



AGENDA

Planning and Zoning Commission Meeting

April 13, 2023 | 6:30 PM

Council Chambers

City Hall | 665 Country Club Road, Lucas, Texas

Notice is hereby given that a meeting of the City of Lucas Planning and Zoning Commission will be held on April 13, 2023, at 6:30 pm at Lucas City Hall, 665 Country Club Road, Lucas, Texas 75002-7651, at which time the following agenda will be discussed. As authorized by Section 551.071 of the Texas Government Code, the Planning and Zoning Commission may convene into closed Executive Session for the purpose of seeking confidential legal advice from the City Attorney on any item on the agenda at any time during the meeting.

If you would like to watch the meeting live, you may go to the City's live streaming link at <https://www.lucastexas.us/departments/public-meetings/>.

How to Provide Input at a Meeting:

Speak In Person: Request to Speak forms will be available at the meeting. Please fill out the form and give to the City Secretary prior to the start of the meeting. This form will also allow a place for comments.

Submit Written Comments: If you are unable to attend a meeting and would like to submit written comments regarding a specific agenda item, email Erin Day, City Secretary at eday@lucastexas.us no later than 3:30 pm the day of the meeting. The email must contain the person's name, address, phone number, and the agenda item(s) for which comments will be made. Any requests received after 3:30 pm will not be included at the meeting.

Call to Order

- Roll Call
- Determination of Quorum
- Reminder to turn off or silence cell phones
- Pledge of Allegiance

Public Hearing

1. Conduct a public hearing and consider approving updates to the City of Lucas Thoroughfare Plan.
 - A. Presentation by Development Services Director Joe Hilbourn
 - B. Conduct public hearing
 - C. Take action on Thoroughfare Plan
2. Conduct a public hearing and consider changes to the City's Code of Ordinances by amending Chapter 14 titled "Zoning", Article 14.01 titled "General Provisions", Division 1 titled "Generally", Section 14.01.004 titled "Definitions", and amending Chapter 14 titled "Zoning", Article 14.04 titled "Supplementary Regulations", Division 8 titled "Accessory Buildings, Structures and Uses".

- A. Presentation by Development Services Director Joe Hilbourn
 - B. Conduct public hearing
 - C. Take action on amendments to Accessory Building Regulations
- 3. Conduct a public hearing and consider approving a request for a change in zoning from AO (Agricultural and Open Space) to R-2 (Residential 2-acre) on a 23+/- parcel of land generally located at 355 Winningkoff Road.
 - A. Presentation by Development Services Director Joe Hilbourn
 - B. Conduct public hearing
 - C. Take action on Zoning Change Request
- 4. Conduct a public hearing and consider approving changes to the City of Lucas Code of Ordinances, Chapter 14 titled "Zoning", by amending Article 14.02 titled "Administration", Division 3 titled "Changes and Amendments", Section §14.02.063 titled "Procedure".
 - A. Presentation by Development Services Director Joe Hilbourn
 - B. Conduct public hearing
 - C. Take action on amendments to the Zoning Appeals Process

Regular Agenda

- 5. Consider the request by Majed Khalaf on behalf of Mahmoud Properties for a site plan, landscape plan, and elevations for use as a commercial retail and office center on a 2.25-acre tract of land in the Jas Lovelady Survey, Abstract Number ABS A0538, Tract 14 situated in the City of Lucas, Collin County, Texas, located at 995 West Lucas Road. **(Development Services Director Joe Hilbourn)**
- 6. Discuss updates on the Barrett Lakes Estates Addition. **(Development Services Director Joe Hilbourn)**
- 7. Consider the 88th Legislative Session and discuss any proposed bill or significant resolution that may have an impact on the City of Lucas and provide guidance to the City Attorney and City Manager. **(City Manager Joni Clarke)**
- 8. Consider approval of the minutes of the March 9, 2023 Planning and Zoning Commission meeting. **(City Secretary Erin Day)**

Executive Agenda

As authorized by Section 551.071 of the Texas Government Code, the Planning and Zoning Commission may convene into closed Executive Session for the purpose of seeking confidential legal advice from the City Attorney regarding any item on the agenda at any time during the meeting. This meeting is closed to the public as provided in the Texas Government Code.

- 9. Executive Session: An Executive Session is not scheduled for this meeting.
- 10. Adjournment.

Certification

I do hereby certify that the above notice was posted in accordance with the Texas Open Meetings Act on the bulletin board at Lucas City Hall, 665 Country Club Road, Lucas, Texas 75002 and on the City's website at www.lucastexas.us on or before 5:00 p.m. on April 7, 2023.

Joshua Menhennett, Management Analyst

In compliance with the American with Disabilities Act, the City of Lucas will provide for reasonable accommodations for persons attending public meetings at City Hall. Requests for accommodations or interpretive services should be directed to City Secretary Erin Day at 972-912-1211 or by email at eday@lucastexas.us at least 48 hours prior to the meeting.



City of Lucas

Planning and Zoning Agenda Request

April 13, 2023

Item No. 01

Requester: Development Services Director Joe Hilbourn

Agenda Item Request

Conduct a public hearing and consider approving updates to the City of Lucas Thoroughfare Plan.

- A. Presentation by Development Services Director Joe Hilbourn
- B. Conduct public hearing
- C. Take action on Thoroughfare Plan

Background Information

The City of Lucas Comprehensive Plan was approved with modifications at the January 19, 2023 City Council meeting. At the March 16, 2023 City Council meeting, the Council evaluated whether additional modifications should be made to the City of Lucas Thoroughfare Plan regarding the alignment of Stinson Road and its connection with FM 1378. Council gave direction to staff to present their proposed updates to the Planning and Zoning Commission. See the attached updated Thoroughfare Plan.

Attachments/Supporting Documentation

- 1. Public Notice
- 2. Updated Thoroughfare Plan

Budget/Financial Impact

NA

Recommendation

City staff recommends approving a recommendation to City Council to accept the updates to the City of Lucas Thoroughfare Plan.

Motion

I make a motion to recommend to the City Council to approve/deny updates to the City of Lucas Thoroughfare Plan.



NOTICE OF PUBLIC HEARING

Notice is hereby given, that the Planning & Zoning Commission of the City of Lucas, Texas will hold a public hearing on Thursday, April 13, 2023, at 6:30 p.m. and City Council will conduct a second public hearing on Thursday, May 4, 2023 at 6:30 p.m. at Lucas City Hall, 665 Country Club, Lucas, Texas to consider an update to the City's Master Thoroughfare Plan.

Those wishing to speak FOR or AGAINST the above item are invited to attend. If you are unable to attend and have comments you may send them to City of Lucas, City Secretary, 665 Country Club Road, Lucas, Texas 75002, email eday@lucastexas.us, and it will be presented at the hearing. If you have any questions about the above hearing you may contact jhilbourn@lucastexas.us.



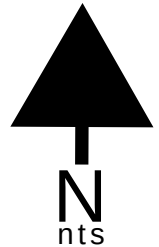
LEGEND					
Type	Color	# of Lanes	Shoulder	Pavement Width (ft)	Right-of-Way Width (ft)
A	Gray	6	Yes	78 + 16ft Median	120
B	Yellow	4	Varies	52-54	60
C	Red	2	No	24-28	50
D	Green	2	No	24	50
Proposed	Blue	As Labeled	As Labeled	As Labeled	As Labeled

 Proposed Intersection Improvement

- Notes:
1. Type D roads are shown for reference only and are not modified by this plan.
 2. Private roads and driveways generally are not shown except where valuable for readability.
 3. The blue shaded area is outside of City Limits.
 4. Only the Northern 2,300 ft (approx) of Lewis Lane is Lucas maintained.
 5. Only the Southern 300 ft (approx) of Rock Ridge Rd is Lucas maintained.

Thoroughfare Plan City of Lucas 2022

Revised: March 31, 2023
Adopted: January 19, 2023





City of Lucas

Planning and Zoning Agenda Request

April 13, 2023

Item No. 02

Requester: Development Services Director Joe Hilbourn

Agenda Item Request

Conduct a public hearing and consider changes to the City's Code of Ordinances by amending Chapter 14 titled "Zoning", Article 14.01 titled "General Provisions", Division 1 titled "Generally", Section 14.01.004 titled "Definitions", and amending Chapter 14 titled "Zoning", Article 14.04 titled "Supplementary Regulations", Division 8 titled "Accessory Buildings, Structures and Uses".

- A. Presentation by Development Services Director Joe Hilbourn
- B. Conduct public hearing
- C. Take action on amendments to Accessory Building Regulations

Background Information

There have been ongoing concerns expressed by both the Planning and Zoning Commission and the City Council regarding accessory buildings with habitable space. City Attorney Courtney Morris has drafted the attached proposed ordinance language with the recommendations discussed at the March 9, 2023 Planning and Zoning Commission meeting.

Attachments/Supporting Documentation

- 1. Public Notice
- 2. Proposed Ordinance amending Accessory Building Regulations

Budget/Financial Impact

NA

Recommendation

City staff recommends approving a recommendation to the City Council to accept the proposed ordinance revisions as presented.

Motion

I make a motion to recommend to the City Council to approve/deny changes to the City's Code of Ordinances by amending Chapter 14 titled "Zoning", by amending Article 14.01 titled "General Provisions", Division 1 titled "Generally", Section 14.01.004 titled "Definitions", and amending Chapter 14 titled "Zoning", Article 14.04 titled "Supplementary Regulations", Division 8 titled "Accessory Buildings, Structures and Uses".



NOTICE OF PUBLIC HEARING

Notice is hereby given, that the Planning & Zoning Commission of the City of Lucas, Texas will hold a public hearing on Thursday, April 13, 2023, at 6:30 p.m. and City Council will conduct a second public hearing on Thursday, May 4, 2023 at 6:30 p.m. at Lucas City Hall, 665 Country Club, Lucas, Texas to consider changes to the City's Code of Ordinances, Chapter 14 Zoning Ordinance, Article 14.01 titled "General Provisions", Section 14.01.004 titled "Definitions" to amend the definition of "accessory buildings" and add and remove other definitions relating to accessory buildings; to amend Article 14.04 titled "Supplementary Regulation," by amending Division 8, titled "Accessory buildings, structures and uses".

Those wishing to speak FOR or AGAINST the above item are invited to attend. If you are unable to attend and have comments you may send them to City of Lucas, City Secretary, 665 Country Club Road, Lucas, Texas 75002, email eday@lucastexas.us, and it will be presented at the hearing. If you have any questions about the above hearing you may contact jhilbourn@lucastexas.us



ORDINANCE #2023-XX-XXXX

AN ORDINANCE OF THE CITY OF LUCAS, TEXAS, AMENDING THE CODE OF ORDINANCES BY AMENDING CHAPTER 14 TITLED "ZONING", BY AMENDING ARTICLE 14.01 TITLED "GENERAL PROVISIONS", SECTION 14.01.004 TITLED "DEFINITIONS", TO AMEND THE DEFINITION OF "ACCESSORY BUILDINGS" AND ADD AND REMOVE OTHER DEFINITIONS RELATING TO ACCESSORY BUILDINGS; TO AMEND ARTICLE 14.04 TITLED "SUPPLEMENTARY REGULATIONS" BY AMENDING DIVISION 8 TITLED "ACCESSORY BUILDINGS, STRUCTURES AND USES" TO REVISE CERTAIN PROVISIONS RELATING TO ACCESSORY BUILDINGS AND ADD PROVISIONS RELATING TO ACCESSORY DWELLING UNITS AND RENUMBER PARAGRAPHS FOR CONSISTENCY THROUGHOUT THE ARTICLE; PROVIDING FOR A REPEALING CLAUSE; PROVIDING FOR A SEVERABILITY CLAUSE; PROVIDING A SAVINGS CLAUSE; PROVIDING FOR A PENALTY OF FINE NOT TO EXCEED TWO HUNDRED DOLLARS (\$200.00); AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City of Lucas is a growing community that places emphasis on its country feel, open spaces, and high quality of life standard, and

WHEREAS, the uses for and sizes of accessory buildings has dramatically changed in the last ten years, and

WHEREAS, in an effort to maintain the qualities that has made Lucas a desirable and safe place with adequate facilities for transportation, water, drainage and sewer and to protect the health and safety of the community in a fair and lawful manner, the City Council has determined it is in the best interest of the City to amend provisions relating to the use and size of accessory buildings, structures and uses.

NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF LUCAS, TEXAS:

SECTION 1. That the City of Lucas Code of Ordinances is amended by amending Chapter 14 titled "Zoning", Article 14.01 titled "General Provisions", Division 1 titled "Generally", §14.01.004 titled "Definitions" to read as follows:

§ 14.01.004 Definitions.

Accessory buildings and structures. Buildings or structures located on the same lot as a dwelling or other principal building, the use of which is subordinate in area, volume and extent as well as incidental in use to the use of the dwelling or other principal building.

Accessory Dwelling Unit. Building area that does not have a permanent interconnection with the primary dwelling, is located on the same lot as the primary dwelling, and that is used, designed or intended to be used for human habitation as an additional abode that contains space for living, sleeping, sanitation, and space for cooking and/or eating.

Accessory Use. Use of land, buildings, or structures that are subordinate and incidental to the primary use and contributes to the comfort, convenience, and necessity of occupants of the principal building or principal use of the land.

....

Premises. Land together with any buildings or structures occupying it.

Principal building, primary dwelling unit or principal use. Primary building, dwelling, or use of property on a single lot on which the building or dwelling unit is located, occupied or maintained under this chapter.

....

SECTION 2. That the City of Lucas Code of Ordinances is amended by amending Chapter 14 titled “Zoning”, Article 14.04 titled “Supplementary Regulations”, Division 8 titled “Accessory Buildings, Structures and Uses”, to read as follows:

§ 14.04.301. Purpose.

The purpose and intent of the accessory building, accessory structures and accessory use regulations is to:

- (1) Maintain neighborhood and community integrity and preserve the existing character of neighborhoods by encouraging compatible land uses.
- (2) Provide the residents of the city the opportunity to use their property to enhance the quality of life and/or fulfill personal objectives as long as the use of the property is compatible with the land uses or character of the neighborhood.
- (3) Assure that public and private services such as streets, water, storm water drainage, and electrical systems are not burdened by accessory uses to the extent that the accessory usage exceeds that which is normally associated with the primary use of the property.

§ 14.04.302. Accessory buildings, structures, and uses permitted.

- (1) Accessory buildings and structures may be erected, maintained, and used for purposes which are clearly accessory to the principal building, structure, or use permitted on the

premises.

- (2) Accessory buildings, structures, and uses shall be so constructed, maintained and utilized so that the use of the building, structure or equipment located therein does not produce excessive noise, vibration, concussion, dust, dirt, smoke, odors, noxious gases, heat, traffic, glare from artificial illumination or from reflection of light that may be offensive to persons of ordinary sensibilities that occupy surrounding properties.
- (3) The total square footage of the primary building or structure and any accessory buildings or structures shall not exceed the lesser of 50,000 square feet or thirty percent (30%) of the lot square footage without a Specific Use Permit. Additionally, the total square footage of an Accessory Dwelling Unit (ADU) shall not exceed 600 square feet without a Specific Use Permit. A Specific Use Permit for an ADU in excess of 600 square feet may be granted by the City Council when such property owner can show the following:
 - (a) Does not contain or support a use inconsistent with the zoning district regulation applicable to the property;
 - (b) Use of structure does not cause traffic congestion;
 - (c) Does not support use by any person other than owner or occupant of the main structure; and
 - (d) That size and mass of the structure is consistent with the surrounding uses.
- (4) Except as provided herein, no trailers, containers, commercial boxes or other similar prefabricated containers shall be used as accessory buildings or structures. Exceptions to this subsection (d) are as follows:
 - (a) Agriculture uses with five (5) acres or more may use trailers, containers, or commercial boxes for permanent storage located behind the primary building or structure and completely obscured from public view; or
 - (b) In Industrial and Commercial zoned districts, ~~users may use~~ trailers, containers, or commercial boxes for temporary storage facilities may be used for a period not to exceed ninety (90) days total in any one calendar year. Such industrial or commercial temporary storage facilities shall be located behind the primary building or structure and completely obscured from public view. The Director of Development Services may extend the allowable time in thirty (30) day increments up to a maximum of 180 days, provided the property owner provides just cause for the extension.
- (5) Except in the Agricultural Use District (AO) accessory buildings shall be built **after** the primary building or structure is substantially complete. Accessory buildings used for agricultural purposes that may be built before the primary building or structure in AO districts:
 - (a) include, but are not limited to, pole barns, livestock barns, riding arenas, implement storage facilities, and loafing sheds.

- (b) Shall not contain area(s) designed or intended to be used for human habitation for living, sleeping, cooking and/or eating.

§ 14.04.303. Exemptions.

The following accessory structures are exempt from this division:

- (1) Retaining walls;
- (2) Air conditioning mechanical equipment;
- (3) Uncovered flatwork (such as, but not limited to, patios, sidewalks, concrete pool decking and driveways);
- (4) Playhouses less than 125 square feet without running water or electricity, playground equipment, tree forts, and similar structures located behind the front of the primary building or structure; and
- (5) Temporary (less than 7 days) membrane structures (such as, but not limited to, tents and bounce houses).

§ 14.04.304. General accessory buildings and structures regulations.

In all residential districts, accessory buildings and structures shall comply with the following standards except as may be otherwise specifically provided for in this code:

- (1) Types of accessory buildings and structures.
 - (a) Attached accessory building and structures. Accessory buildings and structures that are physically attached to a primary building or structure or located less than ten feet (10') from the primary building or structure shall be considered attached accessory buildings or structures.
 - (b) Detached accessory buildings and structures. Accessory buildings and structures which are physically located ten feet (10') or more from a primary building or structure and a minimum of ten feet (10') behind the required front setback line may be considered detached accessory buildings.
- (2) Design.
 - (a) Attached accessory buildings and structures shall be designed to be architecturally compatible with the primary building, structure or dwelling and constructed of similar materials as the main building.
 - (b) Detached accessory buildings shall be constructed of materials designed for construction and have a minimum life expectancy of at least twenty (20) years.
- (3) Setbacks.
 - (a) Accessory buildings.

- i. Front yard setback: Attached accessory buildings or structures shall meet the required setback of the primary building or structure. Detached accessory buildings or structures shall be setback a minimum of ten feet behind the rear build line of the primary building, structure or dwelling. A Specific Use Permit may be granted to allow a detached accessory building or structure to be located in front of the primary building, structure or dwelling in AO and R2 zoned districts and shall require a 300 foot front yard setback.
 - ii. Rear yard setback: Accessory building and structures shall have a minimum setback of twenty feet.
 - iii. Side yard setbacks: Accessory building and structures shall be twenty feet (20') unless the side yard build line is adjacent to a street. Side yards adjacent to a street shall meet the required side yard setbacks as the primary building or structure.
 - iv. Where a build line is established on a plat, which is not consistent with this Article, the build line that is a greater distance from the front property line shall be observed.
 - v. No required parking shall be allowed within the required front yard.
- (b) In-ground swimming pools, sports courts, tennis courts and similar uses shall maintain a minimum rear yard setback of 25 feet, a minimum side yard setback of 20 feet, and if the in-ground pool is in front of the main building, it shall maintain a front setback of 300 feet. In-ground swimming pool setbacks shall be measured from the inside wall of said pool.
- (c) The inside wall of an aboveground swimming pool and any elevated decking associated with an aboveground swimming pool shall be located behind the main building and shall maintain a minimum rear yard setback of 50 feet and a minimum side yard setback of 25 feet.
- (4) Accessory Dwelling Units (ADU's). ADU's may only be used and/or occupied by the owner/occupant of the primary building, structure, or dwelling unit, their family, invited guests and/or domestic staff. An ADU may be a standalone structure, attached but not interconnected to the primary building, structure, or dwelling, or be a part of a permitted accessory building. All areas associated with, or providing support to, an ADU shall be used in calculating the square footage of the ADU. These areas include, but are not limited to, habitable spaces, closets, halls, corridors, bathrooms, porches, patios, storage rooms, and covered vehicle storage areas. The calculation of area associated with an ADU is not intended to include areas of accessory buildings that are isolated and/or delineated for other uses, including, but not limited to, areas used as a barn, workshop, game/party room, art studio, or pool house. ADU's shall comply with the following:
 - (a) General regulations for ADU's:
 - i. Only one (1) Accessory Dwelling Unit may be constructed or

maintained on a lot.

- ii. ADU's shall meet the requirements for safety and occupancy of the International Residential Code as adopted by the city from time to time.
- iii. ADU's may not be rented, bartered, leased, or exchanged separate and apart from the primary building or structure.
- iv. Detached ADU's shall be limited to a maximum height of 25 feet, measured to the peak of the roof of the structure.

(b) Specific regulations for ADU's based on zoning district:

- i. In R-2 zoning districts, a maximum of 600 square feet. An additional 900 square feet may be permitted with a Specific Use Permit. Total area of ADU shall not exceed 1500 square feet.
- ii. In R-1.5 and AO zoning districts, a maximum of 600 square feet. An additional 600 square feet may be permitted with a Specific Use Permit. Total area of ADU shall not exceed 1200 square feet.
- iii. In R-1 zoning districts the maximum of 600 square feet. An additional 400 square feet may be permitted with a Specific Use Permit. Total area of ADU shall not exceed 1000 square feet.

§ 14.04.305. through § 14.04.340. (Reserved)

SECTION 2. To the extent of any irreconcilable conflict with the provisions of this Ordinance and other ordinances of the City of Lucas and which are not expressly amended by this Ordinance, the provision of this Ordinance shall remain be controlling.

SECTION 3. That should any word, sentence, paragraph, subdivision, clause, phrase or section of this Ordinance be adjudged or held to be unconstitutional, illegal, or invalid, the same shall not affect the validity of the remaining portions of this Ordinance or the City of Lucas Code of Ordinances, as amended hereby, which shall remain in full force and effect.

SECTION 4. An offense committed before the effective date of this Ordinance is governed by prior law and the provisions of the Ordinances of the City of Lucas, as amended, in effect when the offense was committed and the former law is continued in effect for this purpose.

SECTION 5. That this Ordinance shall take effect immediately from and after its passage and publication in accordance with the provisions of the Charter of the City of Lucas, and it is accordingly so ordained.

DULY PASSED AND APPROVED BY THE CITY COUNCIL OF THE CITY OF LUCAS, COLLIN COUNTY, TEXAS, ON THIS _____ DAY OF _____, 2023.

APPROVED:

Jim Olk, Mayor

APPROVED AS TO FORM:

Joseph J. Gorfida, Jr., City Attorney
(3-17-2023: TM 134109)

ATTEST:

Erin Day, City Secretary



City of Lucas

Planning and Zoning Agenda Request

April 13, 2023

Item No. 03

Requester: Development Services Director Joe Hilbourn

Agenda Item Request

Conduct a public hearing and consider approving a request for a change in zoning from AO (Agricultural and Open Space) to R-2 (Residential 2-acre) on a 23 +/- parcel of land generally located at 355 Winningkoff Road.

- A. Presentation by Development Services Director Joe Hilbourn
- B. Conduct Public Hearing
- C. Take action on Zoning Change Request

Background Information

This lot is 23 +/- acres of land currently zoned AO, and the applicant is considering subdividing the property into three lots.

Due to an error in the public notice, this item must be removed from the agenda.

Attachments/Supporting Documentation

- 1. Public Notice

Budget/Financial Impact

NA

Recommendation

City staff recommends removing the request from consideration.

Motion

NA



NOTICE OF PUBLIC HEARING

Notice is hereby given that the Planning & Zoning Commission of the City of Lucas, Texas, will conduct a public hearing on Thursday, April 13, 2023 at 6:30 p.m. and City Council will conduct a second public hearing on Thursday, May 4, 2023 at 6:30 p.m. at Lucas City Hall, 665 Country Club Road, Lucas, Texas to consider a request for a change in zoning from AO, Agricultural and Open Space, to R-2, Residential 2-acre, on a parcel of land described as follows:

SITUATED in the State of Texas, County of Collin and City of Lucas, being part of the Thomas D. James Survey, Abstract No. 477, and being all of a called 3.65 acre Tract 1, all of a called 3.59 acre Tract 2, and all of a called 3.59 acre Tract 3, described in Warranty Deed as recorded under County Clerk's File No. 20220405000549610 of the Deed Records of Collin County, Texas, with said premises being more particularly described as follows:

BEGINNING at a point in the approximate center of Winningkoff Road, same being in the south line of a called 224.497 acre tract of land as recorded in Volume 1326, Page 253 of the Deed Records of Collin County, Texas, marking the northeast corner of a called 4.00 acre tract of land as recorded under County Clerk's File No. 20210713001411840 of the Deed Records of Collin County, Texas, same being the northeast corner of a 35' Right-of-Way Dedication for Winningkoff Road as recorded in Volume 4169, Page 37 of the Deeds Records of Collin County, Texas, and marking the northwest corner of said 3.65 acre Tract 1 and the herein described premises, from which a 1/2" iron rod found for reference bears South 09°03'11" West, 22.02 feet;

THENCE with the approximate centerline of Winningkoff Road, the south line of said 224.497 acre tract, the south line of Lot 7 of Logan Ford Ranch, Phase 2 as recorded in Volume 2016, Page 378 of the Deed Records of Collin County, Texas, the north line of said 3.65 acre Tract 1, the north line of said 3.59 acre Tract 2 and the north line of said 3.59 acre Tract 3, South 88°08'15" East, 359.82 feet to a point marking the northwest corner of a called 3.593 acre tract of land as recorded under County Clerk's File No. 20060707000930780 of the Deed Records of Collin County, Texas, same being in the northwest corner of a 35' Right-of-Way Dedication for Winningkoff Road as recorded in Volume 4169, Page 16 of the Deed Records of Collin County, Texas, and marking the northeast corner of said 3.59 acre Tract 3 and said premises;

THENCE with the west line of said 35' Right-of-Way Dedication, the west line of said 3.593 acre tract, the east line of a called 1.00 acre tract of land as recorded under County Clerk's File No. 20090814001027250 of the Deed Records of Collin County, Texas, crossing through a called 4.512 acre tract of land as recorded in Volume 1063, Page 592 of the Deed Records of Collin County, Texas, the east line of said 3.59 acre Tract 3 and an east line of said 3.65 acre Tract 1, South 01°56'24" West, passing at 1,246.55 feet a 3/8" iron rod found marking the southwest corner of said 1.00 acre tract and the easterly

most northeast corner of said 3.65 acre Tract 1, and continuing for a total distance of 1,346.55 feet to a point in the north line of a called 13.050 acre tract of land as recorded under County Clerk's File No. 20130816001163530 of the Deed Records of Collin County, Texas, the southeast corner of said 3.65 acre Tract 1 and of said premises;

THENCE with the north line of said 13.050 acre tract and the south line of said 3.65 acre Tract 1, North 88°11'51" West, 340.74 feet to a point in the east line of a called 32.80 acre tract of land as recorded under County Clerk's File No. 20160407000413150 of the Deed Records of Collin County, Texas, marking the northwest corner of said 13.050 acre tract, the southwest corner of said 3.65 acre Tract 1 and said premises;

THENCE with the east line of said 32.80 acre tract, the east line of a called 5.000 acre tract of land as recorded under County Clerk's File No. 20101022001149850 of the Deed Records of Collin County, Texas, the east line of Lot 2 of Lots 1 & 2, Block A, Franklin Addition as recorded in Volume P, Page 471 of the Plat Records of Collin County, Texas, the east line of a called 5.03 acre tract of land as recorded under County Clerk's File No. 20100219000163010 of the Deed Records of Collin County, Texas, the east line of the aforementioned 4.00 acre tract, the east line of the aforementioned 35' right-of-way dedication and the west line of said 3.65 acre Tract 1, North 01°07'43" East (Basis of Bearings), 1,347.02 feet to the place of beginning and containing 10.830 gross acres of land, of which 0.322 acres is dedicated for Right-of-Way for Winningkoff Road, leaving 10.508 net acres of land.

Those wishing to speak FOR or AGAINST the above item are invited to attend. If you are unable to attend and have comments you may send them to City of Lucas, City Secretary, 665 Country Club Road, Lucas, Texas 75002, email eday@lucastexas.us, and it will be presented at the hearing. If you have any questions about the above hearing, you may contact jhilbourn@lucastexas.us.



City of Lucas

Planning and Zoning Agenda Request

April 13, 2023

Item No. 04

Requester: Development Services Director Joe Hilbourn

Agenda Item Request

Conduct a public hearing and consider approving changes to the City of Lucas Code of Ordinances, Chapter 14 titled “Zoning”, by amending Article 14.02 titled “Administration”, Division 3 titled “Changes and Amendments”, Section §14.02.063 titled “Procedure”.

- A. Presentation by Development Services Director Joe Hilbourn
- B. Conduct public hearing
- C. Take action on amendments to the Zoning Appeals Process

Background Information

Following a recent zoning change appeal, City Attorney Courtney Morris felt our zoning appeals process needed to be updated to conform with current State law and best practices. Attached are proposed changes to our current ordinance.

Attachments/Supporting Documentation

- 1. Public Notice
- 2. Proposed changes to the zoning appeals process

Budget/Financial Impact

NA

Recommendation

City staff recommends approving a recommendation to the City Council to approve the changes to the zoning appeals ordinance.

Motion

I make a motion to recommend to the City Council to approve/deny changes to the City of Lucas Code of Ordinances, Chapter 14 titled “Zoning”, by amending Article 14.02 titled “Administration”, Division 3 titled “Changes and Amendments”, Section §14.02.063 titled “Procedure”.



NOTICE OF PUBLIC HEARING

Notice is hereby given, that the Planning & Zoning Commission of the City of Lucas, Texas will hold a public hearing on Thursday, April 13, 2023, at 6:30 p.m. and City Council will conduct a second public hearing on Thursday, May 4, 2023 at 6:30 p.m. at Lucas City Hall, 665 Country Club, Lucas, Texas to consider changes to the City's Code of Ordinances, Chapter 14 Zoning Ordinance, by amending the zoning appeals process §14.02.063 Procedure.

Those wishing to speak FOR or AGAINST the above item are invited to attend. If you are unable to attend and have comments you may send them to City of Lucas, City Secretary, 665 Country Club Road, Lucas, Texas 75002, email eday@lucastexas.us, and it will be presented at the hearing. If you have any questions about the above hearing you may contact jhilbourn@lucastexas.us

Editing Notes:
Current
Proposed
~~Remove~~

§ 14.02.063. Procedure.

- (a) Proposal required. Every proposal to amend these regulations shall be considered in light of the above declaration of policy and by the purposes enumerated in section 14.01.002 (Interpretation and purposes).
- (b) Public hearing and notices.
- (1) Prior to making its report to the council, the commission shall hold at least one public hearing thereon.
 - (2) Written notice of all public hearings on proposed changes in district boundaries shall be sent to all owners of property, or to the person rendering the same for city taxes, located within five hundred feet (500') of any property affected thereby before the 15th day before such hearing is held. Such notice may be served by using the last known address as listed on the city roll and depositing the notice, postage prepaid, in the United States mail.
 - (3) Posting of property. Not less than 15 or more than 45 days prior to the date set for the public hearing on any proposed changes in district boundaries, the city shall erect at least one notification sign on the affected property. Such sign(s) shall be erected within 25 feet of whatever boundary line of such land that abuts the street of the advertised address. If no public road abuts thereon, then such sign shall be erected along the nearest opened public right-of-way. Signs shall be erected in such a manner as may be most readily seen by the public. Each sign shall indicate a proposed land use change, a public hearing will be held, the telephone number

to call and the website to visit for further information. If the affected land includes more than one (1) tract as shown on a plat recorded in the land records of the county, then a sign shall be erected on the land in each such tract. Any such sign shall be maintained on the property at all times until a decision on the application has been made by the City Council.

- (c) Commission report. The Commission, after the public hearing is closed, shall prepare its report and recommendations on the proposed change stating its findings and evaluation of the request and of the relationship of the request to the city ~~Comprehensive~~ Plan at such time as the city plan has been adopted by council. ~~The commission may defer its report for not more than ninety (90) days until it has had opportunity to consider other proposed changes which may have a direct bearing thereon. In making its determination, the commission shall consider the following factors:~~

- ~~(1) Whether the uses permitted by the proposed change would be appropriate in the area concerned;~~
- ~~(2) Whether adequate public school facilities and other public services (water, etc.) exist or can be provided to serve the needs of additional structures likely to be constructed as a result of such change and the consequences of such change;~~
- ~~(3) How other areas designated for similar development will be, or are likely to be, affected if the proposed amendment is approved, and whether such designation for other areas should be modified also.~~

- (d) Council consideration.

- (1) Proposal recommended for approval. Every proposal which is recommended favorably by the commission shall be forwarded to the Council for setting and holding of public hearing thereon. No change, however, shall become effective

until after the adoption of an ordinance for same and its publication as required by law.

- (2) Proposal recommended for denial. When the Commission determines that a proposal should be denied, it shall so report and recommend to the Council. No hearing shall be set on the proposal until and unless the Council ~~has reviewed the recommendations of the commission, has considered any appeal,~~ **receives an appeal** as provided below, ~~and has adopted a motion setting the matter for hearing.~~
- (3) Appeal procedure. An appeal from the decision of the Commission may be taken whenever any party in interest is aggrieved by the action of the Commission on a specific proposal. ~~Such appeal shall show that the commission either (a) has been prejudiced in its deliberation or (b) has not been given the opportunity to consider certain information because it could not have been made available to the commission at the time of its public hearing.~~ The following procedure shall be required:
 - (A) The aggrieved party shall ~~reduce to writing his appeal stating specifically how, in his opinion, the commission committed an error. He shall file his a~~ **written** appeal with the **Director of Development Services** ~~city secretary and the commission~~ within thirty (30) days following the Commission action. The **Director of Development Services** shall forward the appeal to the Council with the regular report of Commission action on the subject proposal.
 - (B) Upon receipt of written appeal, the Council shall ~~determine whether or not~~

~~the zoning commission committed error. If the council concludes that certain previously unavailable information should be considered by the commission, it may refer the original proposal and the appeal for a new [new] hearing, new report, and recommendation. If the council concludes that commission prejudice prevents a fair hearing or recommendation, the council may schedule its own a public hearing on the original proposal and recommendation.~~

- (4) Council hearing and notice. The council may from time to time amend, supplement, or change by ordinance the boundaries of the districts or the regulations herein established. A public hearing on such amendment, supplement, or change shall be held by the Council. Notice of Council hearing shall be given by publication one time in the official paper of the city, stating the time and place of such hearing, which time shall not be earlier than fifteen (15) days from the date of publication.
- (5) Negative recommendations and written protest. An amendment, supplement, or change shall not become effective except by favorable vote of three- fourths (3/4) of all members of the Council, if:
 - (A) The commission recommends disapproval of the proposed change; or
 - (B) Written protest is filed by the owners of at least 20% of either:
 - (i) Of the area of the lots or land included in such proposed change; or
 - (ii) The area of the lots or land immediately adjoining the area of such proposed change and extending five hundred feet (500') therefrom.
 - (C) Protests signed by property owners may be filed prior to or at one of the public

hearings conducted by either the Commission or the Council. Written protests filed with the Commission shall be forwarded to the Council with the Commission's recommendation.

(D) In computing the percentage of land area under subsection (d), the area of streets and alleys shall be included.

TM 133767



City of Lucas

Planning and Zoning Agenda Request

April 13, 2023

Item No. 05

Requester: Development Services Director Joe Hilbourn

Agenda Item

Consider the request by Majed Khalaf on behalf of Mahmoud Properties for a site plan, landscape plan, and elevations for use as a commercial retail and office center on a 2.25-acre tract of land in the Jas Lovelady Survey, Abstract Number ABS A0538, Tract 14 situated in the City of Lucas, Collin County, Texas, located at 995 West Lucas Road.

Background Information

This parcel of land is currently zoned for commercial business, contains 2.25 acres of land, and proposes commercial retail and office space.

Site Plan: The site plan proposes three new buildings. Building A consists of 7,565 square feet on the first floor and 5,737 square feet on the second floor, for a total of 13,302 square feet. Building B is a single-story consisting of 8,654 square feet. Building C is a single-story consisting of 2,640 square feet. The total square footage for all buildings is 24,596 square feet. There are two existing buildings that will have to be demolished prior to the build out of the property. Total impervious cover permitted is 63,482 square feet (65%), total impervious proposed is 59,574 square feet (61%). 82 parking spaces are required, 82 spaces are provided. Minimum lot size permitted is 43,500 square feet, provided is 97,666 square feet. The water main is 8-inch looped. The 24-foot-wide fire lanes meet the minimum standard for turn radius R30.

Landscape Plan: The total site area is 97,656 square feet. Landscape area required is 14,648 square feet, landscape area provided is 34,480 square feet. The 244 linear feet located on West Lucas Road requires 22 trees, and 22 are provided. Shrubs required are 98, and 98 are provided. Parking perimeter is 211 linear feet. 11 trees are required, 22 are provided. Shrubs required are 85, provided are 98. Parking interior landscape required is 1,672 square feet. Provided is 2,777 square feet. Interior parking trees required is 9, and 9 are provided. All interior landscape elements are irrigated. On the west side of the property the applicant is proposing a live screen in lieu of a masonry screen wall. The property on the east side is zoned R-2 (Residential 2-Acre) but has a specific use permit overlay permitting commercial use. The property is currently used as a real estate office and sports training facility. The applicant is proposing a total of 133 wax myrtle trees on the east and west side to replace the masonry screen wall.

Elevations: Building finishes are a mix of stucco, stone tile, and glazing. Wall signage proposed is 345.5 square feet. A maximum of two monument signs are permitted (one every 100 linear feet of road frontage). Two monument signs are proposed, both less than 40 square feet. The buildings meet the City's requirements for changes in direction. The maximum uninterrupted length is 60 feet. Max building height permitted is 35 feet. Side yard setbacks shall be a minimum of twenty feet (20'). Where a CB zone abuts on the side of a property zoned as single-family residential, each portion of a building in excess of ten feet (10') in height shall be set back two (2) additional feet for each additional one (1) foot in height. Building A's west end is 34' 6" tall, east end is 19' 4"



City of Lucas

Planning and Zoning Agenda Request

April 13, 2023

Item No. 05

tall. Building B is 19' 4" tall. Building C is 21' tall. Buildings on the east side of the property are set back 30' so the maximum height permitted is 20'.

Attachments/Supporting Documentation

1. Site Plan, Landscape Plan, Elevations
2. Site Plan, Landscape Plan, Elevations Checklists
3. Application
4. OSSF Design
5. Civil Construction Plans
6. Location Map

Budget/Financial Impact

NA

Recommendation

Staff recommends approval of a recommendation to the City Council to approve the site plan, landscape plan, and elevations.

Motion

I make a motion to recommend to the City Council to approve/deny the request by Majed Khalaf on behalf of Mahmoud Properties for a site plan, landscape plan, and elevations for use as a commercial retail and office center on a 2.25-acre tract of land in the Jas Lovelady Survey, Abstract Number ABS A0538, Tract 14 situated in the City of Lucas, Collin County, Texas, located at 995 West Lucas Road.

995 WEST LUCAS ROAD,
LUCAS, TEXAS 75002

03/16/2023

Project	220014	Sheet
Date	03/16/23	
Scale	1" = 30'	

LUCAS COMMERCIAL CENTER
Called 2.25 Acres
MAHMOUD PROPERTIES LLC
DOC. # 20191009001265330
O.P.R.C.C.T.



2 LOCATION MAP

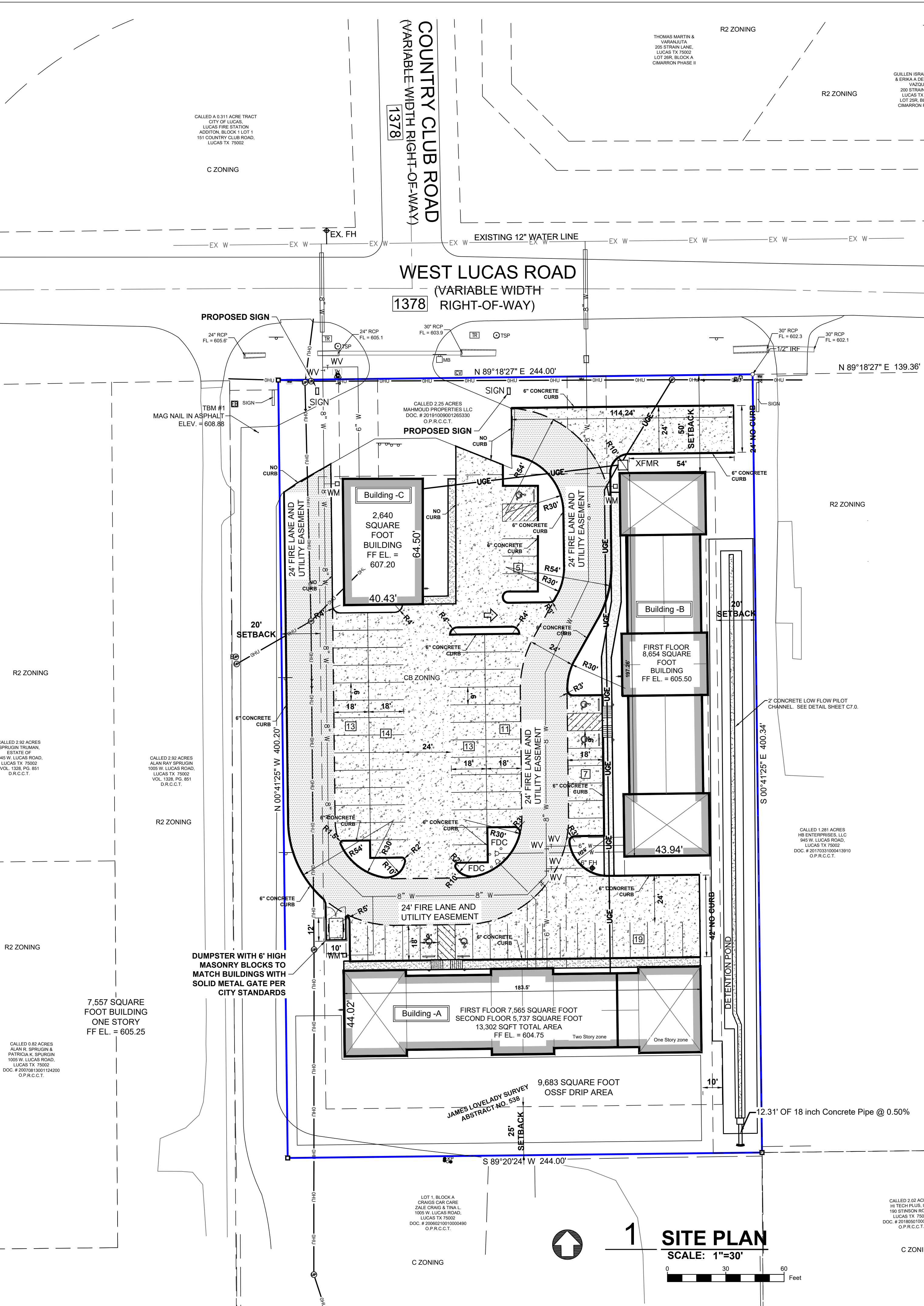
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	PROPERTY LINE
	ADJACENT PROPERTY LINE
	BUILDING SETBACK
	EASEMENT
	FIRE LANE STRIPING
	PROPOSED WATER LINE
	PROPOSED SANITARY SEWER LINE
	PROPOSED STORM SEWER LINE
	EXISTING WATER LINE
	EXISTING SANITARY SEWER LINE
	EXISTING STORM SEWER LINE
	EXISTING GAS LINE
	EXISTING OVERHEAD ELECTRIC LINE
	EXISTING UNDERGROUND ELECTRIC LINE
	EXISTING UNDERGROUND TELEPHONE LINE
	EXISTING UNDERGROUND CABLE LINE
	PROPOSED CONCRETE PAVEMENT
	PROPOSED FIRE LANE PAVEMENT
	PROPOSED SIDEWALK
	EXISTING ASPHALT PAVEMENT
	EXISTING TREE TO REMAIN
	PROPOSED FIRE HYDRANT
	PROPOSED GATE VALVE
	PROPOSED WATER METER
	PROPOSED MANHOLE
	EXISTING FIRE HYDRANT
	EXISTING GATE VALVE
	EXISTING WATER METER
	EXISTING MANHOLE
	EXISTING POWER POLE

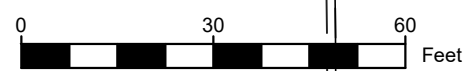
CONSTRUCTION NOTES

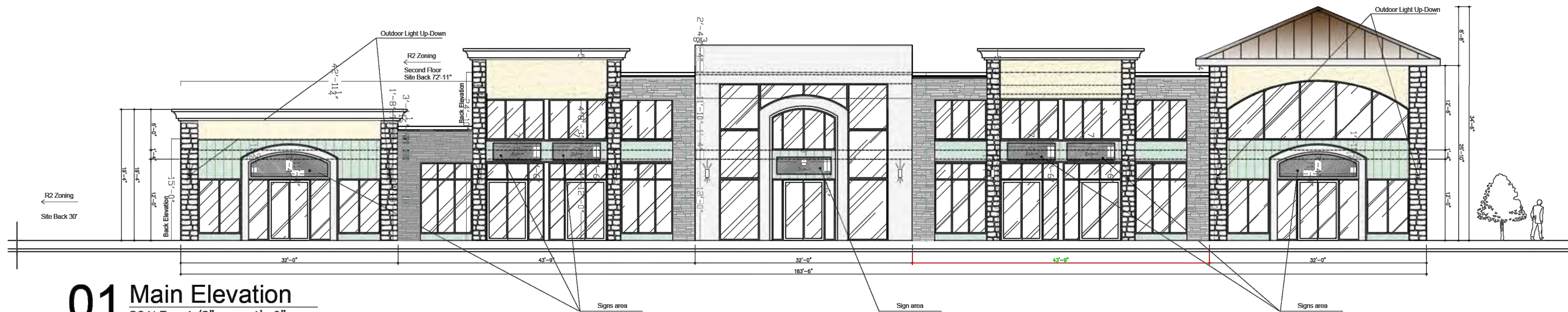
1. BUILDING SILL ELEVATIONS AND SEWER INVERTS ARE APPROXIMATE AND SHOULD BE CONFIRMED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF WORK.
2. THE MINIMUM SLOPE FOR SANITARY SEWER LATERALS: SHALL BE 0.010 FT/FT (6" LATERALS AT MINIMUM 1%; 4" LATERALS AT MINIMUM 2%).
3. PROGRESSION OF WORK: IN GENERAL WORK SHALL PROCEED FROM THE DOWNSTREAM END OF A SEWER LINE SEGMENT TO THE UPSTREAM END OF THE SEGMENT.
4. THE MAXIMUM LENGTH OF OPEN TRENCH SHALL BE LIMITED TO NO MORE THAN THREE PIPE LENGTHS IN A SEWER SEGMENT.
5. THE MINIMUM TRENCH WIDTH SHOULD BE NO LESS THAN 24 INCHES OR ONE FOOT GREATER THAN OUTSIDE DIAMETER OF THE PIPE, WHICHEVER IS GREATER.
6. THE MINIMUM DEPTH OF COVER ABOVE THE TOP OF PIPE FOR WATER LINE INSTALLATIONS SHALL BE 4 FEET.
7. WATER MAINS AND SERVICES: LOCATIONS SHOWN ARE APPROXIMATE AND ARE INDICATED FOR GENERAL REFERENCE ONLY UNLESS OTHERWISE NOTED.
8. ALL EXISTING UNDERGROUND FEATURES SUCH AS SEPTIC TANKS, LEACH FIELDS, SANITARY SEWERS, ETC. ARE APPROXIMATE ONLY AND ARE INDICATED FOR GENERAL REFERENCE AND DESIGN UNLESS OTHERWISE NOTED.
9. WORK IN PRIVATE PROPERTY: THE CONTRACTOR SHALL OBTAIN WRITTEN AUTHORIZATION FROM THE OWNER PRIOR TO BEGINNING WORK IN ANY PRIVATELY OWNED AREAS WHICH WILL REQUIRE EASEMENTS FOR CONSTRUCTION.

