SUITE 800
GRAND PRAIRIE, TX 75050
CONTACT: MATT HILES
PH: (972) 770-1100
EMAIL: MATT@LTTI.COM

ENGINEER / SURVEYOR
WMA & ASSOCIATES, INC.
2501 E. LAMAR BLVD., SUITE 200
ARLINGTON, TEXAS 76010
CONTACT: RANDY EMBLEY, P.E.
PH: (817) 467-7100
EMAIL: RANDY@WMAASSOCIATES.COM

- LEGEND**
- IRON ROD SET W/CAP STAMPED
 - IRON ROD FOUND
 - WMA & ASSOC INC
 - U.S.A.C.O.E.
 - CM1
 - MTL PPST
 - UNITED STATES ARMY CORPS OF ENGINEERS
 - CONTROLLING MONUMENT
 - METAL FENCE POST
 - EXISTING EASEMENT LINE
 - PROPOSED EASEMENT LINE
 - EXISTING BOUNDARY LINE
 - SUBJECT TRACT BOUNDARY LINE
 - PROPOSED RIGHT-OF-WAY LINE
 - PROPOSED LOT LINE
 - ROAD CENTER LINE
 - APPROXIMATE CITY LIMIT LINE
 - CREEK CENTER LINE
 - FLOWAGE EASEMENT LINE
 - SURVEY/ABSTRACT LINE



THIS PROPOSED LOT IS EITHER ONE OR MORE EXISTING DRILLING AND PRODUCTION SITES COULD HAVE EXISTING OR NEW WELLS TO BE DRILLED OR RE-FRACTURED. THIS LOT IS NEW AND INACTIVE GAS WELLS RE-FRACTURED IN THE FUTURE.



LIFT STATION REPORT

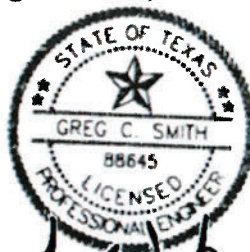
Mansions at South Denton

Prepared for:

The City of Denton, Texas

Prepared by:

Greg C. Smith, P.E. 88645



Greg C. Smith, P.E.

September 3, 2025

GENERAL NARRATIVE

The site is located on Old Alton Road in the City of Denton ETJ 1, with the southern portion of the property bordering Copper Canyon City Limits. The site is located south of Hickory creek, which prohibits the ability to convey wastewater via gravity sewer mains.

The development will consist of 1 lot serving 650 duplex units, clubhouse and maintenance building. The lot will be 118.914 acres of land located in the Alexander E. Cannon Survey, Abstract No. 232, Denton County, Texas.

The project scope includes a sanitary sewer lift station and approximately 3,600 linear feet of 8-inch force main. The lift station and a portion of the force main will be located on private property within an easement. Approximately 2,343 linear feet of the force main will extend within the County right-of-way along Old Alton Road, where it will connect to an existing City of Denton gravity sewer main on the north side of Hickory Creek.

The force main plans, prepared in accordance with City of Denton standards, are included with this submittal. Installation within the County's right-of-way is necessary because no other feasible routes are available to establish a connection to the City's sewer system.

LIFT STATION DESIGN SEWER DEMAND CONTRIBUTION

Population Calculations

	Units	Flow/Capita	Population	Acres
Mansions of South Denton	650	2.5	1625	118

Maintenance Staff	1	2	2
Office Staff	1	3	3

Total

Approximate Population 2125 People

Design Criteria

Gallons per person	100 Gal/person/day
Development Size	111.2 Acres
Inflow and Infiltration =	500 Gal/ Acre*Day

Calculations

Total Avg Dry Weather Flow (F) = 212,500 Gal/day or 147.57 gpm

where: F = 70 gal./person/day X population/1440

Peaking Factor (Mp =) 2.50 Unitless Greater of the two.

$$Mp = \frac{18 + (0.0206 * F)^{0.5}}{4 + (0.0206 * F)^{0.5}}$$

3.44 Unitless

4.0 Peaking Factor per City of Denton

Min. Flow Factor (Mm =) 0.23 Unitless

$$Mm = 0.2 * (0.0144 * F)^{0.198}$$

Minimum Dry Weather Flow - 49,340.78 Gal/day or 34.26 gpm

Peak Dry Weather Flow - 850,000 Gal/day 590.28 gpm

I&I Contribution - 55,600 Gals/Day or 38.61 gpm

Total Peak Wet Weather Flow - 905,600 Gal/ Day or 628.89 gpm

630 gpm - Total pump flow

Lift Station Firm Capacity - 0.906 MGD

Selected Force Main Diameter - 7.31 Inches

8 HDPE DR 11

Force Main Velocity Check - 4.82 Feet/ Sec

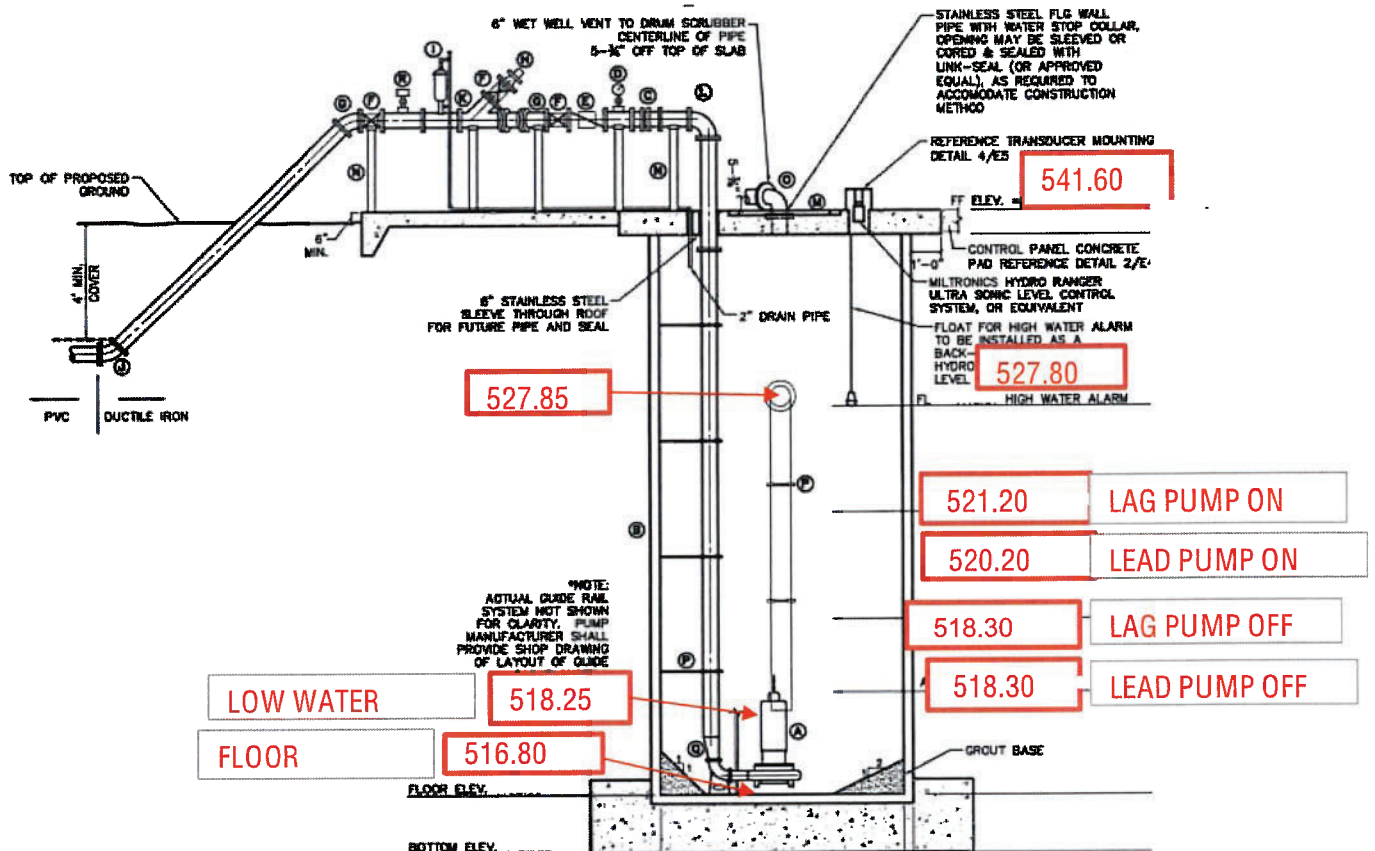
Meets Denton's criteria of
3-6 fps at ultimate development

HDPE DR 11		
Pipe Size	I.D.	
4	3.876	in.
6	5.571	in.
8	7.305	in.
10	8.961	in.
12	10.656	in.