1. ALL WORK AND MATERIALS SHALL COMPLY WITH ALL CITY/COUNTY REGULATIONS AND CODES AND O.S.H.A. STANDARDS.
2. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF VESTIBULES, SIDEWALKS, EXIT PORCHES, PRECISE BUILDING DIMENSIONS AND EXACT BUILDING UTILITY ENTRANCE LOCATIONS.
3. ALL DIMENSIONS AND RADII ARE TO THE BACK OF CURB OR EDGE OF PAVEMENT, UNLESS OTHERWISE NOTED.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RELOCATIONS, INCLUDING BUT NOT LIMITED TO, ALL UTILITIES, STORM DRAINAGE, SIGNS, TRAFFIC SIGNALS & POLES, ETC. AS REQUIRED. ALL WORK SHALL BE IN ACCORDANCE WITH GOVERNING AUTHORITIES SPECIFICATIONS AND SHALL BE APPROVED BY SUCH. ALL COST SHALL BE INCLUDED IN BASE BID.
5. CONTRACTOR SHALL COORDINATE UTILITY POLE RELOCATION WITH THE UTILITY COMPANY.
6. CONCRETE AND FLEXBASE SECTION DESIGNS WILL SUPPORT TYPICAL FIRE APPARATUS LOADS.
7. PROPOSED DOMESTIC WATER AND FIRE FLOW WILL BE SUPPLIED BY CITY OF LUCAS.



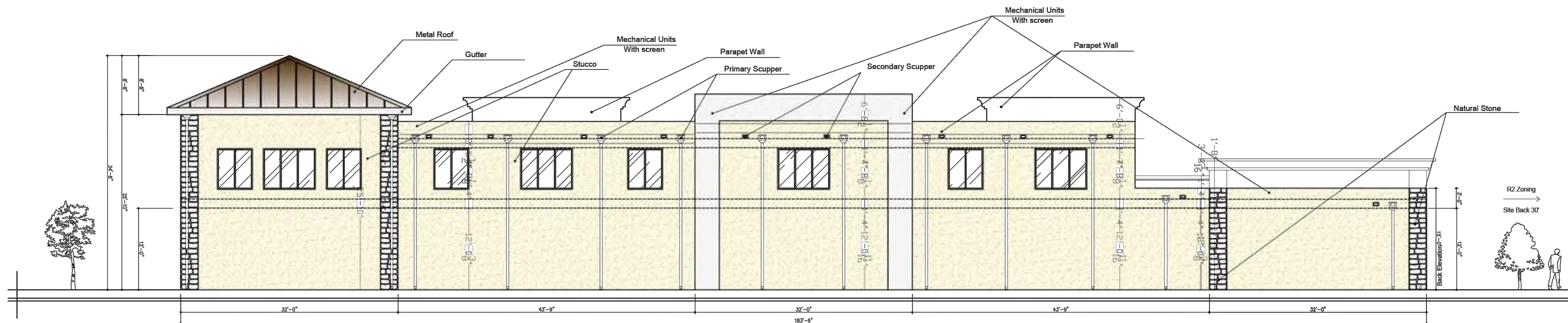
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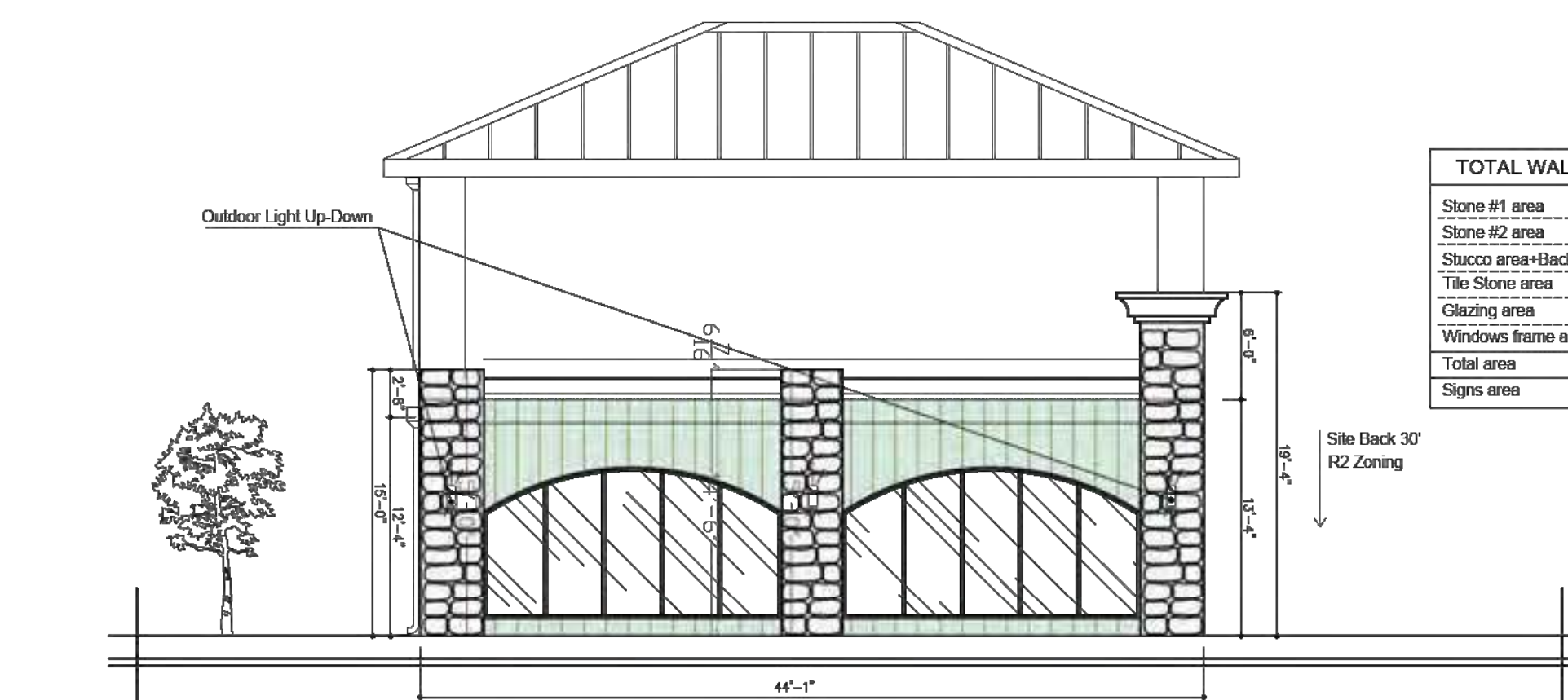
01 Main Elevation
SCALE : 1/8" = 1'-0"

TOTAL WALL AREA-Main Elevation		
Stone #1 area	552.8 SF	12.41%
Stone #2 area	476.2 SF	10.69%
Stucco area	575.5 SF	12.92%
Stucco Light area	833.4 SF	18.72%
Tile Stone area	497.6 SF	11.17%
Glazing area	1,290 SF	28.97%
Windows frame area	226.1 SF	5.07%
Total area	4,451.6 SF	100%
Signs area	157 SF	



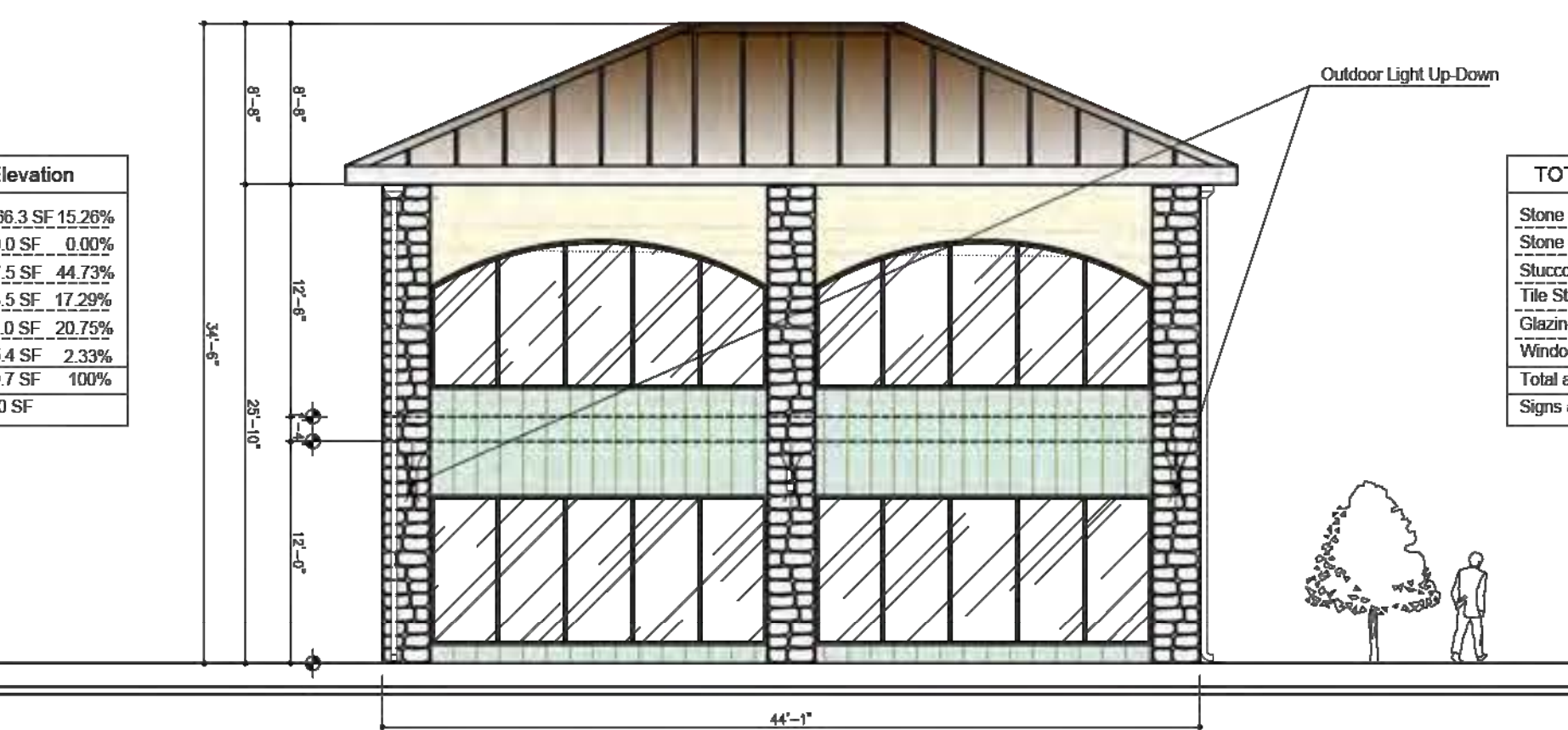
02 Back Elevation
SCALE : 1/8" = 1'-0"

TOTAL WALL AREA-Back Elevation		
Stone #1 area	211 SF	0.491%
Stone #2 area	0 SF	0.00%
Stucco area	3,440.59 SF	80.11%
Stucco Light area	303.9 SF	7.07%
Tile Stone area	0 SF	0.00%
Glazing area	306 SF	7.12%
Windows frame area	33 SF	0.76%
Total area	4,264.49 SF	100%
Signs area	0.00 SF	



04 Left Elevations
SCALE : 1/8" = 1'-0"

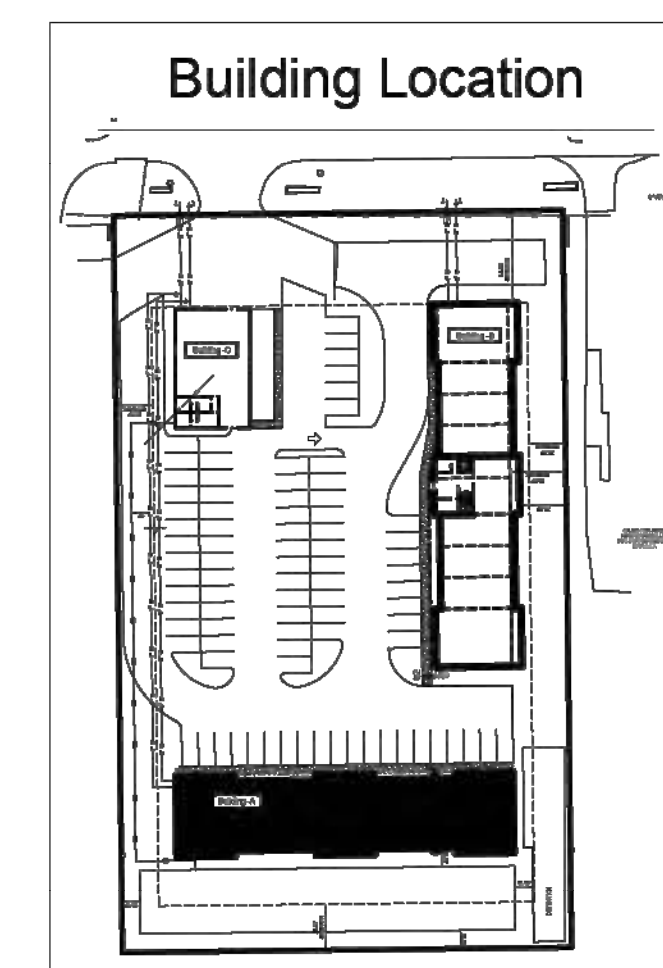
TOTAL WALL AREA-Left Elevation		
Stone #1 area	188.3 SF	15.26%
Stone #2 area	0.0 SF	0.00%
Stucco area-Back For Terrace	487.5 SF	44.73%
Tile Stone area	188.5 SF	17.29%
Glazing area	222.0 SF	20.73%
Windows frame area	25.4 SF	2.33%
Total area	1,089.7 SF	100%
Signs area	0.00 SF	



03 Right Elevations
SCALE : 1/8" = 1'-0"

TOTAL WALL AREA-Right Elevation		
Stone #1 area	200.1 SF	17.56%
Stone #2 area	0.00 SF	0.00%
Stucco area	138.4 SF	12.14%
Tile Stone area	245.2 SF	21.52%
Glazing area	500.9 SF	43.95%
Windows frame area	55 SF	4.82%
Total area	1,139.4 SF	100%
Signs area	0.00 SF	

NOTE:
- This Facade Plan is for conceptual purposes only. All building plans require review and approval of the Building Inspection Department.
- All mechanical units shall be screened from public view.
- When permitted, exposed utility boxes and conduits shall be painted match the building.
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- Roof access shall be provided internally, unless otherwise permitted by the Building Office.



Building -A

CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AT THE JOB SITE AND NOTIFY THE ARCHITECT OF ANY DIMENSIONAL ERRORS, OMISSIONS BEFORE FABRICATING ANY WORK. DO NOT SCALE DRAWINGS.

F&L
DESIGN & CONSTRUCTION L.L.C.
8202 Woodside Rd Rowlett Tx, 75088
Fidesign11@gmail.com
214-4781485

DRAWING TITLE :

**ELEVATION A
BUILDING A**

PROJECT NAME :

**LUCAS COMMERCIAL CENTER
995 WEST LUCAS ROAD
ALLEN , TX 75002**

ARCHITECT'S SEAL

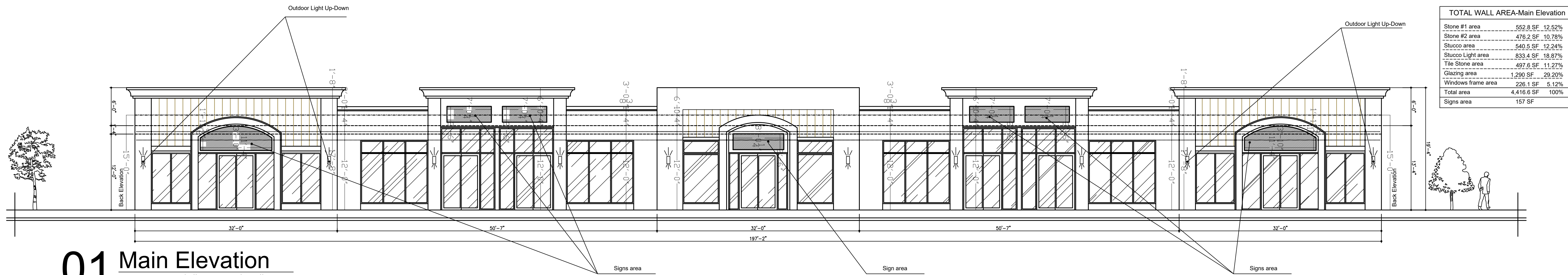
REVISION DATE

SHEET NUMBER

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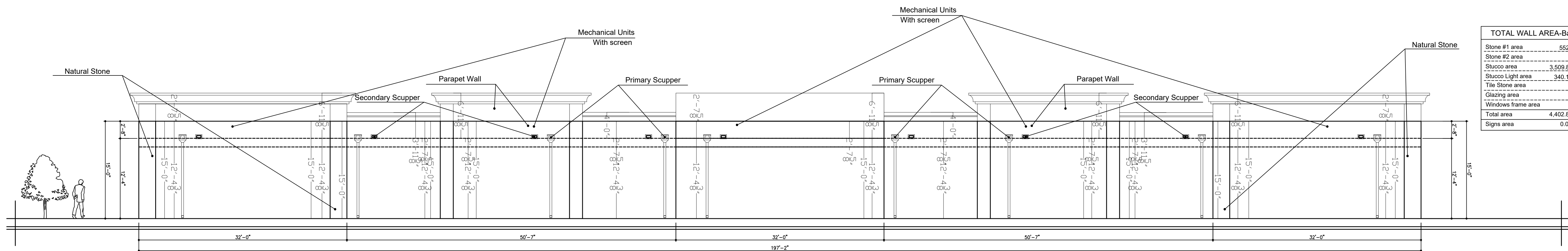
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06/23/22



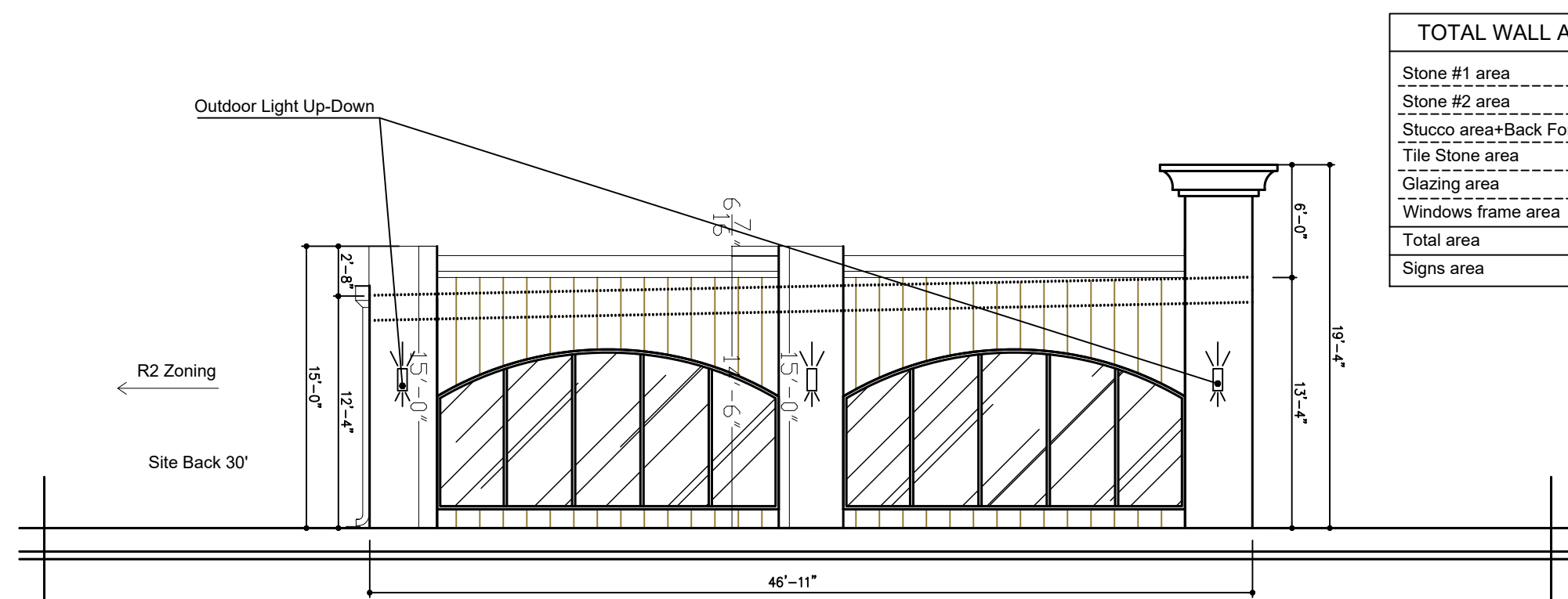
01 Main Elevation
SCALE :1/8" = 1'-0"

TOTAL WALL AREA-Main Elevation	
Stone #1 area	552.8 SF 12.52%
Stone #2 area	476.2 SF 10.78%
Stucco area	540.5 SF 12.24%
Stucco Light area	833.4 SF 18.87%
Tile Stone area	497.6 SF 11.27%
Glazing area	1,290 SF 29.20%
Windows frame area	226.1 SF 5.12%
Total area	4,416.6 SF 100%
Signs area	157 SF



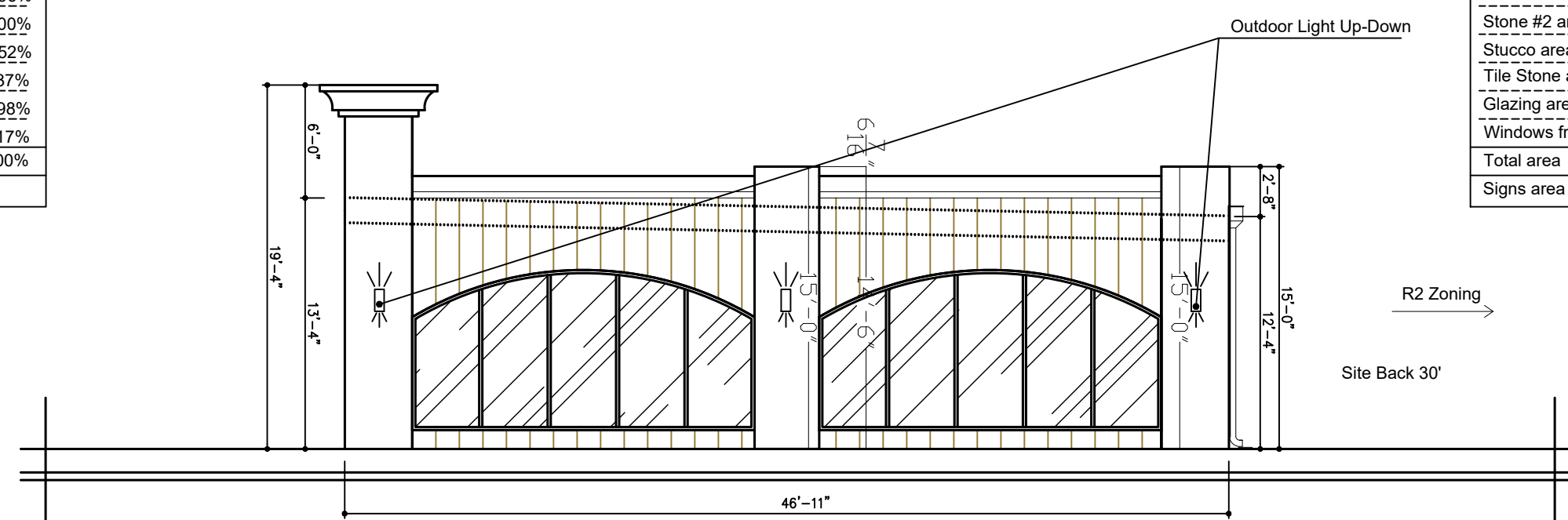
02 Back Elevation
SCALE :1/8" = 1'-0"

TOTAL WALL AREA-Back Elevation	
Stone #1 area	552.8 SF 12.56%
Stone #2 area	0 SF 0.00%
Stucco area	3,509.85 SF 79.72%
Stucco Light area	340.17 SF 7.72%
Tile Stone area	0 SF 0.00%
Glazing area	0 SF 0.00%
Windows frame area	0 SF 0.00%
Total area	4,402.82 SF 100%
Signs area	0.00 SF



04 Left Elevations
SCALE :1/8" = 1'-0"

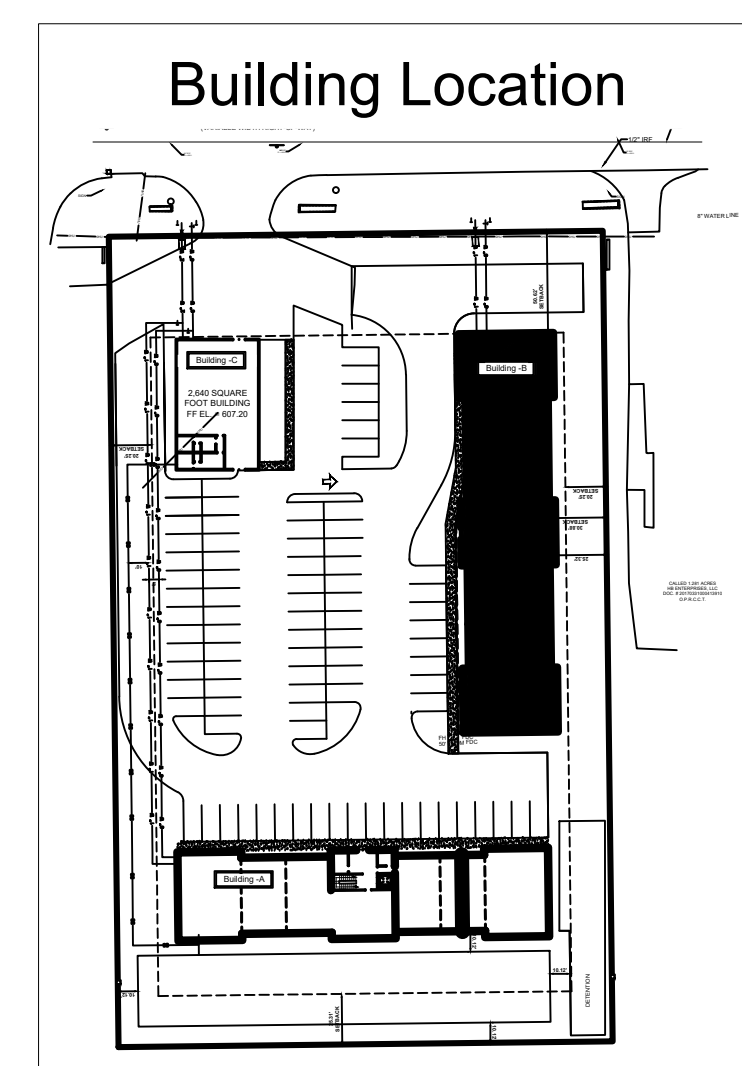
TOTAL WALL AREA-Left Elevation	
Stone #1 area	224 SF 15.96%
Stone #2 area	0.0 SF 0.00%
Stucco area+Back For Terrace	595.5 SF 42.52%
Tile Stone area	229.2 SF 16.37%
Glazing area	321.8 SF 22.98%
Windows frame area	30.4 SF 2.17%
Total area	1,400.4 SF 100%
Signs area	0.00 SF



03 Right Elevations
SCALE :1/8" = 1'-0"

TOTAL WALL AREA-Right Elevation	
Stone #1 area	224 SF 17.70%
Stone #2 area	0.00 SF 0.00%
Stucco area	380 SF 29.90%
Tile Stone area	123 SF 9.68%
Glazing area	496 SF 39.02%
Windows frame area	47 SF 3.70%
Total area	1,271 SF 100%
Signs area	0.00 SF

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Building -B

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F&L
DESIGN & CONSTRUCTION L.L.C.
8202 Woodside Rd
Rowlett Tx, 75088
Fidesign1@gmail.com
214-4781485

DRAWING TITLE :
**ELEVATION
BUILDING B**

PROJECT NAME :
**LUCAS COMMERCIAL CENTER
995 WEST LUCAS ROAD
ALLEN , TX 75002**

ARCHITECT'S SEAL

REVISION DATE

SHEET NUMBER

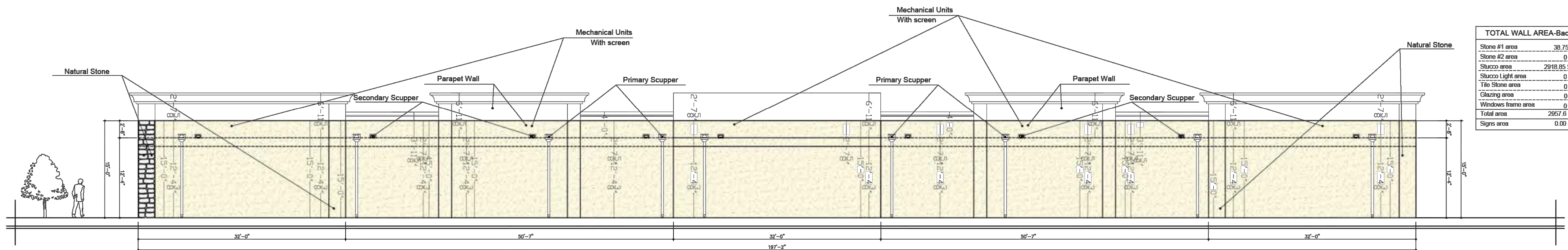
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06/23/22



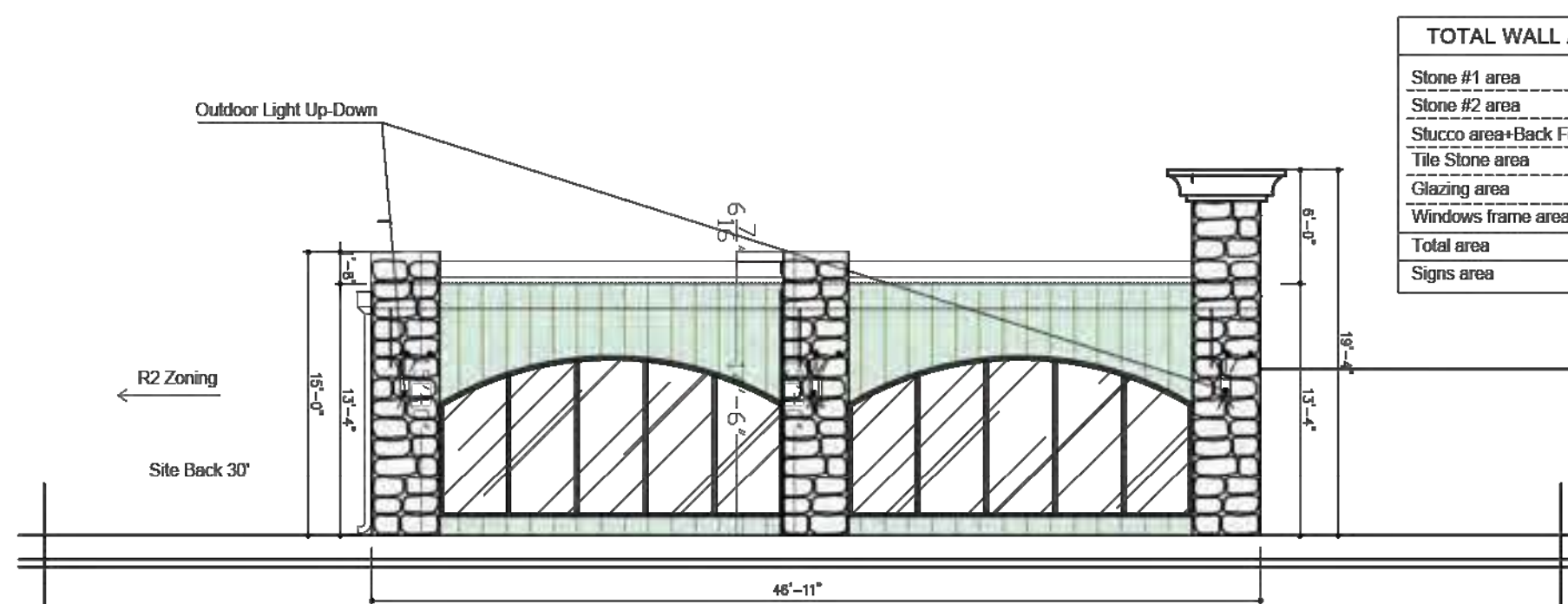
01 Main Elevation
SCALE : 1/8" = 1'-0"

TOTAL WALL AREA-Main Elevation		
Stone #1 area	318.8 SF	09.31%
Stone #2 area	430.4 SF	12.57%
Stucco area	0 SF	0%
Stucco Light area	0 SF	0%
Tile Stone area	1154 SF	33.71%
Glazing area	1,388.9 SF	39.95%
Windows frame area	150.1 SF	4.67%
Total area	3,422.7 SF	100%
Signs area	157 SF	



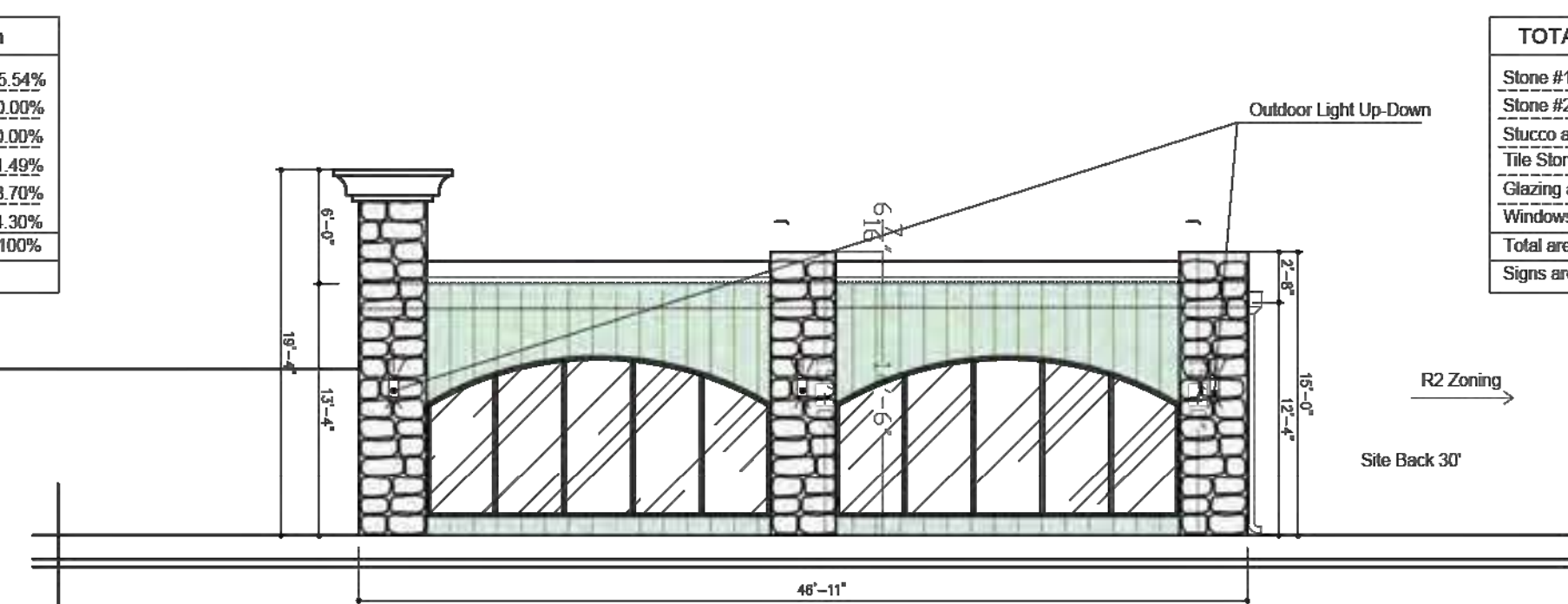
02 Back Elevation
SCALE : 1/8" = 1'-0"

TOTAL WALL AREA-Back Elevation		
Stone #1 area	38.75 SF	01.31%
Stone #2 area	0 SF	0.00%
Stucco area	2918.65 SF	98.69%
Stucco Light area	0 SF	0.00%
Tile Stone area	0 SF	0.00%
Glazing area	0 SF	0.00%
Windows frame area	0 SF	0.00%
Total area	2957.4 SF	100%
Signs area	0.00 SF	



04 Left Elevations
SCALE : 1/8" = 1'-0"

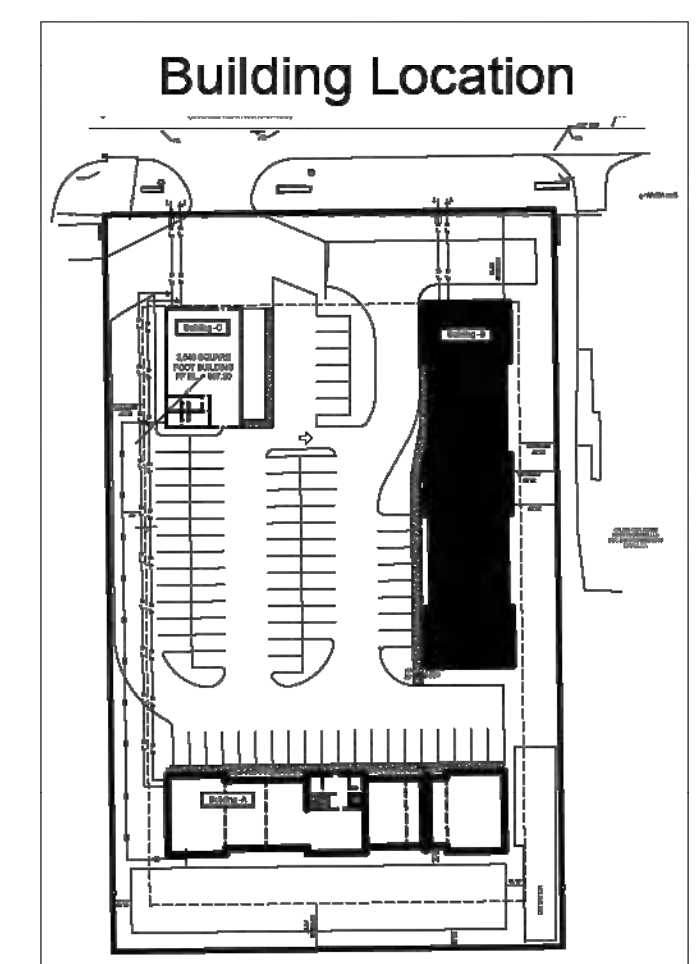
TOTAL WALL AREA-Left Elevation		
Stone #1 area	188.3 SF	25.54%
Stone #2 area	0.0 SF	0.00%
Stucco area+Back For Terrace	0 SF	0.00%
Tile Stone area	205 SF	31.42%
Glazing area	252.0 SF	38.70%
Windows frame area	28.0 SF	4.30%
Total area	651 SF	100%
Signs area	0.00 SF	



03 Right Elevations
SCALE : 1/8" = 1'-0"

TOTAL WALL AREA-Right Elevation		
Stone #1 area	188.3 SF	25.54%
Stone #2 area	0.0 SF	0.00%
Stucco area	0 SF	0.00%
Tile Stone area	205 SF	31.42%
Glazing area	252.0 SF	38.70%
Windows frame area	28.0 SF	4.30%
Total area	651 SF	100%
Signs area	0.00 SF	

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Building -B

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F&L
 DESIGN & CONSTRUCTION L.L.C.
 8202 Woodside Rd Fidesign11@gmail.com
 Rowlett Tx, 75088 214-4781488

DRAWING TITLE :
**ELEVATION B
 BUILDING B**

PROJECT NAME :
**LUCAS COMMERCIAL CENTER
 995 WEST LUCAS ROAD
 ALLEN , TX 75002**

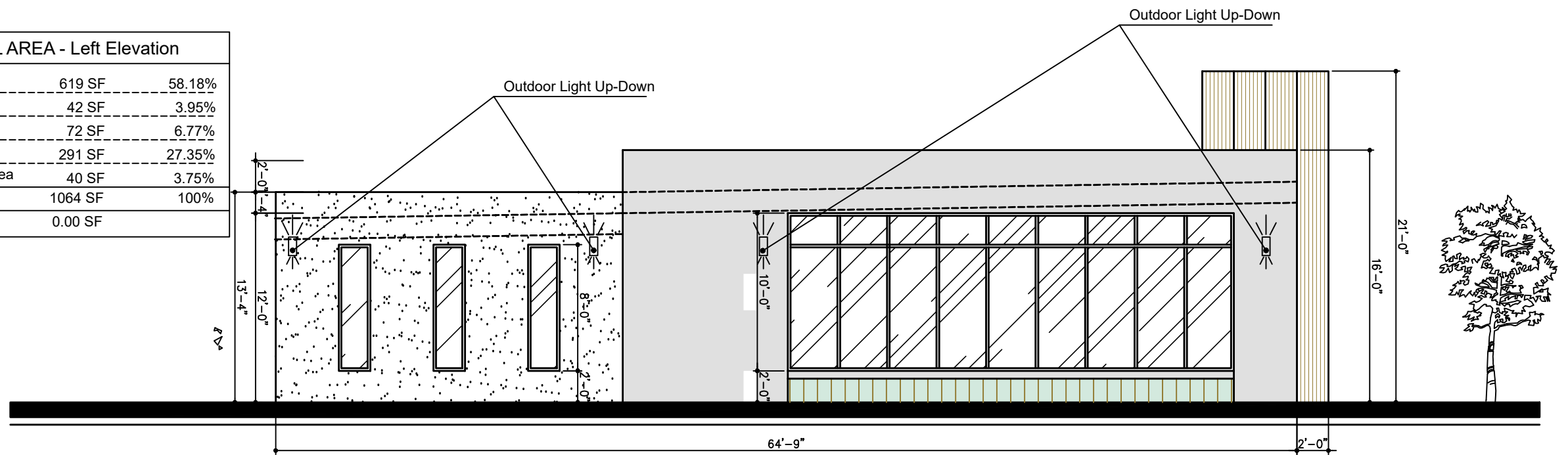
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REVISION DATE