LIFT STATION DESIGN WET WELL SIZING

Lift Station Size Design Criteria

Pump HP From Manufacture:	25.0 HP	
Cycle Time	10 Minutes	
Ground Elevation @ Proposed Wetwell:	541.60 Feet	
Water Elevation w/in Wetwell:	518.30 Feet	Pump Off should be 6-inch above pump casing
Elevation of Floor of Proposed Wetwell:	516.80 Feet	
Flow Line of Gravity Line	527.85	High Alarm - 48" below top of wet well or 48" below flowline lowest influent of collection system, which ever is lowest.
High Level Alarm	527.80 Feet	
Low Level Alarm	518.25 Feet	
Minimum Vol Between Pump On/ Off	1,572.22 Gallons	210.19 ft ³
Lead Pump On (Pump 1) =	520.20	
Pump Off (Pump 1 off) =	518.30	Pump Off (Pump 2 off) = 518.30
Elev. Change =	1.90 ft	Pump On/Pump Of Distance 214.88 cu.ft.
Wet Well Dia. =	12.00 ft	Area Wet Well = 113.1
Wet Well Usable Volume =	215 ft ³	1,607.6 Gallons Volume is Good
Retention Time (Min 20 Minutes)	10.00 minutes	(Longest outage period assume Peak flow)
Retention Storage Required =	6,289 Gallons	from last pump cycle. (Generator Required)
Retention Storage Provided =	6,472 Gallons	(Retention Storage + Minimum Vol between on/off)
Second Pump On	521.20 ft	Full Storage Depth = 7.65 ft.
Total Storage	8,079 Gallons	859.56 ft ³ Volume is Good



LIFT STATION DESIGN WET WELL SIZING

Lift Station Peak Flow (Pump) = 630.00 gpm

Lift Station Detention Time Calculations

MAX. WET WEATHER	905,600.00	Gal/day	or	628.89	gpm
Time to fill Wet Well (t_f) =	2.6	Min			
Time to empty Wet Well (t_e) =	1,446.8	Min			
Total Detention Time (T_d) =	1,449.35	Min			
MAX. DRY WEATHER	850,000.00	Gal/day	or	590.28	gpm
Time to fill Wet Well (t_f) =	2.723	Min			
Time to empty Wet Well (t_e) =	40.470	Min			
Total Detention Time (T_d) =	43.19	Min			
AVG. DRY WEATHER	212,500.00	Gal/day	or	147.57	gpm
Time to fill Wet Well (t_f) =	10.894	Min			
Time to empty Wet Well (t_e) =	3.332	Min			
Total Detention Time (T_d) =	14.23	Min			
MIN. DRY WEATHER	49,340.78	Gal/day	or	34.26	gpm
Time to fill Wet Well (t_f) =	46.916	Min			
Time to empty Wet Well (t_e) =	2.698	Min			
Total Detention Time (T_d) =	49.61	Min			

Force Main Detention Time Calculations

Length of Force Main =	3,497.00	ft
Velocity in Force Main (V_{fm}) =	4.82	feet/sec
Volume of Wet Well =	1,607.55	gal
Pump Cycle Time (PCT) =	43.57	min

$$T_{flush} = (t_f + t_e) * \frac{FMlength}{(PCT/2) * V_{fm} * (60s/min)}$$

T_{flush} = Time to flush Force Main - 7.89 min

Total Detention Time 57.50

LIFT STATION DESIGN
WET WELL SIZING

CITY OF AUSTIN
CRITERIA

CITY OF ROUND
ROCK CRITERIA

Figure: 30 TAC §217.60(b)(7)

Table C.5. - Minimum Pump Cycle Times

Pump Horsepower	Minimum Cycle Times (minutes)
< 50	6
50-100	10
> 100	15

Minimum 10 min. per City of Denton

LIFT STATION DESIGN SYSTEM CURVE C100

		Field
Discharge Pipe Diameter (inches)	7.305	
Discharge Pipe Length (feet)	2140	
Discharge Equivalent Length (feet)	254	
Discharge Pipe Total Length (feet)	2394	
c-value	100	
Total Static Head	20.78	
Pipe Area	0.291	sq.ft.

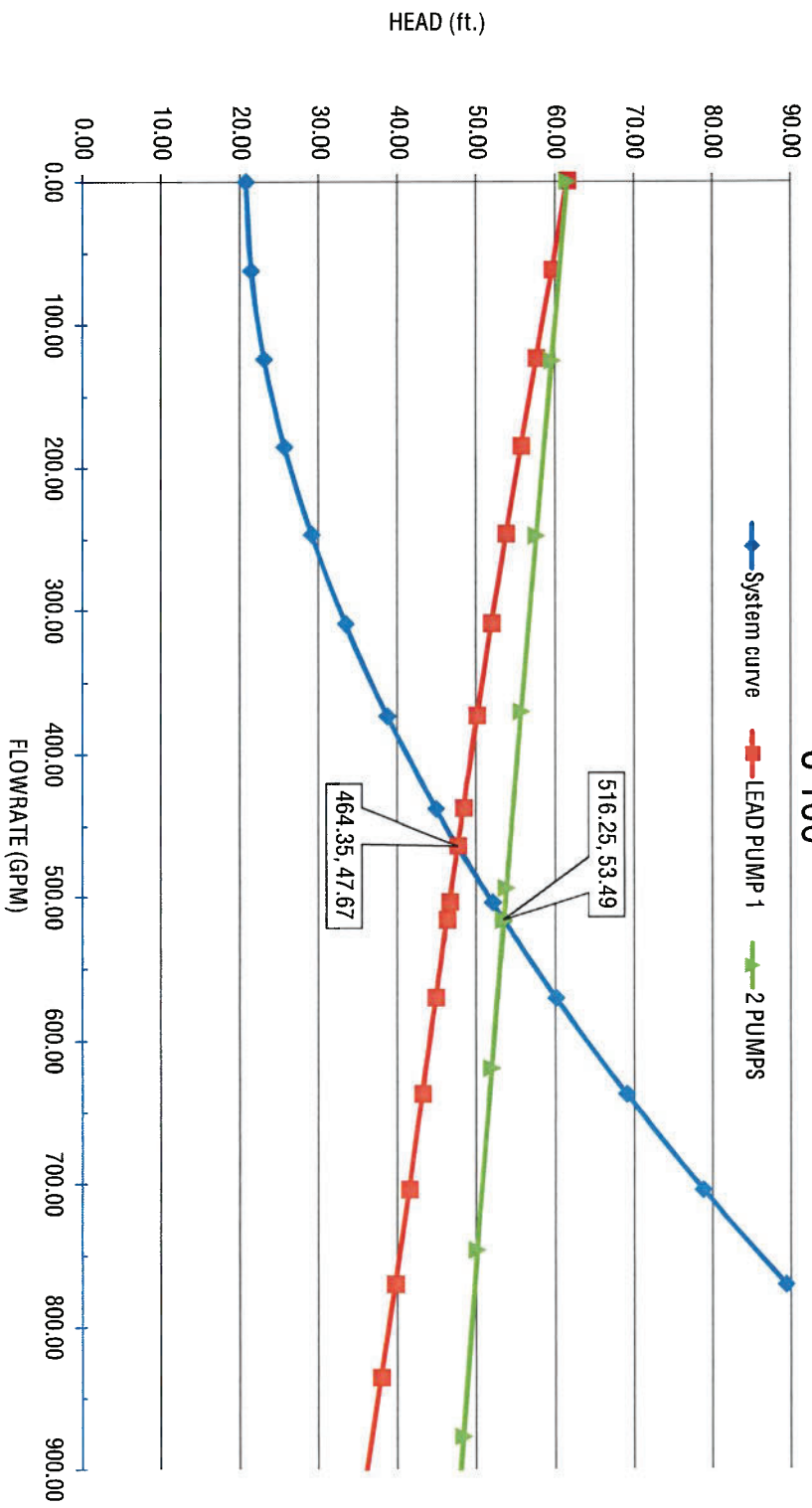
Hazen-Williams formula

$$h_f = \frac{10.44 \cdot L \cdot Q^{1.85}}{C^{1.85} \cdot d^{4.8655}}$$

Where: h_f = head loss due to friction (ft)
 L = length of pipe (ft)
 Q = flow rate of water (gpm)
 C = Hazen-Williams constant
 d = diameter of the pipe (in.)