SHEET NUMBER
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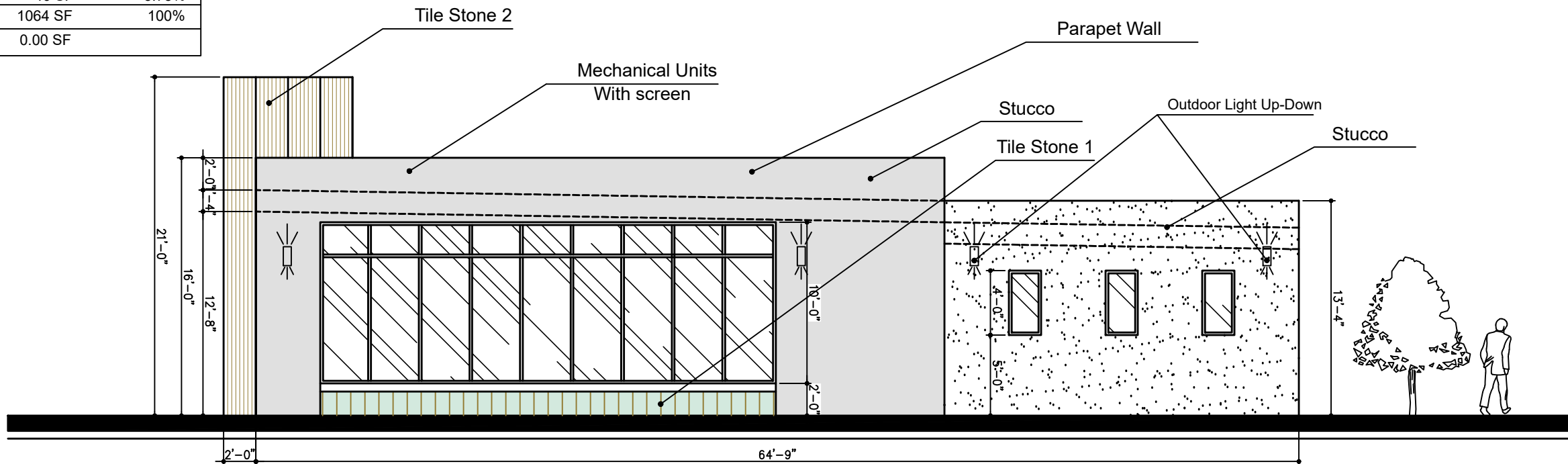
PLOT DATE
 06/23/22

TOTAL WALL AREA - Left Elevation		
Stucco area	619 SF	58.18%
Tile Stone area-1	42 SF	3.95%
Tile Stone area-2	72 SF	6.77%
Glazing area	281 SF	27.35%
Windows frame area	40 SF	3.75%
Total area	1064 SF	100%
Signs area	0.00 SF	

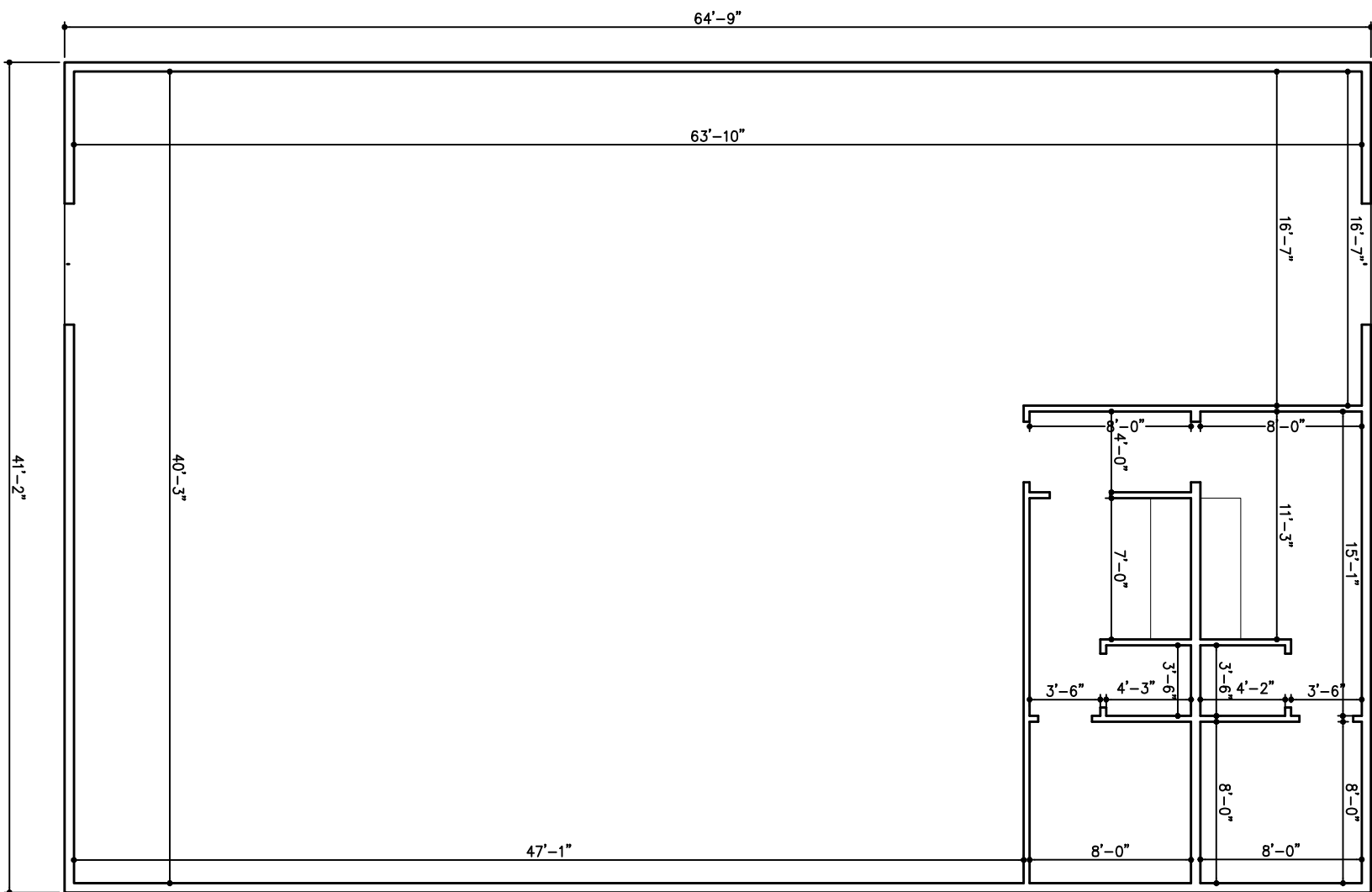


01 LEFT ELEVATION
SCALE : 1/8" = 1'-0"

TOTAL WALL AREA - Right Elevation		
Stucco area	639 SF	60.05%
Tile Stone area-1	42 SF	3.95%
Tile Stone area-2	72 SF	6.77%
Glazing area	271 SF	25.48%
Windows frame area	40 SF	3.75%
Total area	1064 SF	100%
Signs area	0.00 SF	

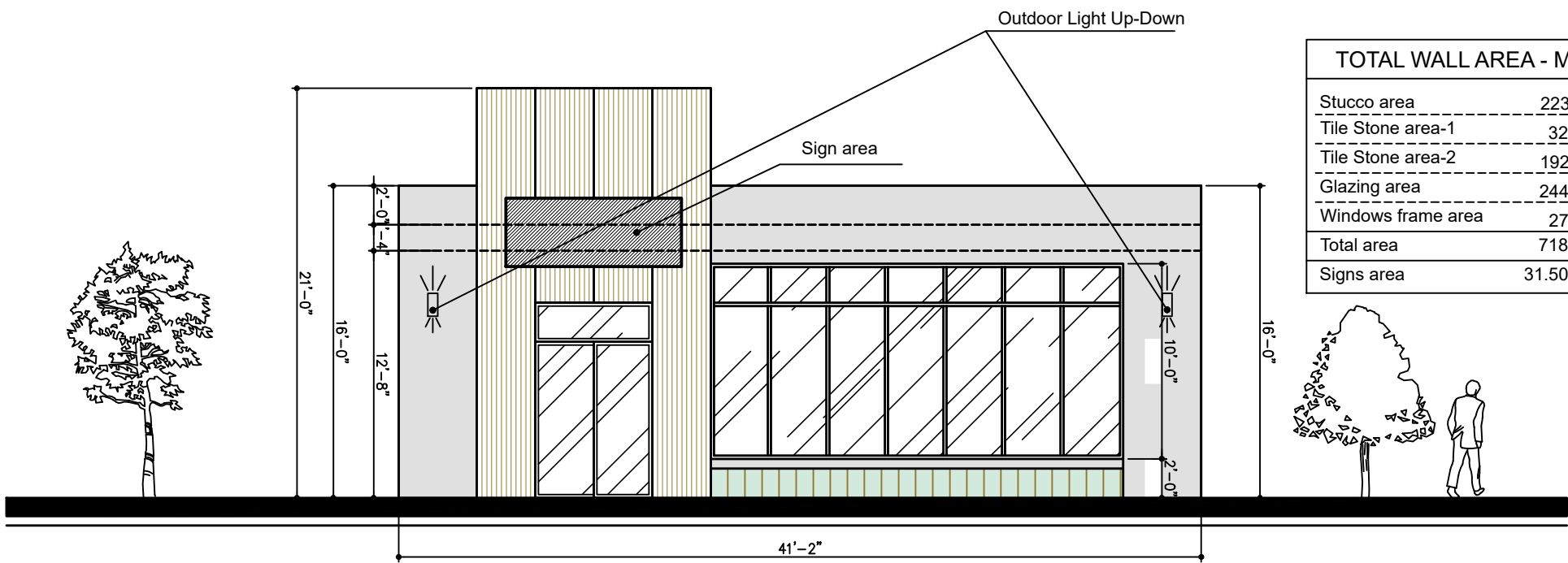


03 RIGHT ELEVATION
SCALE : 1/8" = 1'-0"



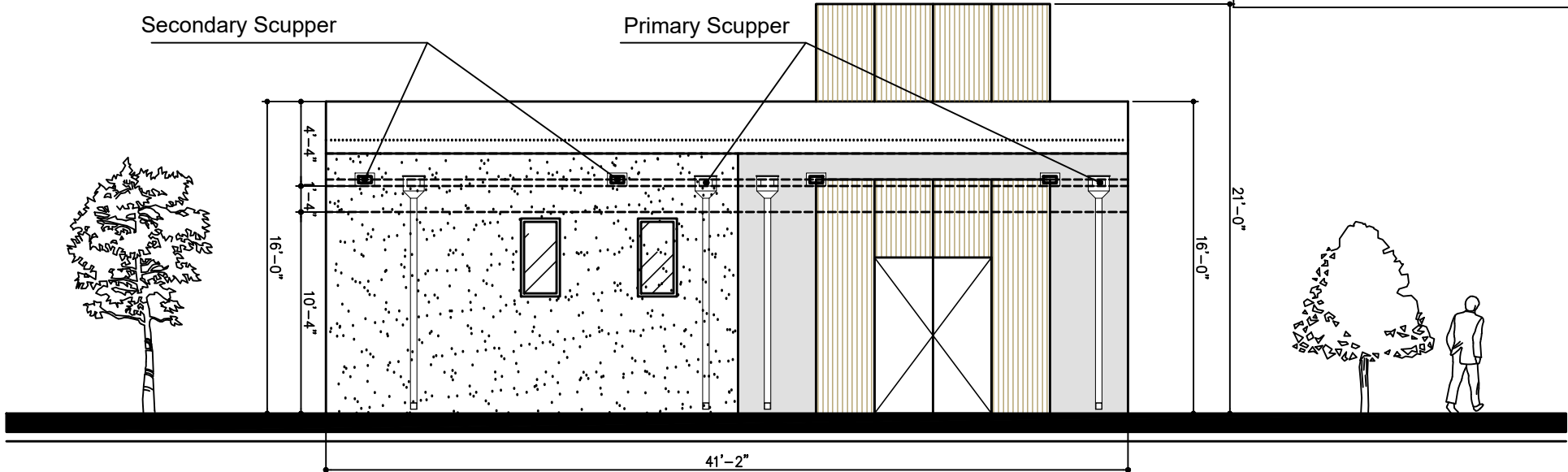
05 FLOOR PLAN
SCALE : 1/8" = 1'-0"

TOTAL WALL AREA - Main Elevation		
Stucco area	223 SF	31.05%
Tile Stone area-1	32 SF	4.45%
Tile Stone area-2	192 SF	26.74%
Glazing area	244 SF	33.98%
Windows frame area	27 SF	3.78%
Total area	718 SF	100%
Signs area	31.50 SF	



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

TOTAL WALL AREA - Back Elevation		
Stucco area	498 SF	69.36%
Tile Stone area-1	0.00 SF	0.00%
Tile Stone area-2	156 SF	21.73%
Glazing area	12 SF	1.7%
Windows frame area	4 SF	0.53%
Metal Door area	48 SF	6.68%
Total area	718 SF	100%
Signs area	0.00 SF	



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

NOTE:
- This Facade Plan is for conceptual purposes only. All building plans require review and approval of the Building Inspection Department.
- All mechanical units shall be screened from public view.
- When permitted, exposed utility boxes and conduits shall be painted match the building.
- All signage areas and locations are subject to approval by the Building Inspection Department.
- Roof access shall be provided internally, unless otherwise permitted by the Building Office.

Building -C

CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AT THE JOB SITE AND NOTIFY THE ARCHITECT OF ANY DIMENSIONAL ERRORS, OMISSIONS BEFORE FABRICATING ANY WORK. DO NOT SCALE DRAWINGS.

F&L
DESIGN & CONSTRUCTION L.L.C.
8202 Woodside Rd
Rowlett Tx, 75088
Fidesign11@gmail.com
214-4781485

DRAWING TITLE :
FLOOR PLAN AND ELEVATIONS
BUILDING C

PROJECT NAME :
LUCAS COMMERCIAL CENTER
995 WEST LUCAS ROAD
ALLEN , TX 75002

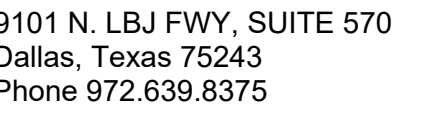
ARCHITECT'S SEAL

REVISION DATE

SHEET NUMBER

A1.3

PLOT DATE
06/23/22



995 WEST LUCAS ROAD,
LUCAS, TEXAS 75002

TREES	CODE	COMMON / BOTANICAL NAME	SIZE	CONTAINER	QTY
	EX	Existing Tree to Remain protect during construction	exist.	exist.	2
	CC	Texas Red Bud / <i>Cercis canadensis</i> parking lot tree; multi-trunk	CONT.	3"Cal	4
	DW2	Desert Willow / <i>Chilopsis linearis</i> street tree (ornamental)	CONT.	3"Cal	13
	IV	Yaupon Holly / <i>Ilex vomitoria</i> street tree	CONT.	3"Cal	7
	BRO	Burr Oak / <i>Quercus macrocarpa</i> parking lot	CONT.	3"Cal	4
	CE	Cedar Elm / <i>Ulmus crassifolia</i> parking lot	CONT.	3"Cal	4
SHRUBS	CODE	COMMON / BOTANICAL NAME	SIZE	QTY	
	GA	Glossy Abelia / <i>Abelia grandiflora</i> 30" o.c	5 gal	103	
	IN	Dwarf Yaupon / <i>Ilex vomitoria</i> 'Nana' 24" o.c.	3 gal	25	
	WXM	Southern Wax Myrtle / <i>Myrica cerifera</i> 60" o.c.	5 gal	133	
GROUND COVERS	CODE	COMMON / BOTANICAL NAME	SIZE	QTY	
	CD	Bermuda Grass / <i>Cynodon dactylon</i> 'tlf 419'	sod	29,686 sf	

BY SUBMITTING A PROPOSAL, FOR THE LANDSCAPE PLANTING SCOPE OF WORK, THE CONTRACTOR CONFIRMS THAT HE HAS READ, AND WILL COMPLY WITH, THE ASSOCIATED NOTES, SPECIFICATIONS, AND DETAILS WITH THIS PROJECT. 1. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF ALL VEGETATION (EXCEPT WHERE NOTED TO REMAIN).

2. IN THE CONTEXT OF THESE PLANS, NOTES, AND SPECIFICATIONS, "FINISH GRADE" REFERS TO THE FINAL ELEVATION OF THE SURFACE AT THE TOP OF MOUND INDICATED ON THE GRADING PLAN.

3. a. BEFORE STARTING WORK, THE LANDSCAPE CONTRACTOR SHALL VERIFY THAT THE ROUGH GRADES OF ALL LANDSCAPE AREAS ARE WITHIN +0.1' OF FINISH GRADE. SEE SPECIFICATIONS FOR MORE DETAILED INSTRUCTION ON TURF AREA AND SOIL PREPARATION.

4. b. CONSTRUCT AND MAINTAIN FINISH GRADES AS SHOWN ON GRADING PLANS, AND CONSTRUCT AND MAINTAIN SLOPES AS RECOMMENDED BY THE GEOTECHNICAL REPORT. ALL LANDSCAPE AREAS SHALL HAVE POSITIVE SLOPES AWAY FROM TURF AREAS, AND AWAY FROM GRADING PLANS, AND AWAY FROM GRADING PLANS, AND AREAS OF POTENTIAL PONDING SHALL BE REGRADED TO BLEND IN WITH THE SURROUNDING GRADES AND ELIMINATE PONDING POTENTIAL.

5. c. THE LANDSCAPE CONTRACTOR SHALL DETERMINE WHETHER OR NOT THE EXPORT OF ANY SOIL WILL BE NEEDED, TAKING INTO ACCOUNT THE ROUGH GRADE PROVIDED, THE AMOUNT OF SOIL AMENDMENTS TO BE ADDED (BASED ON A SOIL TEST, PER SPECIFICATIONS), AND THE FINISH GRADES TO BE ESTABLISHED.

6. d. ENSURE THAT THE FINISH GRADE IS PROPERLY SLOPED TO ADJACENT WALKS AND OTHER WALKING SURFACES, AFTER INSTALLING SOIL AMENDMENTS. IT IS BELOW THE ADJACENT FINISH SURFACE, IN ORDER TO ALLOW FOR PROPER MULCH DEPTH. TAPER THE SOIL SURFACE TO FINISH GRADE AS SPECIFIED ON THE GRADING PLANS, AT APPROXIMATELY 18" AWAY FROM THE FINISH GRADE.

7. e. ENSURE THAT THE FINISH GRADE IN TURF AREAS IMMEDIATELY ADJACENT TO WALKS AND OTHER WALKING SURFACES, AFTER INSTALLING SOIL AMENDMENTS, IS 1" BELOW THE FINISH SURFACE OF THE WALKS. TAPER THE FINISH GRADE TO FINISH GRADE AS SPECIFIED ON THE GRADING PLANS, AT APPROXIMATELY 18" AWAY FROM THE WALKS.

8. f. SHOULD ANY CONFLICTS AND/OR DISCREPANCIES ARISE BETWEEN THE GRADING PLANS, GEOTECHNICAL REPORT, NOTES, SPECIFICATIONS AND DETAILS, AND/OR CONFLICTS BETWEEN THE CONTRACTOR AND ARCHITECT, THE CONTRACTOR SHALL IMMEDIATELY BRING SUCH ITEMS TO THE ATTENTION OF THE LANDSCAPE ARCHITECT AND THE GENERAL CONTRACTOR AND THE OWNER.

9. ALL PLANT LOCATIONS ARE DIAGRAMMATIC. ACTUAL LOCATIONS SHALL BE VERIFIED WITH THE LANDSCAPE ARCHITECT OR DESIGNER PRIOR TO PLANTING. THE LANDSCAPE CONTRACTOR SHALL ENSURE THAT ALL REQUIREMENTS OF THE LANDSCAPE ARCHITECT AND THE GENERAL CONTRACTOR AND THE OWNER ARE MET (INCLUDING BUT NOT LIMITED TO, ETC.).

10. a. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR DETERMINING PLANT QUANTITIES, PLANT QUANTITIES SHOWN IN THE LEGENDS AND CALLOUTS ARE FOR GENERAL INFORMATION ONLY. IN THE EVENT OF A DISCREPANCY BETWEEN THE PLAN AND THE PLANT LEGEND, THE PLANT QUANTITY AS SHOWN ON THE PLAN (FOR INDIVIDUAL SYMBOLS) OR CALLOUT (FOR GROUNDCOVER PATTERNS) SHALL TAKE PRECEDENCE.

11. b. ALL PLANT QUANTITIES SHOWN ON THE PLAN SHALL BE VERIFIED WITH THE WRITTEN PERMISSION OF THE LANDSCAPE ARCHITECT. IF SOME OF THE PLANTS ARE NOT AVAILABLE, THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT IN WRITING (VIA PROPER CHANNELS).

12. c. THE CONTRACTOR SHALL PROVIDE PROTECTION FOR ALL PLANTS PROPOSED FOR THE PROJECT. THE CONTRACTOR SHALL ALLOW THE LANDSCAPE ARCHITECT AND THE OWNER/OWNER'S REPRESENTATIVE TO INSPECT, AND APPROVE OR REJECT, ALL PLANTS DELIVERED TO THE JOBSITE. REFER TO SPECIFICATIONS FOR PROTECTION FOR PLANTS TO REMAIN.

13. d. THE CONTRACTOR SHALL MAINTAIN THE LANDSCAPE IN A HEALTHY CONDITION FOR 90 DAYS AFTER ACCEPTANCE BY THE OWNER. REFER TO SPECIFICATIONS FOR CONDITIONS OF ACCEPTANCE FOR THE START OF THE MAINTENANCE PERIOD, AND FOR THE ACCEPTANCE DATE AT THE END OF THE MAINTENANCE PERIOD.

14. e. SEE SPECIFICATIONS AND DETAILS FOR FURTHER REQUIREMENTS.

TOTAL SITE AREA:	97,656 SF
LANDSCAPE AREA REQUIRED:	14,648 SF (15% OF SITE AREA)
LANDSCAPE AREA PROVIDED:	34,480 SF

STREET TREES
WEST LUCAS RD. FRONTAGE LENGTH: 244 LF
STREET TREES REQUIRED: 22 TREES (1 PER 20 LF OF FRONTAGE)
STREET TREES PROVIDED: 22 TREES
SHRUBS REQUIRED: 98 SHRUBS (8 PER 20 LF OF FRONTAGE)
SHRUBS PROVIDED: 98 SHRUBS

<u>PARKING PERIMETER</u>	211 LF
TREES REQUIRED:	11 TREES (1 PER 20 LF OF FRONTAGE)
TREES PROVIDED:	22 TREES
SHRUBS REQUIRED:	85 SHRUBS (8 PER 20 LF OF FRONTAGE)
SHRUBS PROVIDED:	98 SHRUBS

LANDSCAPE AREA REQUIRED:	1,672 SF (8% OF SITE AREA)
LANDSCAPE AREA PROVIDED:	2,777 SF
TREES REQUIRED:	9 TREES (1 TREE /10 SPACES; 82 SPACES)
TREES PROVIDED:	9 TREES

OWNER:
MAHMOUD PROPERTIES LLC
844 ELGIN COURT,
ROCKWALL, TX 75032

ENGINEER:
ROC DESIGN ENGINEERS
Texas Firm F-13744
9101 N. LBJ FWY, SUITE 570
Dallas, Texas 75243
Phone 972.639.8375

LANDSCAPE ARCHITECT:
EVERGREEN DESIGN GROUP
15455 Dallas Pkwy., Ste 600
Addison, TX 75001
Phone 800.680.6630

LUCAS COMMERCIAL CENTER
Called 2.25 Acres
MAHMOUD PROPERTIES LLC
DOC. # 20191009001265330
O.P.R.C.C.T.

No.	Revision/Issue	Date

Drawn By:	ROC
Checked By:	MAK
Designed By:	ROC

Project	220014	Sheet LP-1
Date	10/13/22	
Scale	1" = 30'-0"	

THE CONTRACTOR SHALL INSTALL ROOT BARRIERS NEAR ALL NEWLY-PLANTED TREES THAT ARE LOCATED WITHIN FIVE (5) FEET OF PAVING OR CURBS. ROOT BARRIERS SHALL BE "CENTURY" OR "DEEP-ROOT" 24" DEEP PANELS (OR EQUAL). BARRIERS SHALL BE LOCATED IMMEDIATELY ADJACENT TO HARDSCAPE. INSTALL PANELS PER MANUFACTURER'S RECOMMENDATIONS. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR USE ROOT BARRIERS OF A TYPE THAT COMPLETELY ENCIRCLE THE ROOTBALL.

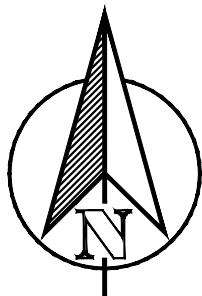
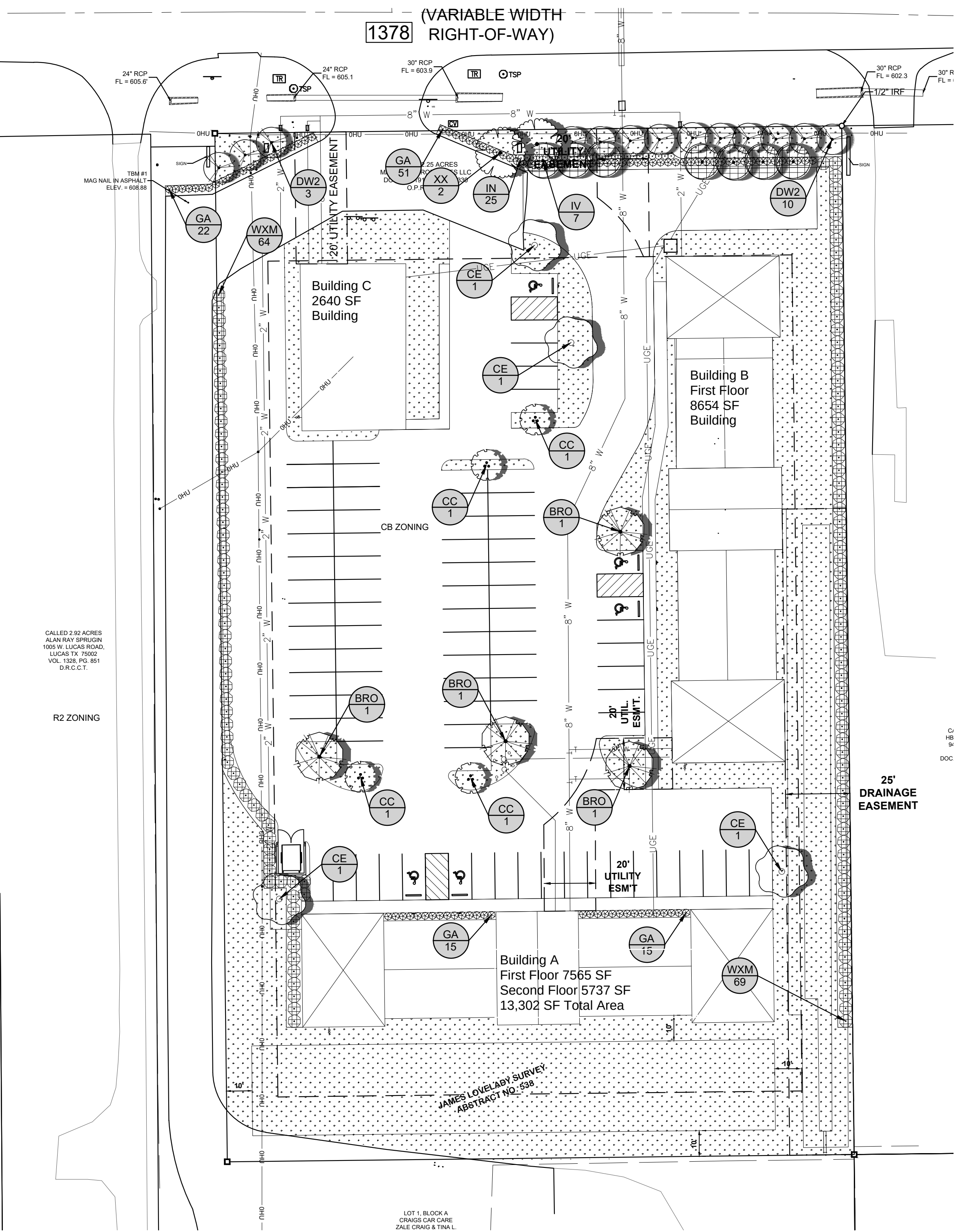
AFTER ALL PLANTING IS COMPLETE, CONTRACTOR SHALL INSTALL 3" THICK LAYER OF 1-1/2" SHREDDED WOOD MULCH, NATURAL (UNDYED), OVER LANDSCAPE FABRIC IN ALL PLANTING AREAS (EXCEPT FOR TURF AND SEEDED AREAS). CONTRACTOR SHALL SUBMIT SAMPLES OF ALL MULCHES TO LANDSCAPE ARCHITECT AND OWNER FOR APPROVAL PRIOR TO CONSTRUCTION. ABSOLUTELY NO EXPOSED GROUND SHALL BE LEFT SHOWING ANYWHERE ON THE PROJECT AFTER MULCH HAS BEEN INSTALLED (SUBJECT TO THE CONDITIONS AND REQUIREMENTS OF THE "GENERAL GRADING AND PLANTING NOTES" AND SPECIFICATIONS).

THE LANDSCAPE CONTRACTOR SHALL GUARANTEE THAT ALL NEWLY INSTALLED AND EXISTING PLANTS SHALL SURVIVE FOR ONE YEAR AFTER FINAL OWNER ACCEPTANCE OF THE INSTALLATION WORK. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR APPROPRIATE WATERING OF THE LANDSCAPE THROUGH INSTALLATION OF A PROPERLY DESIGNED IRRIGATION SYSTEM. THE OWNER SHALL APPROVE THE SYSTEM DESIGN BEFORE INSTALLATION OF PLANTS OR IRRIGATION.

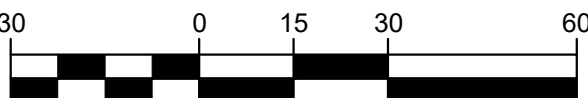
VICINITY MAP



NOT TO SCALE



GRAPHIC SCALE



1 inch = 30 ft.

PLANTING SPECIFICATIONS

GENERAL

- A. QUALIFICATIONS OF LANDSCAPE CONTRACTOR
1. ALL LANDSCAPE WORK SHOWN ON THESE PLANS SHALL BE PERFORMED BY A SINGLE FIRM SPECIALIZING IN LANDSCAPE PLANTING.
 2. A LIST OF SUCCESSFULLY COMPLETED PROJECTS OF THIS TYPE, SIZE AND NATURE MAY BE REQUESTED BY THE OWNER FOR FURTHER QUALIFICATION MEASURES.
 3. THE LANDSCAPE CONTRACTOR SHALL HOLD A VALID NURSERY AND FLORAL CERTIFICATE ISSUED BY THE TEXAS DEPARTMENT OF AGRICULTURE, AS WELL AS OPERATE UNDER A COMMERCIAL PESTICIDE APPLICATOR LICENSE ISSUED BY EITHER THE TEXAS DEPARTMENT OF AGRICULTURE OR THE TEXAS STRUCTURAL PEST CONTROL BOARD.
- B. SCOPE OF WORK
1. WORK COVERED BY THESE SPECIFICATIONS INCLUDES THE FURNISHING AND PAYMENT OF ALL MATERIALS, LABOR, SERVICES, EQUIPMENT, LICENSES, TAXES AND ANY OTHER ITEMS THAT ARE NECESSARY FOR THE EXECUTION, INSTALLATION AND COMPLETION OF ALL WORK, SPECIFIED HEREIN AND / OR SHOWN ON THE LANDSCAPE PLANS, NOTES, AND DETAILS.
 2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES AND REGULATIONS REQUIRED BY AUTHORITIES HAVING JURISDICTION OVER SUCH WORK, INCLUDING ALL INSPECTIONS AND PERMITS REQUIRED BY FEDERAL, STATE AND LOCAL AUTHORITIES IN SUPPLY, TRANSPORTATION AND INSTALLATION OF MATERIALS.
 3. THE LANDSCAPE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITY LINES (WATER, SEWER, ELECTRICAL, TELEPHONE, GAS, CABLE, TELEVISION, ETC) PRIOR TO THE START OF ANY WORK.

PRODUCTS

- A. ALL MANUFACTURED PRODUCTS SHALL BE NEW.
- B. CONTAINER AND BALLED-AND-BURLAPPED PLANTS.
1. FURNISH NURSERY-GROWN PLANTS COMPLYING WITH ANSI Z60.1-2014. PROVIDE WELL-SHAPED, FULLY BRANCHED, HEALTHY, VIGOROUS STOCK FREE OF DISEASE, INSECTS, EGGS, LARVAE, AND DEFECTS SUCH AS KNOTS, SUN SCALD, INJURIES, ABRASIONS, AND DISFIGUREMENT. ALL PLANTS WITHIN A SPECIES SHALL HAVE SIMILAR SIZE, AND SHALL BE OF A FORM TYPICAL FOR THE SPECIES. ALL TREES SHALL BE OBTAINED FROM SOURCES WITHIN 200 MILES OF THE PROJECT SITE, AND WITH SIMILAR CLIMATIC CONDITIONS.
 2. ROOT SYSTEMS SHALL BE HEALTHY, DENSELY BRANCHED ROOT SYSTEMS, NON-POT-BOUND, FREE FROM ENCIRCLING AND/OR GIRDLING ROOTS, AND FREE FROM ANY OTHER ROOT DEFECTS (SUCH AS J-SHAPED ROOTS).
 3. TREES MAY BE PLANTED FROM CONTAINERS OR BALLED-AND-BURLAPPED (B&B), UNLESS SPECIFIED ON THE PLANTING LEGEND. BARE-ROOT TREES ARE NOT ACCEPTABLE.
 4. ANY PLANT DEEMED UNACCEPTABLE BY THE LANDSCAPE ARCHITECT OR OWNER SHALL BE IMMEDIATELY REMOVED FROM THE SITE AND SHALL BE REPLACED WITH AN ACCEPTABLE PLANT OF LIKE TYPE AND SIZE AT THE CONTRACTOR'S OWN EXPENSE. ANY PLANTS APPEARING TO BE UNHEALTHY, EVEN IF DETERMINED TO STILL BE ALIVE, SHALL NOT BE ACCEPTED. THE LANDSCAPE ARCHITECT AND OWNER SHALL BE THE SOLE JUDGES AS TO THE ACCEPTABILITY OF PLANT MATERIAL.
 5. ALL TREES SHALL BE STANDARD IN FORM, UNLESS OTHERWISE SPECIFIED. TREES WITH CENTRAL LEADERS WILL NOT BE ACCEPTED IF LEADER IS DAMAGED OR REMOVED. PRUNE ALL DAMAGED TWIGS AFTER PLANTING.
 6. CALIPER MEASUREMENTS FOR STANDARD (SINGLE TRUNK) TREES SHALL BE AS FOLLOWS: SIX INCHES ABOVE THE ROOT FLARE FOR TREES UP TO AND INCLUDING FOUR INCHES IN CALIPER, AND TWELVE INCHES ABOVE THE ROOT FLARE FOR TREES EXCEEDING FOUR INCHES IN CALIPER.
 7. MULTI-TRUNK TREES SHALL BE MEASURED BY THEIR OVERALL HEIGHT, MEASURED FROM THE TOP OF THE ROOT BALL. WHERE CALIPER MEASUREMENTS ARE REQUIRED, THE CALIPER SHALL BE CALCULATED AS ONE-HALF OF THE SUM OF THE CALIPER OF THE THREE LARGEST TRUNKS.
 8. ANY TREE OR SHRUB SHOWN TO HAVE EXCESS SOIL PLACED ON TOP OF THE ROOT BALL, SO THAT THE ROOT FLARE HAS BEEN COMPLETELY COVERED, SHALL BE REJECTED.
- C. SOD: PROVIDE WELL-ROOTED SOD OF THE VARIETY NOTED ON THE PLANS. SOD SHALL BE CUT FROM HEALTHY, MATURE TURF WITH SOIL THICKNESS OF 3/4" TO 1". EACH PALLET OF SOD SHALL BE ACCOMPANIED BY A CERTIFICATE FROM SUPPLIER STATING THE COMPOSITION OF THE SOD.
- D. TOPSOIL: SANDY TO CLAY LOAM TOPSOIL, FREE OF STONES LARGER THAN 1/2 INCH, FOREIGN MATTER, PLANTS, ROOTS, AND SEEDS.
- E. COMPOST: WELL-COMPOSTED, STABLE, AND WEED-FREE ORGANIC MATTER, pH RANGE OF 5.5 TO 8; MOISTURE CONTENT 35 TO 55 PERCENT BY WEIGHT; 100 PERCENT PASSING THROUGH 3/4-INCH SIEVE; SOLUBLE SALT CONTENT OF 5 TO 10 DECISEMENS/M; NOT EXCEEDING 0.5 PERCENT INERT CONTAMINANTS AND FREE OF SUBSTANCES TOXIC TO PLANTINGS. NO MANURE OR ANIMAL-BASED PRODUCTS SHALL BE USED.
- F. FERTILIZER: GRANULAR FERTILIZER CONSISTING OF NITROGEN, PHOSPHORUS, POTASSIUM, AND OTHER NUTRIENTS IN PROPORTIONS, AMOUNTS, AND RELEASE RATES RECOMMENDED IN A SOIL REPORT FROM A QUALIFIED SOIL-TESTING AGENCY (SEE BELOW).
- G. MULCH: SIZE AND TYPE AS INDICATED ON PLANS, FREE FROM DELETERIOUS MATERIALS AND SUITABLE AS A TOP DRESSING OF TREES AND SHRUBS.
- H. TREE STAKING AND GUYING.
1. STAKES: 6" LONG GREEN METAL T-POSTS.
 2. GUY AND TIE WIRE: ASTM A 641, CLASS 1, GALVANIZED-STEEL WIRE, 2-STRAND, TWISTED, 0.106 INCH DIAMETER.
 3. STRAP CHAFING GUARD: REINFORCED NYLON OR CANVAS AT LEAST 1-1/2 INCH WIDE, WITH GROMMETS TO PROTECT TREE TRUNKS FROM DAMAGE.
- I. STEEL EDGING: PROFESSIONAL STEEL EDGING, 14 GAUGE THICK X 4 INCHES WIDE, FACTORY PAINTED DARK GREEN. ACCEPTABLE MANUFACTURERS INCLUDE COL-MET OR APPROVED EQUAL.
- J. PRE-EMERGENT HERBICIDES: ANY GRANULAR, NON-STAINING PRE-EMERGENT HERBICIDE THAT IS LABELED FOR THE SPECIFIC ORNAMENTALS OR TURF ON WHICH IT WILL BE UTILIZED, PRE-EMERGENT HERBICIDES SHALL BE APPLIED PER THE MANUFACTURERS LABELED RATES.

METHODS

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

SUBMITTALS

1. THE CONTRACTOR SHALL PROVIDE SUBMITTALS AND SAMPLES, IF REQUIRED, TO THE LANDSCAPE ARCHITECT, AND RECEIVE APPROVAL IN WRITING FOR SUCH SUBMITTALS BEFORE WORK COMMENCES.
 2. SUBMITTALS SHALL INCLUDE PHOTOS OF PLANTS WITH A RULER OR MEASURING STICK FOR SCALE, PHOTOS OR SAMPLES OF ANY REQUIRED MULCHES, AND SOIL TEST RESULTS AND PREPARATION RECOMMENDATIONS FROM THE TESTING LAB (INCLUDING COMPOST AND FERTILIZER RATES AND TYPES, AND OTHER AMENDMENTS FOR TREE/SHRUB, TURF, AND SEED AREAS AS MAY BE APPROPRIATE).
 3. SUBMITTALS SHALL ALSO INCLUDE MANUFACTURER CUT SHEETS FOR PLANTING ACCESSORIES SUCH AS TREE STAKES AND TIES, EDGING, AND LANDSCAPE FABRICS (IF ANY).
 4. WHERE MULTIPLE ITEMS ARE SHOWN ON A PAGE, THE CONTRACTOR SHALL CLEARLY INDICATE THE ITEM BEING CONSIDERED.
- C. GENERAL PLANTING
1. REMOVE ALL NURSERY TAGS AND STAKES FROM PLANTS.
 2. EXCEPT IN AREAS TO BE PLANTED WITH ORNAMENTAL GRASSES, APPLY PRE-EMERGENT HERBICIDES AT THE MANUFACTURERS RECOMMENDED RATE.
 3. TRENCHING NEAR EXISTING TREES:
 - a. CONTRACTOR SHALL NOT DISTURB ROOTS 1-1/2" AND LARGER IN DIAMETER WITHIN THE CRITICAL ROOT ZONE (CRZ) OF EXISTING TREES, AND SHALL EXERCISE ALL POSSIBLE CARE AND PRECAUTIONS TO AVOID INJURY TO TREE ROOTS, TRUNKS, AND BRANCHES. THE CRZ IS DEFINED AS A CIRCULAR AREA EXTENDING OUTWARD FROM THE TREE TRUNK, WITH A RADIUS EQUAL TO 1" FOR EVERY 1" OF TRUNK DIAMETER-AT-BREAST-HEIGHT (4.5' ABOVE THE AVERAGE GRADE AT THE TRUNK).
 - b. ALL EXCAVATION WITHIN THE CRZ SHALL BE PERFORMED USING HAND TOOLS. NO MACHINE EXCAVATION OR TRENCHING OF ANY KIND SHALL BE ALLOWED WITHIN THE CRZ.
 - c. ALTER ALIGNMENT OF PIPE TO AVOID TREE ROOTS 1-1/2" AND LARGER IN DIAMETER. WHERE TREE ROOTS 1-1/2" AND LARGER IN DIAMETER ARE ENCOUNTERED IN THE FIELD, TUNNEL UNDER SUCH ROOTS. WRAP EXPOSED ROOTS WITH SEVERAL LAYERS OF BURLAP AND KEEP MOIST. CLOSE ALL TRENCHES WITHIN THE CANOPY DRIP LINES WITHIN 24 HOURS.
 - d. ALL SEVERED ROOTS SHALL BE HAND PRUNED WITH SHARP TOOLS AND ALLOWED TO AIR-DRY. DO NOT USE ANY SORT OF SEALERS OR WOUND PAINTS.

TREE PLANTING

1. TREE PLANTING HOLES SHALL BE EXCAVATED TO MINIMUM WIDTH OF TWO TIMES THE WIDTH OF THE ROOTBALL, AND TO A DEPTH OF THE ROOTBALL PLUS LESS THAN FOUR INCHES.
 2. SCARIFY THE SIDES AND BOTTOM OF THE PLANTING HOLE PRIOR TO THE PLACEMENT OF THE TREE. REMOVE ANY GLAZING THAT MAY HAVE BEEN CAUSED DURING THE EXCAVATION OF THE HOLE.
 3. FOR CONTAINER AND BOX TREES, TO REMOVE ANY POTENTIALLY GIRDLING ROOTS AND OTHER ROOT DEFECTS, THE CONTRACTOR SHALL SHAVE A 1" LAYER OFF OF THE SIDES AND BOTTOM OF THE ROOTBALL OF ALL TREES JUST BEFORE PLACING INTO THE PLANTING PIT. DO NOT "TEASE" ROOTS OUT FROM THE ROOTBALL.
 4. INSTALL THE TREE ON UNDISTURBED SUBGRADE SO THAT THE TOP OF THE ROOTBALL IS TWO TO FOUR INCHES ABOVE THE SURROUNDING GRADE.
 5. DISPOSED LEGALLY OF ALL EXCAVATED TOPSOIL FROM ON-SITE. ROCKS LARGER THAN 1" DIA. AND ALL OTHER DEBRIS SHALL BE REMOVED FROM THE SOIL PRIOR TO THE BACKFILL. SHOULD ADDITIONAL SOIL BE REQUIRED TO ACCOMPLISH THIS TASK, USE STORED TOPSOIL FROM ON-SITE OR IMPORT ADDITIONAL SOIL FROM AN OFF-SITE. NO ADDITIONAL COST TO THE OWNER. IMPORTED TOPSOIL SHALL BE OF SIMILAR TEXTURAL CLASS AND COMPOSITION IN THE ON-SITE SOIL.
 6. TREES SHALL NOT BE STAKED UNLESS LOCAL CONDITIONS (SUCH AS HEAVY WINDS OR SLOPES) REQUIRE STAKES TO KEEP TREES UPRIGHT. SHOULD STAKES BE REQUIRED, THE TOTAL NUMBER OF TREE STAKES (BEYOND THE MINIMUMS LISTED BELOW) WILL BE LEFT TO THE LANDSCAPE CONTRACTOR'S DISCRETION. SHOULD ANY TREES FALL OR LEAN, THE LANDSCAPE CONTRACTOR SHALL STRAIGHTEN THE TREE OR REPLACE IT SHOULD IT BECOME DAMAGED. TREE STAKING SHALL ADHERE TO THE FOLLOWING GUIDELINES:
 - a. 1-2" TREES TWO STAKES PER TREE
 - b. 2-1/2" - 4" TREES THREE STAKES PER TREE
 - c. TREES OVER 4" CALIPER GUY AS NEEDED
 - d. MULTI-TRUNK TREES THREE STAKES PER TREE MINIMUM, QUANTITY AND POSITIONS AS NEEDED TO STABILIZE THE TREE
 - e. MULTI-TRUNK TREES THREE STAKES PER TREE MINIMUM, QUANTITY AND POSITIONS AS NEEDED TO STABILIZE THE TREE
 7. UPON COMPLETION OF PLANTING, CONSTRUCT AN EARTH WATERING BASIN AROUND THE TREE. COVER THE INTERIOR OF THE TREE RING WITH THE WEED BARRIER CLOTH AND TOPDRESS WITH MULCH (TYPE AND DEPTH PER PLANS).
- E. SHRUB, PERENNIAL, AND GROUNDCOVER PLANTING
1. DIG THE PLANTING HOLES TWICE AS WIDE AND 2" LESS DEEP THAN EACH PLANTS ROOTBALL. INSTALL THE PLANT IN THE HOLE. BACKFILL AROUND THE PLANT WITH SOIL AMENDED PER SOIL TEST RECOMMENDATIONS.
 2. INSTALL THE WEED BARRIER CLOTH, OVERLAPPING IT AT THE ENDS. UTILIZE STEEL STAPLES TO KEEP THE WEED BARRIER CLOTH IN PLACE.
 3. WHEN PLANTING IS COMPLETE, INSTALL MULCH (TYPE AND DEPTH PER PLANS) OVER ALL PLANTING BEDS, COVERING THE ENTIRE PLANTING AREA.
- F. SODDING
1. SOD VARIETY TO BE AS SPECIFIED ON THE LANDSCAPE PLAN.
 2. LAY SOD WITHIN 24 HOURS FROM THE TIME OF STRIPPING. DO NOT LAY IF THE GROUND IS FROZEN.
 3. LAY THE SOD TO FORM A SOLID MASS WITH TIGHTLY FITTED JOINTS. BUTT ENDS AND SIDES OF SOD STRIPS. DO NOT OVERLAP. STAGGER STRIPS TO OFFSET JOINTS IN ADJACENT COURSES.
 4. ROLL THE SOD TO ENSURE GOOD CONTACT OF THE SOD'S ROOT SYSTEM WITH THE SOIL UNDERNEATH.
 5. WATER THE SOD THOROUGHLY WITH A FINE SPRAY IMMEDIATELY AFTER PLANTING TO OBTAIN AT LEAST SIX INCHES OF PENETRATION INTO THE SOIL BELOW THE SOD.
- G. MULCH
1. INSTALL MULCH TOPDRESSING, TYPE AND DEPTH PER MULCH NOTE, IN ALL PLANTING AREAS AND TREE RINGS.
 2. DO NOT INSTALL MULCH WITHIN 6" OF TREE ROOT FLARE AND WITHIN 24" OF HABITABLE STRUCTURES, EXCEPT AS MAY BE NOTED ON THESE PLANS. MULCH COVER WITHIN 6" OF CONCRETE WALKS AND CURBS. MULCH COVER WITHIN 12" OF WALLS SHALL BE AT LEAST 3" LOWER THAN THE TOP OF WALL.

CLEAN UP

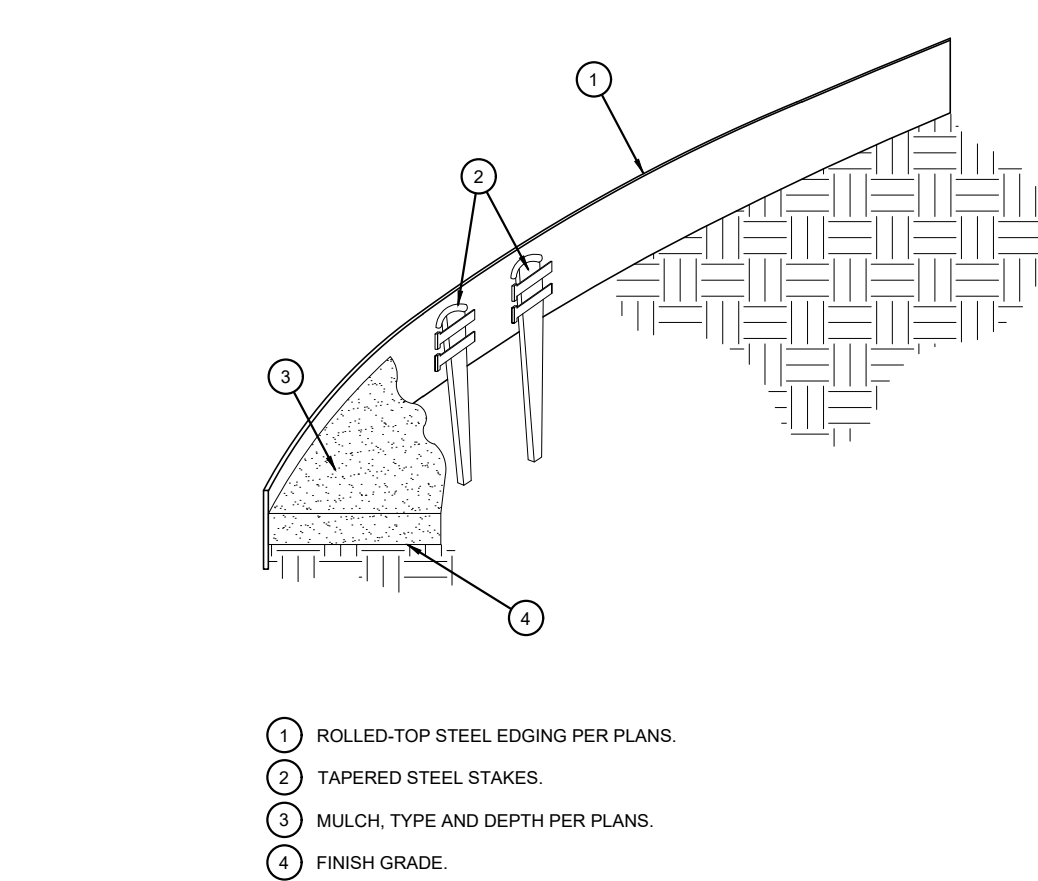
1. DURING LANDSCAPE PREPARATION AND PLANTING, KEEP ALL PAVEMENT CLEAN AND ALL WORK AREAS IN A NEAT, ORDERLY CONDITION.
 2. DISPOSED LEGALLY OF ALL EXCAVATED MATERIALS OFF THE PROJECT SITE.
- I. INSPECTION AND ACCEPTANCE
1. UPON COMPLETION OF THE WORK, THE LANDSCAPE CONTRACTOR SHALL PROVIDE THE SITE CLEAN, FREE OF DEBRIS AND TRASH, AND SUITABLE FOR USE AS INTENDED. THE LANDSCAPE CONTRACTOR SHALL THEN REQUEST AN INSPECTION BY THE OWNER TO DETERMINE FINAL ACCEPTABILITY.
 2. WHEN THE INSPECTED PLANTING WORK DOES NOT COMPLY WITH THE CONTRACT DOCUMENTS, THE LANDSCAPE CONTRACTOR SHALL REPAIR AND/OR REPAIR THE REJECTED WORK TO THE OWNER'S SATISFACTION WITHIN 24 HOURS.
 3. THE LANDSCAPE MAINTENANCE PERIOD WILL NOT COMMENCE UNTIL THE LANDSCAPE WORK HAS BEEN RE-INSPECTED BY THE OWNER AND FOUND TO BE ACCEPTABLE. AT THAT TIME, A WRITTEN NOTICE OF FINAL ACCEPTANCE WILL BE ISSUED BY THE OWNER, AND THE MAINTENANCE AND GUARANTEE PERIODS WILL COMMENCE.

LANDSCAPE MAINTENANCE

1. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL WORK SHOWN ON THESE PLANS FOR 90 DAYS BEYOND FINAL ACCEPTANCE OF ALL LANDSCAPE WORK BY THE OWNER. LANDSCAPE MAINTENANCE SHALL INCLUDE WEEKLY SITE VISITS FOR THE FOLLOWING ACTIONS (AS APPROPRIATE): PROPER PRUNING, RESTAKING OF TREES, RESETTING OF PLANTS THAT HAVE SETTLED, MOVING AND AERATION OF LAWN, WEEDING, TREATING FOR INSECTS AND DISEASES, REPLACEMENT OF MULCH, REMOVAL OF LITTER, REPAIRS TO THE IRRIGATION SYSTEM DUE TO FAULTY PARTS AND/OR WORKMANSHIP, AND THE APPROPRIATE WATERING OF ALL PLANTINGS.
2. THE LANDSCAPE CONTRACTOR SHALL MAINTAIN THE IRRIGATION SYSTEM IN PROPER WORKING ORDER, WITH SCHEDULING ADJUSTMENTS BY SEASON TO MAXIMIZE WATER CONSERVATION.
3. SHOULD SEEDS AND/OR SODDED AREAS NOT BE COVERED BY AN AUTOMATIC IRRIGATION SYSTEM, THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING THESE AREAS AND OBTAINING A FULL, HEALTHY STAND OF PLANTS AT NO ADDITIONAL COST TO THE OWNER.
4. TO ACHIEVE FINAL ACCEPTANCE AT THE END OF THE MAINTENANCE PERIOD, ALL OF THE FOLLOWING CONDITIONS MUST OCCUR:
 - a. THE LANDSCAPE SHALL SHOW ACTIVE, HEALTHY GROWTH (WITH EXCEPTIONS MADE FOR SEASONAL DORMANCY). ALL PLANTS NOT MEETING THIS CONDITION SHALL BE REJECTED AND REPLACED BY HEALTHY PLANT MATERIAL, PRIOR TO FINAL ACCEPTANCE.
 - b. ALL HARDSCAPE SHALL BE CLEANED PRIOR TO FINAL ACCEPTANCE.
 - c. SODDED AREAS MUST BE ACTIVELY GROWING AND MUST REACH A MINIMUM HEIGHT OF 1 1/2 INCHES BEFORE FINAL MOWING. BARE AREAS LARGER THAN TWELVE SQUARE INCHES MUST BE RESODDED (AS APPROPRIATE) PRIOR TO FINAL ACCEPTANCE. ALL SODDED TURF SHALL BE NEATLY MOVED.

WARRANTY PERIOD, PLANT GUARANTEE AND REPLACEMENTS

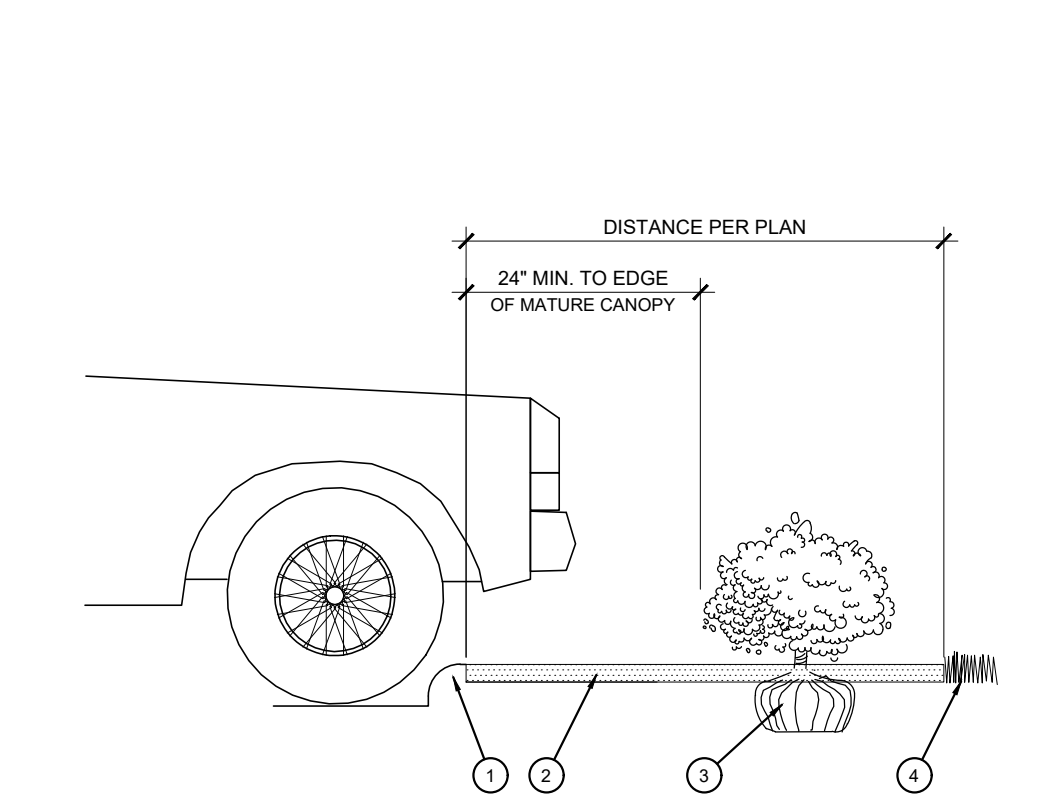
1. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL TREES, SHRUBS, PERENNIALS, SOD, AND IRRIGATION SYSTEMS FOR A PERIOD OF ONE YEAR FROM THE DATE OF THE OWNER'S FINAL ACCEPTANCE (90 DAYS FOR ANNUAL PLANTS). THE CONTRACTOR SHALL REPLACE, AT HIS OWN EXPENSE AND TO THE SATISFACTION OF THE OWNER, ANY PLANTS WHICH DIE IN THAT TIME, OR REPAIR ANY PORTIONS OF THE IRRIGATION SYSTEM WHICH OPERATE IMPROPERLY.
2. AFTER THE INITIAL MAINTENANCE PERIOD, THE LANDSCAPE CONTRACTOR SHALL ONLY BE RESPONSIBLE FOR REPLACEMENT OF PLANTS WHEN PLANT DEATH CAN BE ATTRIBUTED DIRECTLY TO OVERWATERING OR OTHER DAMAGE BY HUMAN ACTIONS.
3. PROVIDE A MINIMUM OF 10 COPIES OF RECORD DRAWING TO THE OWNER UPON COMPLETION OF WORK. A RECORD DRAWING IS A RECORD OF ALL CHANGES THAT OCCURRED IN THE FIELD AND THAT ARE DOCUMENTED THROUGH CHANGE ORDERS, ADDENDA, OR CONTRACTOR/CONSULTANT DRAWING MARKUPS.



- NOTES:
1. INSTALL EDGING SO THAT STAKES WILL BE ON INSIDE OF PLANTING BED.
 2. BOTTOM OF EDGING SHALL BE BURIED A MINIMUM OF 1" BELOW FINISH GRADE.
 3. TOP OF MULCH SHALL BE 1" LOWER THAN TOP OF EDGING.

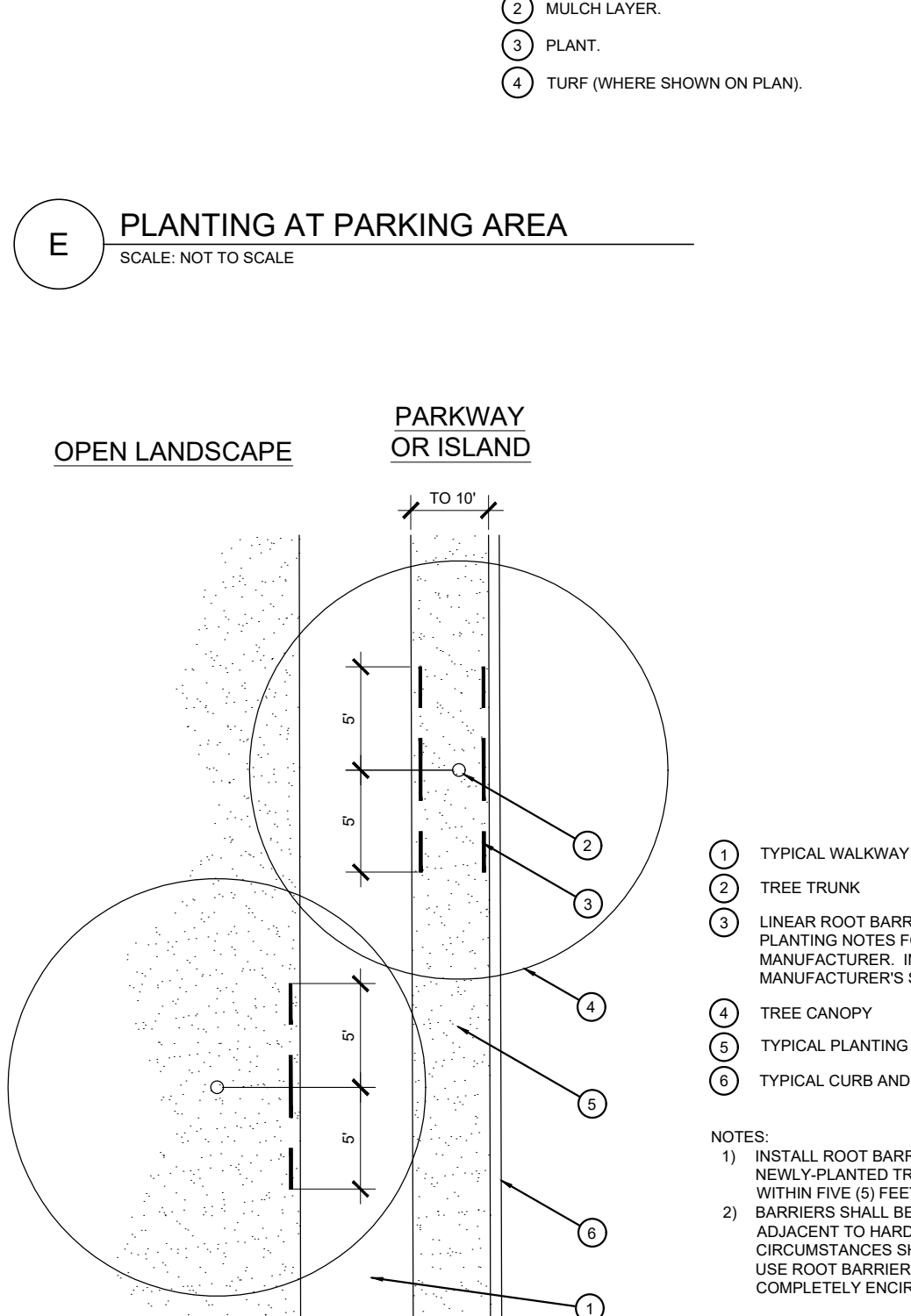
STEEL EDGING

SCALE: NOT TO SCALE



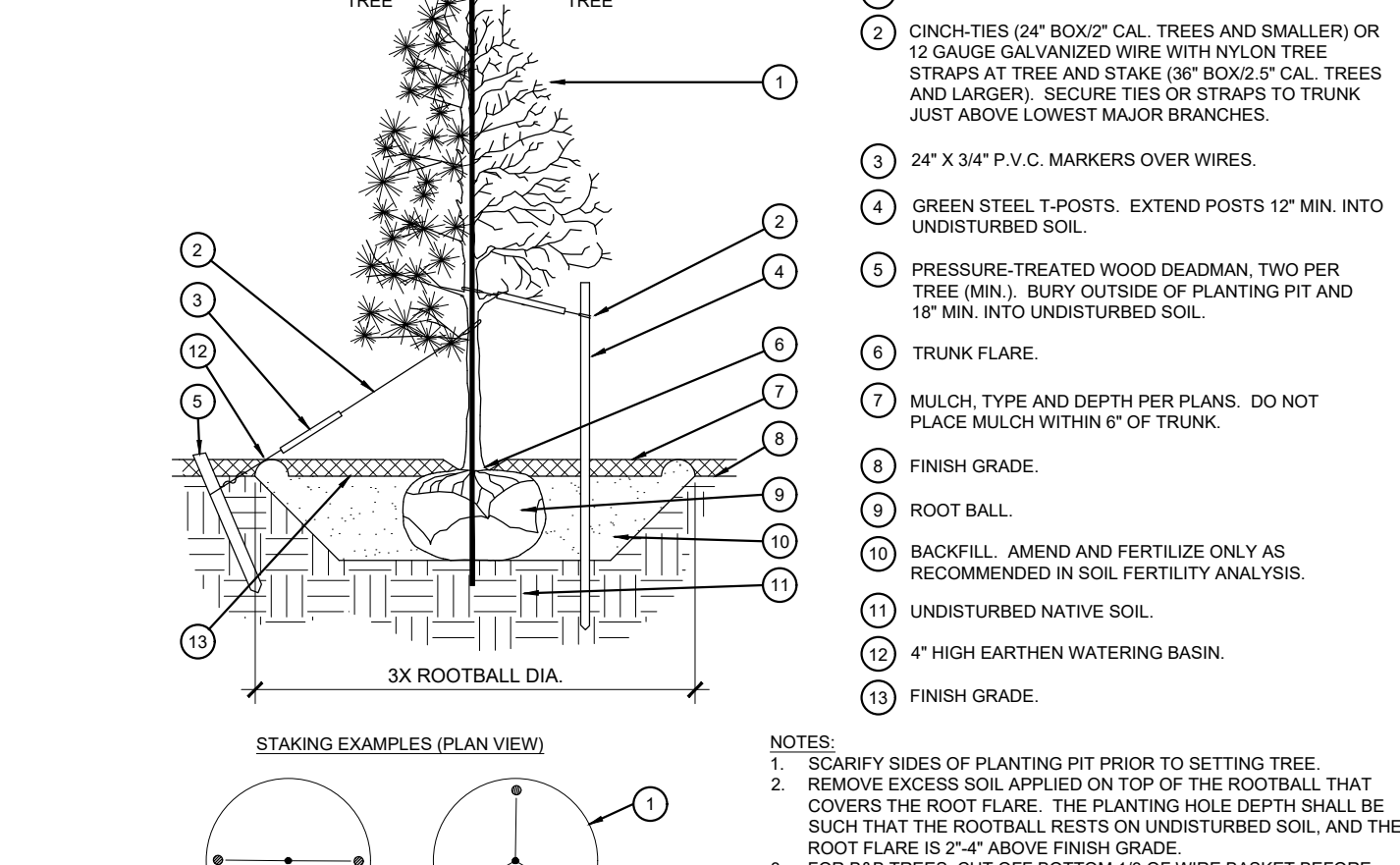
PLANTING AT PARKING AREA

SCALE: NOT TO SCALE



ROOT BARRIER - PLAN VIEW

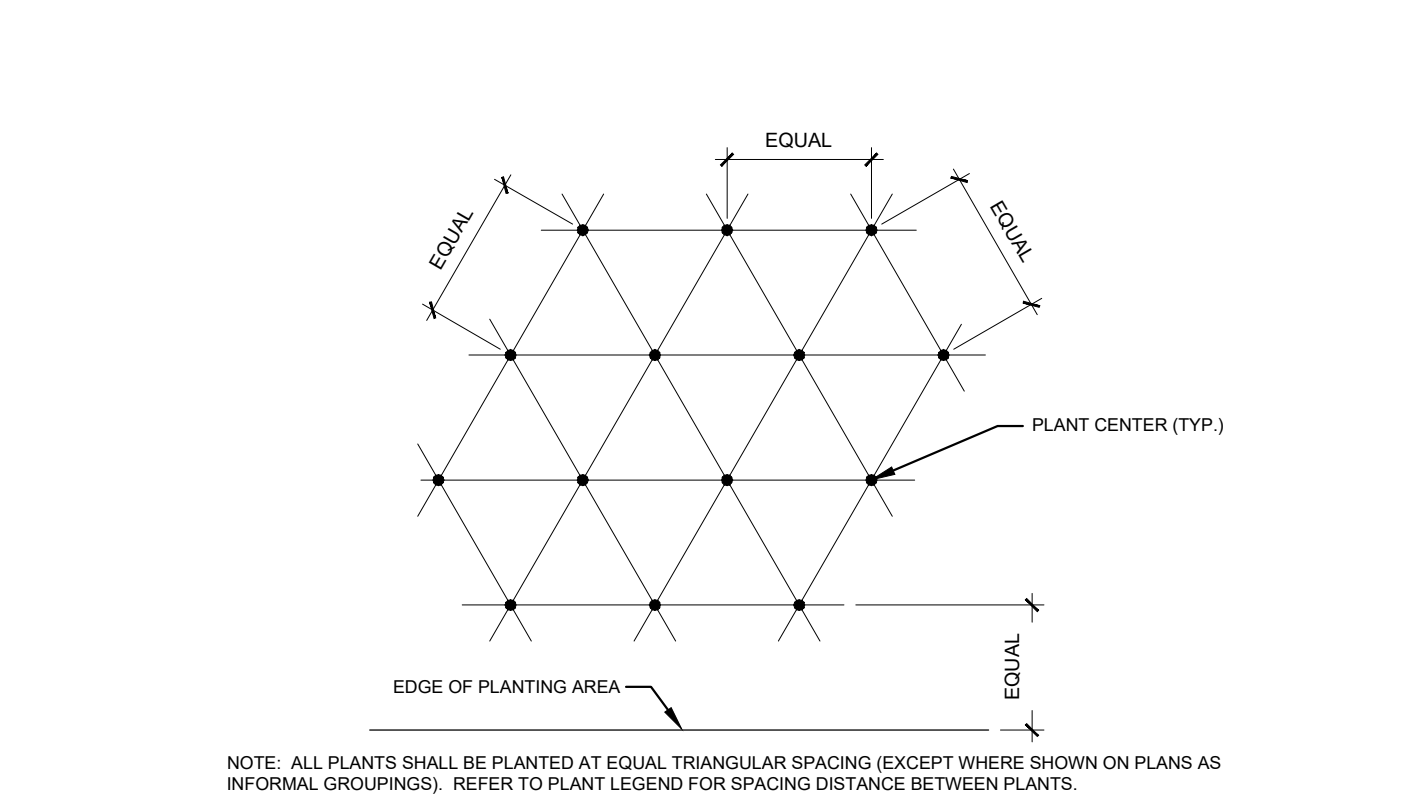
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- NOTES:
1. SCARIFY SIDES OF PLANTING PIT PRIOR TO SETTING TREE.
 2. REMOVE EXCESS SOIL PLACED ON TOP OF THE ROOTBALL THAT COVERS THE ROOT FLARE. THE PLANTING HOLE DEPTH SHALL BE SUCH THAT THE ROOTBALL RESTS ON UNDISTURBED SOIL, AND THE ROOT FLARE IS 2-4\"/>

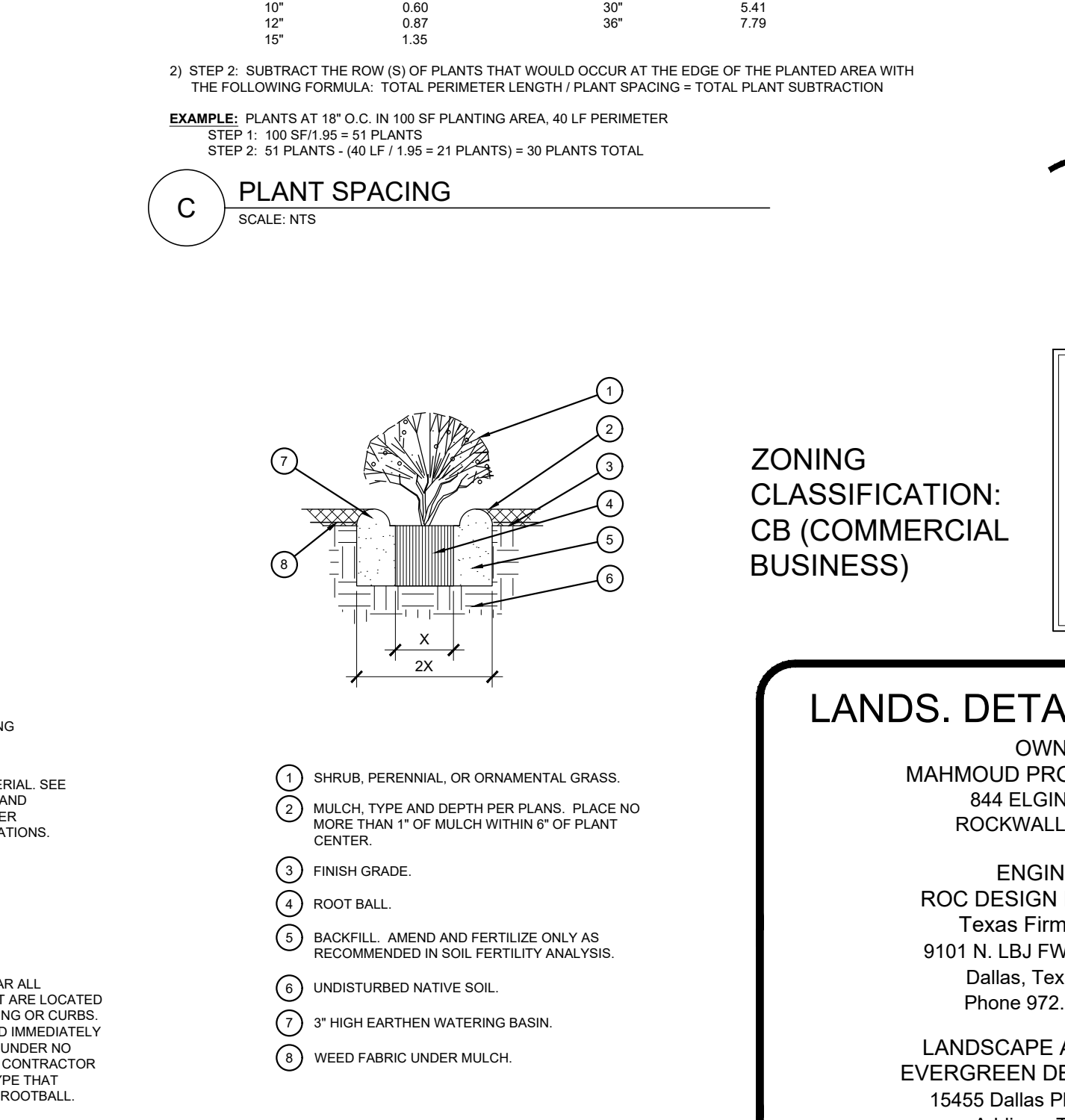
TREE PLANTING

SCALE: NOT TO SCALE



PLANT SPACING

SCALE: NTS



SHRUB AND PERENNIAL PLANTING

SCALE: NTS

ROC

CIVIL
ROC DESIGN ENGINEERS
Superior Civil Engineering Service
Texas Firm F-13744

9101 N. LBJ FWY, SUITE 570
Dallas, Texas 75243
Phone 972.639.8375

LUCAS COMMERCIAL CENTER

995 WEST LUCAS ROAD,
LUCAS, TEXAS 75002



ZONING CLASSIFICATION:

CB (COMMERCIAL BUSINESS)

LANDS. DETAILS & SPECS

OWNER:
MAHMOUD PROPERTIES LLC
844 ELGIN COURT,
ROCKWALL, TX 75082

ENGINEER:
ROC DESIGN ENGINEERS
Texas Firm F-13744
9101 N. LBJ FWY, SUITE 570
Dallas, Texas 75243
Phone 972.639.8375

LANDSCAPE ARCHITECT:
EVERGREEN DESIGN GROUP
15455 Dallas Pkwy., Ste 600
Addison, TX 75001
Phone 800.680.6630

LUCAS COMMERCIAL CENTER
Called 2.25 Acres
MAHMOUD PROPERTIES LLC
DOC. # 20191009001265330
O.P.R.C.C.T.

No.	Revision/Issue	Date

LANDSCAPE DETAILS & SPECIFICATIONS (CB ZONING)

Issued Date: 5-30-22
Project No: 22002

Drawn By: ROC
Checked By: MAK
Designed By: ROC

Project: 220014
Date: 10/13/22
Scale: 1" = 30'-0"

Sheet: LP-2

LUCAS COMMERCIAL CENTER

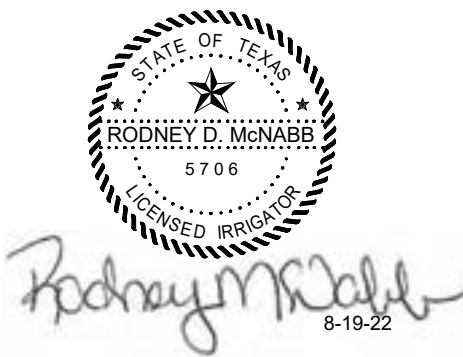
995 WEST LUCAS ROAD,
LUCAS, TEXAS 75002

No.	Revision/Issue	Date

IRRIGATION PLAN

Issued Date:	5-30-22
Project No:	22002
Drawn By:	ROC
Checked By:	MAK
Designed By:	ROC

Project	Sheet
Date	LI-1
Scale	



IRRIGATION DISCLAIMER

THIS DESIGN IS DIAGRAMMATIC. ALL PIPING, VALVES, AND OTHER EQUIPMENT SHOWN WITHIN PAVED AREAS OR OUT OF PROPERTY BOUNDARIES ARE FOR DESIGN CLARIFICATION ONLY, AND SHALL BE INSTALLED IN PLANTING AREAS WITHIN THE PROPERTY LINES OR LIMITS INDICATED ON PLAN. THE IRRIGATION CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL ABOVE-GRADE IRRIGATION EQUIPMENT WITH THE OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO INSTALLATION, OR IRRIGATION CONTRACTOR MAY BE REQUIRED TO MOVE SUCH ITEMS AT HIS OWN COST.

IRRIGATION CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL FINAL QUANTITIES PER DRAWINGS AND SPECIFICATIONS. ANY QUANTITIES PROVIDED ARE PROVIDED AS A CONVENIENCE TO THE CONTRACTOR ONLY AND SHALL NOT BE CONSIDERED ABSOLUTE.

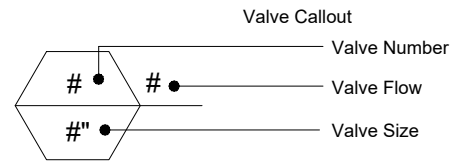
AUTOMATIC DRAIN VALVES AND AIR RELIEF VALVES

INSTALL AUTOMATIC DRAIN VALVES AT THE LOW POINTS OF EACH LATERAL LINE (MIN. 2 PER VALVE) AS PER DETAIL ON SHEET LI-2. INSTALL AIR RELIEF VALVES ON DRIP SYSTEMS AT THE LOCATIONS SHOWN ON THE PLANS, AS AS PER DETAILS.

SLEEVING / WIRING NOTES:

IN ADDITION TO PROVIDING SLEEVES FOR ALL PIPING UNDER ROADWAYS AND WALKWAYS, THE IRRIGATION CONTRACTOR SHALL PROVIDE AND INSTALL SCH. 40 PVC SLEEVES FOR ALL CONTROLLER WIRES OCCURRING UNDER ALL ROADWAYS AND WALKWAYS. SLEEVES FOR CONTROLLER WIRES SHALL BE 2" DIA. AND CONTAIN NO MORE THAN 25 WIRES. **FOR PLAN CLARITY, ONLY SOME REPRESENTATIVE SLEEVES ARE SHOWN; SOME SLEEVES MAY NOT BE SHOWN.**

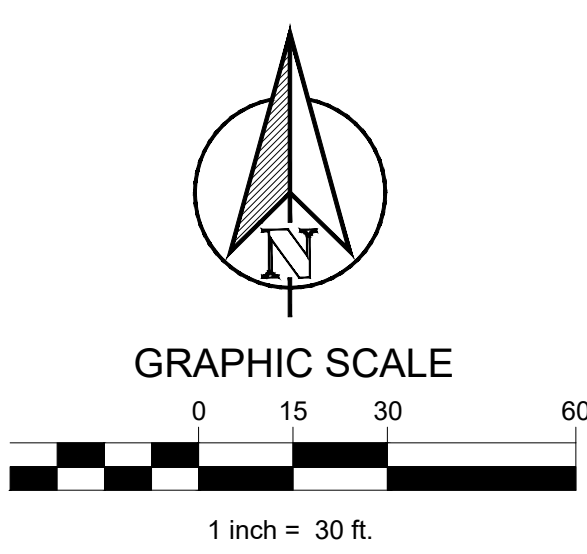
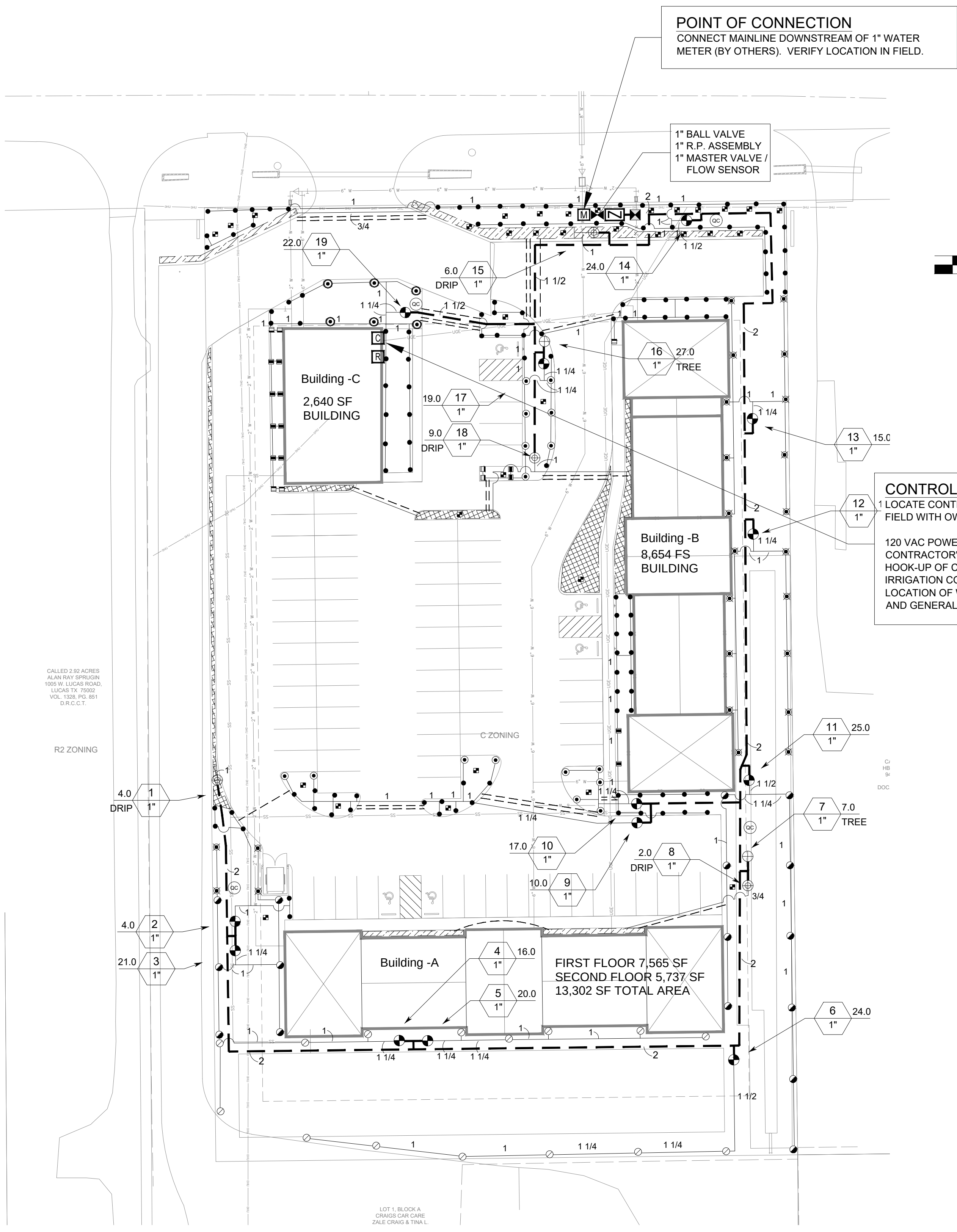
VALVE KEY



IRRIGATION LEGEND

SYMBOL	MANUFACTURER/MODEL
	RAIN BIRD R-VAN-STRIP 1806-SAM-P45, TURF ROTARY, 5'X15' (LCS AND RCS), 5'X30' (SST) HAND ADJUSTABLE MULTI-STREAM ROTARY W/ 1800 TURF SPRAY BODY ON 6.0" POP-UP, WITH CHECK VALVE AND 45 PSI IN-STEM PRESSURE REGULATOR. 1/2" NPT FEMALE THREADED INLET.
	RAIN BIRD R-VAN14 1806-SAM-P45, TURF ROTARY, 8'-14' 45°-270° AND 360° HAND ADJUSTABLE MULTI-STREAM ROTARY W/1800 TURF SPRAY BODY ON 6.0" POP-UP, WITH CHECK VALVE AND 45 PSI IN-STEM PRESSURE REGULATOR. 1/2" NPT FEMALE THREADED INLET.
	RAIN BIRD R-VAN18 1806-SAM-P45, TURF ROTARY, 13'-18' 45°-270° AND 360° HAND ADJUSTABLE MULTI-STREAM ROTARY W/1800 TURF SPRAY BODY ON 6.0" POP-UP, WITH CHECK VALVE AND 45 PSI IN-STEM PRESSURE REGULATOR. 1/2" NPT FEMALE THREADED INLET.
	RAIN BIRD R-VAN24 1806-SAM-P45, TURF ROTARY, 17'-24' 45°-270° AND 360° HAND ADJUSTABLE MULTI-STREAM ROTARY W/1800 TURF SPRAY BODY ON 6.0" POP-UP, WITH CHECK VALVE AND 45 PSI IN-STEM PRESSURE REGULATOR. 1/2" NPT FEMALE THREADED INLET.
	RAINBIRD 1806-SAM-PRS SERIES POP UP SPRAY HEADS WITH ADAPTER AND RAINBIRD #1402 SERIES BUBBLER NOZZLES. (TWO PER TREE) SEE INSTALLATION NOTE #0-5 REGARDING TREE BUBBLER LATERAL PIPE
	RAINBIRD 5006PCSAMR, ADJUSTABLE ARC 6" POP UP ROTARY HEAD, PART CIRCLE #1.5 LA NOZZLE UNLESS NOTED OTHERWISE
	RAINBIRD 5006PCSAMR, ADJUSTABLE ARC 6" POP UP ROTARY HEAD, PART CIRCLE #4.0 NOZZLE UNLESS NOTED OTHERWISE
	RAINBIRD 5006PCSAMR, ADJUSTABLE ARC 6" POP UP ROTARY HEAD, PART CIRCLE #2.5 NOZZLE UNLESS NOTED OTHERWISE
	RAINBIRD XCZ-100-PRB-COM / 150-PRB-COM SERIES AUTOMATIC DRIP VALVE ASSEMBLY WITH 40 PSI PRESSURE REGULATOR
	XCZ-100-PRB-COM - 1" BALL VALVE WITH 1" PESB VALVE AND 1" PRESSURE REGULATING 40PSI QUICK-CHECK BASKET FILTER. 0.3GPM TO 20GPM
	XCZ-150-PRB-LCDR - 1-1/2" PESB-R SCRUBBER GLOBE VALVE WITH SINGLE 1-1/2" PRESSURE REGULATING (40PSI) QUICK-CHECK BASKET FILTERS. FLOW RANGE: 15-62GPM.
	RAINBIRD PEB SERIES ELECTRIC REMOTE CONTROL, "TREE BUBBLER ZONE" VALVE SEE INSTALLATION NOTE #0-5 REGARDING TREE BUBBLER LATERAL PIPE
	RAIN BIRD PEB SERIES 1", 1-1/2", 2" PLASTIC INDUSTRIAL VALVES. LOW FLOW OPERATING CAPABILITY, GLOBE CONFIGURATION.
	AREA TO RECEIVE DRIPLINE RAINBIRD XFS-CV-06-12 SERIES DRIP TUBE IN SHRUB BED INSTALLED AT 2" DEPTH
	AREA TO RECEIVE DRIPLINE RAINBIRD XFS-CV-06-12 SERIES DRIP TUBE IN NARROW TURF AREAS INSTALLED AT 4" DEPTH
	ZURN / WILKINS 375XLB SERIES REDUCED PRESSURE TYPE BACKFLOW PREVENTOR INSTALLED PER CITY CODE WITH SAME SIZE BRONZE BALL VALVE INSTALLED ON THE UP-STREAM SIDE. MOUNTED IN STRONGBOX SMOOTH TOUCH ENCLOSURE.
	LASCO "V101N" SERIES SCH. 80 PVC TRUE UNION BALL VALVE, MAINLINE SIZE
	IRRIGATION WATER METER AND TAP, SIZE AS NOTED ON THE PLAN
	RAINBIRD 33-DNP QUICK COUPLING VALVE WITH LOCKING PURPLE COVER AND 3/4" PVC BALL VALVE
	RAINBIRD ESP12LXMEF SERIES AUTOMATIC WALL MOUNT CONTROLLER WITH ONE ESP12LXMSM12 STATION MODULE
	WR2-RFC RAIN / FREEZE SENSOR LOCATE SENSOR AS FIELD DIRECTED BY THE LANDSCAPE ARCHITECT
	"MASTER" ELECTRIC VALVE (SAME SIZE AS METER) WITH RAINBIRD FLOW SENSOR MODEL #FS100B SERIES
	IRRIGATION LATERAL LINE: CLASS 200
	IRRIGATION MAINLINE: SCHEDULE 40 PVC
	IRRIGATION SLEEVES, SCH. 40 PVC, MIN. TWICE SIZE OF PIPE TO BE INSERTED
	IRRIGATION SLEEVE, SCH. 40 PVC, MIN. TWICE SIZE OF PIPE TO BE INSERTED

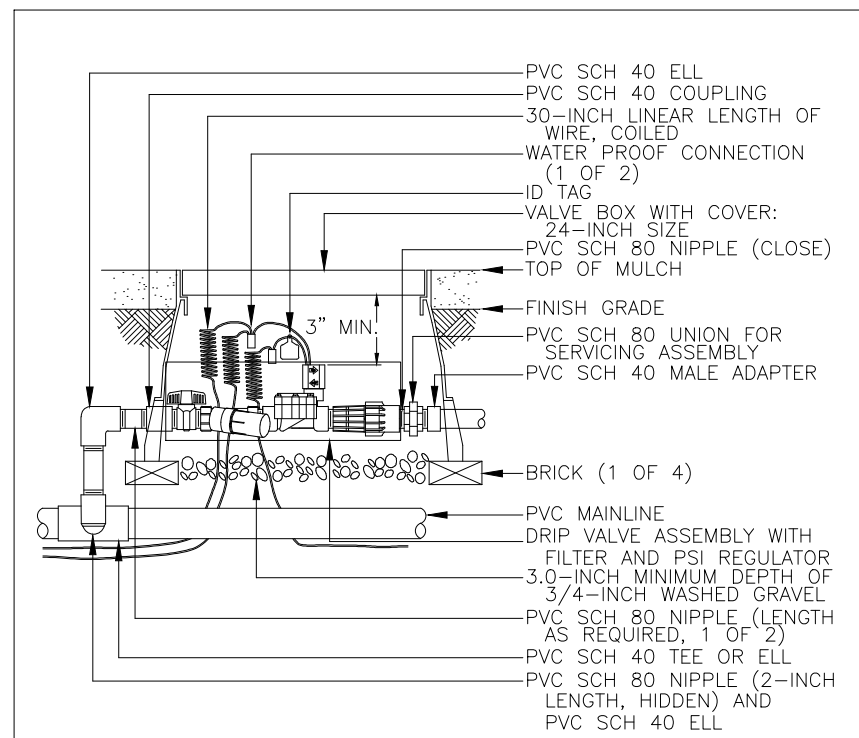
NOTE: L.I.C. SHALL SELECT R-VAN SPRAY NOZZLES FOR "HEAD-TO-HEAD" COVERAGE, ADJUSTED FOR NO OVERSPRAY ONTO WALLS AND WALKS. NO OVERSPRAY INTO STREETS IS PERMITTED.
*** ALL PIPE TO BE SIZED SUCH THAT FLOWS WILL NOT EXCEED VELOCITY OF 5 FPS ***



VICINITY MAP NOT TO SCALE

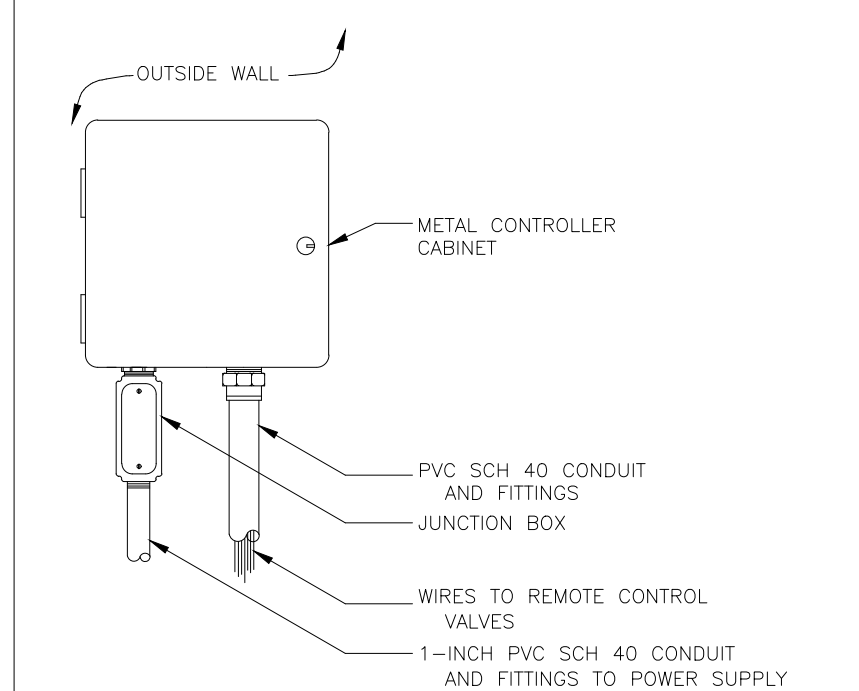


NOTE: THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON DESIGN DRAWINGS, RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE DESIGNER DOES NOT GUARANTEE THAT LOCATIONS SHOWN ARE EXACT. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF UTILITIES. AS SUCH, THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND UNCOVERING EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED IMPROVEMENTS AND UTILITY CONNECTION POINTS PRIOR TO THE START OF CONSTRUCTION TO ASCERTAIN EXACT MATERIALS, LOCATIONS, ELEVATIONS, ETC. AND THEIR POTENTIAL CONFLICT WITH PROPOSED IMPROVEMENTS. GC SHALL CONSULT WITH CONSTRUCTION MANAGER AND ENGINEER AS APPROPRIATE BEFORE PROCEEDING WITH WORK.