System curve			LEAD PUMP 1		2 PUMPS	
Flow (gpm)	Head (ft)	Vel (ft/sec)	Flow (gpm)	Head (ft)	Flow (gpm)	Head (ft)
0.05	20.78	0.000	0.05	61.63	0.10	61.63
62.39	21.44	0.478	62.39	59.65	124.78	59.65
123.79	23.11	0.948	123.79	57.67	247.58	57.67
185.02	25.68	1.416	185.02	55.72	370.04	55.72
246.87	29.14	1.890	246.87	53.82	493.74	53.82
309.57	33.48	2.370	309.57	51.96	516.25	53.49
373.20	38.73	2.857	373.20	50.13	619.14	51.96
438.42	44.96	3.356	438.42	48.36	746.40	50.13
464.35	47.67	3.555	464.35	47.67	876.84	48.36
504.09	52.08	3.859	504.09	46.60	1008.18	46.60
516.25	53.49	3.952	516.25	46.28	1141.26	44.87
570.63	60.15	4.368	570.63	44.87	1274.90	43.15
637.45	69.10	4.880	637.45	43.15	1408.78	41.44
704.39	78.90	5.392	704.39	41.44	1541.16	39.70
770.58	89.41	5.899	770.58	39.70	1671.68	37.94
835.84	100.54	6.398	835.84	37.94	1801.64	36.17
900.82	112.39	6.896	900.82	36.17	1929.66	34.37
964.83	124.80	7.386	964.83	34.37	2056.12	32.55
1028.06	137.76	7.870	1028.06	32.55	2181.32	30.72
1090.66	151.28	8.349	1090.66	30.72	2305.78	28.86
1152.89	165.39	8.825	1152.89	28.86	2429.00	26.99
1214.50	180.01	9.297	1214.50	26.99		

xyiem NP 3153 MT 3 ~ 433 C 100



LIFT STATION DESIGN SYSTEM CURVE C140

		Field
Discharge Pipe Diameter (inches)	7.305	
Discharge Pipe Length (feet)	2140	
Discharge Equivalent Length (feet)	254	
Discharge Pipe Total Length (feet)	2394	
c-value	140	
Total Static Head	20.78	
Pipe Area	0.291	sq.ft.

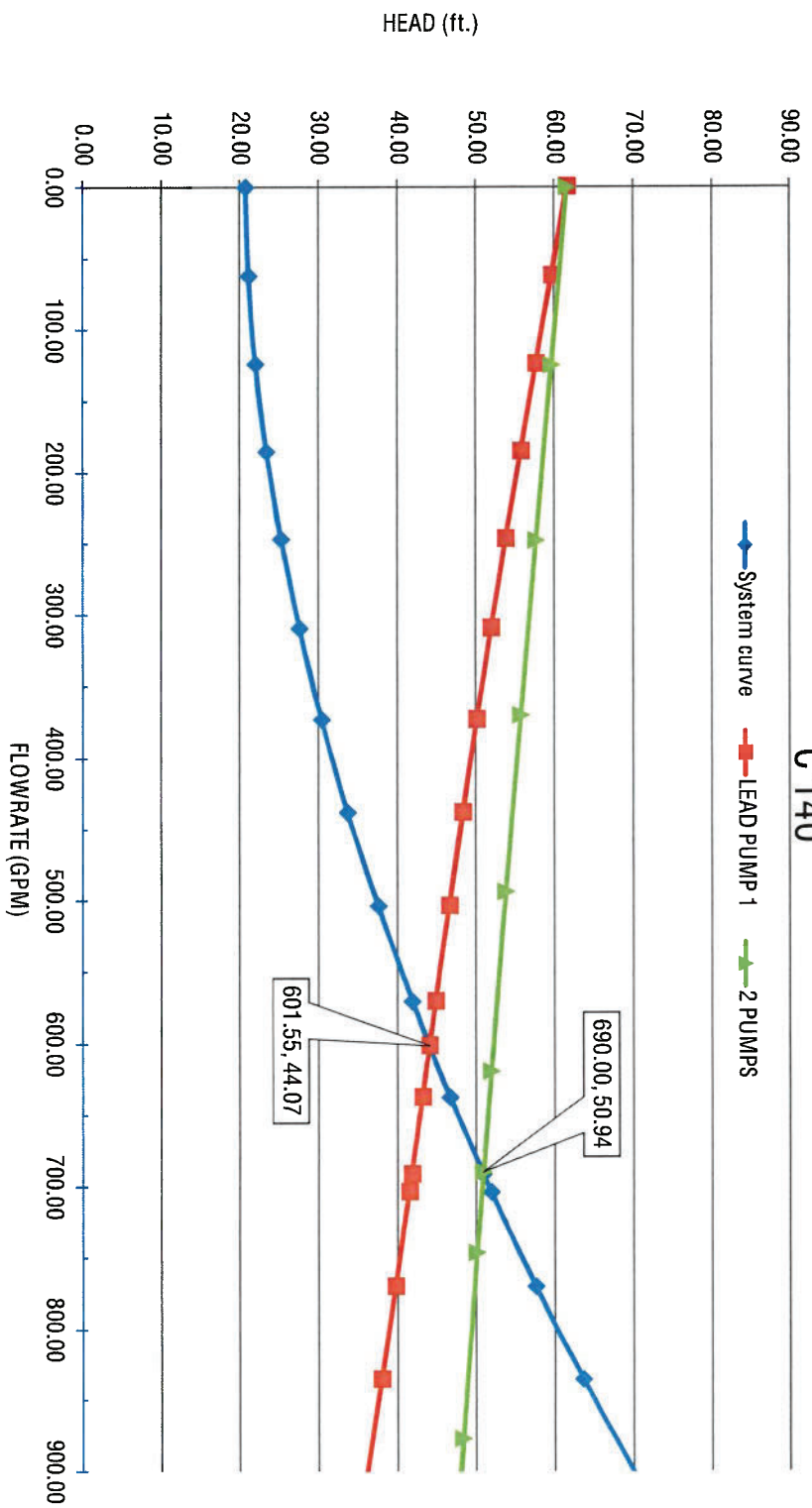
Hazen-Williams formula

$$h_f = \frac{10.44 \cdot L \cdot Q^{1.85}}{C^{1.85} \cdot d^{4.8655}}$$

Where: h_f = head loss due to friction (ft)
 L = length of pipe (ft)
 Q = flow rate of water (gpm)
 C = Hazen-Williams constant
 d = diameter of the pipe (in.)

System curve			LEAD PUMP 1		2 PUMPS	
Flow (gpm)	Head (ft)	Vel (ft/sec)	Flow (gpm)	Head (ft)	Flow (gpm)	Head (ft)
0.05	20.78	0.000	0.05	61.63	0.10	61.63
62.39	21.13	0.478	62.39	59.65	124.78	59.65
123.79	22.03	0.948	123.79	57.67	247.58	57.67
185.02	23.41	1.416	185.02	55.72	370.04	55.72
246.87	25.26	1.890	246.87	53.82	493.74	53.82
309.57	27.59	2.370	309.57	51.96	619.14	51.96
373.20	30.41	2.857	373.20	50.13	690.00	50.94
438.42	33.75	3.356	438.42	48.36	746.40	50.13
504.09	37.58	3.859	504.09	46.60	876.84	48.36
570.63	41.91	4.368	570.63	44.87	1008.18	46.60
601.55	44.07	4.605	601.55	44.07	1141.26	44.87
637.45	46.71	4.880	637.45	43.15	1274.90	43.15
691.70	50.94	5.295	691.70	41.76	1408.78	41.44
704.39	51.97	5.392	704.39	41.44	1541.16	39.70
770.58	57.61	5.899	770.58	39.70	1671.68	37.94
835.84	63.58	6.398	835.84	37.94	1801.64	36.17
900.82	69.94	6.896	900.82	36.17	1929.66	34.37
964.83	76.60	7.386	964.83	34.37	2056.12	32.55
1028.06	83.55	7.870	1028.06	32.55	2181.32	30.72
1090.66	90.81	8.349	1090.66	30.72	2305.78	28.86
1152.89	98.38	8.825	1152.89	28.86	2429.00	26.99
1214.50	106.22	9.297	1214.50	26.99		

xyiem NP 3153 MT 3 ~ 433 C 140



LIFT STATION DESIGN SYSTEM CURVE C 150

		Field
Discharge Pipe Diameter (inches)	7.305	
Discharge Pipe Length (feet)	2140	
Discharge Equivalent Length (feet)	254	
Discharge Pipe Total Length (feet)	2394	
c-value	150	
Total Static Head	20.78	
Pipe Area	0.291	sq.ft.

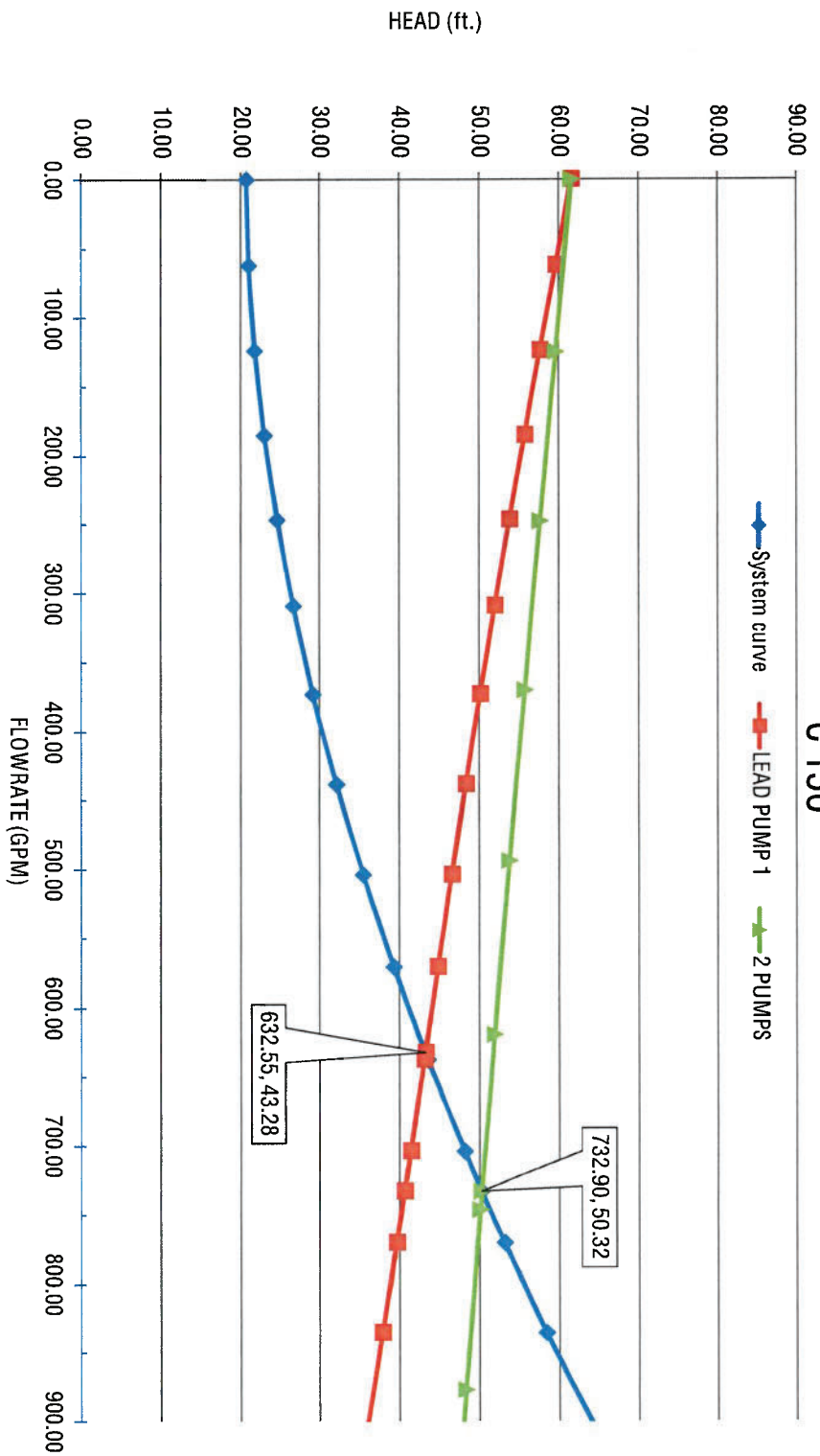
Hazen-Williams formula

$$h_f = \frac{10.44 \cdot L \cdot Q^{1.85}}{C^{1.85} \cdot d^{4.8655}}$$

Where: h_f = head loss due to friction (ft)
 L = length of pipe (ft)
 Q = flow rate of water (gpm)
 C = Hazen-Williams constant
 d = diameter of the pipe (in.)

System curve			LEAD PUMP 1		2 PUMPS	
Flow (gpm)	Head (ft)	Vel (ft/sec)	Flow (gpm)	Head (ft)	Flow (gpm)	Head (ft)
0.05	20.78	0.000	0.05	61.63	0.10	61.63
62.39	21.09	0.478	62.39	59.65	124.78	59.65
123.79	21.88	0.948	123.79	57.67	247.58	57.67
185.02	23.09	1.416	185.02	55.72	370.04	55.72
246.87	24.73	1.890	246.87	53.82	493.74	53.82
309.57	26.78	2.370	309.57	51.96	619.14	51.96
373.20	29.26	2.857	373.20	50.13	732.90	50.32
438.42	32.20	3.356	438.42	48.36	746.40	50.13
504.09	35.56	3.859	504.09	46.60	876.84	48.36
570.63	39.37	4.368	570.63	44.87	1008.18	46.60
632.55	43.28	4.842	632.55	43.28	1141.26	44.87
637.45	43.60	4.880	637.45	43.15	1274.90	43.15
704.39	48.23	5.392	704.39	41.44	1408.78	41.44
732.90	50.32	5.610	732.90	40.69	1541.16	39.70
770.58	53.19	5.899	770.58	39.70	1671.68	37.94
835.84	58.45	6.398	835.84	37.94	1801.64	36.17
900.82	64.05	6.896	900.82	36.17	1929.66	34.37
964.83	69.91	7.386	964.83	34.37	2056.12	32.55
1028.06	76.03	7.870	1028.06	32.55	2181.32	30.72
1090.66	82.42	8.349	1090.66	30.72	2305.78	28.86
1152.89	89.08	8.825	1152.89	28.86	2429.00	26.99
1214.50	95.99	9.297	1214.50	26.99		

xylem NP 3153 MT 3 ~ 433 C 150



LIFT STATION DESIGN

NET POSITIVE SUCTION HEAD

SUCTION SPECIFIC SPEED

Net Positive Suction Head Comparision (Pump - Available)

NPSH from Pump Manufacture	5.5 feet
Elevation of Lift Station	541 Altitude in feet
Barometric Pressure ($P_B =$)	29.39
Static Suction Head in Feet ($H_S =$)	3
Vapor Pressure ($P_V =$)	0.2563
Friction Loss in Feet ($H_{FS} =$)	0.5
$NPSH_A = P_B + H_S - P_V - H_{FS}$	31.6337
$NPSH_A - NPSH_{PUMP} =$	26.1337 $NPSH_A$ Should be greater than $NPSH_{PUMP} =$

Suction Specific Speed

$$SSS = \frac{RPM * PUMP^{0.5}}{NPSH^{0.75}}$$

Shaft Rotations	2866 RPMs
Suction Specific Speed (SSS=)	5393.0 RPMs (Maintain below 9000)

Stiffness Ration

Distance from Impeller (L=)	1 inches	$S_R = \frac{L^3}{D^4}$
Diameter of Shaft (D=)	1 inches	
Stiffness Ration (SR =	1 The stiffness shall not exceed 60.	