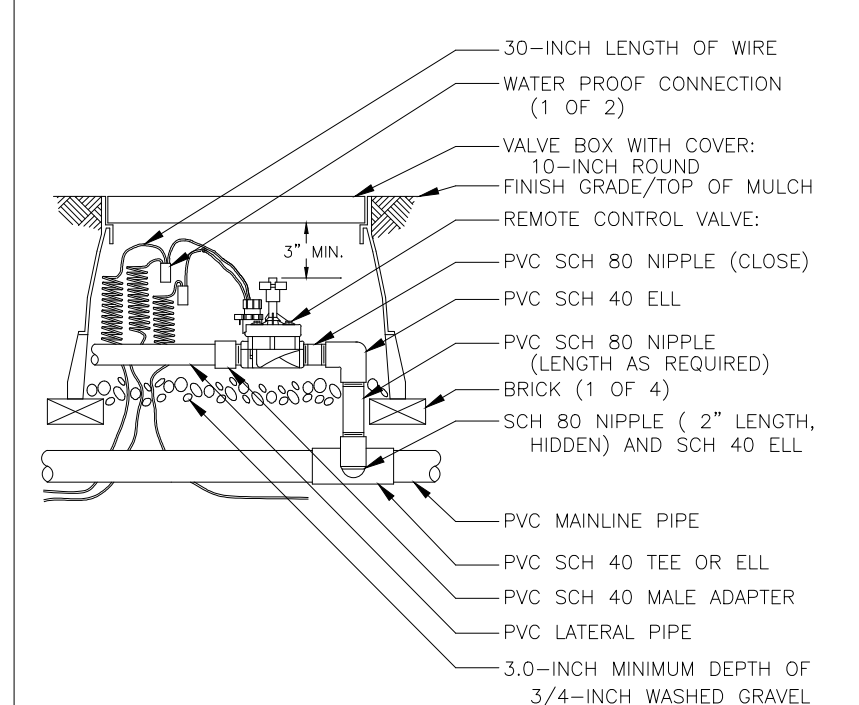
CONTROL ZONE KIT

N.T.S.



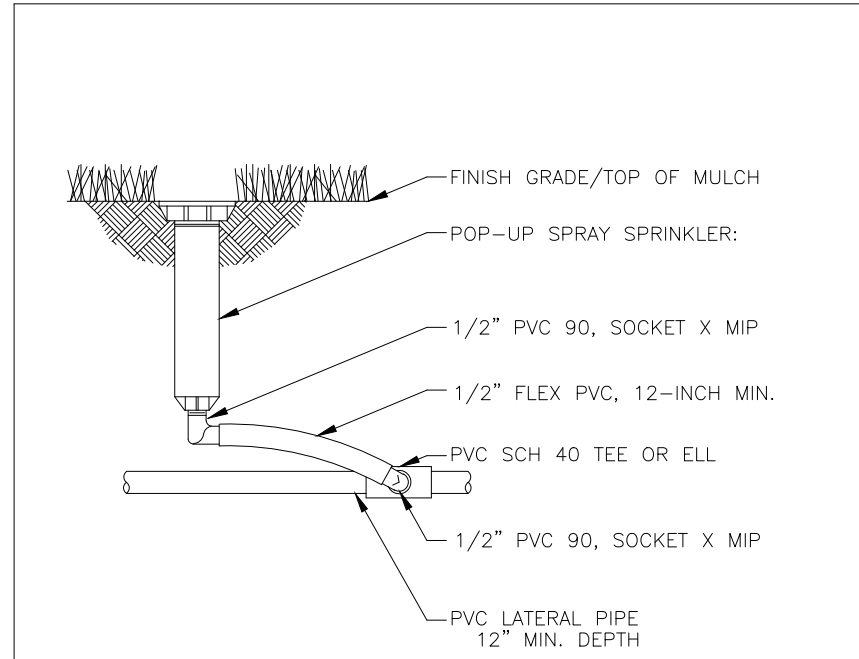
WALL MOUNT CONTROLLER

N.T.S.



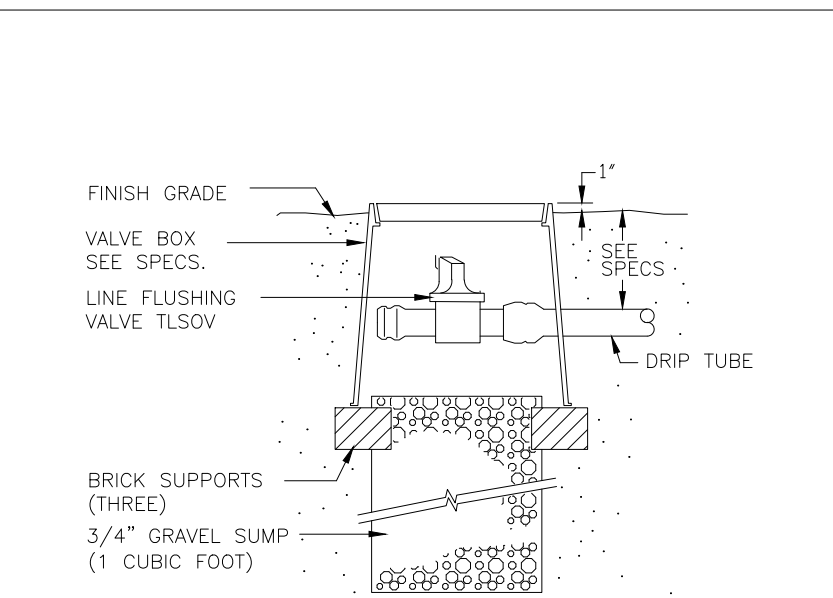
REMOTE CONTROL VALVE

N.T.S.



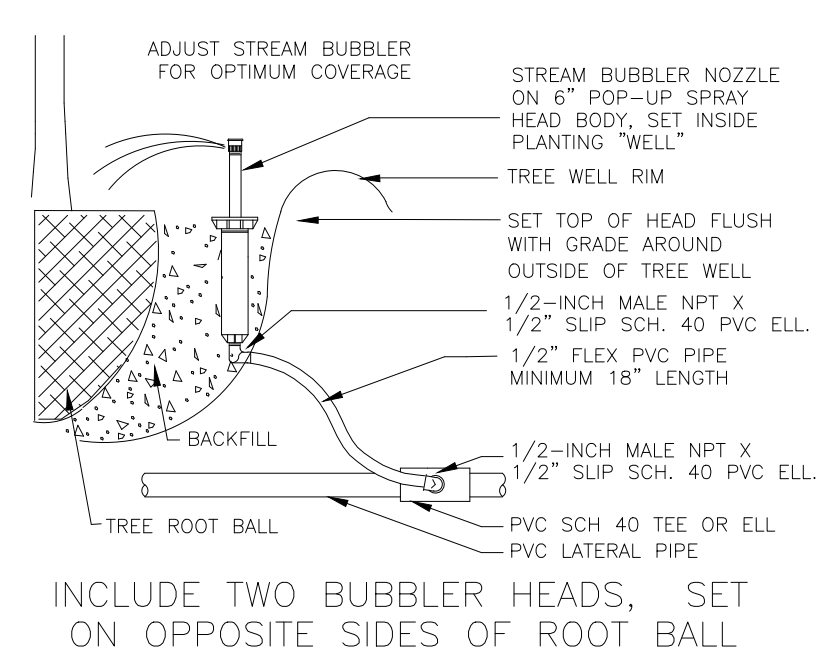
POP-UP SPRAY HEAD

N.T.S.



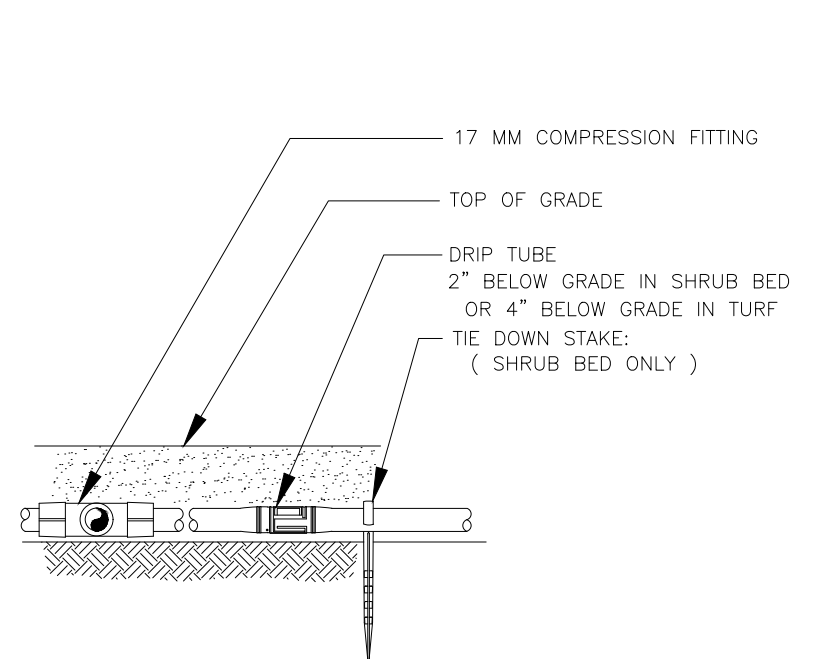
MANUAL LINE FLUSH VALVE

N.T.S.



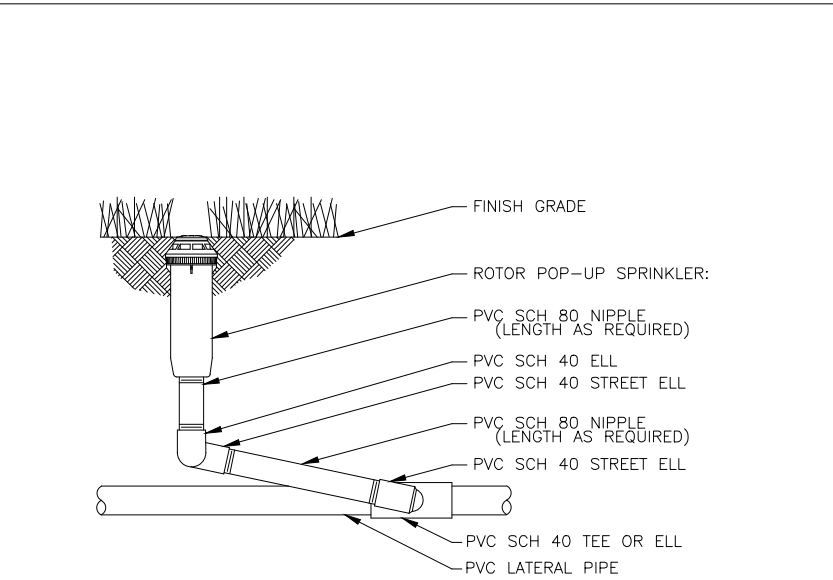
TREE BUBBLER

N.T.S.



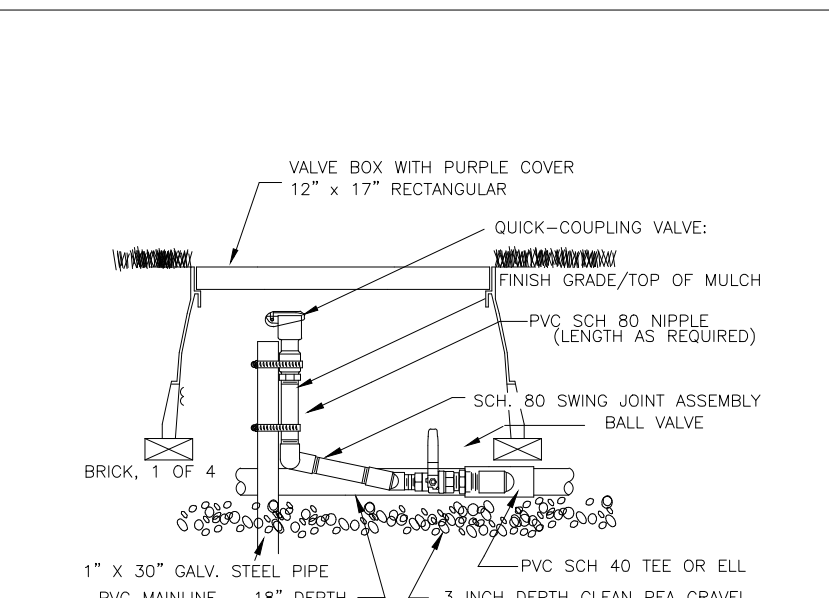
DRIP TUBE

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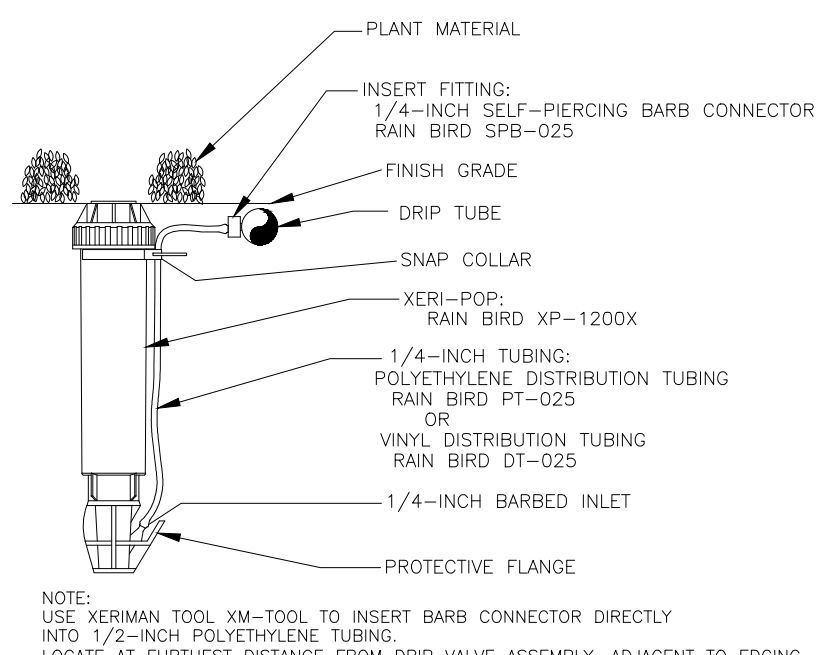
ROTOR POP-UP SPRINKLER

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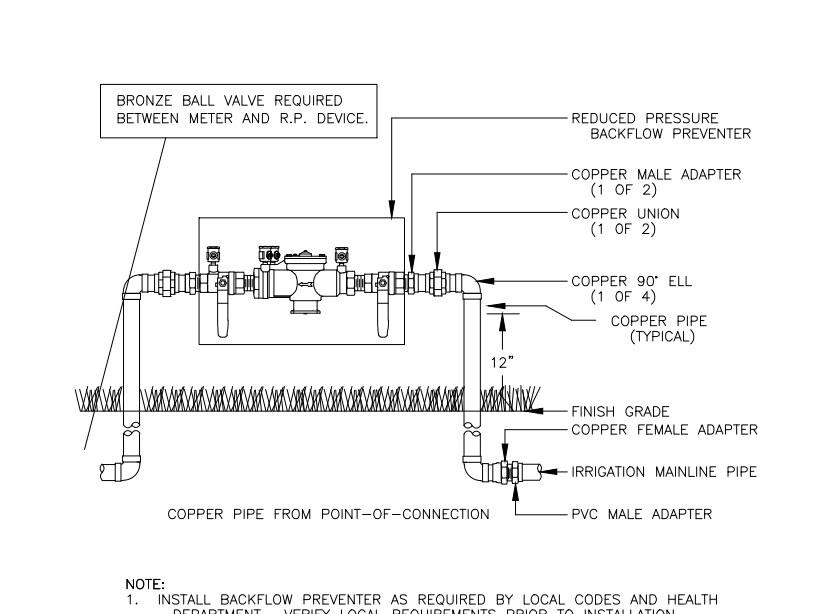
QUICK COUPLER VALVE WITH PVC BALL VALVE

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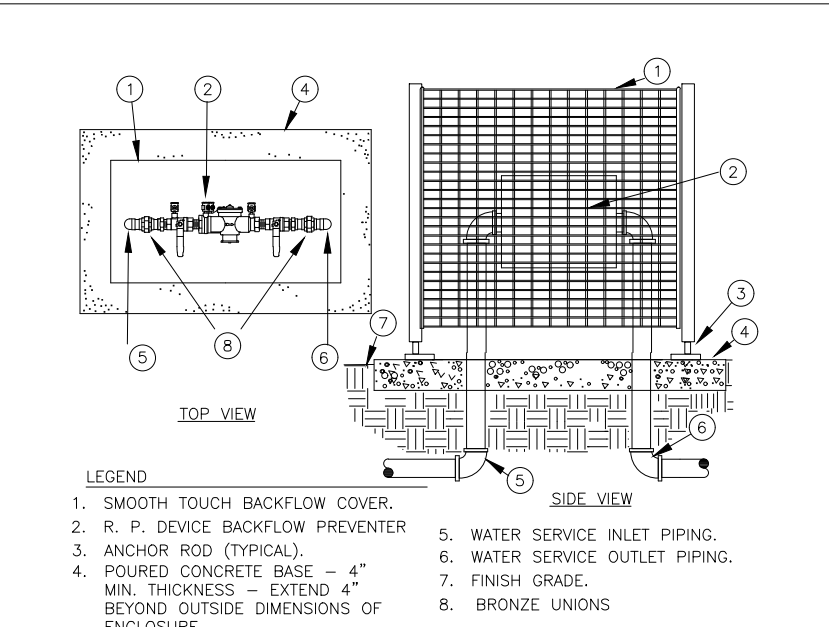
DRIP ZONE INDICATOR

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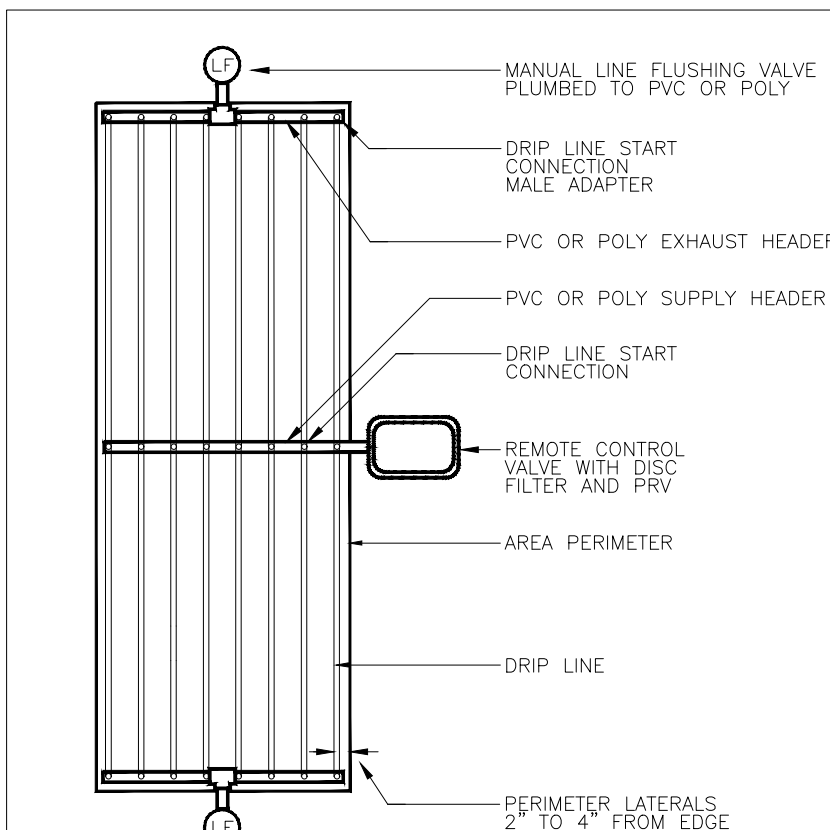
RP DEVICE

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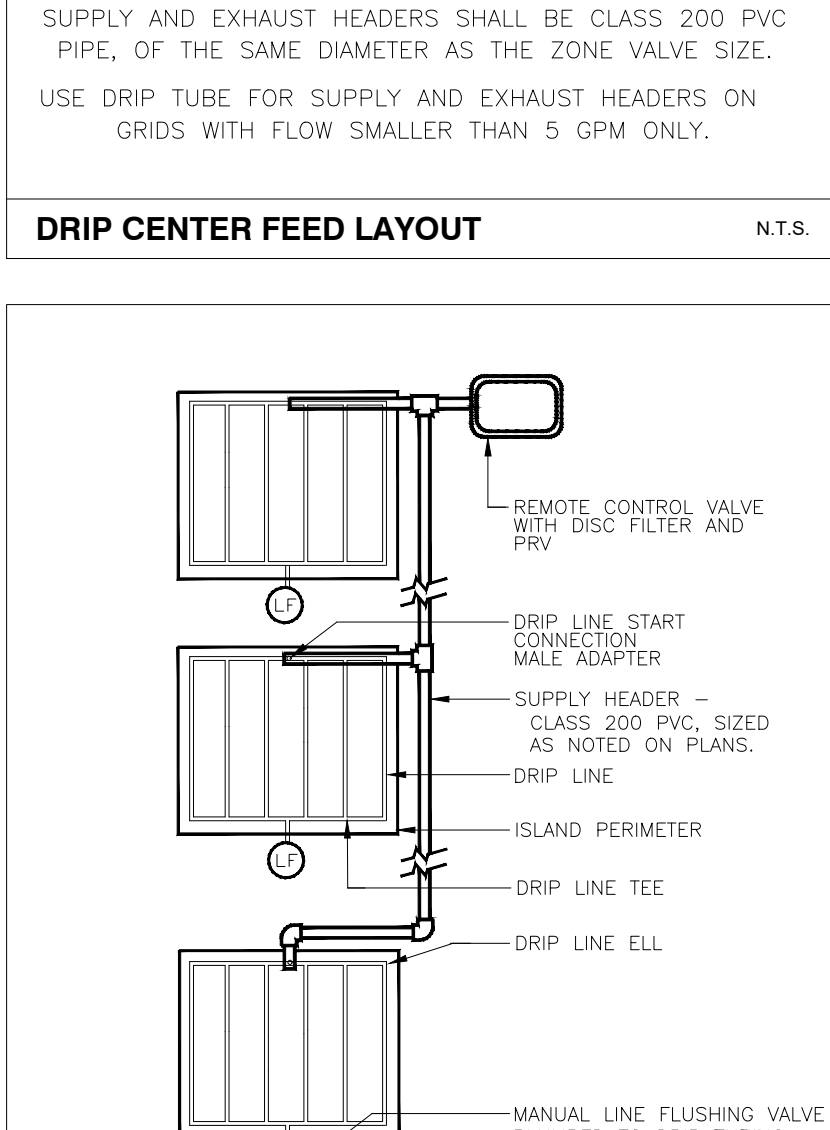
RP DEVICE WITH ENCLOSURE

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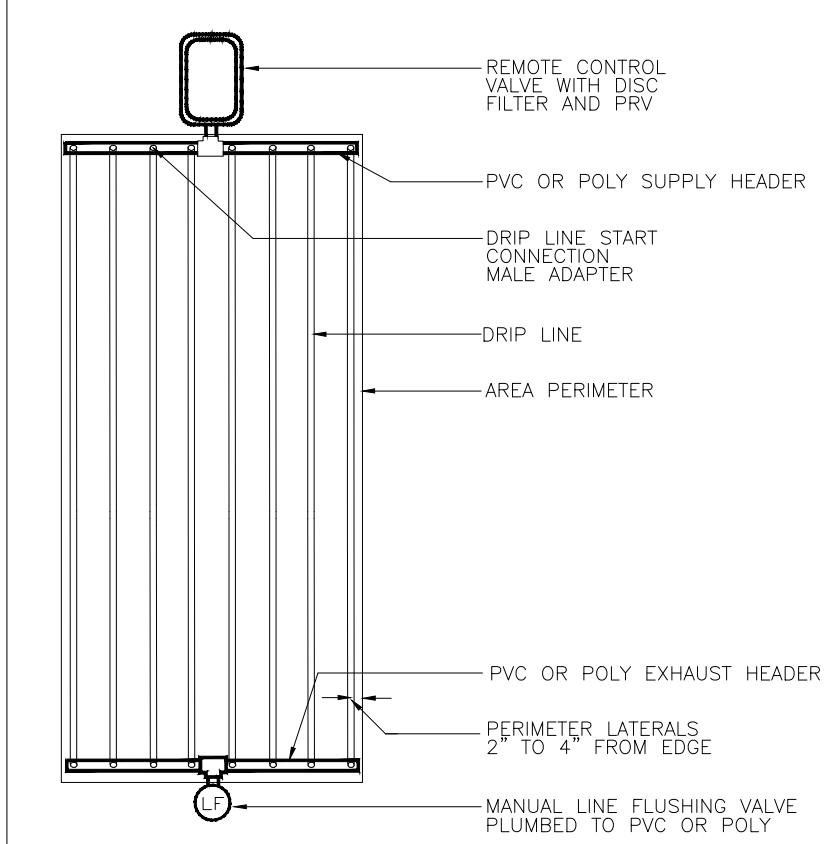
DRIP CENTER FEED LAYOUT

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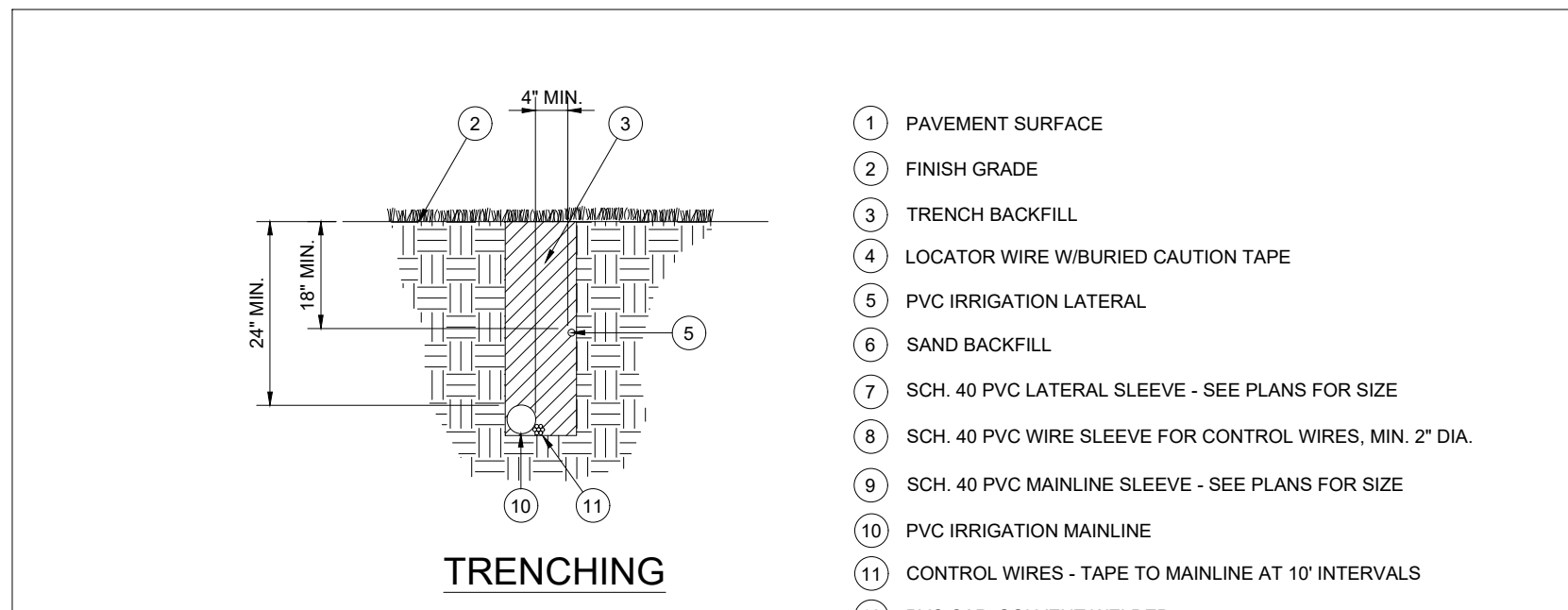
DRIP ISLAND LAYOUT

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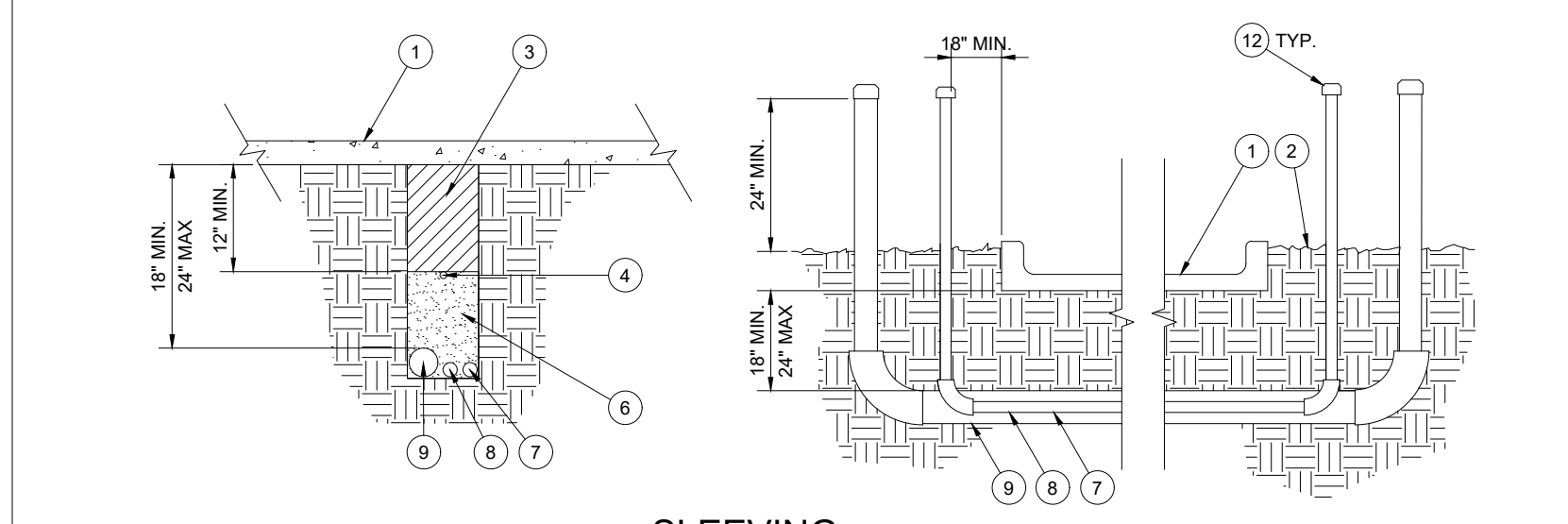


DRIP END FEED LAYOUT

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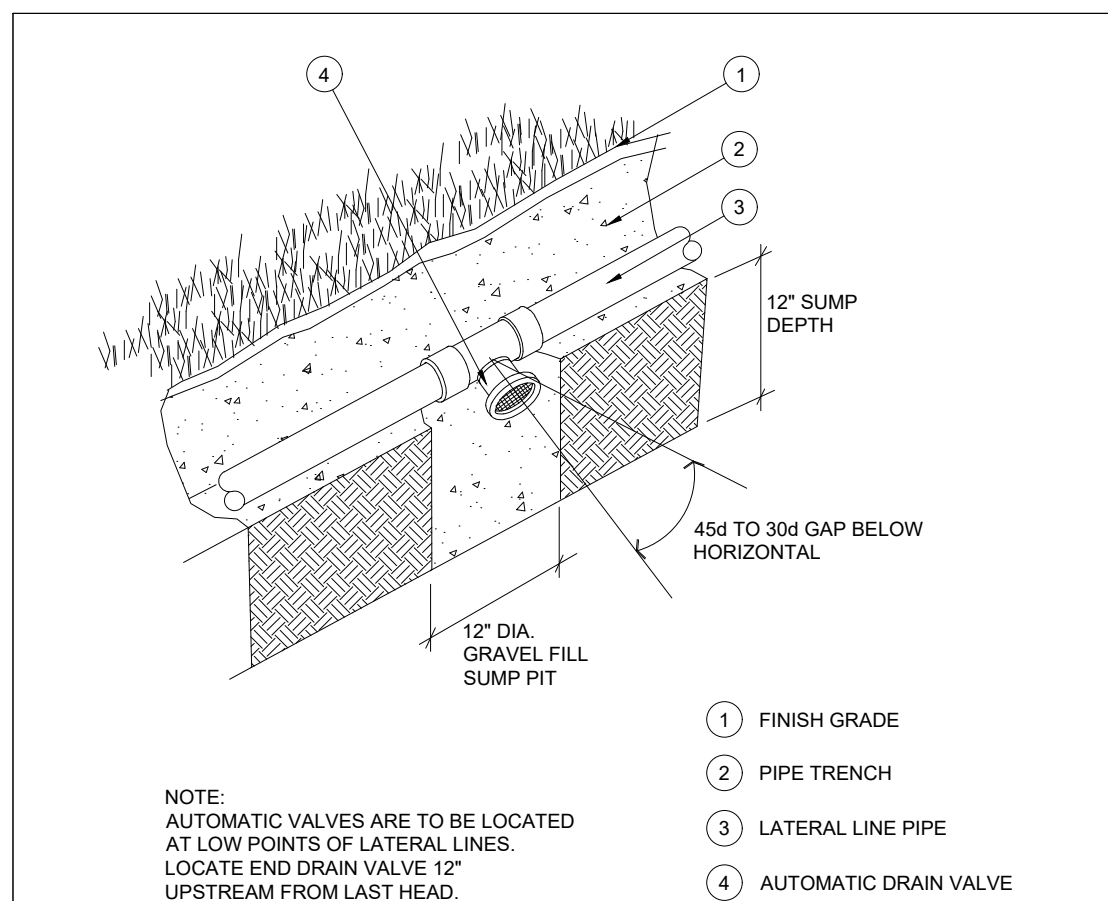
TRENCHING



SLEEVING

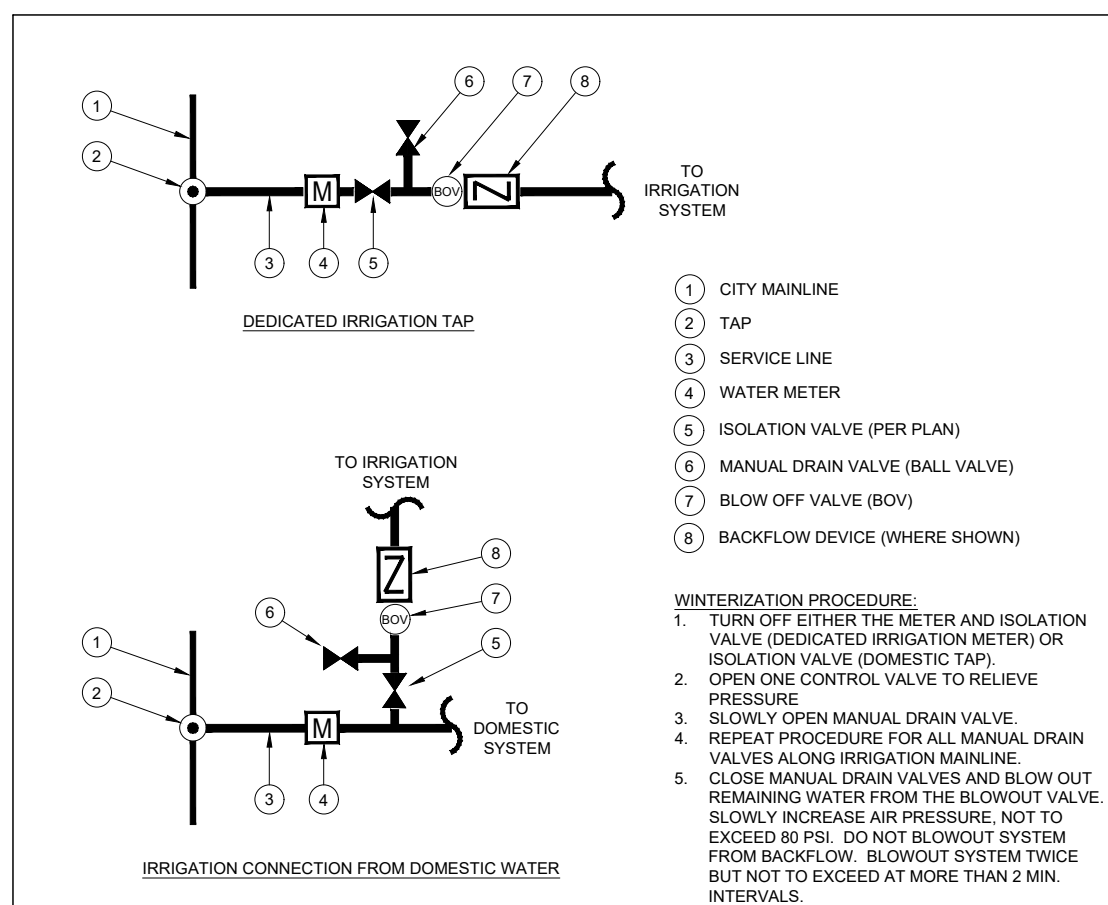
N.T.S.

PIPE AND SLEEVE INSTALLATION



AUTOMATIC DRAIN VALVE

N.T.S.



WATER TAP DIAGRAM

N.T.S.