Mansions South Denton
 Lift Station Design
 MBC Project Number 33915

LIFT STATION DESIGNS ENERGY CALCULATIONS

<u>Water Horsepower</u>	<u>Theoretical</u>	<u>Pump Manufacture</u>
Pump Flow (Q=)	630 gpm	$P = \frac{(Q)(h)(8.34 \frac{lb}{gal})}{33,000 \text{ ft} - lb \text{ min}/hp}$
Head (h =)	46.5 gpm	
Horsepower (P=)	7.41 HP	

<u>Brake Horsepower</u>		
Pump efficient	0.391	0.504
Break Horsepower (Bhp =)	18.95	29.17

<u>Electrical Horsepower</u>		
Motor Efficiency	0.85	0.79
Electrical (Ehp =)	22.30 Ehp	36.92 Ehp

<u>Power Consumption</u>		
Power Required in Kilowatts =	16.63551123 Kilowatts	27.54219409
Pump 1 Run Times	2.81 Hours	2.81 Hours
Pump 2 Run Times	2.81 Hours	2.81 Hours
Daily Power Consumption	93.52 kWh Per Day	154.83 kWh Per Day

<u>Estimate Cost for Power Consumption</u>		
Cost Per Kilowatt	\$ 0.06	\$ 0.06
Time in Service	1706735.24 days	2825716.18
Cost of power over the life of the station	\$ 102,404.11	\$ 169,542.97 kWh Per Day

LIFT STATION DESIGN WATER HAMMER/ SURGE ANALYSIS

Surge Analysis

Pump Flow (2~PUMPS RUNNING)= 483.29 gpm
Velocity in Pipe (v) = 3.70 fps
Operating Pressure = 19.66 psi

Pipe Material = HDPE DR 13.5
Length of Pipe = 3,497.00 feet
Dia. Of Pipe = 7.305 in
Pipe A Thickness = 0.185 in

Young's Modulus of PVC (E) = 400000 psi
Bulk Modulus (Y) = 300000 psi
Spec. Weight of Water (w) = 62.4 psf

Find pressure wave velocity (a):

$$a = 12 \div \left\{ \frac{w}{g} \left(\frac{1}{k} + \frac{d}{E * t} \right) \right\}^{0.5}$$

a = 853 fps for HDPE

Find max surge pressure (P):

$$P = \frac{a * v}{2.31 * g} + \text{Operating Pressure}$$

P = 62.11 psi for HDPE (pressure rated for 160 psi)

LIFT STATION DESIGN ODOR CONTROL

Hydrogen Sulfide Production

Initial Sulfide Production

Longest Stretch of Gravity line	1545 LF	
Diameter of Gravity Line	8 inches	
Average Velocity	3 fps	
Anticipate BOD ₅	250 mg/l	Source Metcalf & Eddy, 4th Edition
Anticipate Initial Sulfide Concentratio	0.29 mg/l	

Force Main Retention Time

Force Main Length	3,497 LF	3,497
Average Flow	0.2125 MGD	0.18
Force Main Diameter	7.305 inches	7.305
Force Main Retention Time	51.5642 min	60.8744

Sulfide Production

Temperature Avg Summer High	36 Celsius Source Weather Channel
Temperature Avg. Winter Low	5 Celsius Source Weather Channel

Effective BOD @ Summer High=	738.041 mg/l
Effective BOD @ Winter Low=	90.6115 mg/l

Sulfide (Summer High)	5.88 mg/l	or	10.4207 Pounds per Day
Sulfide (Winter Low)	0.98 mg/l	or	1.72974 Pounds per Day

Ferrous Sulfate Production

Assume Pencoco's Ferrous Sulfate:PH>4

Dosage guidelines per Manufacture is 1 lb of H₂S requires 3.2 gallons of Ferrous Sulfate solution

Reducton of Sulfide Concentration to	0.5 mg/l	will produce the following revised Sulfide concentrations
Summer Production of sulfide	5.38 mg/l	or 9.53453 Pounds per Day
Winter Production of sulfide	0.48 mg/l	or 0.84362 Pounds per Day

Per Manufactures recommendation, the following Ferrous Sulfate is required for each season

Summer Day	30.5105 gallons per day	Meter Pump Size	1.27127 Gallons Per Hours
Winter Day	2.69958 gallons per day	Meter Pump Size	0.11248 Gallons Per Hours
Storage Time	90 Days		
Assume 60 Day Storage volume	2745.95 Gallons		
Mini Bulk Tanks	1050 Gallons	Assume Norwesco Storage Containers with stand	
Diameter	73 in	Polyethlyene Cone Stand	32 in
Height	86 in	Fill Opening	16 in
		Drain	2 in
Part No.	40359		

Containment Storage Required	140.37 ft^3
Inside Length	10
Inside Width	10
Height	2
Volume - Minus Tank Footprint	141.899 ft^3

Mansions South Denton
Lift Station Design
MBC Project Number 33915

LIFT STATION DESIGN BOUYANCY CALCULATIONS WET WELL

Given

Diameter of Wet Well = 12.00 Feet
Diameter of concrete Base 14.00 Feet

Assume empty wet well weight with no liquids, pump, piping or other appurtenances adding to the weight

Forces Down must exceed Forces Up

Factor of Safety 2.00

Forces Down Weight of Soil Acting on Concrete Base + Weight of Concrete Base
Assume the unit weight of concrete is 150 pcf and the unit weight of submerged concrete is 87.6 pcf

Weight of Concrete 150 lbs/cuft
Weight of Concrete Submerged 87.6 lbs/cuft
Wt of Concrete (submerged) 26956.27 lbs

Unit Weight of Soil (DRY) 99 lbs/cuft
Unit Weight of Soil (sat) 130.00 lbs/cuft
Wt of Soil acting on Concrete Base 5306.60 lbs

Forces Up	Area of Wet Well* Unit weight of water	16458.624 Lbs Up
Total Forces Down =	32262.87 lbs Down	

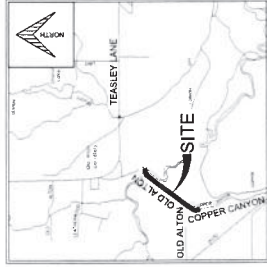
NO ADDITIONAL ANTI-FLOTATION DEVICES NEEDED

MANSIONS OF SOUTH DENTON SANITARY SEWER LIFT STATION & FORCEMAIN PLANS COPPER CANYON ROAD AND OLD ALTON ROAD

DENTON, TEXAS

DEVELOPER
MANSIONS OF SOUTH DENTON TRAIL INVESTMENTS, LLC
2505 NORTH STATE HIGHWAY 360, STE. 600
DENTON, TEXAS 76205
(972) 471-8700

ENGINEER
MACINA • BOSE • COPELAND & ASSOCIATES, INC.
1035 CENTRAL PARKWAY NORTH
SAN ANTONIO, TEXAS 78222
(210) 545-1122



LOCATION MAP
NOT TO SCALE

Sheet List Table	
SHEET NUMBER	SHEET TITLE
1	COVER SHEET
2	GENERAL NOTES
3	ENGINEERING CONTROL PLANS
4	ENGINEERING CONTROL PLANS
5	ENGINEERING CONTROL PLANS
6	ENGINEERING CONTROL PLANS
7	ENGINEERING CONTROL PLANS
8	ENGINEERING CONTROL PLANS
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100	ENGINEERING CONTROL PLANS

NOTES:
1. ALL SHEETS DATED FROM 1990 TO 2000, NOT USED.
2. ALL SHEETS DATED FROM 2000 TO 2010, NOT USED.
3. ALL SHEETS DATED FROM 2010 TO 2020, NOT USED.
4. ALL SHEETS DATED FROM 2020 TO 2025, NOT USED.



PRIMARY CONTACT PERSON

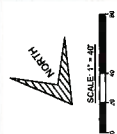
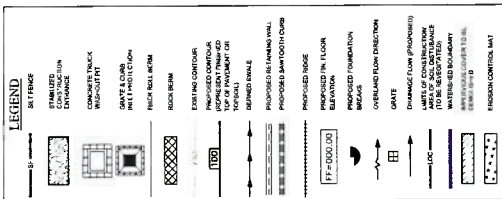
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CONSULTING ENGINEERS AND LAND SURVEYORS
1035 Central Parkway North, San Antonio, Texas 78222
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TEXAS PROFESSIONAL ENGINEERING #10000 & SURVEYING 1001700

PERMIT
09-04-2025

COVER
SHEET

1



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MANIONS OF SOUTH DENTON
DENTON, TEXAS

[illegible]

333915-DENTON
PERMIT
09-04-2025

EROSION
CONTROL
PLAN 1

3

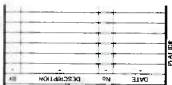
THIS SHEET TO BE
USED FOR EROSION
CONTROL PURPOSES
ONLY.

THIS SHEET TO BE
USED FOR EROSION
CONTROL PURPOSES
ONLY.

EROSION
CONTROL
PLAN 2

33915 DENTON
PERMIT
09-04-2025

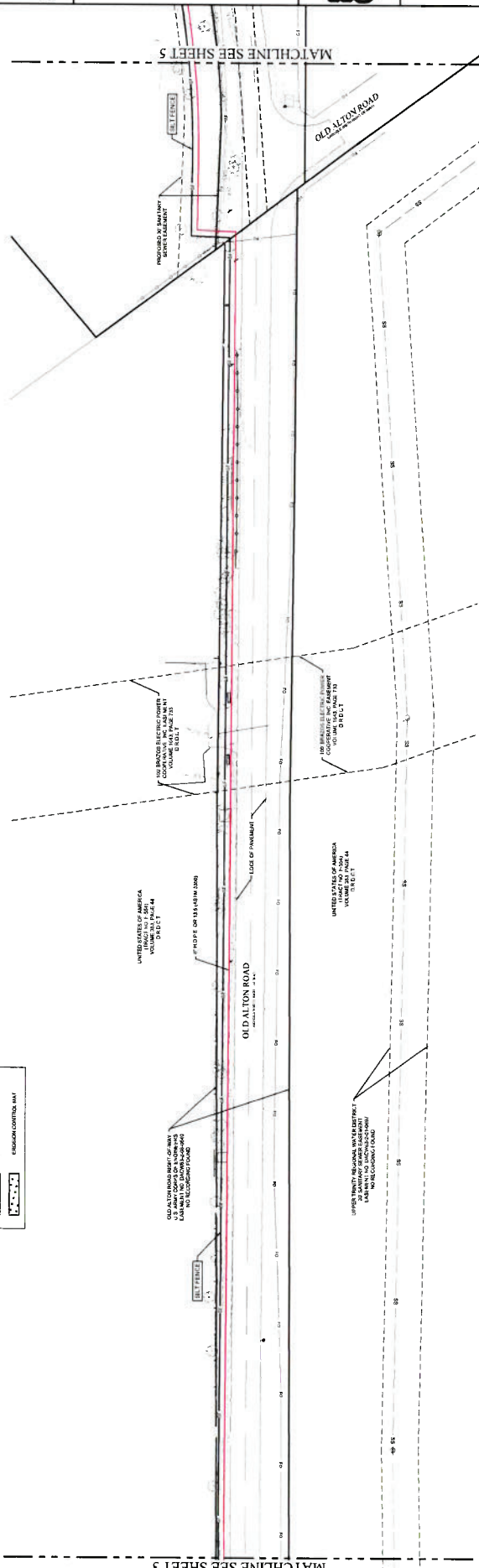
33915 DENTON
PERMIT
09-04-2025



811
Know what's below.
Call before you dig.

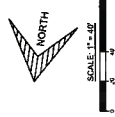
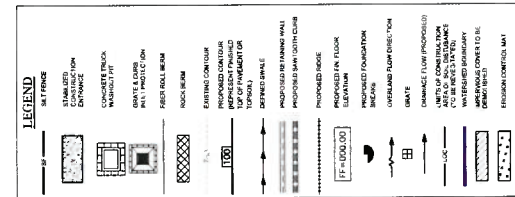
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DENTON, TEXAS

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CONSULTING ENGINEERS AND LAND SURVEYORS
1035 Capital Parkway, Suite 100, Dallas, Texas 75222
(214) 545-1122 Fax (214) 545-5000 www.macospe.com



LEGEND

	SILT FENCE
	STORM DRAIN
	CONCRETE TRENCH
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THIS SHEET TO BE
USED FOR EROSION
CONTROL PURPOSES
ONLY.