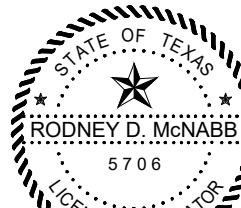
No.	Revision/Issue	Date

IRRIGATION DETAILS

Issued Date: 5-30-22
Project No: 22002

Drawn By: ROC
Checked By: MAK
Designed By: ROC

Project	Sheet
Date	LI-2
Scale	



8-19-22

IRRIGATION SPECIFICATIONS

GENERAL	
A. QUALIFICATIONS OF IRRIGATION CONTRACTOR	
1. ALL WORK SHOWN ON THESE PLANS SHALL BE PERFORMED BY A SINGLE IRRIGATION CONTRACTING FIRM SPECIALIZING IN IRRIGATION SYSTEMS. SEE THE IRRIGATION PLAN FOR SPECIFIC EQUIPMENT AND SYSTEM LAYOUT.	
2. THE IRRIGATION CONTRACTOR MUST HAVE ON ITS STAFF A TEXAS LICENSED IRRIGATOR. AS REGULATED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY, A LICENSED IRRIGATOR OR LICENSED IRRIGATION INSTALLER SHALL BE PRESENT AT THE PROJECT SITE AT ALL TIMES AS WORK IS IN PROGRESS. THE OWNER MAY DEMAND THAT WORK STOP UNTIL THE CONTRACTOR PROVIDES FOR A LICENSED IRRIGATOR OR LICENSED IRRIGATION INSTALLER TO BE PRESENT AT THE PROJECT SITE AND SUPERVISING ALL IRRIGATION WORK.	
3. A LIST OF SUCCESSFULLY COMPLETED PROJECTS OF THIS TYPE, SIZE AND NATURE MAY BE REQUESTED BY THE OWNER FOR FURTHER QUALIFICATION MEASURES.	
B. SCOPE OF WORK	
1. WORK COVERED BY THESE SECTIONS INCLUDES THE FURNISHING AND PAYMENT OF ALL MATERIALS, LABOR, SERVICES, EQUIPMENT, LICENSES, TAXES, FEES, AND ANY OTHER ITEMS THAT ARE NECESSARY FOR THE EXECUTION, INSTALLATION AND COMPLETION OF ALL WORK, SPECIFIED HEREIN AND/OR SHOWN ON THE IRRIGATION PLANS, NOTES, AND DETAILS.	
2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES AND REGULATIONS REQUIRED BY AUTHORITIES HAVING JURISDICTION OVER SUCH WORK, INCLUDING ALL INSPECTIONS AND PERMITS REQUIRED BY FEDERAL, STATE AND LOCAL AUTHORITIES IN SUPPLY, TRANSPORTATION AND INSTALLATION OF MATERIALS. IN CASE OF CONFLICT BETWEEN THESE PLANS AND LOCAL AND/OR STATE CODES, CODES SHALL PREVAIL.	
3. THE INTENT OF THE IRRIGATION SYSTEM IS TO PROVIDE 100% COVERAGE OF ALL LANDSCAPE AREAS. THE IRRIGATION PLAN IS GENERALLY DIAGRAMMATIC; COORDINATE IRRIGATION INSTALLATION WITH UTILITY INSTALLATIONS. ACTUAL LOCATION OF CONTROLLER, BACKFLOW DEVICE, PIPING, VALVES, SPRAY HEADS, DRIP IRRIGATION, AND RELATED EQUIPMENT MAY NEED TO BE ADJUSTED BASED ON ACTUAL SITE CONDITIONS.	
4. FOR CLARITY PURPOSES, SOILS, IRRIGATION LINES AND EQUIPMENT ARE SHOWN IN HARDCAPE AREAS WITHOUT ACCESS SLEEVES; THESE LINES SHALL BE INSTALLED IN A COMMON TRENCH OR AT THE BACK OF CURB IN LANDSCAPE AREAS. MINOR FIELD ADJUSTMENTS SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER.	
PRODUCTS	
A. ALL MATERIALS SHALL BE NEW AND WITHOUT FLAWS OR DEFECTS OF ANY TYPE AND SHALL BE THE BEST OF THEIR CLASS AND KIND. ALL MATERIALS SHALL HAVE A MINIMUM GUARANTEE OF ONE YEAR AGAINST MATERIAL DEFECTS OR DEFECTIVE WORKMANSHIP. ALL MATERIALS SHALL BE OF THE BRANDS AND TYPES NOTED ON THE DRAWINGS OR AS SPECIFIED HEREIN, OR APPROVED EQUAL. THE CONTRACTOR MUST OBTAIN APPROVAL FROM THE IRRIGATION DESIGNER FOR AN APPROVED EQUAL BEFORE INSTALLING SUCH MATERIALS IN THE FIELD, OR THE CONTRACTOR MAY BE REQUIRED TO REPLACE SUCH MATERIALS AT HIS OWN COST.	
B. BACKFLOW PREVENTION DEVICES SHALL BE OF THE SIZE AND TYPE INDICATED ON THE DRAWINGS. INSTALL BACKFLOW PREVENTION UNITS IN ACCORDANCE WITH IRRIGATION CONSTRUCTION DETAILS AND ALL APPLICABLE STATE AND LOCAL CODES AND ORDINANCES.	
C. PIPING	
1. PRESSURE SUPPLY LINES, DOWNSTREAM OF THE POINT-OF-CONNECTION:	
a. SCHEDULE 40 PVC FOR ALL PIPE 2-1/2" OR LESS	
b. CLASS 315 PVC, GASKETED, FOR ALL PIPE 3" AND LARGER	
2. SLEEVING: SCHEDULE 40 PVC	
3. NON-PRESSURE LATERAL LINES (DOWNSTREAM FROM VALVES): CLASS 200 PVC	
4. FITTINGS: SCH. 40 PVC, EXCEPT AS NOTED OTHERWISE	
D. VALVES AND DRIP VALVE ASSEMBLIES: TYPE AND SIZE AS NOTED ON PLANS. EACH VALVE SHALL BEAR A PRE-MANUFACTURED, NUMBERED WATERPROOF TAG BEARING A NUMBER CORRESPONDING TO ITS VALVE SEQUENCE OF OPERATION ON THE CONTROLLER. THE OPERATION SEQUENCE SHALL MATCH THAT AS SHOWN ON THE PLANS.	
E. QUICK COUPLERS, BALL VALVES, AND GATE VALVES: TYPE AND SIZE PER PLANS.	
F. VALVE BOXES: TYPE AND SIZE AS NOTED ON DETAILS. ALL VALVE BOXES SHALL BE LOCKING BOLT-DOWN TYPE, FURNISHED WITH LIDS AND BOLTS. BOXES SHALL BE OF A SIZE TO CONTAIN THE ENTIRE VALVE AND/OR VALVE ASSEMBLY. THE VALVE BOX LID SHALL HAVE THE VALVE STATION NUMBER HEAT-BRANDED INTO THE LID WITH 2" HIGH LETTERS.	
G. FIXED SPRAY HEADS AND ROTORS: PLASTIC BODY POP-UP, WITH A REMOVABLE PLASTIC SPRAY NOZZLE. EXACT TYPE, MODEL, AND NOZZLE SHALL BE AS INDICATED ON PLANS.	
H. INTEGRAL EMITTER DRIP TUBING: TUBING MODEL AND FLOW RATE AS NOTED ON PLANS, WITH INTEGRAL EMITTERS WELDED TO THE INSIDE WALL OF THE TUBING AS AN INTEGRAL PART OF THE TUBING ASSEMBLY.	
I. AUTOMATIC CONTROLLER: TYPE AND MODEL PER PLANS. PROVIDE VANDAL-PROOF ENCLOSURE FOR ALL EXTERIOR INSTALLATIONS. PROVIDE LINE-VOLTAGE DISCONNECT SWITCH WITH GROUND FAULT PROTECTION.	
J. WIRE SPLICES SHALL BE ENCASED IN A WATERPROOF COMPOUND OR GEL. ALL FIELD SPLICES SHALL BE LOCATED IN A 6 INCH ROUND VALVE BOX.	
K. RAIN SENSOR: TYPE AND MODEL PER PLANS.	
METHODS	
A. THIS DESIGN IS DIAGRAMMATIC. ALL PIPING, VALVES, AND OTHER EQUIPMENT SHOWN WITHIN PAVED AREAS OR OUT OF PROPERTY BOUNDARIES ARE FOR DESIGN CLARIFICATION ONLY. AND SHALL BE INSTALLED IN PLANTING AREAS WITHIN THE PROPERTY LINES OR LIMITS INDICATED ON PLAN. THE IRRIGATION CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL ABOVE-GRADE IRRIGATION EQUIPMENT WITH THE OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO INSTALLATION, OR IRRIGATION CONTRACTOR MAY BE REQUIRED TO MOVE SUCH ITEMS AT HIS OWN COST. ENSURE FIELD COORDINATION IS MADE EARLY ON IN THE CONSTRUCTION PHASE SO PLACEMENT LOCATION IS CORRECT.	
B. THE IRRIGATION CONTRACTOR SHALL MEET WITH THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCEMENT OF WORK, AND SHALL OBTAIN ALL ENGINEERING, LANDSCAPE, AND OTHER APPLICABLE PLANS & DOCUMENTS. THE CONTRACTOR SHALL THOROUGHLY REVIEW THE PLANS AND REPORT ANY CONFLICTS OR DISCREPANCIES TO THE LANDSCAPE ARCHITECT AND OWNER'S REPRESENTATIVE IMMEDIATELY.	
C. THE IRRIGATION CONTRACTOR SHALL NOT WILLFULLY INSTALL THE IRRIGATION SYSTEM AS SHOWN ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT UNKNOWN OBSTRUCTIONS, GRADES OR DIMENSIONS EXIST THAT MIGHT NOT HAVE BEEN CONSIDERED IN THE ENGINEERING. SUCH OBSTRUCTIONS OR DIFFERENCES SHALL BE BROUGHT TO THE ATTENTION OF THE IRRIGATION DESIGNER. IN THE EVENT THAT THIS NOTIFICATION IS NOT PERFORMED, THE IRRIGATION CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY REVISIONS AND NECESSARY COSTS. SEE UTILITY PLANS FOR IRRIGATION POINTS OF CONNECTION (TAP) AND DOMESTIC WATER SUPPLY.	
D. THE IRRIGATION CONTRACTOR SHALL PAY ANY AND ALL FEES AND PERMITS ASSOCIATED WITH THE INSTALLATION OF THE IRRIGATION SYSTEM.	
E. AT LEAST SEVEN DAYS BEFORE BEGINNING WORK, CONFIRM THE STATIC WATER PRESSURE IS AT LEAST 65 PSI AND LESS THAN 80 PSI. IF STATIC WATER PRESSURE IS OUTSIDE OF THE STATED RANGE, DO NOT PROCEED WITHOUT FIRST NOTIFYING THE IRRIGATION DESIGNER AND OWNER IN WRITING, AND OBTAINING SUBSEQUENT DIRECTION FOR CORRECTIONAL MEASURES. SHOULD THE IRRIGATION CONTRACTOR CHOOSE TO BEGIN THE INSTALLATION WITHOUT SUCH NOTIFICATION, THE IRRIGATION CONTRACTOR WILL ASSUME THE RESPONSIBILITY FOR ALL COSTS INCURRED TO ENSURE THE SYSTEM IS WORKING PROPERLY. NO CHANGE ORDERS WILL BE AUTHORIZED IN SUCH CIRCUMSTANCES.	
F. THE IRRIGATION CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITY LINES (WATER, SEWER, ELECTRICAL, TELEPHONE, GAS, CABLE, TELEVISION, ETC.) PRIOR TO THE START OF ANY WORK. THE CONTRACTOR SHALL BE FAMILIAR WITH ALL GRADE DIFFERENCES, LOCATIONS OF WALLS, STRUCTURES AND UTILITIES.	
G. COORDINATE WITH THE OWNER THE PROPOSED LOCATIONS OF THE AUTOMATIC CONTROLLER AND ANY REQUIRED SLEEVES THROUGH THE BUILDING FOR CONTROL WIRES.	
H. TRENCHING NEAR EXISTING TREES	
1. CONTRACTOR SHALL NOT DISTURB ROOTS 1-1/2" AND LARGER IN DIAMETER WITHIN THE CRITICAL ROOT ZONE (CRZ) OF EXISTING TREES, AND SHALL EXERCISE ALL POSSIBLE CARE AND PRECAUTIONS TO AVOID INJURY TO TREE ROOTS, TRUNKS, AND BRANCHES. THE CRZ IS DEFINED AS A CIRCULAR AREA EXTENDING OUTWARD FROM THE TREE TRUNK, WITH A RADIUS EQUAL TO 1" FOR EVERY 1" OF TRUNK DIAMETER-AT-BREAST-HEIGHT (4.5' ABOVE THE AVERAGE GRADE AT THE TRUNK).	
2. ALL EXCAVATION WITHIN THE CRZ SHALL BE PERFORMED USING HAND TOOLS. NO MACHINE EXCAVATION OR TRENCHING OF ANY KIND SHALL BE ALLOWED WITHIN THE CRZ.	
3. AFTER ALIGNMENT OF PIPES TO AVOID TREE ROOTS 1-1/2" AND LARGER IN DIAMETER, WHERE TREE ROOTS 1-1/2" AND LARGER IN DIAMETER ARE ENCOUNTERED IN THE FIELD, TUNNEL UNDER SUCH ROOTS. WRAP EXPOSED ROOTS WITH SEVERAL LAYERS OF BURLAP AND KEEP MOIST. CLOSE ALL TRENCHES WITHIN THE CANOPY DRIP LINES WITHIN 24 HOURS.	
4. ALL SEVERED ROOTS SHALL BE HAND PRUNED WITH SHARP TOOLS AND ALLOWED TO AIR-DRY. DO NOT USE ANY SORT OF SEALERS OR WOUND PAINTS.	
J. BACKFILL	
1. ALL BACKFILL MATERIAL SHALL BE SUBJECT TO APPROVAL BY THE OWNER. BACKFILL MATERIAL SHALL BE FREE FROM RUBBISH, ROCK LARGER THAN 1", LARGE STONES, BRUSH, SOIL, FROZEN MATERIAL, OR OTHER UNSUITABLE SUBSTANCES THAT MAY DAMAGE PIPE DURING THE BACKFILLING OPERATIONS. SEPARATE OUT ROCKS LARGER THAN 1" INCH IN ANY DIRECTION FROM EXCAVATED MATERIAL, AND REMOVE FROM AREAS TO RECEIVE LANDSCAPING. COVER FOR BOTH TOP AND SIDES OF PIPE SHALL BE A MINIMUM OF 2 INCHES OF ROCK-FREE SOIL, SAND, OR OTHER APPROVED MATERIAL.	
2. IN THE EVENT THAT THE MATERIAL FROM THE EXCAVATION OR TRENCHING IS FOUND TO BE UNSUITABLE FOR USE IN BACKFILL, IT SHALL BE REMOVED FROM THE SITE AND PROPERLY AND LEGALLY DISPOSED OF BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL THEN PURCHASE AND USE FURNISH SUITABLE BACKFILL MATERIAL CONSISTING OF EARTH, LOAM, SANDY CLAY, SAND OR OTHER APPROVED MATERIALS FREE OF DEBRIS.	
K. BACKFLOW PREVENTER INSTALLATION: CONTRACTOR SHALL MAKE CONNECTIONS TO EXISTING WATER SOURCES AT LOCATION SHOWN ON PLANS AND AS APPROVED BY THE OWNER, AND SHALL MAKE ANY MINOR CHANGES IN LOCATION AS MAY BE NECESSARY DUE TO ACTUAL SITE CONDITIONS. BACKFLOW PREVENTER HEIGHT SHALL BE AS PER LOCAL CODES AND IRRIGATION DETAILS. INSTALL A BRASS BALL VALVE IMMEDIATELY UPSTREAM OF THE BACKFLOW DEVICE TO SERVE AS AN ISOLATION VALVE. TO EVERY EXTENT POSSIBLE, INSTALL BACKFLOW PREVENTER IN A LOCATION SCREENED FROM PUBLIC VIEW (SUCH AS BEHIND A SHRUB ROW).	
L. PIPING	
1. PIPE SIZE SHALL CONFORM TO THOSE SHOWN ON THE DRAWINGS. NO SUBSTITUTIONS OF SMALLER PIPE SIZES SHALL BE PERMITTED, BUT SUBSTITUTIONS FOR LARGER SIZES MAY BE APPROVED.	
2. MAINLINE PIPE AND WIRES SHALL BE INSTALLED WITH A MINIMUM COVER OF 18 INCHES. LATERAL PIPE SHALL BE INSTALLED WITH A MINIMUM COVER OF 12 INCHES.	
3. ASSEMBLE ALL THREADED FITTINGS WITH TEFLON TAPE, WHICH SHALL BE APPLIED TO MALE THREADS ONLY.	
4. ALL SOLVENT-WELDED CONNECTIONS SHALL BE MADE WITH APPROVED SOLVENT-WELD PRIMER AND GLUE.	
5. PIPE SHALL BE INSTALLED WITH A MINIMUM OF 4" HORIZONTAL CLEARANCE FROM ANY OTHER PIPE AND 2" VERTICAL CLEARANCE FROM ANY PIPES THAT CROSS OVER OR UNDER.	
M. VALVES	
1. VALVES SHALL BE INSTALLED PER MANUFACTURER'S DIRECTIONS AND THE IRRIGATION DETAILS.	
2. VALVE BOXES SHALL BE INSTALLED FLUSH WITH THE GRADE, WITH CLEAN PEA GRAVEL LOCATED BELOW THE VALVE AS NOTED ON THE DETAILS. LOCATE BOXES WITHIN 12" TO 24" OF SIDEWALKS OR LANDSCAPE EDGES, WITH TOPS OF BOXES 1" ABOVE FINISH GRADE IN TURF, AND 3" ABOVE FINISH GRADE IN SHRUB AREAS (TO AVOID BEING COVERED BY MULCH).	
3. EACH VALVE BOX COVER SHALL BE HEAT-BRANDED WITH THE CONTROLLER STATION NUMBER.	
4. DO NOT INSTALL MORE THAN TWO VALVES IN A JUMBO BOX.	
N. DRIP IRRIGATION EQUIPMENT SHALL BE INSTALLED PER MANUFACTURER'S DIRECTIONS AND THE IRRIGATION DETAILS.	
1. SUBSURFACE DRIP LINES SHALL BE BURIED NO MORE THAN 2" BELOW FINISH GRADE.	
2. DRIP LINES MOUNTED ON GRADE SHALL BE LOCATED BENEATH LANDSCAPE FABRIC, AND SECURED IN PLACE WITH WIRE STAPLES AT A MAXIMUM OF 48" ON CENTER.	
O. SPRAY, ROTOR, AND BUBBLER HEADS	
1. ALL SPRAY AND ROTOR HEAD LOCATIONS SHALL BE STAKED, FLAGGED AND/OR OTHERWISE CLEARLY MARKED ON THE GROUND PRIOR TO INSTALLATION. SPRINKLER HEAD STAKING SHALL BE INSPECTED AND APPROVED BY THE OWNER'S REPRESENTATIVE BEFORE INSTALLATION.	
2. ALL SPRAY HEADS SHALL BE CONNECTED WITH A 12 INCH MINIMUM LENGTH OF 1/2 INCH FLEX PVC. THE FLEX PVC SHALL BE SOLVENT WELDED TO SCHEDULE 40 PVC FITTINGS WITH WELD-ON #795 SOLVENT AND #P-70 PRIMER. ALL ROTORS SHALL BE CONNECTED TO LATERAL LINES WITH PRE-MANUFACTURED SWING JOINTS.	
3. ALL ROTOR/ SPRAY ROTOR BUBBLER HEADS SHALL BE SET PERPENDICULAR AND FLUSH TO FINISH GRADE AND WITH A CLEARANCE OF FOUR INCHES (MINIMUM) FROM THE EDGE OF ANY BUILDINGS, WALLS, BOULDERS, AND HARDCAPE, UNLESS OTHERWISE SPECIFIED.	
4. ALL ROTOR, SPRAY AND BUBBLER HEADS AND VALVES SHALL BE FLUSHED AND ADJUSTED FOR OPTIMUM COVERAGE WITH MINIMUM OVERSPRAY ON WALKS, STREETS, WALLS, ETC.	
5. LATERAL PIPE TO TREE STREAM BUBBLER HEADS IS OMITTED FOR GRAPHIC CLARITY. CONNECT TREE BUBBLER HEADS TO VALVES AS SHOWN WITH CLASS 200 PVC PIPE SIZED TO ALLOW A MAXIMUM FLOW VELOCITY OF 5 FEET PER SECOND.	
P. AUTOMATIC CONTROLLER	
1. INSTALL THE CONTROLLER AT THE LOCATION INDICATED BY THE OWNER. INSTALL CONTROLLER WITH A BACKUP BATTERY AS RECOMMENDED BY THE MANUFACTURER.	
2. THE IRRIGATION CONTRACTOR SHALL COORDINATE 120 V A.C. ELECTRICAL POWER TO CONTROLLER AND DEDICATE ONE (1) 20-AMP BREAKER FOR EACH CONTROLLER. IT SHALL BE THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO MAKE THE FINAL HOOK-UP FROM THE ELECTRICAL SOURCE TO THE CONTROLLER UNIT ONLY.	
3. ALL VALVE CONTROL WIRE SHALL BE TWO-WIRE CABLE BY CONTROLLER MANUFACTURER, DIRECT BURIAL. NO SPLICES SHALL BE ALLOWED EXCEPT AT VALVES AND CONTROLLER, WHERE SPLICES MAY BE NECESSARY DUE TO EXCESSIVELY LONG WIRE RUNS. THE CONTRACTOR SHALL MAKE ALL SPLICES IN 6" ROUND VALVE BOXES WITH 3M'S "TAP DIRECT BURIAL SPLICE KIT". THE CONTRACTOR SHALL LABEL ALL WIRES WITH WATERPROOF TAGS AND MARKERS AT ALL SPLICES AND VALVE MANIFOLDS, AND SHALL LEAVE A 24" COIL OF EXCESS WIRE AT EACH CONNECTION.	
4. CONNECT ALL DIRECT BURIAL WIRES TO VALVES USING RAIN BIRD WC20 (UNLESS OTHERWISE SPECIFIED).	
5. THE IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ALL CONTROL WIRE SLEEVES AND PIPE SLEEVES UNDER PAVED AREAS PRIOR TO PAVING - SEE SLEEVING NOTES.	
Q. INSTALL THE RAIN SENSOR IN THE VICINITY OF THE CONTROLLER, AND COORDINATE LOCATION WITH THE OWNER. IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO ENSURE THE RAIN SENSOR IS PLACED IN A LOCATION WHERE IT CAN RECEIVE ADEQUATE RAINFALL WITHOUT OBSTRUCTIONS. IF IT IS PLACED IN AN INADEQUATE LOCATION, THE IRRIGATION CONTRACTOR MAY BE REQUIRED TO RELOCATE IT AT NO ADDITIONAL COST TO THE OWNER.	
R. ALL IRRIGATION EQUIPMENT NOT OTHERWISE DETAILED OR SPECIFIED SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS.	
S. QUALITY CONTROL	
1. PERFORM COVERAGE TESTS AFTER SPRINKLER SYSTEM IS COMPLETED, BUT PRIOR TO ANY PLANTING AND PERFORM TESTING IN THE PRESENCE OF THE IRRIGATION DESIGNER AND THE CONSTRUCTION MANAGER.	
2. TEST SYSTEM TO ASSURE THAT ALL LAWN AND PLANTING AREAS ARE WATERED COMPLETELY AND UNIFORMLY.	
3. MAKE ALL NECESSARY ADJUSTMENTS TO PROVIDE COMPLETE COVERAGE, INCLUDING REALIGNMENT OF HEADS AND REPLACEMENT OF NOZZLES.	
U. CLEAN UP	
1. DURING IRRIGATION EXCAVATION AND INSTALLATION, KEEP ALL PAVEMENT CLEAN AND ALL WORK AREAS IN A NEAT, ORDERLY CONDITION.	
2. DISPOSED LEGALLY OF ALL EXCAVATED MATERIALS OFF THE PROJECT SITE.	
V. INSPECTION AND ACCEPTANCE	
1. UPON COMPLETION OF THE WORK, THE IRRIGATION CONTRACTOR SHALL PROVIDE THE SITE CLEAN, FREE OF DEBRIS AND TRASH, AND SUITABLE FOR USE AS INTENDED. THE IRRIGATION CONTRACTOR SHALL THEN REQUEST AN INSPECTION BY THE OWNER TO DETERMINE FINAL ACCEPTABILITY.	
2. WHEN THE INSPECTED WORK DOES NOT COMPLY WITH THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL REPLACE AND/OR REPAIR THE REJECTED WORK TO THE OWNER'S SATISFACTION WITHIN 24 HOURS.	
3. THE MAINTENANCE PERIOD WILL NOT COMMENCE UNTIL THE WORK HAS BEEN RE-INSPECTED BY THE OWNER AND FOUND TO BE ACCEPTABLE. AT THAT TIME, A WRITTEN NOTICE OF FINAL ACCEPTANCE WILL BE ISSUED BY THE OWNER, AND THE MAINTENANCE AND GUARANTEE PERIODS WILL COMMENCE.	
4. CONTROLLER CHART: THE IRRIGATION CONTRACTOR SHALL PROVIDE A 11" X 17" COLOR-CODED, LAMINATED COPY OF THE IRRIGATION LAYOUT AND PLACE IT IN THE CONTROLLER'S COVER. THE CONTROLLER CHART SHALL CLEARLY DELINEATE THE AREAS COVERED BY EACH VALVE, USING A SEPARATE COLOR FOR EACH ZONE.	
5. TURN THE FOLLOWING ITEMS IN TO THE OWNER UPON COMPLETION OF THE INSTALLATION:	
a. QUICK COUPLER KEYS (2)	
b. CONTROLLER MANUAL (1)	
c. CONTROLLER KEYS (2)	
d. A MINIMUM OF (2) COPIES OF RECORD DRAWINGS. A RECORD DRAWING IS A RECORD OF ALL CHANGES THAT OCCURRED IN THE FIELD AND THAT ARE DOCUMENTED THROUGH CHANGE ORDERS, ADDENDA, OR CONTRACTOR/CONSULTANT DRAWING REVISIONS.	
W. REFER TO THE PLANTING SPECIFICATIONS FOR ADDITIONAL CONDITIONS OF FINAL ACCEPTANCE AND START OF THE MAINTENANCE PERIOD.	
X. THE IRRIGATION SYSTEM SUPPLIED AND INSTALLED SHALL BE WARRANTED (LABOR AND MATERIALS) TO REMAIN OPERATIONAL FOR A PERIOD OF 12 MONTHS AFTER THE DATE OF FINAL ACCEPTANCE. DURING THIS PERIOD, THE CONTRACTOR SHALL ALSO REPAIR ANY SETTLEMENT OF THE IRRIGATION TRENCHES.	
2. BY THE END OF THE WARRANTY PERIOD, ANY IRRIGATION PART THAT IS EITHER NON-OPERATIONAL OR THAT IS OPERATING BELOW STANDARDS AS DETERMINED BY THE OWNER, SHALL BE REMOVED FROM THE SITE AND SHALL BE REPLACED. REPLACEMENTS SHALL BE OF THE SAME KIND AS SPECIFIED IN THE IRRIGATION LEGEND, AND SHALL BE INSTALLED AS ORIGINALLY SPECIFIED.	
3. IRRIGATION PARTS DAMAGED OR IMPAIRED DUE TO ACTS OF GOD, VANDALISM, AND/OR THE OWNER'S IMPROPER MAINTENANCE SHALL NOT BE COVERED BY THIS WARRANTY.	
Y. SHOULD THE PERMITTING JURISDICTION REQUIRE AN IRRIGATION AUDIT, THE IRRIGATION CONTRACTOR SHALL RETAIN THE SERVICES OF A THIRD-PARTY CERTIFIED LANDSCAPE IRRIGATION AUDITOR, AT NO ADDITIONAL COST TO THE OWNER.	

IRRIGATION LEGEND

SYMBOL	MANUFACTURER/MODEL
	RAIN BIRD R-VAN-STRIP 1806-SAM-P45, TURF ROTARY, 5'X15' (LCS AND RCS), 5'X30' (SST) HAND ADJUSTABLE MULTI-STREAM ROTARY W/ 1800 TURF SPRAY BODY ON 6.0" POP-UP, WITH CHECK VALVE AND 45 PSI IN-STEM PRESSURE REGULATOR. 1/2" NPT FEMALE THREADED INLET.
	RAIN BIRD R-VAN14 1806-SAM-P45, TURF ROTARY, 8'-14' 45"-270" AND 360" HAND ADJUSTABLE MULTI-STREAM ROTARY W/1800 TURF SPRAY BODY ON 6.0" POP-UP, WITH CHECK VALVE AND 45 PSI IN-STEM PRESSURE REGULATOR. 1/2" NPT FEMALE THREADED INLET.
	RAIN BIRD R-VAN18 1806-SAM-P45, TURF ROTARY, 13'-18' 45"-270" AND 360" HAND ADJUSTABLE MULTI-STREAM ROTARY W/1800 TURF SPRAY BODY ON 6.0" POP-UP, WITH CHECK VALVE AND 45 PSI IN-STEM PRESSURE REGULATOR. 1/2" NPT FEMALE THREADED INLET.
	RAIN BIRD R-VAN24 1806-SAM-P45, TURF ROTARY, 17'-24' 45"-270" AND 360" HAND ADJUSTABLE MULTI-STREAM ROTARY W/1800 TURF SPRAY BODY ON 6.0" POP-UP, WITH CHECK VALVE AND 45 PSI IN-STEM PRESSURE REGULATOR. 1/2" NPT FEMALE THREADED INLET.
	RAINBIRD 1806-SAM-PRS SERIES POP UP SPRAY HEADS WITH ADAPTER AND RAINBIRD #1402 SERIES BUBBLER NOZZLES. (TWO PER TREE) SEE INSTALLATION NOTE #0-S REGARDING TREE BUBBLER LATERAL PIPE
	RAINBIRD 5006PCSAMR, ADJUSTABLE ARC 6" POP UP ROTARY HEAD, PART CIRCLE, #1.5 LA NOZZLE UNLESS NOTED OTHERWISE
	RAINBIRD 5006PCSAMR, ADJUSTABLE ARC 6" POP UP ROTARY HEAD, PART CIRCLE, #4.0 NOZZLE UNLESS NOTED OTHERWISE
	RAINBIRD 5006PCSAMR, ADJUSTABLE ARC 6" POP UP ROTARY HEAD, PART CIRCLE, #2.5 NOZZLE UNLESS NOTED OTHERWISE
	RAINBIRD XC2-100-PRB-COM / 150-PRB-COM SERIES AUTOMATIC DRIP VALVE ASSEMBLY WITH 40 PSI PRESSURE REGULATOR
	XC2-100-PRB-COM - 1" BALL VALVE WITH 1" PESB VALVE AND 1" PRESSURE REGULATING 40PSI QUICK-CHECK BASKET FILTER. 0.3GPM TO 20GPM.
	XC2-150-PRB-LCDR - 1-1/2" PESB-R SCRUBBER GLOBE VALVE WITH SINGLE 1-1/2" PRESSURE REGULATING (40PSI) QUICK-CHECK BASKET FILTERS. FLOW RANGE: 15-62GPM.
	RAINBIRD PEB SERIES ELECTRIC REMOTE CONTROL, "TREE BUBBLER ZONE" VALVE SEE INSTALLATION NOTE #0-S REGARDING TREE BUBBLER LATERAL PIPE
	RAIN BIRD PEB SERIES 1", 1-1/2", 2" PLASTIC INDUSTRIAL VALVES. LOW FLOW OPERATING CAPABILITY, GLOBE CONFIGURATION.
	AREA TO RECEIVE DRIPLINE
	RAINBIRD XFS-CV-06-12 SERIES DRIP TUBE IN SHRUB BED INSTALLED AT 2" DEPTH
	AREA TO RECEIVE DRIPLINE
	RAINBIRD XFS-CV-06-12 SERIES DRIP TUBE IN NARROW TURF AREAS INSTALLED AT 4" DEPTH
	ZURN / WILKINS 375XLB SERIES REDUCED PRESSURE TYPE BACKFLOW PREVENTOR INSTALLED PER CITY CODE WITH SAME SIZE BRONZE BALL VALVE INSTALLED ON THE UP-STREAM SIDE. MOUNTED IN STRONGBOX SMOOTH TOUCH ENCLOSURE.
	LASCO "V101N" SERIES SCH. 80 PVC TRUE UNION BALL VALVE, MAINLINE SIZE
	IRRIGATION WATER METER AND TAP, SIZE AS NOTED ON THE PLAN
	RAINBIRD 33-DNP QUICK COUPLING VALVE WITH LOCKING PURPLE COVER AND 3/4" PVC BALL VALVE
	RAINBIRD ESP12LXMEF SERIES AUTOMATIC WALL MOUNT CONTROLLER WITH ONE ESPLXMSM12 STATION MODULE
	WR2-RFC RAIN / FREEZE SENSOR LOCATE SENSOR AS FIELD DIRECTED BY THE LANDSCAPE ARCHITECT
	"MASTER" ELECTRIC VALVE (SAME SIZE AS METER) WITH RAINBIRD FLOW SENSOR MODEL #FS100B SERIES
	IRRIGATION LATERAL LINE: CLASS 200
	IRRIGATION MAINLINE: SCHEDULE 40 PVC
	IRRIGATION SLEEVES, SCH. 40 PVC, MIN. TWICE SIZE OF PIPE TO BE INSERTED
	IRRIGATION SLEEVE, SCH. 40 PVC, MIN. TWICE SIZE OF PIPE TO BE INSERTED

NOTE: L.I.C. SHALL SELECT R-VAN SPRAY NOZZLES FOR "HEAD-TO-HEAD" COVERAGE, ADJUSTED FOR NO OVERSPRAY ONTO WALLS AND WALKS. NO OVERSPRAY INTO STREETS IS PERMITTED. *** ALL PIPE TO BE SIZED SUCH THAT FLOWS WILL NOT EXCEED VELOCITY OF 5 FPS ***

WATER-CONSERVATION

IRRIGATION WATER CONSERVATION SHALL BE ACCOMPLISHED THROUGH THE FOLLOWING EFFORTS:

1. SEPARATE TURF / SHRUB ZONES FOR SCHEDULING ADJUSTMENT
2. NO OVERSPRAY ONTO PAVEMENT PERMITTED
3. USE OF RAIN SENSOR SHUT OFF OVER-RIDE DEVICE

CRITICAL ANALYSIS

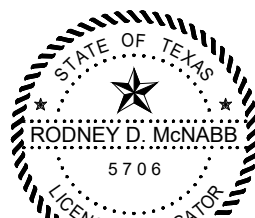
P.O.C. NUMBER: 01
Water Source Information: Irrigation Meter, By Others

FLOW AVAILABLE
Water Meter Size: 1"
Flow Available: 30 gpm

PRESSURE AVAILABLE
Static Pressure at POC: 68.00 psi
Service Line Size: 1"
Length of Service Line: 20.00 ft
Pressure Available: 65.00 psi

DESIGN ANALYSIS
Maximum Multi-valve Flow: 27.0 gpm
Flow Available at POC: 30.0 gpm
Residual Flow Available: 3.0 gpm

Critical Station: 6
Design Pressure: 35.00 psi
Friction Loss: 0.85 psi
Fittings Loss: 0.08 psi
Elevation Loss: 0.00 psi
Loss through Valve: 2.90 psi
Pressure Req. at Critical Station: 38.61 psi
Loss for Fittings: 1.10 psi
Loss for Main Line: 2.9 psi
Loss for POC to Valve Elevation: 0.0 psi
Loss for Backflow: 1.0 psi
Loss for Master Valve: 3.0 psi
Loss for Water Meter: 3.4 psi
Critical Station Pressure at POC: 60.01 psi
Pressure Available: 65.00 psi
Residual Pressure Available: 4.99 psi



Rodney McNabb
8-19-22



ROC
CIVIL
ROC DESIGN ENGINEERS
Superior Civil Engineering Service
Texas Firm F-13744

9101 N. LBJ FWY, SUITE 570
Dallas, Texas 75243
Phone 972.639.8375

LUCAS COMMERCIAL CENTER

995 WEST LUCAS ROAD,
LUCAS, TEXAS 75002

IRRIGATION SPECIFICATIONS

Issued Date: 5-30-22
Project No: 22002

Drawn By: ROC
Checked By: MAK
Designed By: ROC

Project
Date
Scale

Sheet

LI-3



Site Plan Minimum Requirements

Project Name Lucas Commercial Center

Preparer Majed Khalaf

This checklist is provided to assist you in addressing the minimum requirements for Site Plan submission. An application is incomplete unless all applicable information noted below is submitted to the Development Services Department. Indicate that all information is included on the submitted plans by checking the box next to the required information. Checking the box certifies to the City that you have completely and accurately addressed the issue. If not applicable, indicate an "N/A" next to the box. Return this completed form at the time of application submittal.

If an exception or modification to the regulations is requested, the reason and/or request for each shall be provided directly on the plan and on a separate sheet on letterhead with sufficient details as to allow a determination by the appropriate approval body. Additional information may be required. Reference the specific requirement/s.

Plans are expected to be submitted complete and accurate in all detail as shown by the checklist. Should plans be determined to be incomplete, they may either be returned to the applicant without further review or marked up with needed changes, depending on the amount/magnitude of changes or corrections needed. Please keep in mind that changes/additions to previously incomplete or inaccurate plans may generate additional comments at re-submittal of corrected Plans. Therefore, diligence to the initial submittal is paramount to expediting the review process.

Included

- ☒ Site boundary is indicated by a heavy solid line intermittent with 2 dash lines, dimensioned with bearings and distances; indicate and label lot lines, setback lines, and distance to the nearest cross street.
- ☒ Site location/vicinity map clearly showing the location of the subject property with cross streets is provided. Indicate scale or NTS and provide north arrow.
- ☒ A north arrow is provided with drawing oriented such as that north is located to the top or left side of drawing sheet.
- ☒ A written and bar scale is provided.
- ☒ A title block is in the lower right corner that includes large, boldly printed "SITE PLAN", owner and engineer's names, addresses and phone numbers, subdivision name, lot number/s, block number or letter, original submission date, and a log of resubmittal/revision dates since submitted to the City.
- ☒ Tree masses are clouded with accurate canopy widths shown to determine critical root zone where located within close proximity to existing or proposed pavement.
- ☒ Flood plain boundary is shown and indicates F.I.R.M. Community panel number and date, and flow line of drainage ways and creeks, as applicable.
- ☒ Existing topography lines are shown with a light dashed line and proposed contours are shown by a medium weight solid line. Topography is shown at minimum five (5) foot contours referenced to sea level city datum. Spot elevations and additional contours may be required in certain areas depending on topography.
- ☒ Accurately located, labeled and dimensioned footprint of proposed structure(s) is/are shown by a solid heavy line.

- X Accurately located, labeled and dimensioned footprint of existing structure(s) to remain is/are shown by a heavy dashed line.
- X Accurately located and labeled footprint of structure(s) proposed for demolition is/are shown by a light dashed line. Structures to be demolished are clearly labeled/ identified.
- X Accurately located footprint of nonresidential structure(s) on abutting properties is/are shown by a light, solid line.
- X Adjacent property lines within 500 feet of the subject property lines are shown by a light dashed line.
- X Adjacent zoning and land use (e.g. bank with drive-thru, office building, undeveloped etc.) within 500 feet of the property line is indicated.
- Adjacent property owner(s), or subdivision name, with lot, block and recording information, is shown.
- X Finished floor elevation of existing and/or proposed structures is referenced to sea level datum.
- Full width of streets and alley rights-of-way with centerlines and backs of curbs or paving edges within 200 feet of the property line are dimensioned and street name or use is labeled.
- Driveways within 200 feet of the property line:
 - o Are accurately located and dimensioned.
 - o Distances to the nearest on-site driveway and/or off-site driveway is accurately located and dimensioned as measured from the centerlines.
 - o Distance to the nearest street is shown as measured from the end of curb-return radius of the adjacent street to the driveway centerline.
 - o Typical radii are shown.
- Drive-thru lanes, menu board location, pick-up window/s, maneuvering area, stacking lanes and escape lanes are indicated and dimensioned.
- Sidewalks and barrier-free ramps (BFR) within 200 feet of and on the subject property are shown, dimensioned and labeled.
- Off-site streets and roads:
 - o Existing and proposed roadways with medians and median openings adjacent to and within 200 feet of the project site are shown and dimensioned.
 - o Medians, median openings with associated left- turn lanes, continuous left turn lanes, transition and stacking lengths are shown and dimensioned within 200 feet of the project site.
 - o Existing, proposed, and required acceleration/deceleration lanes within 200 feet of the project site are shown dimensioned, stacking length indicated, and right-of-way dedication is indicated as applicable.
- X All parking spaces are shown, group numbered, and typical dimensions are provided. Indicate required two-foot overhang, as applicable.
- X Handicapped parking spaces and barrier-free access points are shown, dimensioned, and labeled.
- X Loading and maneuvering areas are indicated, labeled, and dimensioned. Loading area screening method is indicated and labeled.
- X Dumpster and/or compactor locations and screening methods are shown. Indicate screening materials and height for all sides. Screening material is to match structure façade with enclosure having solid metal gates. Specs and sketch available from staff.
- X Paving materials, boundaries and type are indicated.
- X Access easements are accurately located/ tied down, labeled and dimensioned.
- Off-site parking is shown and dimensioned from the off-site parking area to the structure or use as applicable. A parking easement or shared parking agreement is required and is provided in draft format.
- Fire lanes are shown and dimensioned at a minimum of 24 feet in width, with internal radii of not less than 20 feet. Label and use an approximate 20 percent shade for fire lanes to differentiate from other paving. Ensure that required labeling and dimensioning is readable through shading.

- ~~X~~ Proposed dedications and reservations of land for public use including, but not limited to, rights-of-way, easements, park land, open space, drainage ways, floodplains and facility sites are accurately located, dimensioned and labeled.
- ~~X~~ Screening walls are shown with dimensions and materials. An inset is provided that shows the wall details and column placement as applicable. Plans for masonry walls are to be signed and sealed by a structural engineer and approved by the City Engineer. Channeled or slip-panel/pre-cast walls are prohibited.
- ~~X~~ The location of living screens are shown and labeled. Details of a living screen are provided on the Landscape Plan indicating plant species/name, height at planting, and spacing.
- ~~X~~ A lighting plan that shows location by fixture type is included. A lighting data chart is used to reference fixture type (i.e. pole or wall pack), maximum height, those requiring shielding, those requiring skirting, wattage and foot-candles of each fixture. No lighting source (i.e. bulb, reflector, etc.) is allowed to be visible from an adjacent property or public street.
- ~~X~~ Existing and proposed water and sanitary sewer lines, storm sewer pipe, with sizes, valves, fire hydrants, manholes, and other utility structures on-site or immediately adjacent to the site are shown and labeled.
- ~~X~~ Boundaries of detention areas are located. Indicate above and/or below ground detention.
- ~~X~~ Monument signage location is indicated. Details of construction materials and architecture are shown on required Building Elevation/Façade Plan. Color, type and texture are to match that of the building.
- ~~X~~ Communication towers are shown and a fall distance/collapse zone is indicated.
- ~~X~~ Provide Site Data Summary Table that references distinct numbers for each lot and all buildings (existing and proposed) that includes, where applicable:
 - o Existing Zoning
 - o Proposed use(s) for each structure
 - o Total lot area less right-of-way dedications by square feet and acres
 - o Square footage of building(s)
 - o Building height (stories and feet)
 - o Percent of lot coverage (building footprint square footage/lot square footage).
 - o For apartment developments, number of living units broken down by number of bedrooms and minimum square footage for each dwelling unit.
 - o Parking required by use with applicable parking ratios indicated for each use
 - o Parking provided indicated
 - o Handicap parking required as per Code of Ordinances and TAS/ADA requirements
 - o List of exceptions and/or variance/s requested or previously granted, including dates and approving authority
- ~~X~~ Improvements are proposed in TXDOT Right-of-Way and one (1) full set of civil engineering plans has been submitted to: Mohammad Khoshkar, TXDot Office, P.O.Box 90 McKinney, Texas 75069-0090, phone (972)547-2237



Architectural Plan Checklist

Project Name Lucas Commercial Center

Preparer Ahmed Dardary

This checklist is provided to assist you in addressing the minimum requirements for **Landscape Plan** submission. An application is incomplete unless all applicable information noted below is submitted to the Development Services Department. Confirm that all information is included on the submitted plans by checking the box next to the required information.

Initialing the box certifies to the City that you have completely and accurately addressed the issue. This completed form must be returned at the time of application submittal.

If an exception or modification to the regulations is requested, the reason and/or request for each shall be provided on a separate sheet on letterhead with sufficient details as to allow a determination by the appropriate approving body. Additional information may be required. Reference the specific requirement. All exception/modification requests must also be specifically listed on the plan/s.

Plans are expected to be submitted complete in all detail as included by the checklist. Should plans be determined to be incomplete, they may either be returned to the applicant without further review or marked up with needed changes.

- ☒ Elevations of all four sides labeled North, East, South, and West with the front elevation designated as such.
- ☒ Materials calculations table showing for each elevation
 - ☐ Total surface area of each elevation
 - ☐ List of materials (including glazing) with square footage of each material per elevation and percentage of each material per elevation
- ☒ Building dimensions (if multiple heights are used, provide dimension for each)
- ☒ Provide estimated allowable wall mounted signage size for each elevation.
- ☒ Add the following notes:
 - ☐ "This Façade Plan is for conceptual purposes only. All building plans require review and approval of the Building Inspection Department".
 - ☐ "All mechanical units shall be screened from public view"
 - ☐ "When permitted, exposed utility boxes and conduits shall be painted to match the building"
 - ☐ All signage areas and locations are subject to approval by the Building "Inspection Department"
 - ☐ "Roof access shall be provided internally, unless otherwise permitted by the Building Official"
- ☒ Cross sections of sight lines may be requested to verify screening of mechanical units.
- ☐ A sample board with a maximum size of 11" x 17" shall be provided with color and materials samples to correspond to the Facade Plan.
- ☒ Designate color and materials location on elevations.
- ☒ Additional information as requested by staff to clarify the proposed development and compliance with minimum development requirements.



Landscape Plan Checklist

Project Name Lucas Commercial Center

Preparer Rodney McNapp

This checklist is provided to assist you in addressing the minimum requirements for **Landscape Plan** submission. An application is incomplete unless all applicable information noted below is submitted to the Development Services Department. Confirm that all information is included on the submitted plans by checking the box next to the required information. **Initialing each item certifies to the City that you have completely and accurately addressed the issue.** This completed form must be returned at the time of application submittal.