EROSION
CONTROL
DETAILS

PERMIT
NO. 09-04-2025

33915 DENTON

NO.	DESCRIPTION
1	SECTION 1
2	SECTION 2
3	SECTION 3
4	SECTION 4
5	SECTION 5
6	SECTION 6
7	SECTION 7
8	SECTION 8
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10	SECTION 10
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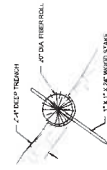
811
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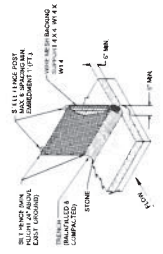
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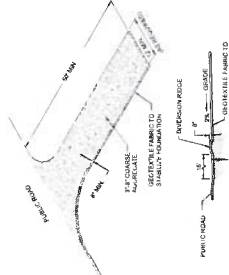
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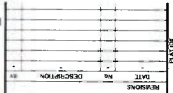
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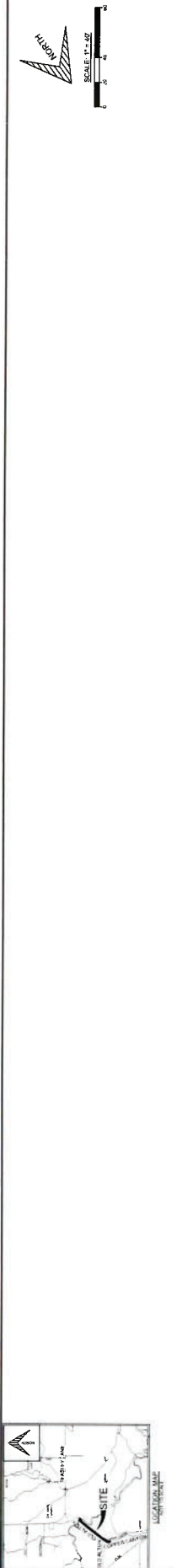
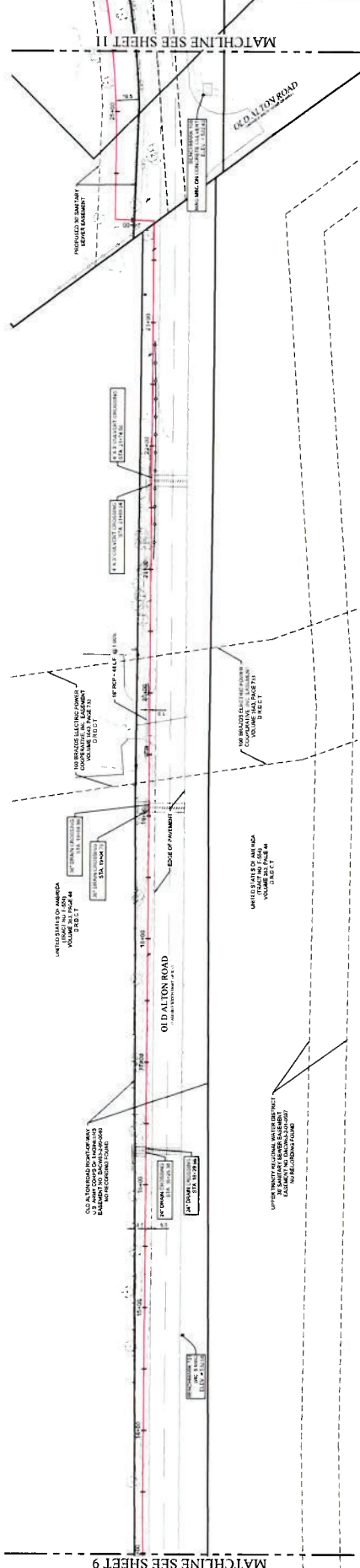
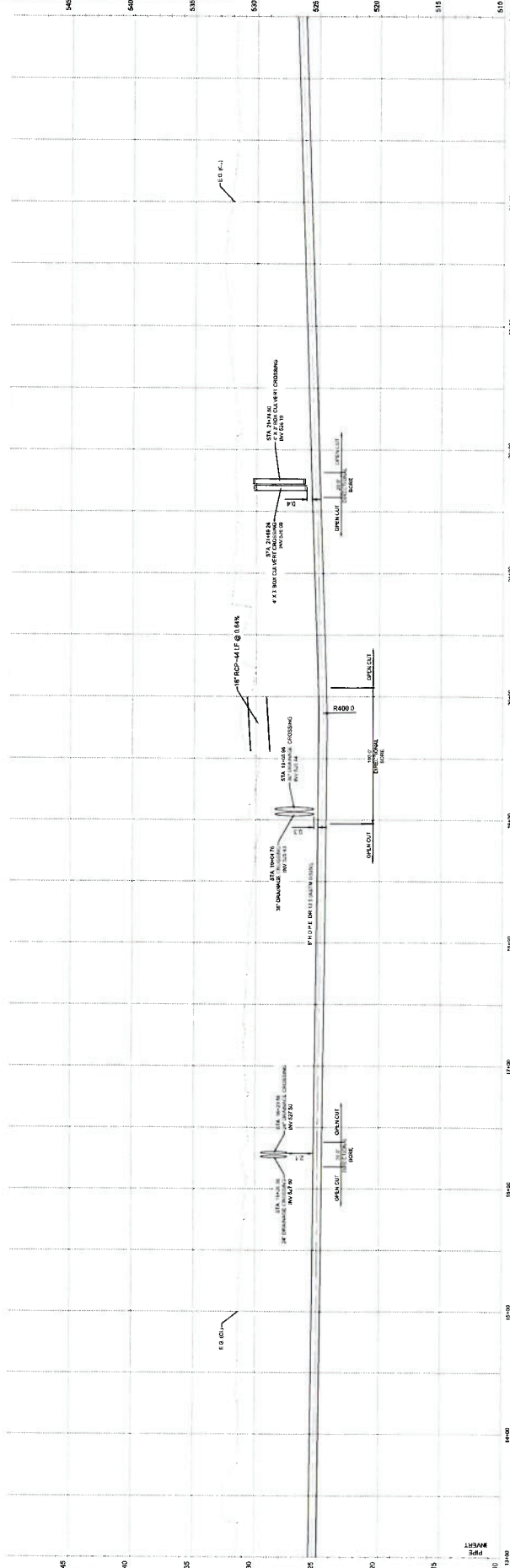


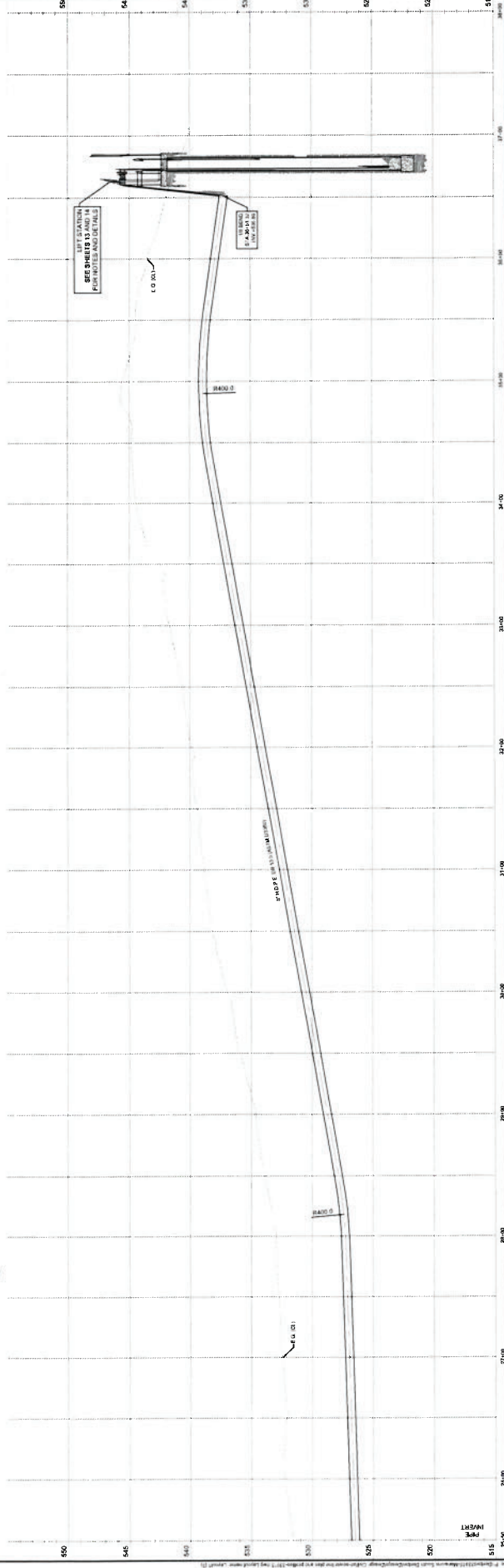
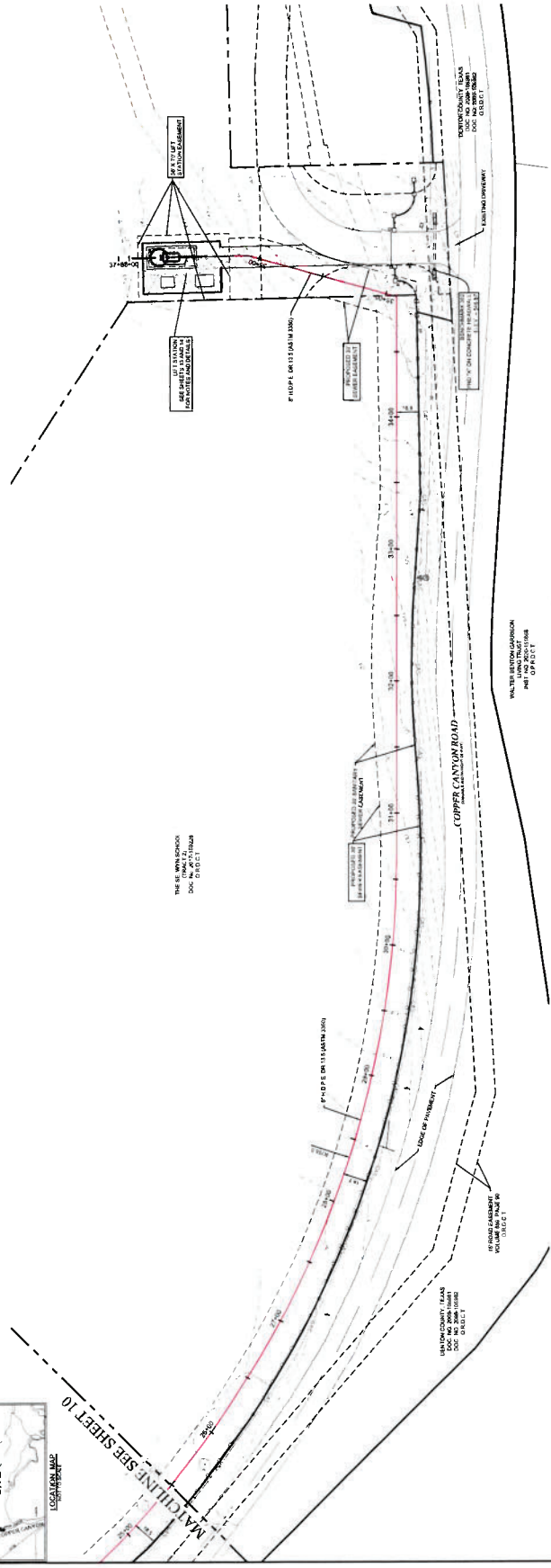
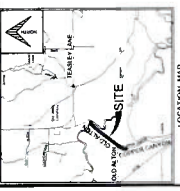
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TEXAS PROFESSIONAL ENGINEERING #7826 & SURVEYING #0017700