If an exception or modification to the regulations is requested, the reason and/or request for each shall be provided on a separate sheet on letterhead with sufficient details as to allow a determination by the appropriate approving body. Additional information may be required. Reference the specific requirement. All exception/modification requests must also be specifically listed on the plan/s.

Plans are expected to be submitted complete in all detail as included by the checklist. Should plans be determined to be incomplete, they may either be returned to the applicant without further review or marked up with needed changes.

- ☒ Plans shall be to same scale as approved site plan.
- ☒ A minimum of 15% of the gross area must be landscaped.
- ☒ The area between the property line and the street shall be included in the landscape plan and shall be maintained by the abutting property owner.
- ☒ Heights of landscaping materials shall be such that they do not create safety hazards for vehicular traffic by block sight lines at ingress points.
- ☒ The specifications shall state the common names and scientific names (genus species), sizes, and quantity of all materials to be utilized.
- ☒ Property abutting a different zoning district must be screened by a living screen. Planting which serves as a living screen shall be evergreens with an initial minimum six-foot (6') height and provided a solid visual barrier within two (2) years after planting.
- ☐ Additional information as needed for clarity.

Lucas Code of Ordinances - Sec. 3.18.022 Minimum requirements

- ☒ The title block in the lower, right-hand corner containing the following: date, scale, site location map, north arrow, and the names, addresses, and telephone numbers of both the property owners and the person preparing the plan.
- ☒ The addition name, block and lot description along with business name placed in the title block in the lower right-hand corner of the plan.
- ☒ The property boundary dimensions of the site (bearings and distances).
- ☒ All existing and proposed public and private streets and sidewalks including street and sidewalk widths.
- ☒ All existing services: fire hydrants, water mains, and sewer mains within the tract and immediately adjacent to it with pipe size and location indicated.

- X All proposed water and sanitary sewer pipe lines with sizes indicated and valves, fire hydrants, manholes, and other appurtenances or structures shown.
- X All existing or proposed water, sewer and irrigation connections, meter location, and size of meters.
- X All existing and proposed utility and visibility easements.
- X All existing or proposed buildings on the property, existing structures, access points on and adjacent to the property.
- X Existing and proposed contours of berms in intervals of one (1) foot.
- X Detailed structural designs of entryway features.
- X Screening walls and location, type and height of screening wall, either living or masonry. (Masonry screening walls must be designed by a professional engineer registered in the state. Proposed berming is to be delineated by one-foot contours.)
- X The following additional information must be submitted on the landscape plan:
 - Tabulations of the landscape edge in linear feet. Give the street name and the amount of frontage.
 - Label streets.
 - The following information is to be provided on the landscape plan in a tabular format:
 - Indicate the trees/shrubs required and provided.
 - Indicate parking area trees required and provided.
 - Indicate the trees/shrubs required and provided for parking lot perimeter landscaping.
 - Indicate parking lot interior landscaping required and provided.
 - Indicate gross landscape square footage and percentage excluding the city right-of-way (i.e. the landscape provided within the landscape edge and within the interior of the lots).
 - Show graphically all plant material existing/proposed.
 - Distance of trees/shrubs from sidewalks, curbs, screening walls, and utilities (minimum five (5) feet).
 - Spacing between trees/shrubs (varies, check growth specifications).
- X Complete description of plant materials shown on the plan, including common and botanical names, locations, quantities, container (five-gallon minimum for required shrubs) or caliper sizes (four-inch minimum caliper for required shade trees), heights, spread, and spacing.
- X Complete description of landscaping and screening to be provided in or near off-street parking and loading areas, including information as to the amount (in square feet) of landscape area compared to gross site square footage. The city right-of-way shall not be included as part of the gross site landscaping.
- X Size, height, location and material of any proposed seating, lighting, planters, sculptures, decorative paving, and water features.
- X Landscape plans shall contain the certification and stamp of a landscape architect licensed in the state that such plans have been reviewed by such landscape architect and satisfy all requirements of this article.
- X Irrigation plans shall contain the certification and stamp of an irrigator licensed by the state board of irrigators that such plans were prepared by such irrigator and satisfy all requirements of this article.
- X Location of sprinkler heads, valves, double-check valves, water meter, automatic controller, rain and freeze sensor, wind sensor, moisture sensor or any control mechanic of whatever kind or make must be shown on all irrigation plans.
- X Living screens are clearly detailed by fence material, plant material species, plant material spacing, height at time of planting and mature height. Where the Director of Planning feels that there are elevation or topographical differences that would not accomplish the intent of the screening, the Director may request more details.
- X Public or private street names (including street suffixes and/or prefixes) and right-of-way (ROW) dimensions are indicated for all internal and external streets.

- ☒ All existing and proposed plant material is graphically shown; species and quantity for each grouping are labeled. A minimum of four different species is shown for each plant type and are distributed throughout the site.
- ☒ Distance of trees/shrubs from sidewalks, curbs, screening walls, and utilities is indicated. If less than five feet from paving, areas of impervious surface or utility lines, show dimension. Refer to Plant List for other exceptions to planting in paving areas.
- ☒ A full set of civil engineering drawings, also including the plat, site plan, and landscape plan have been submitted to TXU. Submit these drawings to: TXU Electric Delivery, Attn: Right-of-Way Department, 115 W. 7th Street, Ste. 725, Fort Worth, TX, 76102.
- ☒ I understand that the City requires an approval letter from TXU Electric Delivery prior to issuance of a building permit where landscaping, parking, or other improvement/s are proposed to encroach within any TXU/TP&L easement/s. TXU has stated a minimum of six weeks to process the review. Approved irrigation within a TXU transmission easement shall be limited to drip and soaker hose irrigation, with the valve for such located outside of the easement.
- ☒ Residential subdivisions are to have landscaping requirements (Indicate required planting ratio, square footage, linear footage, etc., including required and provided quantities) specifically listed in tabular format on plan for the following:
 - a) Landscape Buffer (along external street frontage-provide separate calculations for each street frontage).
 - b) Entryway Yard areas (located each side of subdivision entries) are provided for primary and secondary entryways.
 - c) Entryway Yard area Trees and Shrubs are provided.
 - d) Entryway Medians are shown and dimensioned.
 - e) Entryway Median Trees and Shrubs are provided.
 - f) Screening Wall plans are provided.



DEVELOPMENT APPLICATION City of Lucas, Texas

NAME OF SUBDIVISION AND/OR PROJECT: Lucas Square

ITEM SUBMITTED APPLICATION FEE

Site Plan
\$300 + \$10 per acre (i.e. \$500 for a 20 acre site plan)

Tree Survey/Conservation Plan N/A

Tree Removal & Site Clearing Permit
\$250 N/A

Architectural Plan
\$250 + \$50 for any reviews or presentations of amended plans

Landscape Plan
\$200 + \$50 for any reviews or presentations of amended plans

Park Site Dedication
\$1,000 per lot or land dedication per Lucas City Ordinance Sec. 10.03.122

TOTAL FEES SUBMITTED

Collin County Appraisal District Short Account Number(s):

Physical Location of Property: 995 W. Lucas Rd. Lucas, TX
(Address and General Location - approximate distance to nearest existing street corner)

Brief Legal Description of Property (must also attach accurate metes and bounds description):
(Survey/Abstract No. and Tracts; or platted Subdivision Name with Lots/Block)

Acreage: 2.25 Existing # of Lots/Tracts: Existing Zoning: Retail & Office

OWNER'S NAME: Mahmoud Properties LLC Contact Phone: 313-377-7015

Applicant/Contact Person: Saleh Mahmoud Title: President

Company Name: Mahmoud Properties LLC

Street/Mailing Address: 844 Elgin Ct.

City: Rockwall State: TX Zip code: 75032

Phone: (313) 377-7015 Fax: () Email Address: mahmoudpropertiesllc@gmail.com

ENGINEER/REPRESENTATIVE'S NAME: Dardari Consulting & Remodeling, LLC.

Contact Person: Ahmed A. Dardari Title: General Contractor

Street/Mailing Address: 1537 Englewood Dr.

City: Rockwall State: TX Zip code: 75032

Phone: (469) 434-8625 Fax: () Email Address: amer_dardari@hotmail.com





NAME OF SUBDIVISION and/or PROJECT: Lucas Square

****READ BEFORE SIGNING BELOW:** If there is more than one property owner, complete a separate sheet with the same wording as below. The City requires all original signatures. If applicant is other than the property owner, a "Power of Attorney" with original, notarized signatures is required. (Notaries are available upon submittal)

ALL APPLICATIONS MUST BE COMPLETE, ACCOMPANIED BY THE APPLICABLE CHECKLIST AND TAX CERTIFICATE SHOWING TAXES PAID, BEFORE THEY WILL BE SCHEDULED FOR P&Z AGENDA. It is the applicant's responsibility to be familiar with, and to comply with, all City submittal requirements (in the Zoning & Subdivision Ordinances, and any separate submittal policies, requirements and/or checklists that may be required from City staff), including the number of plans to be submitted, application fees, etc. Please contact City staff in advance for submittal requirements. [Drawings will not be returned to applicant.]

ALL PARCELS/PROPERTIES MUST MATCH IN ACREAGE ALL OTHER DOCUMENTS SUBMITTED WITH NO AMBIGUITY, SUBMISSIONS. Failure to submit all materials to the City with this application will result in delays scheduling the agenda date.

NOTICE OF PUBLIC RECORDS. The submission of plans/drawings/etc. with this application makes such items public record, and the applicant understands that these items may be viewed by the general public. Unless the applicant expressly states otherwise in writing, submission of this application (with associated plans/drawings/etc.) will be considered consent by the applicant that the general public may view and/or reproduce (i.e., copy) such documents.

Applicant agrees to pay any and all monies due to the City including but not limited to park pro rata fee, Tree Removal Permit fee, 3% of construction cost (developer to provide contracts for verification) and including but not limited to other fees that may be required prior to final plat approval.

STATE OF ~~TEXAS~~ Michigan
COUNTY OF ~~COLLIN~~ Wayne

BEFORE ME, a Notary Public, on this day personally appeared SALEH MAHMOUD the undersigned who, under oath, stated the following: "I hereby certify that I am the owner, or duly authorized agent of the owner, (as of attached) for the purposes of this application; that all information submitted herein is true and correct. I understand that submitting this application does not constitute approval, and incomplete applications will result in delays and possible denial."

[Signature]
**Owner / Agent (circle one)

SUBSCRIBED AND SWORN TO before me, this 28 day of June, 2022

Notary Public in and for the State of Michigan



Official Use Only:

Action Taken

Planning & Zoning: _____ Date: _____

City Council: _____ Date: _____

Applicant Withdrew: Yes or No

Applicant Made a Written Withdrawal: Yes or No

Date: _____

KCB Engineering, LLC

11303 Southwind Pl, Krum, TX 76249

(940) 368-6159

KCBEngineering@outlook.com

Roc Design Engineers
Attn: Majad Khalaf, P.E.
9101 LBJ Hwy Suite 570
Dallas, TX 75243

Collin County Health Dept.
Attn: OSSF Designated Representative
4690 Community Ave., Suite 200
McKinney, TX 76071

RE: Lucas Retail Center
995 W. Lucas Rd.
Lucas, TX 75002

October 28, 2022 rev 1-27-23

Gentlemen,

We have been asked to provide details and specifications for an On-Site Sewage Facility (OSSF) to be located at the above address. KCB Engineering, LLC has designed the OSSF for the above referenced property address sealed on October 28, 2022. The design is in compliance with the TCEQ chapter 285 requirements and standard accepted engineering practice.

This design requires a sewer line and a forced main to cross the fire lane and utility easement. Permission from the easement holder will be required prior to construction.

Due to the amount of development on the property, the OSSF has very limited options. The limitations are due to water lines, building sewer exits, detention pond and concrete paving to mention a few. The contractor should understand these limitations prior to construction commencing.

It is important that you understand the need to impress upon your management staff and tenants the need for good septic practices. This will reduce maintenance issues and costs for your company. These practices are listed on the following pages.

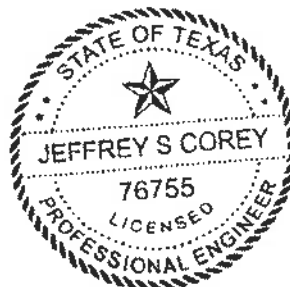
Once the system is in operation and has reached steady state, it is recommended that a BOD₅ be sampled. Based upon the results, the system may require additional adjustments.

You will need to apply for an OSSF construction and operating permit. Please submit the design packet and this letter along with the permit application to the Designated Representative for OSSF's at Collin County.

If you have any questions, please contact me.

Respectfully,


Jeffrey S. Corey, P.E.
Professional Engineer
TBPE #76755
Texas Firm # F-15507



KCB Engineering, LLC

11303 Southwind Pl, Krum, TX 76249

(940) 368-6159

KCBEngineering@outlook.com

On-Site Sewage Recommended Practices

- Know and abide by all state and any local requirements for wastewater quality, testing, and reporting.
- Inspect the system at specified intervals, usually once every 3 months, to check its operation and perform routine maintenance.
- Contract with a licensed professional company to perform inspections, wastewater tests, and reports completion and submission to local agencies.
- Keep records on the system performance and your service activities.
- Recognize the tasks that should be left to professionals to make sure that the job is performed correctly and that you do not subject the public to undue health risks.
- Keep other supplies, such as the permit/ as-built plans/specifications, governmental forms, and the system owner's manual.
- Keep on hand the proper disinfectant, such as wastewater chlorine tablets or liquid bleach, to add to the disinfection component. If you do not maintain the system properly, you could endanger human and environmental health, impair your wastewater system, and incur legal action. Because sewage can contain disease-causing microbes, wastewater is a public health concern. Environmental protection: The EPA has set national guidelines for management of onsite and wastewater treatment systems. The guidelines are posted on the Web at <http://cfpub.epa.gov/owm/septic/home.cfm>. System reliability: All system components from the plumbing fixtures in the home to the spray heads in the yard must be functional within expectations. By law, water that leaves your property, either through runoff or by seepage into the ground, must meet certain quality standards as demonstrated by laboratory tests. If your wastewater treatment system is not maintained properly, the water will not be treated enough, and you may be subject to fines.
- Your system can be affected by the amount, strength, and timing of the wastewater entering it. These devices, practices, and products can alter an aerobic system's performance:
- Water-saving devices reduce the amount of wastewater, but they also make it stronger, which can prevent the system from meeting the required effluent standards.
- Water-treatment devices with automatic back flushing add extra water into the system that can be avoided.
- Some water-conditioning units add chemicals into the effluent that can reduce the effectiveness of the biological and physical processes in an aerobic treatment unit. This wastewater stream may need to be plumbed around the treatment tanks to the pump tank.
- Condensate from air conditioning units is not sewage. Route it around the system. □ Commercial ice machines can also add large amounts of clear water.
- Laundry activities greatly affect your wastewater system: - Powdered detergent can plug cast-iron piping, and some soap contains forms of benzoate as filler. Keep these out of the system to improve its long-term performance. - Bleach additives can affect the biology of the septic tank and the rest of the system. Do not overuse bleach. - The amount of laundry done each day is also important. Spread out the loads over time to help the system perform at its best.
- In-home businesses can directly affect the system. Use for daycare increases the overall flow and can increase the use of antibacterial soaps. The system can also be affected by other small businesses that use chemicals, such as antique refinishing services, beauty shops, lawn care services, photo labs, dog grooming services, and taxidermy shops. Barbershops typically discharge large amounts of hair.
- Prescription antibiotics and drugs are extremely hard on the microbes in the system. Flushing them into the wastewater system increases the maintenance.
- Heavy use of bath and body oils can raise the fats, oils, and grease (FOG) values in the system. Removal or reduction of these can improve the performance of the system.

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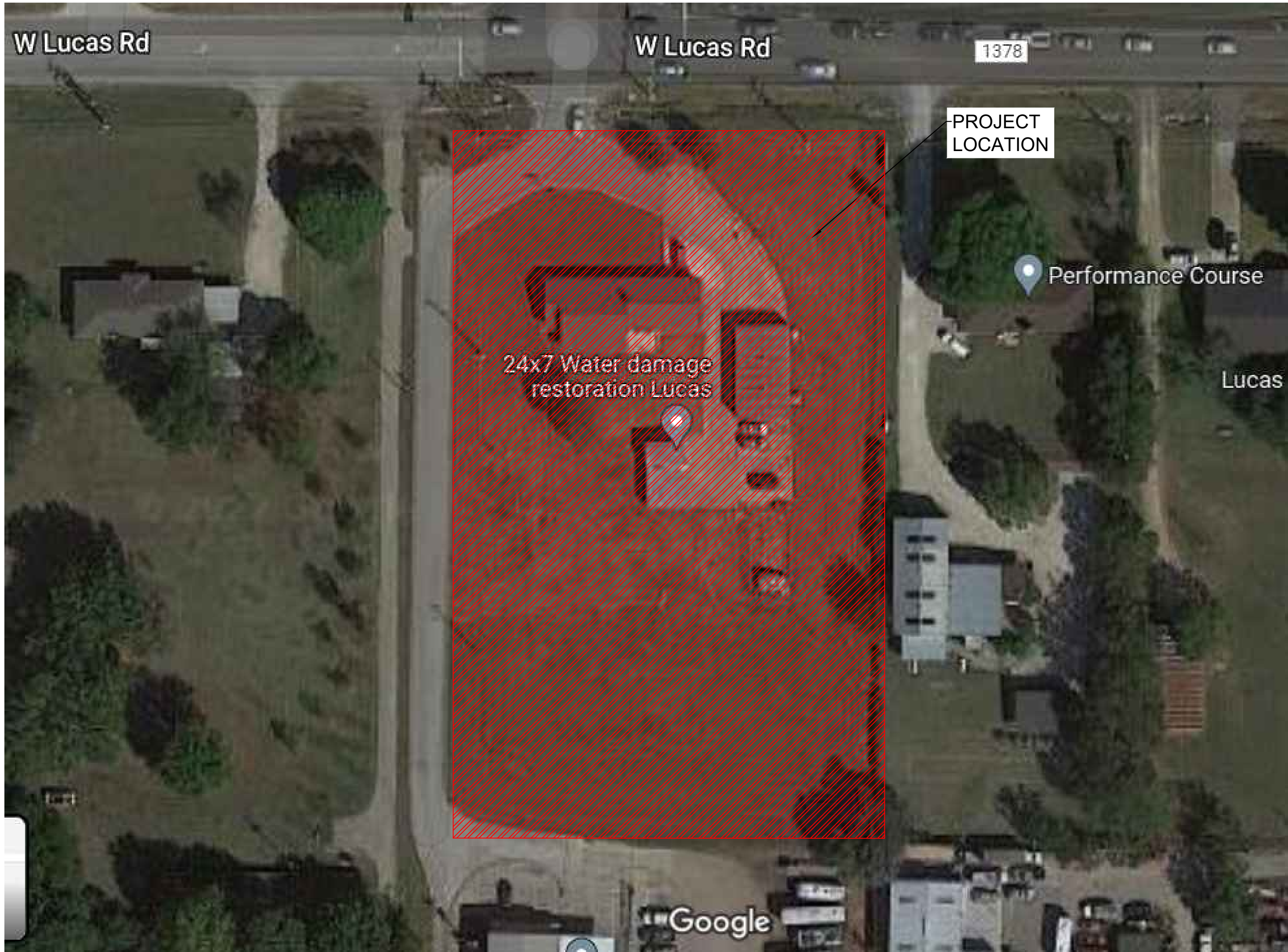
- A garbage disposal adds to the overall loading of the system in four ways: - More waste enters the treatment system. - Because the organic matter has not been digested, it takes longer to break down. - More water is used to rinse out the sink. - Smaller particles take longer to settle.
- Toxic drain cleaners kill the bacteria, resulting in a limited microbial activity in the tank and poor separating characteristics.
- Antibacterial soap also affects the biology of the tank.
- Liquid soap tends to be easily overused and may create problems in the system.
- Automatic cleaners (for toilets and showers) continually send chemicals into the system, which can cause long-term problems.
- Other cleaning products may also alter the treatment process. When choosing a cleaning product, first read the label: - Danger means that the chemical will kill the microbes; use it rarely or never. - Warning means that limited use should not affect the system much. - Caution typically means that the product will have little effect on the system.
- Areas used for effluent application must be seeded or sodded to provide vegetative cover. Effluent must not be applied to gardens or fruit orchards.
- Excessive amounts of toilet paper cause sludge to build up faster.
- Treated toilet paper, such as the type that contains lotion, does not settle well and forms a thick layer of scum at the top of the tank.
- Other paper products, such as wet wipes, should not enter the system.
- Flushable cleaning products, many wipes and toilet cleaning materials are labeled as "septic safe." This statement typically refers to their ability to flow through the piping. These items will collect in the treatment system and increase the need for maintenance.
- Trash and non-digestible material increase the amount of maintenance required and may even shorten the life of the components. Examples are rags, toys, diapers, condoms, cat litter, plastic bags, coffee grounds, cigarette filters, and feminine hygiene products. Many of these items have neutral buoyancy and will pass through the treatment components. Cat litter and coffee grounds add to the sludge that must be pumped out during maintenance. Diapers must be removed individually.

CONSTRUCTION DRAWINGS FOR

LUCAS COMMERCIAL CENTER

995 W. LUCAS ROAD, LUCAS, TX

MARCH 2023



Sheet List Table	
Sheet Number	Sheet Title
C0.0	COVER SHEET
C1.0	SITE PLAN
C2.0	EROSION CONTROL PLAN
C3.0	EXISTING DRAINAGE AREA MAP
C3.1	PROPOSED DRAINAGE AREA MAP
C3.2	PROPOSED DETENTION PLAN AND PROFILE
C4.0	GRADING PLAN
C5.0	PAVING PLAN
C6.0	UTILITY PLAN
C7.0	SITE DETAILS
C7.1	SITE DETAILS
C7.2	SITE DETAILS

ROC

CIVIL

ROC DESIGN ENGINEERS

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LUCAS COMMERCIAL CENTER

995 WEST LUCAS ROAD,
LUCAS, TEXAS 75002

No.	Revision/Issue	Date

STATE OF TEXAS

MAJED A. KHALAF

67826

LICENSED PROFESSIONAL ENGINEER

03/16/2023

Issued Date: 03-16-23

Project No: 22014

Drawn By: JPK

Checked By: MAK

Designed By: JPK

Project 220014

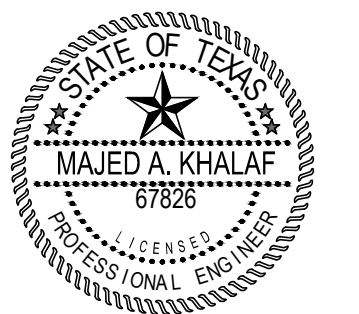
Date 03/16/23

Scale

Sheet C0.0

LUCAS COMMERCIAL CENTER

995 WEST LUCAS ROAD,
LUCAS, TEXAS 75002



03/16/2023

Issued Date: 03-16-23
Project No: 22014

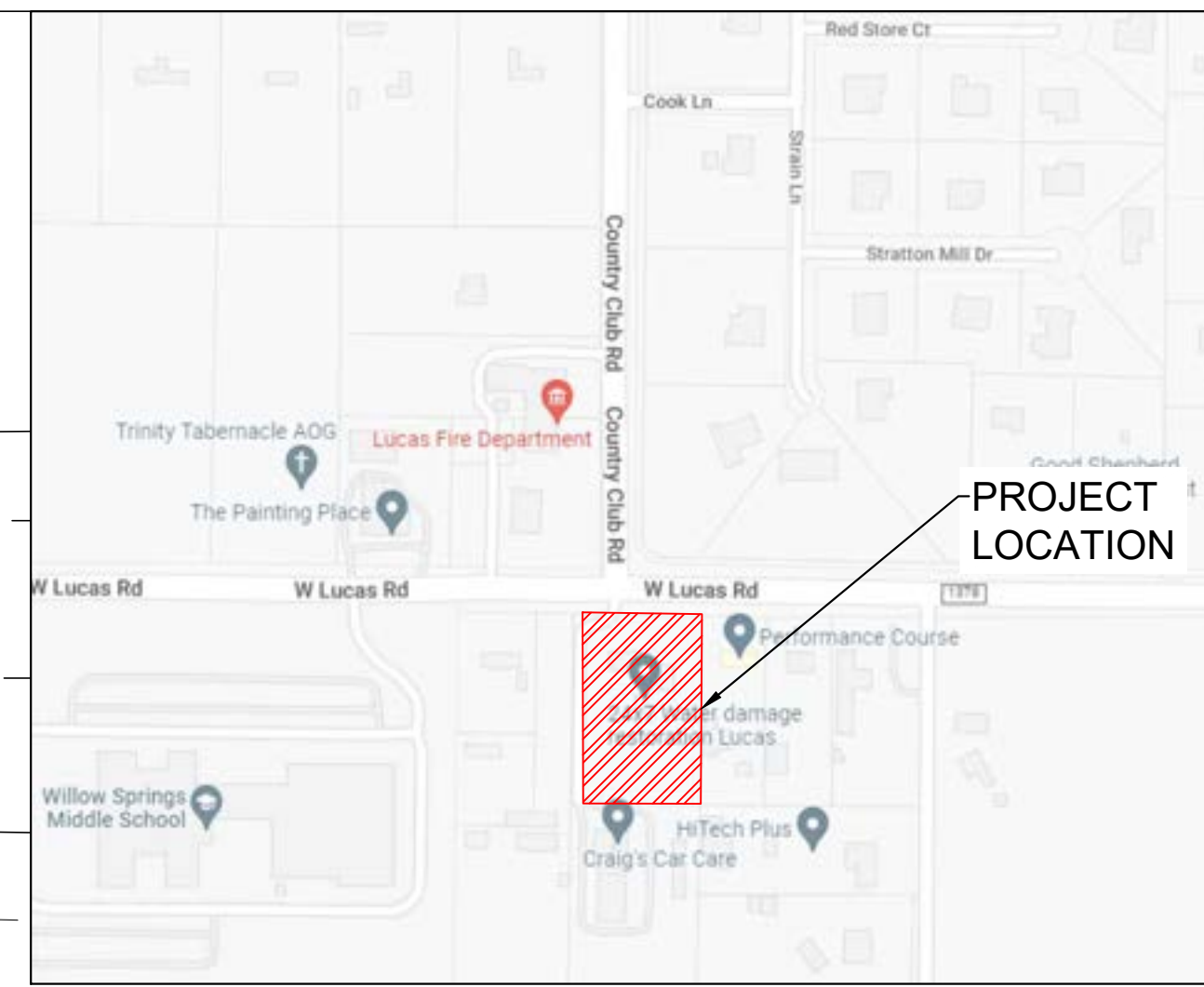
Drawn By:	JPK
Checked By:	MAK
Designed By:	JPK

Project 220014

Date 03/16/23

Scale $1'' = 30'$

C1.0



2
LOCATION MAP

C1.0
SCALE: NTS

LEGEND - SITE PLAN

	PROPERTY LINE
	ADJACENT PROPERTY LINE
	BUILDING SETBACK
	EASEMENT
	FIRE LANE STRIPING
	PROPOSED WATER LINE
	PROPOSED SANITARY SEWER LINE
	PROPOSED STORM SEWER LINE
	EXISTING WATER LINE
	EXISTING SANITARY SEWER LINE
	EXISTING STORM SEWER LINE
	EXISTING GAS LINE
	EXISTING OVERHEAD ELECTRIC LINE
	EXISTING UNDERGROUND ELECTRIC LINE
	EXISTING UNDERGROUND TELEPHONE LINE
	EXISTING UNDERGROUND CABLE LINE
	PROPOSED CONCRETE PAVEMENT
	PROPOSED FIRE LANE PAVEMENT
	PROPOSED SIDEWALK
	EXISTING ASPHALT PAVEMENT
	EXISTING TREE TO REMAIN
	PROPOSED FIRE HYDRANT
	PROPOSED GATE VALVE
	PROPOSED WATER METER
	PROPOSED MANHOLE
	EXISTING FIRE HYDRANT
	EXISTING GATE VALVE
	EXISTING WATER METER
	EXISTING MANHOLE
	EXISTING POWER POLE

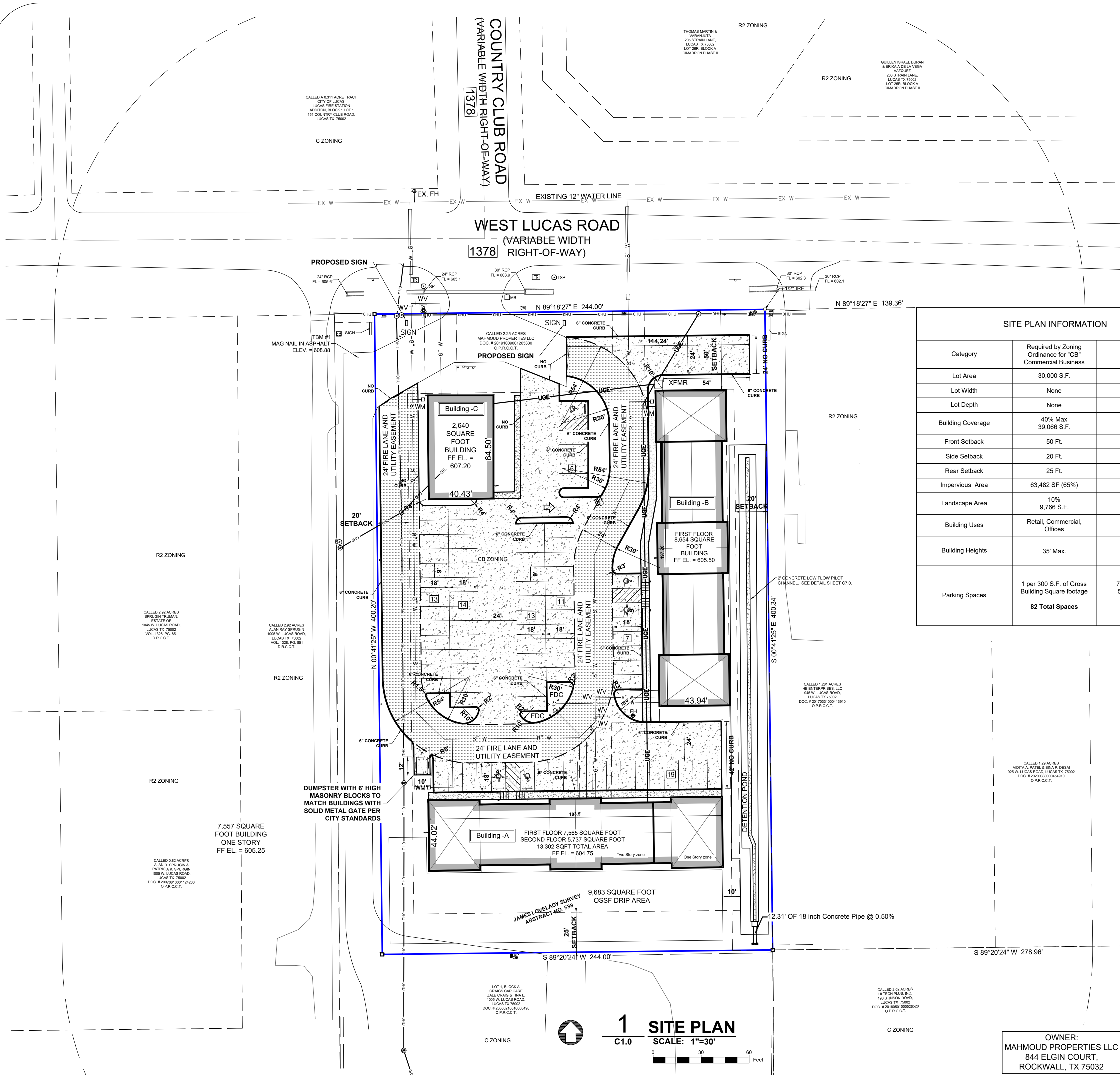
CONSTRUCTION NOTES

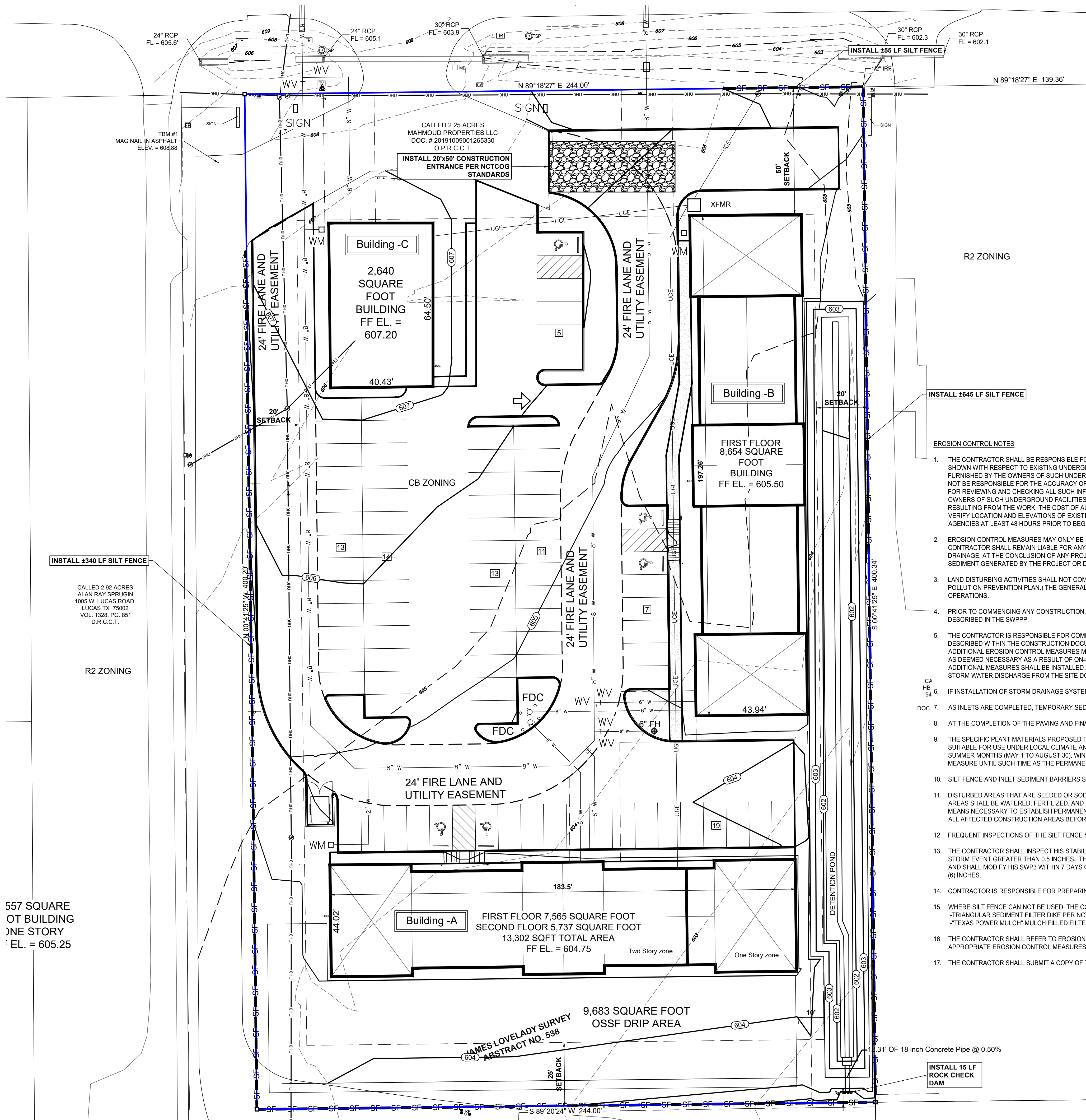
1. BUILDING SILL, ELEVATIONS AND SEWER INVERTS ARE APPROXIMATE AND SHOULD BE CONFIRMED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF WORK.
2. THE MINIMUM SLOPE FOR SANITARY SEWER LATERALS: SHALL BE 0.010 FT/FT (6" LATERALS AT MINIMUM 1%, 4" LATERALS AT MINIMUM 2%).
3. PROGRESSION OF WORK: IN GENERAL WORK SHALL PROCEED FROM THE DOWNSTREAM END OF A SEWER LINE SEGMENT TO THE UPSTREAM END OF THE SEGMENT.
4. THE MAXIMUM LENGTH OF OPEN TRENCH SHALL BE LIMITED TO NO MORE THAN THREE PIPE LENGTHS IN A SEWER SEGMENT.
5. THE MINIMUM TRENCH WIDTH SHOULD BE NO LESS THAN 24 INCHES OR ONE FOOT GREATER THAN OUTSIDE DIAMETER OF THE PIPE, WHICHEVER IS GREATER.
6. THE MINIMUM DEPTH OF COVER ABOVE THE TOP OF PIPE FOR WATER LINE INSTALLATIONS SHALL BE 4 FEET.
7. WATER MAINS AND SERVICES: LOCATIONS SHOWN ARE APPROXIMATE AND ARE INDICATED FOR GENERAL REFERENCE ONLY UNLESS OTHERWISE NOTED.
8. ALL EXISTING UNDERGROUND FEATURES SUCH AS SEPTIC TANKS, LEACH FIELDS, SANITARY SEWERS, ETC. ARE APPROXIMATE ONLY AND ARE INDICATED FOR GENERAL REFERENCE AND DESIGN UNLESS OTHERWISE NOTED.
9. WORK IN PRIVATE PROPERTY: THE CONTRACTOR SHALL OBTAIN WRITTEN AUTHORIZATION FROM THE OWNER PRIOR TO BEGINNING WORK IN ANY PRIVATELY OWNED AREAS WHICH WILL REQUIRE EASEMENTS FOR CONSTRUCTION.

SITE NOTES

1. ALL WORK AND MATERIALS SHALL COMPLY WITH ALL CITY/COUNTY REGULATIONS AND CODES AND O.S.H.A. STANDARDS.
2. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF VESTIBULES, SIDEWALKS, EXIT PORCHES, PRECISE BUILDING DIMENSIONS AND EXACT BUILDING UTILITY ENTRANCE LOCATIONS.
3. ALL DIMENSIONS AND RADII ARE TO THE BACK OF CURB OR EDGE OF PAVEMENT, UNLESS OTHERWISE NOTED.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RELOCATIONS, INCLUDING BUT NOT LIMITED TO ALL UTILITIES, STORM DRAINAGE, SIGNS, TRAFFIC SIGNALS & POLES, ETC. AS REQUIRED. ALL WORK SHALL BE IN ACCORDANCE WITH GOVERNING AUTHORITIES' SPECIFICATIONS AND SHALL BE APPROVED BY SUCH. ALL COST SHALL BE INCLUDED IN BASE BID.
5. CONTRACTOR SHALL COORDINATE UTILITY POLE RELOCATION WITH THE UTILITY COMPANY.
6. CONCRETE AND FLEXBASE SECTION DESIGNS WILL SUPPORT TYPICAL FIRE APPARATUS LOADS.
7. PROPOSED DOMESTIC WATER AND FIRE FLOW WILL BE SUPPLIED BY CITY OF LUCAS.

OWNER:
MAHMOUD PROPERTIES LLC
844 ELGIN COURT,
ROCKWALL, TX 75032





- LEGEND - EROSION CONTROL PLAN
- PROPERTY LINE
 - ADJACENT PROPERTY LINE
 - BUILDING SETBACK
 - EASEMENT
 - PROPOSED WATER LINE
 - PROPOSED SANITARY SEWER LINE
 - PROPOSED STORM SEWER LINE
 - EXISTING WATER LINE
 - EXISTING SANITARY SEWER LINE
 - EXISTING STORM SEWER LINE
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 - PROPOSED MANHOLE
 - EXISTING FIRE HYDRANT
 - EXISTING GATE VALVE
 - EXISTING WATER METER
 - EXISTING MANHOLE
 - EXISTING POWER POLE
 - SEDIMENT CONTROL BARRIER
 - STABILIZED CONSTRUCTION ENTRANCE
 - ROCK CHECK DAM
 - INLET PROTECTION

- EROSION CONTROL NOTES
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES, WHETHER PRIVATE OR PUBLIC, PRIOR TO EXCAVATING. THE INFORMATION AND DATA SHOWN WITH RESPECT TO EXISTING UNDERGROUND FACILITIES AT OR CONTIGUOUS TO THE SITE IS APPROXIMATE AND BASED ON THE INFORMATION AND DATA FURNISHED BY THE OWNERS OF SUCH UNDERGROUND FACILITIES OR ON PHYSICAL APPEARANCES OBSERVED IN THE FIELD. THE OWNER AND ENGINEER SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ANY SUCH INFORMATION OR DATA, AND THE CONTRACTOR SHALL HAVE FULL RESPONSIBILITY FOR REVIEWING AND CHECKING ALL SUCH INFORMATION AND DATA, FOR LOCATING ALL UNDERGROUND FACILITIES, FOR COORDINATION OF THE WORK WITH THE OWNERS OF SUCH UNDERGROUND FACILITIES DURING CONSTRUCTION, FOR THE SAFETY AND PROTECTION THEREOF, AND REPAIRING ANY DAMAGE THERETO RESULTING FROM THE WORK, THE COST OF ALL OF WHICH WILL BE CONSIDERED AS HAVING BEEN INCLUDED IN THE CONTRACT PRICE. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATIONS OF EXISTING UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY ANY AFFECTED UTILITY COMPANIES OR AGENCIES AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.
 - EROSION CONTROL MEASURES MAY ONLY BE PLACED IN FRONT OF INLETS, OR IN CHANNELS, DRAINAGEWAYS OR BORROW DITCHES AT RISK OF CONTRACTOR. CONTRACTOR SHALL REMAIN LIABLE FOR ANY DAMAGE CAUSED BY THE MEASURES, INCLUDING FLOODING DAMAGE, WHICH MAY OCCUR DUE TO BLOCKED DRAINAGE, AT THE CONCLUSION OF ANY PROJECT, ALL CHANNELS, DRAINAGEWAYS AND BORROW DITCHES IN THE WORK ZONE SHALL BE DREDGED OF ANY SEDIMENT GENERATED BY THE PROJECT OR DEPOSITED AS A RESULT OF EROSION CONTROL MEASURES.
 - LAND DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED BY GOVERNING AUTHORITIES. (INCLUDING STORM WATER POLLUTION PREVENTION PLAN,) THE GENERAL CONTRACTOR SHALL STRICTLY ADHERE TO THE APPROVED TPDES SWPPP DRAWINGS DURING CONSTRUCTION OPERATIONS.
 - PRIOR TO COMMENCING ANY CONSTRUCTION, A CONSTRUCTION ENTRANCE AND PERIMETER SILT FENCE SHALL BE INSTALLED AT THE LOCATIONS SHOWN, OR AS DESCRIBED IN THE SWPPP.
 - THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL EROSION CONTROL MEASURES SHOWN ON THE PLANS. THE EROSION CONTROL SYSTEM DESCRIBED WITHIN THE CONSTRUCTION DOCUMENTS SHOULD BE CONSIDERED TO REPRESENT THE MINIMUM ACCEPTABLE STANDARDS FOR THIS PROJECT. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DEPENDENT UPON THE STAGE OF CONSTRUCTION, THE SEVERITY OF THE RAINFALL EVEN AND/OR AS DEEMED NECESSARY AS A RESULT OF ON-SITE INSPECTIONS BY THE OWNER, THEIR REPRESENTATIVES OR THE JURISDICTIONAL AUTHORITIES. THESE ADDITIONAL MEASURES SHALL BE INSTALLED AT NO ADDITIONAL COST TO THE OWNER. IT IS THE CONTRACTOR'S ULTIMATE RESPONSIBILITY TO ASSURE THAT THE STORM WATER DISCHARGE FROM THE SITE DOES NOT EXCEED THE TOLERANCES ESTABLISHED BY ANY OF THE JURISDICTIONAL AUTHORITIES.
 - IF INSTALLATION OF STORM DRAINAGE SYSTEM SHOULD BE INTERRUPTED BY WEATHER OR NIGHTFALL, THE PIPE ENDS SHALL BE COVERED WITH FILTER FABRIC.
 - AS INLETS ARE COMPLETED, TEMPORARY SEDIMENT BARRIERS SHALL BE INSTALLED.
 - AT THE COMPLETION OF THE PAVING AND FINAL GRADING, THE DISTURBED AREA(S) SHALL BE REVEGETATED IN ACCORDANCE WITH THE SWPPP.
 - THE SPECIFIC PLANT MATERIALS PROPOSED TO PROTECT FILL AND EXCAVATED SLOPES SHALL BE AS INDICATED WITHIN THE SWPPP. PLANT MATERIALS MUST BE SUITABLE FOR USE UNDER LOCAL CLIMATE AND SOIL CONDITIONS. IN GENERAL, HYDROSEEDING OR SODDING BERMUDA GRASS IS ACCEPTABLE DURING THE SUMMER MONTHS (MAY 1 TO AUGUST 30). WINTER RYE OR FESCUE GRASS MAY BE PLANTED DURING TIMES OTHER THAN THE SUMMER MONTHS AS A TEMPORARY MEASURE UNTIL SUCH TIME AS THE PERMANENT PLANTING CAN BE MADE.
 - SILT FENCE AND INLET SEDIMENT BARRIERS SHALL REMAIN IN PLACE UNTIL REVEGETATION HAS BEEN COMPLETED.
 - DISTURBED AREAS THAT ARE SEEDED OR SODDED SHALL BE CHECKED PERIODICALLY TO SEE THAT GRASS COVERAGE IS PROPERLY MAINTAINED. DISTURBED AREAS SHALL BE WATERED, FERTILIZED, AND RESEEDED OR RESODDED, IF NECESSARY. GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO TAKE WHATEVER MEANS NECESSARY TO ESTABLISH PERMANENT SOIL STABILIZATION. CONTRACTOR SHOULD ATTAIN A 75% BERMUDA COVERING BY SEEDING OR SODDING OVER ALL AFFECTED CONSTRUCTION AREAS BEFORE EROSION CONTROL CAN BE REMOVED.
 - FREQUENT INSPECTIONS OF THE SILT FENCE SHALL BE MADE. ALL REPAIRS OR REPLACEMENTS SHALL BE MADE IMMEDIATELY.
 - THE CONTRACTOR SHALL INSPECT HIS STABILIZATION AND EROSION CONTROL MEASURES AT MINIMUM OF ONCE EVERY 14 DAYS, AND WITHIN 24 HOURS OF ANY STORM EVENT GREATER THAN 0.5 INCHES. THE CONTRACTOR SHALL REPAIR INADEQUACIES REVEALED BY THE INSPECTION BEFORE THE NEXT STORM EVENT AND SHALL MODIFY HIS SWP3 WITHIN 7 DAYS OF THE INSPECTION. ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF WHEN IT REACHES A DEPTH OF SIX (6) INCHES.
 - CONTRACTOR IS RESPONSIBLE FOR PREPARING, FILING, & MAINTAINING THE SWPPP & THE NOI.
 - WHERE SILT FENCE CAN NOT BE USED, THE CONTRACTOR MAY SUBSTITUTE WITH THE FOLLOWING:
 - TRIANGULAR SEDIMENT FILTER DIKE PER NCTCOG SPEC 1050A
 - TEXAS POWER MULCH MULCH FILLED FILTER SOCK
 - THE CONTRACTOR SHALL REFER TO EROSION CONTROL NARRATIVE AND SWPPP COORDINATION/INVESTIGATION DOCUMENTATION PROVIDED BY OTHERS FOR APPROPRIATE EROSION CONTROL MEASURES AND PROCEDURES FOR THIS PROJECT.
 - THE CONTRACTOR SHALL SUBMIT A COPY OF THE SWPPP TO THE CITY PRIOR TO CONSTRUCTION.