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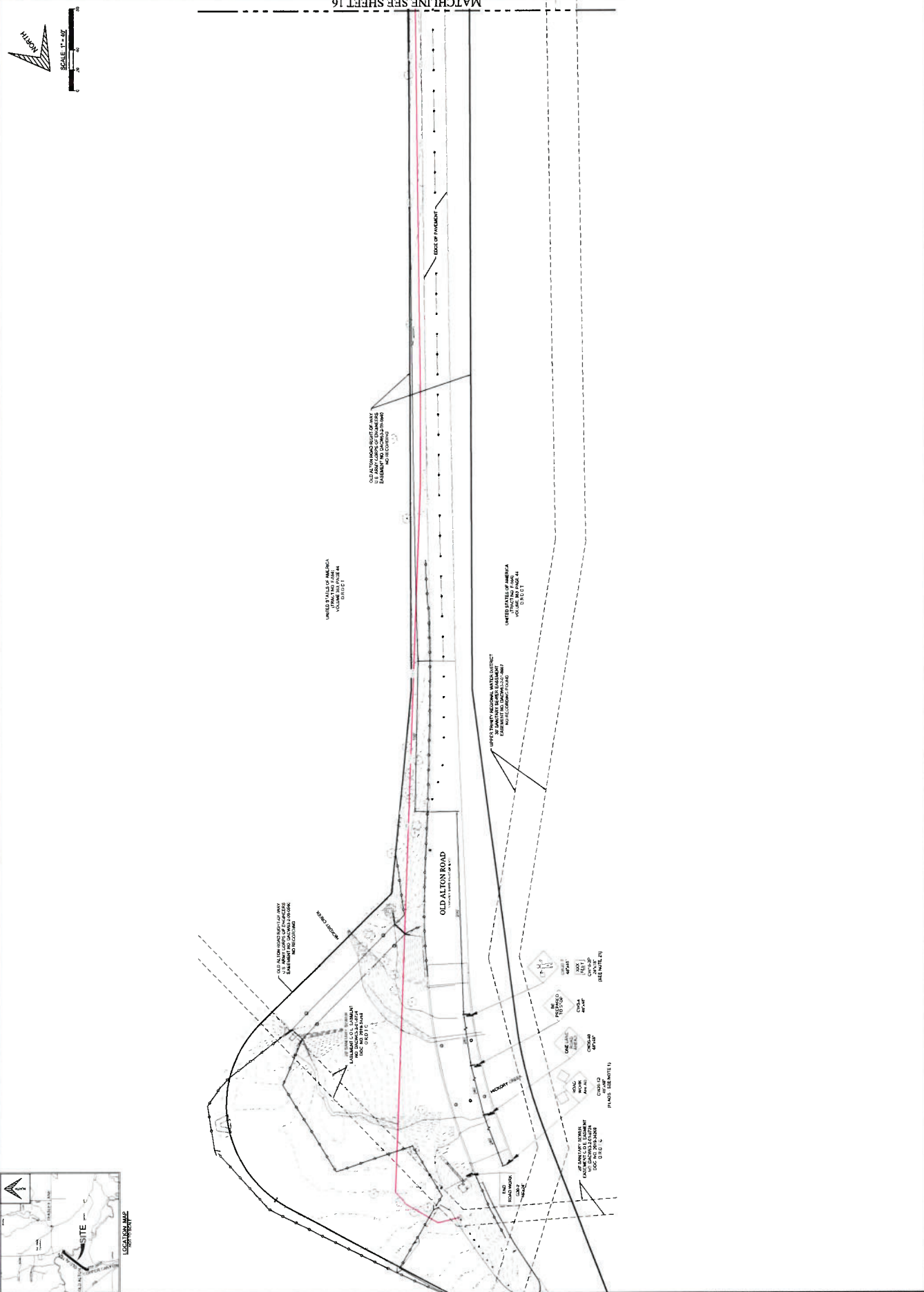


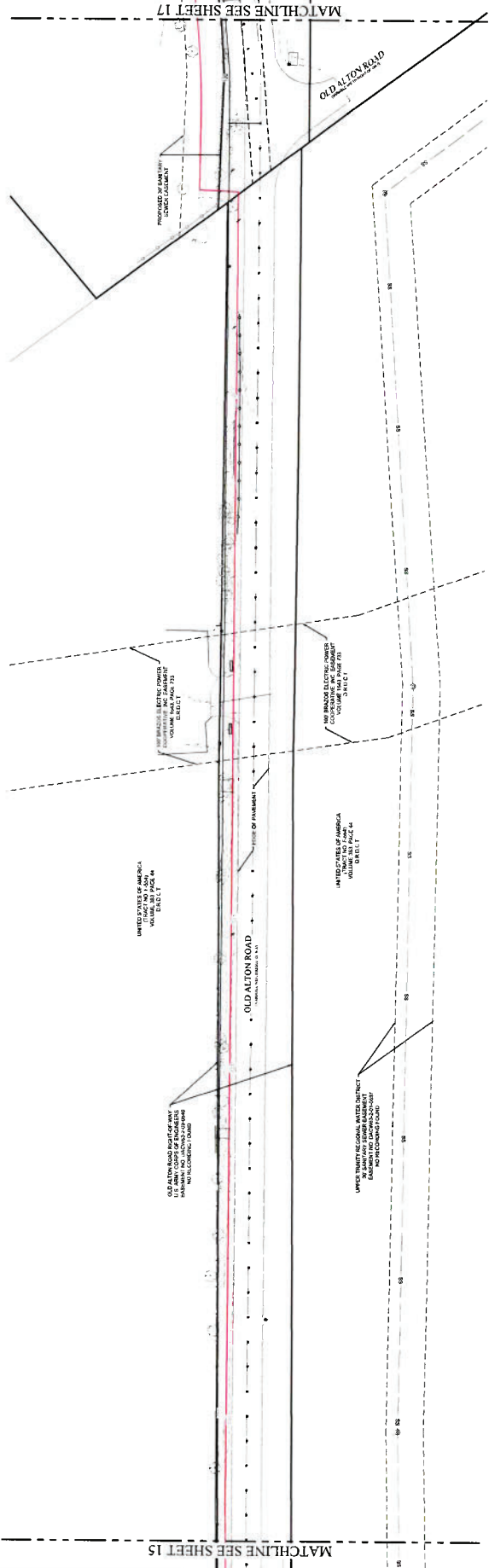
MANSIONS OF SOUTH DENTON
DENTON, TEXAS

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33915-DENTON
PERMIT
09-04-2025

TRAFFIC
CONTROL 1

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MATCHLINE SEE SHEET 15

--- MATCHLINE SEE SHEET 17 ---





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PERMIT CONTACT
J.C.

TXSAS REGISTRATION # ENGINEERING P-1784 & SURVEYING 10011720

10/1/2025

MANSON'S OF SOUTH DENTON
DENTON, TEXAS

811
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33915-DENTON
PERMIT
DATE
09-04-2025

TRAFFIC
CONTROL 3

18

KEYNOTE
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10/1/2025

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MANIONS OF SOUTH DENTON
DENTON, TEXAS



REVISIONS		
NO.	DESCRIPTION	DATE

33915-DENTON
PERMIT
09-04-2025
TRAFFIC CONTROL
DETAILS
1
18