1
C2.0
EROSION CONTROL PLAN
SCALE: 1"=20'
0 20 40 Feet

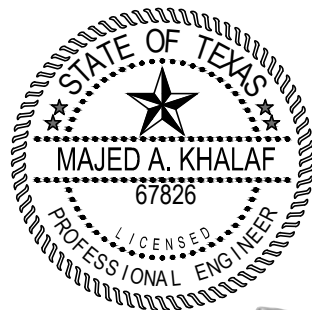
ROC
CIVIL
ROC DESIGN ENGINEERS
Superior Civil Engineering Service
Texas Firm F-13744

9101 N. LBJ FWY, SUITE 570
Dallas, Texas 75243
Phone 972.639.8375

LUCAS COMMERCIAL CENTER

995 WEST LUCAS ROAD,
LUCAS, TEXAS 75002

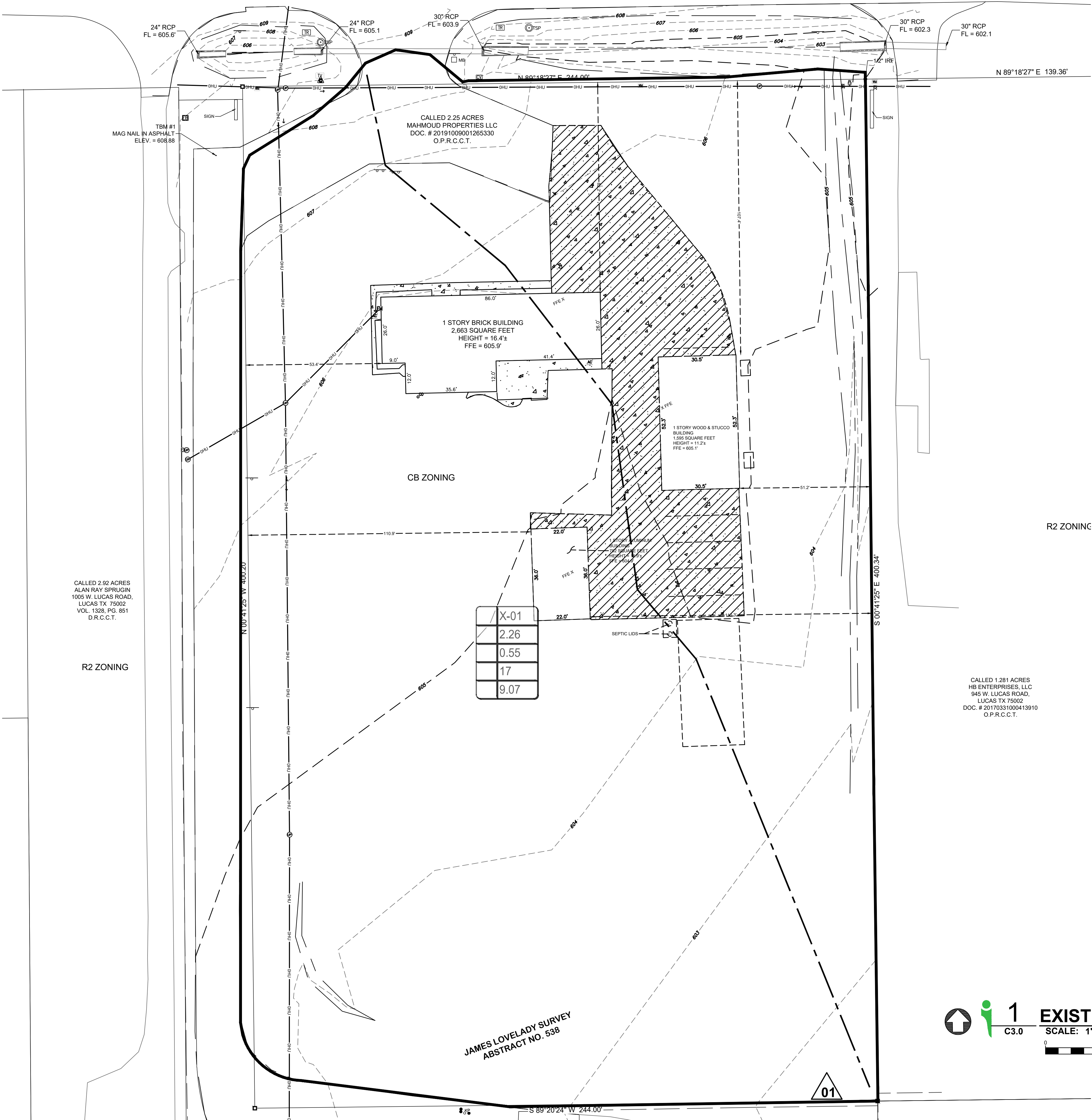
No.	Revision/Issue	Date



03/16/2023

Issued Date: 03-16-23
Project No: 22014
Drawn By: JPK
Checked By: MAK
Designed By: JPK

Project	220014	Sheet
Date	03/16/23	C2.0
Scale	1" = 20'	



Duration		Rainfall Intensity (in/hr) by Storm Frequency (Years)						
min	hr	2-year	5-year	10-year	25-year	50-year	100-year	
5	0.083	5.94	7.24	8.29	9.72	10.80	11.90	
10	0.167	4.76	5.80	6.65	7.80	8.68	9.53	
15	0.25	3.95	4.80	5.50	6.44	7.14	7.84	
30	0.5	2.75	3.33	3.81	4.45	4.93	5.40	
60	1	1.79	2.18	2.50	2.93	3.26	3.58	
120	2	1.11	1.37	1.59	1.88	2.11	2.35	
180	3	0.826	1.03	1.20	1.44	1.62	1.82	
360	6	0.494	0.620	0.728	0.882	1.00	1.13	
720	12	0.291	0.366	0.431	0.522	0.595	0.673	
1440	24	0.171	0.215	0.253	0.307	0.350	0.395	

NOAA ATLAS 14 RAINFALL INTENSITIES
(TABLE 1 - LUCAS DRAINAGE DESIGN MANUAL)

FAA Formula Tc Worksheet

$T_c = 1.8(1.1 - C) \times \text{Flow length}^{0.5} / \text{Watercourse slope}^{0.333}$

Hyd. No. 1

X-01

Description

Flow length (ft) = 456.00
Watercourse slope (%) = 1.57
Runoff coefficient (C) = 0.55

Time of Conc. (min) = 17

DESIGN FLOW (QD) BY RATIONAL METHOD, EXISTING						
LOCATION	DESIGN STORM FREQUENCY (YEARS)	TIME OF CONCENTRATION (MIN)	INTENSITY, I (IN/HR)	DRAINAGE AREA, A (ACRES)	RUNOFF COEFFICIENT, C	DESIGN FLOW, Q _D = CIA (CFS)
1	2	17	3.73	2.26	0.55	4.64
1	5	17	4.51	2.26	0.55	5.61
1	10	17	5.16	2.26	0.55	6.41
1	25	17	6.02	2.26	0.55	7.48
1	100	17	7.30	2.26	0.55	9.07

R2 ZONING

CALLLED 1.281 ACRES
HB ENTERPRISES, LLC
945 W. LUCAS ROAD,
LUCAS TX 75002
DOC. #20170331000413910
O.P.R.C.C.T.

1
C3.0

EXISTING DRAINAGE PLAN
SCALE: 1"=20'

0 20 40 Feet

ROC
CIVIL

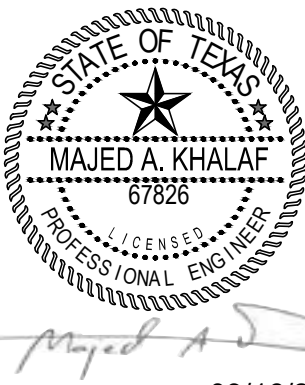
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No.	Revision/Issue	Date



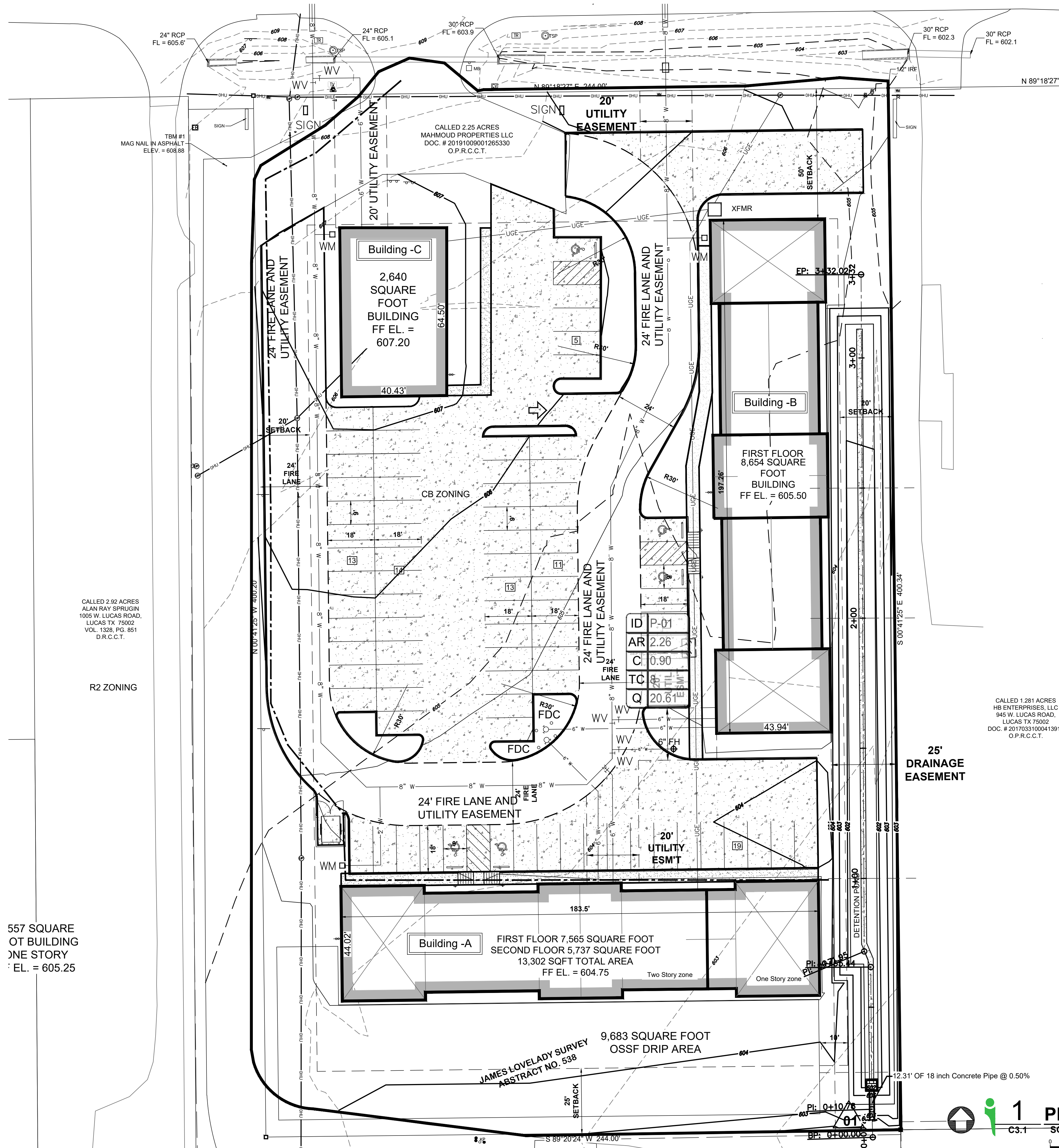
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Project 220014
Date 03/16/23
Scale 1" = 30'

Sheet
C3.0

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FAA Formula Tc Worksheet

Tc = 1.8(1.1 - C) x Flow length^0.5 / Watercourse slope^0.333

Hyd. No. 2

P-01

Description

Flow length (ft) = 529.00
Watercourse slope (%) = 1.16
Runoff coefficient (C) = 0.90

Time of Conc. (min) = 8

DESIGN FLOW (QD) BY RATIONAL METHOD, PROPOSED

LOCATION	DESIGN STORM FREQUENCY (YEARS)	TIME OF CONCENTRATION (MIN)	INTENSITY, I (IN/HR)	DRAINAGE AREA, A (ACRES)	RUNOFF COEFFICIENT, C	DESIGN FLOW, Q _D = CIA (CFS)
1	2	8	5.13	2.26	0.9	10.44
1	5	8	6.23	2.26	0.9	12.66
1	10	8	7.13	2.26	0.9	14.50
1	25	8	8.34	2.26	0.9	16.96
1	100	8	10.15	2.26	0.9	20.64

Hydrograph type = Mod. Rational
Storm frequency = 2 yrs
Time interval = 1 min
Drainage area = 2.260 ac
Intensity = 2.846 in/hr
IDF Curve = NOAA_995_W_LUCAS.IDF
Target Q = 4.620 cfs

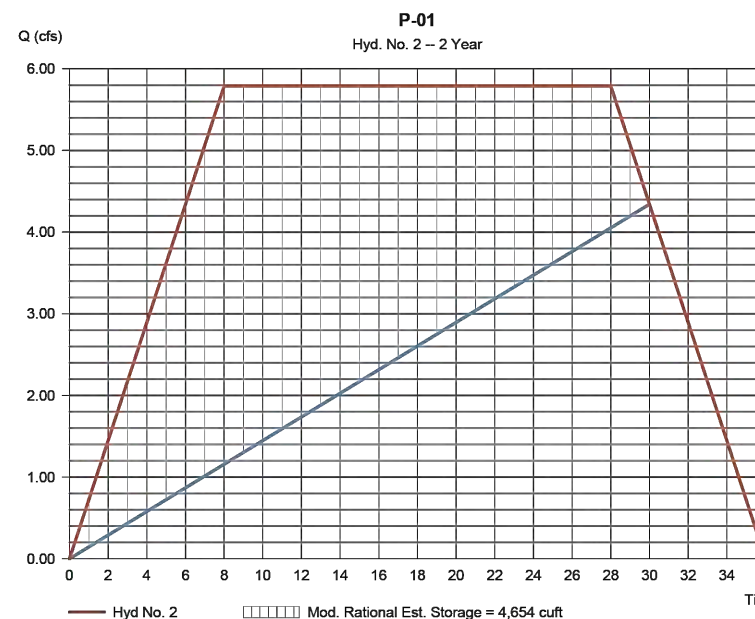
Peak discharge = 5.785 cfs
Time to peak = 8 min
Hyd. volume = 9.751 cuf
Runoff coeff. = 0.9
Tc by FAA = 8.00 min
Storm duration = 3.5 x Tc = 28.00 min
Est. Req'd Storage = 4.654 cuf

Hydrograph type = Mod. Rational
Storm frequency = 5 yrs
Time interval = 1 min
Drainage area = 2.260 ac
Intensity = 3.402 in/hr
IDF Curve = NOAA_995_W_LUCAS.IDF
Target Q = 5.620 cfs

Peak discharge = 6.921 cfs
Time to peak = 8 min
Hyd. volume = 12.059 cuf
Runoff coeff. = 0.9
Tc by FAA = 8.00 min
Storm duration = 3.5 x Tc = 28.00 min
Est. Req'd Storage = 5.725 cuf

*Composite Area(C) = (33.810 x 0.17) + (1.000 x 0.95) + (0.425 x 0.97) = 2.260

*Composite Area(C) = (33.810 x 0.17) + (1.000 x 0.95) + (0.425 x 0.97) = 2.260



MODIFIED RATIONAL METHOD DETENTION VOLUME, 2-YR

Hydrograph type = Mod. Rational
Storm frequency = 2 yrs
Time interval = 1 min
Drainage area = 2.260 ac
Intensity = 3.187 in/hr
IDF Curve = NOAA_995_W_LUCAS.IDF
Target Q = 4.440 cfs

Peak discharge = 8.068 cfs
Time to peak = 8 min
Hyd. volume = 13.594 cuf
Runoff coeff. = 0.9
Tc by FAA = 8.00 min
Storm duration = 3.5 x Tc = 28.00 min
Est. Req'd Storage = 4.468 cuf

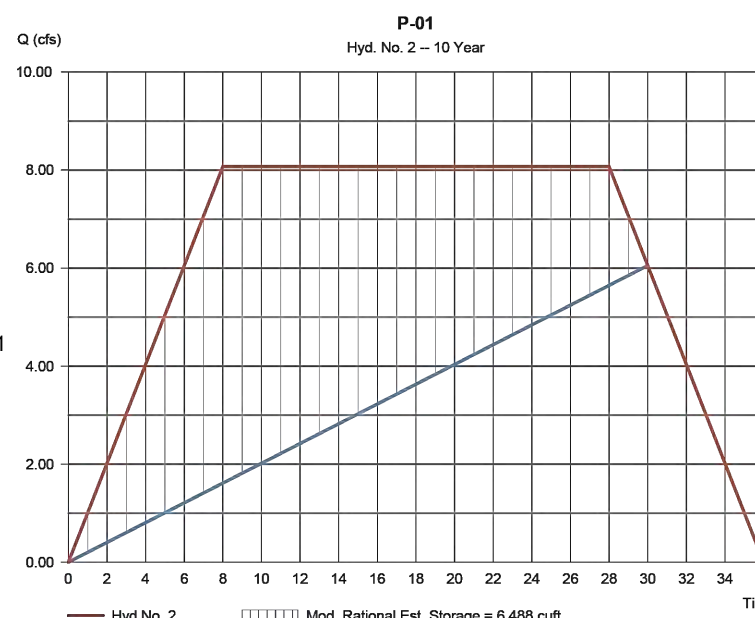
*Composite Area(C) = (33.810 x 0.17) + (1.000 x 0.95) + (0.425 x 0.97) = 2.260

MODIFIED RATIONAL METHOD DETENTION VOLUME, 5-YR

Hydrograph type = Mod. Rational
Storm frequency = 5 yrs
Time interval = 1 min
Drainage area = 2.260 ac
Intensity = 4.243 in/hr
IDF Curve = NOAA_995_W_LUCAS.IDF
Target Q = 5.500 cfs

Peak discharge = 9.240 cfs
Time to peak = 8 min
Hyd. volume = 16.100 cuf
Runoff coeff. = 0.9
Tc by FAA = 8.00 min
Storm duration = 3.5 x Tc = 28.00 min
Est. Req'd Storage = 5.747 cuf

*Composite Area(C) = (33.810 x 0.17) + (1.000 x 0.95) + (0.425 x 0.97) = 2.260



MODIFIED RATIONAL METHOD DETENTION VOLUME, 10-YR

Hydrograph type = Mod. Rational
Storm frequency = 10 yrs
Time interval = 1 min
Drainage area = 2.260 ac
Intensity = 5.499 in/hr
IDF Curve = NOAA_995_W_LUCAS.IDF
Target Q = 6.070 cfs

Peak discharge = 11.119 cfs
Time to peak = 8 min
Hyd. volume = 19.460 cuf
Runoff coeff. = 0.9
Tc by FAA = 8.00 min
Storm duration = 3.5 x Tc = 28.00 min
Est. Req'd Storage = 6.288 cuf

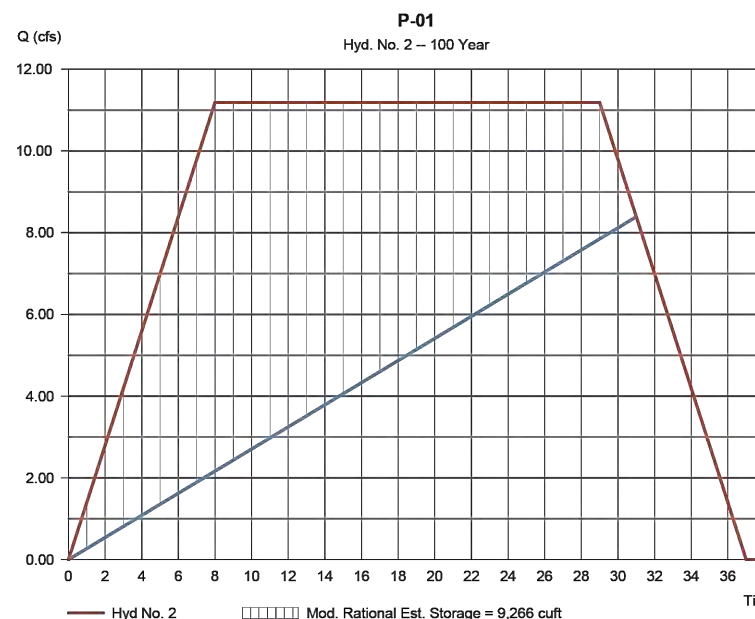
*Composite Area(C) = (33.810 x 0.17) + (1.000 x 0.95) + (0.425 x 0.97) = 2.260

MODIFIED RATIONAL METHOD DETENTION VOLUME, 25-YR

Hydrograph type = Mod. Rational
Storm frequency = 25 yrs
Time interval = 1 min
Drainage area = 2.260 ac
Intensity = 7.585 in/hr
IDF Curve = NOAA_995_W_LUCAS.IDF
Target Q = 7.585 cfs

Peak discharge = 16.960 cfs
Time to peak = 8 min
Hyd. volume = 28.000 cuf
Runoff coeff. = 0.9
Tc by FAA = 8.00 min
Storm duration = 3.5 x Tc = 28.00 min
Est. Req'd Storage = 7.585 cuf

*Composite Area(C) = (33.810 x 0.17) + (1.000 x 0.95) + (0.425 x 0.97) = 2.260



MODIFIED RATIONAL METHOD DETENTION VOLUME, 100-YR

Hydrograph type = Mod. Rational
Storm frequency = 100 yrs
Time interval = 1 min
Drainage area = 2.260 ac
Intensity = 10.150 in/hr
IDF Curve = NOAA_995_W_LUCAS.IDF
Target Q = 10.150 cfs

Peak discharge = 20.640 cfs
Time to peak = 8 min
Hyd. volume = 36.000 cuf
Runoff coeff. = 0.9
Tc by FAA = 8.00 min
Storm duration = 3.5 x Tc = 28.00 min
Est. Req'd Storage = 20.640 cuf

*Composite Area(C) = (33.810 x 0.17) + (1.000 x 0.95) + (0.425 x 0.97) = 2.260

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945 W. LUCAS ROAD,
LUCAS TX 75002
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O.P.R.C.C.T.

25'
DRAINAGE
EASEMENT



PROPOSED DRAINAGE PLAN

SCALE: 1"=20'



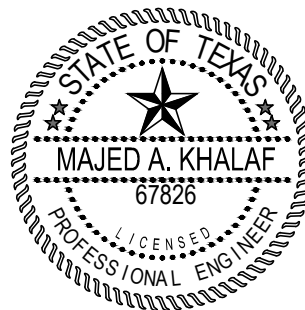
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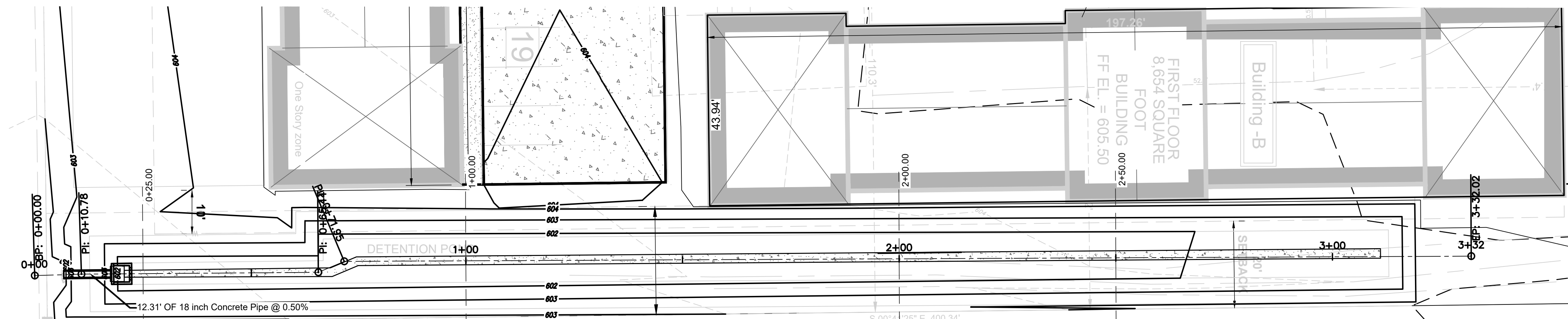
No.	Revision/Issue	Date



03/16/2023

Issued Date: 03-16-23
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Designed By: JPK

Project: 220014	Sheet:
Date: 03/16/23	C3.1
Scale: 1" = 30'	



DETENTION RELEASE SUMMARY (FLOW RATES IN CFS)					
EVENT	2-YR	5-YR	10-YR	25-YR	100-YR
MAX. ALLOWABLE RELEASE	4.64	5.61	6.41	7.49	9.07
ACTUAL RELEASE	4.19	5.28	6.2	7.48	9.03
ALLOWABLE - ACTUAL	0.45	0.33	0.21	0.01	0.04

Detention Stage/Storage/ Discharge			
Stage (ft)	Elev. (ft)	Storage (cf)	Discharge (cfs)
0.00	601.60	0.0	0.00
0.10	601.70	9.8	0.01
0.20	601.80	73.3	0.04
0.60	602.20	1,067.0	0.56
0.80	602.40	1,827.0	0.98
1.00	602.60	2,665.0	2.01
1.20	602.80	3,579.0	2.94
1.40	603.00	4,568.0	4.46
1.60	603.20	5,633.0	6.25
1.80	603.40	6,813.0	8.77
2.00	603.60	7,993.0	14.09
2.20	603.80	9,288.0	23.04

EQUATIONS USED FOR DISCHARGE CALCULATIONS:

(A) Rectangular Weir Flow Equation

$$Q = CLH^{3/2}$$

where

Q = Weir discharge, cubic feet per second

C = Weir coefficient

L = Horizontal length, feet

H = Head on weir, feet

(C) Orifice Flow Equation

$$Q = C_o A \sqrt{2gh} \quad 0.5$$

where

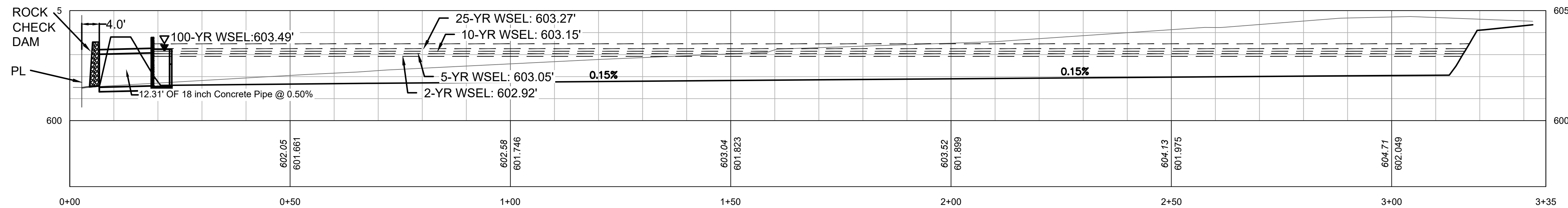
Q = Orifice Flow, cubic feet per second

C_o = Orifice Coefficient (use 0.6)

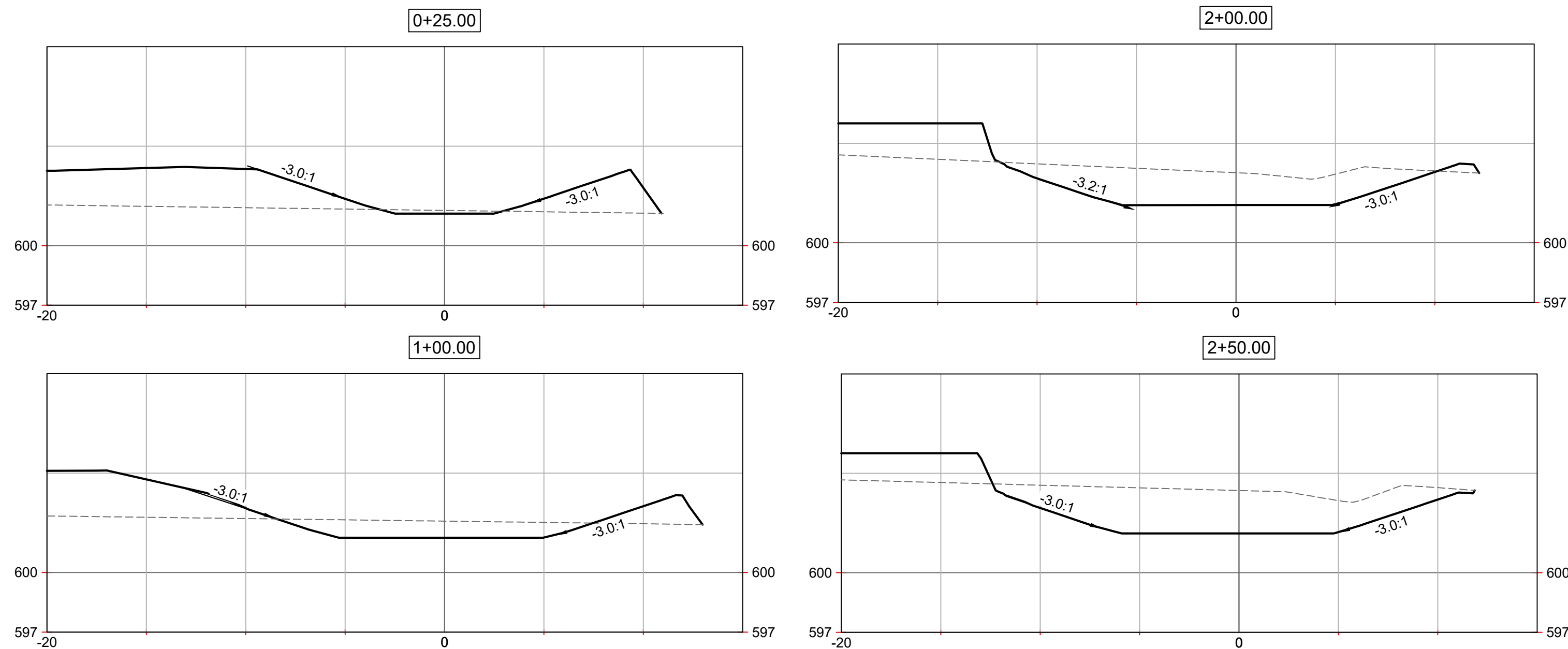
A = Orifice Area, square feet

g = Gravitation constant, 32.2 feet/sec²

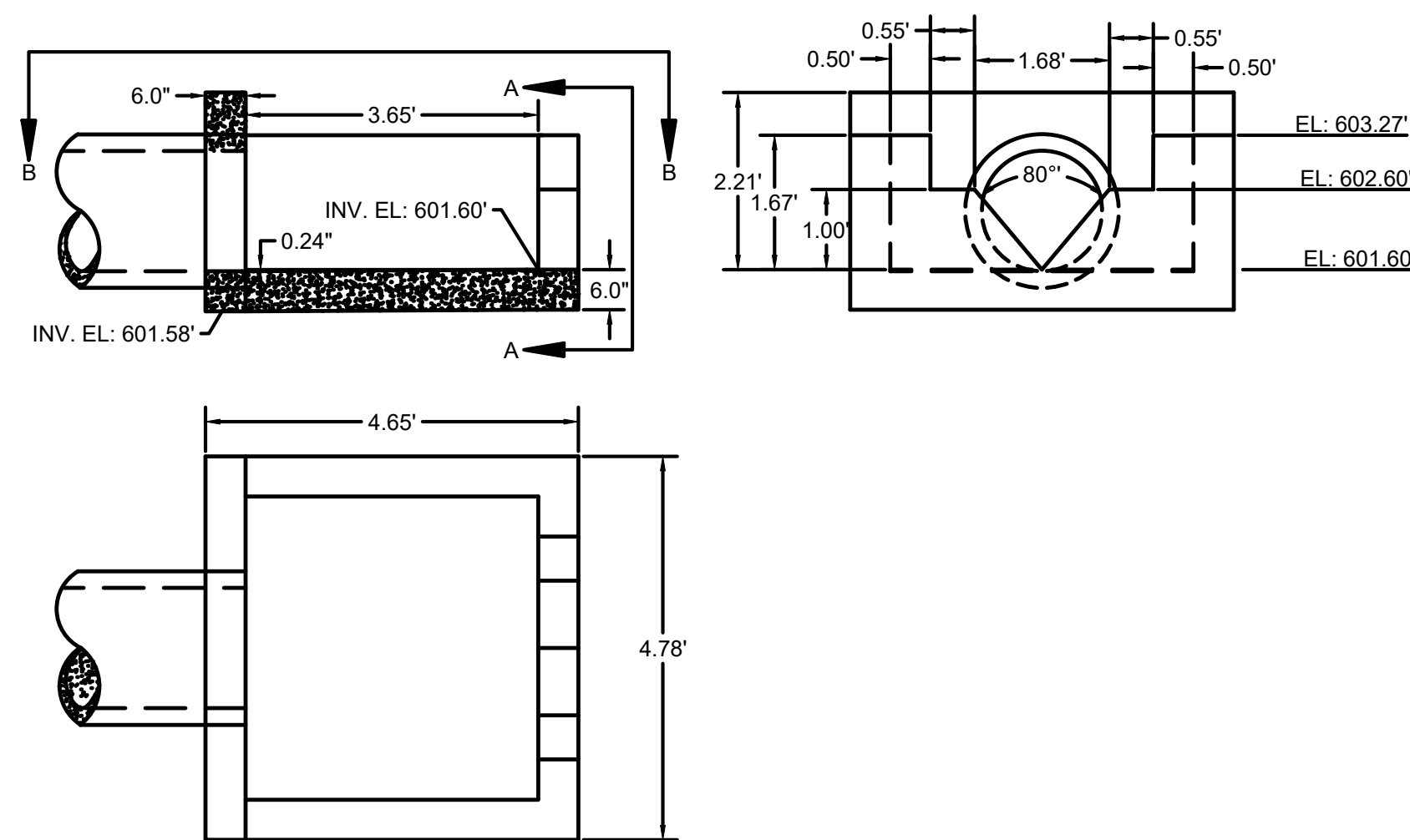
H = Head on orifice measured from centerline, feet



2 PROPOSED DETENTION PROFILE
C3.1 SCALE: 1"=15'



3 PROPOSED DETENTION X-SECTIONS
C3.1 SCALE: 1"=5'



4 PROPOSED OUTLET STRUCTURE
C3.1 SCALE: 1"=2'

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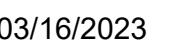


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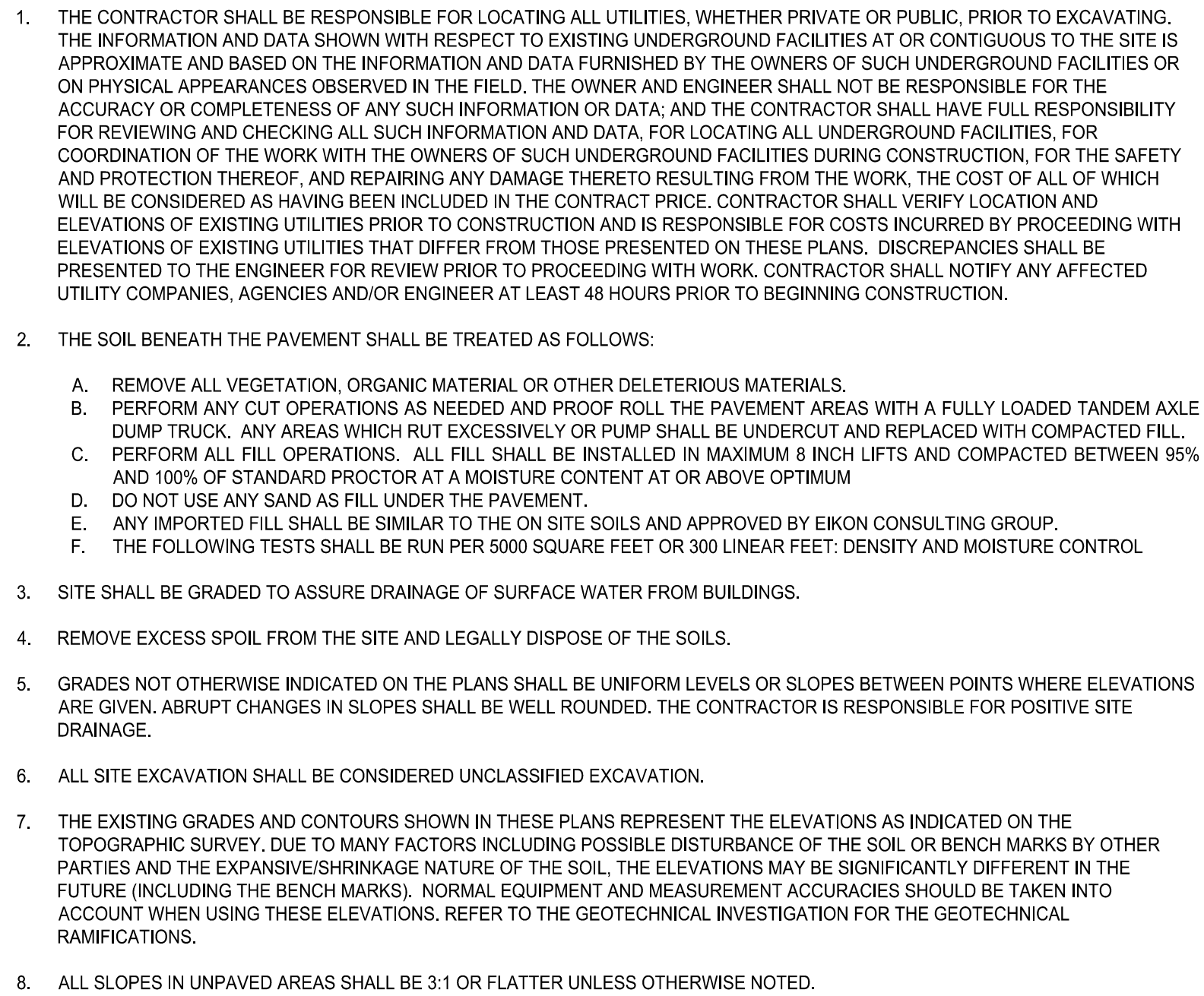
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Scale $1'' = 20'$

C4.0|



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 945 W. LUCAS ROAD,
 LUCAS TX 75002
 DOC. # 20170331000413910
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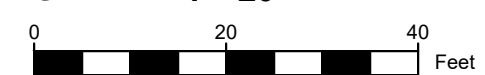
557 SQUARE
OT BUILDING
ONE STORY
EL. = 605.25



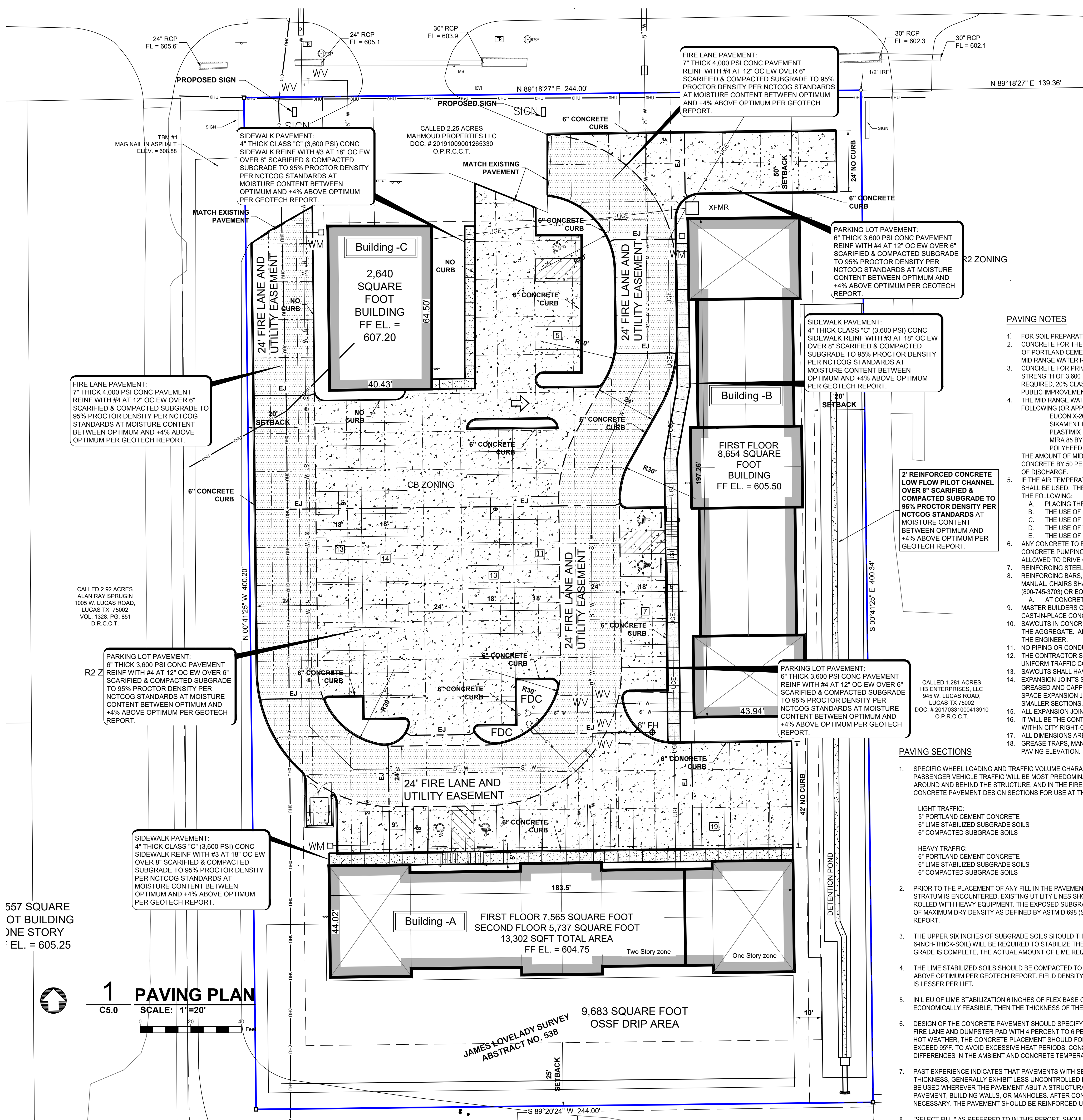
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C4.0

GRADING PLAN

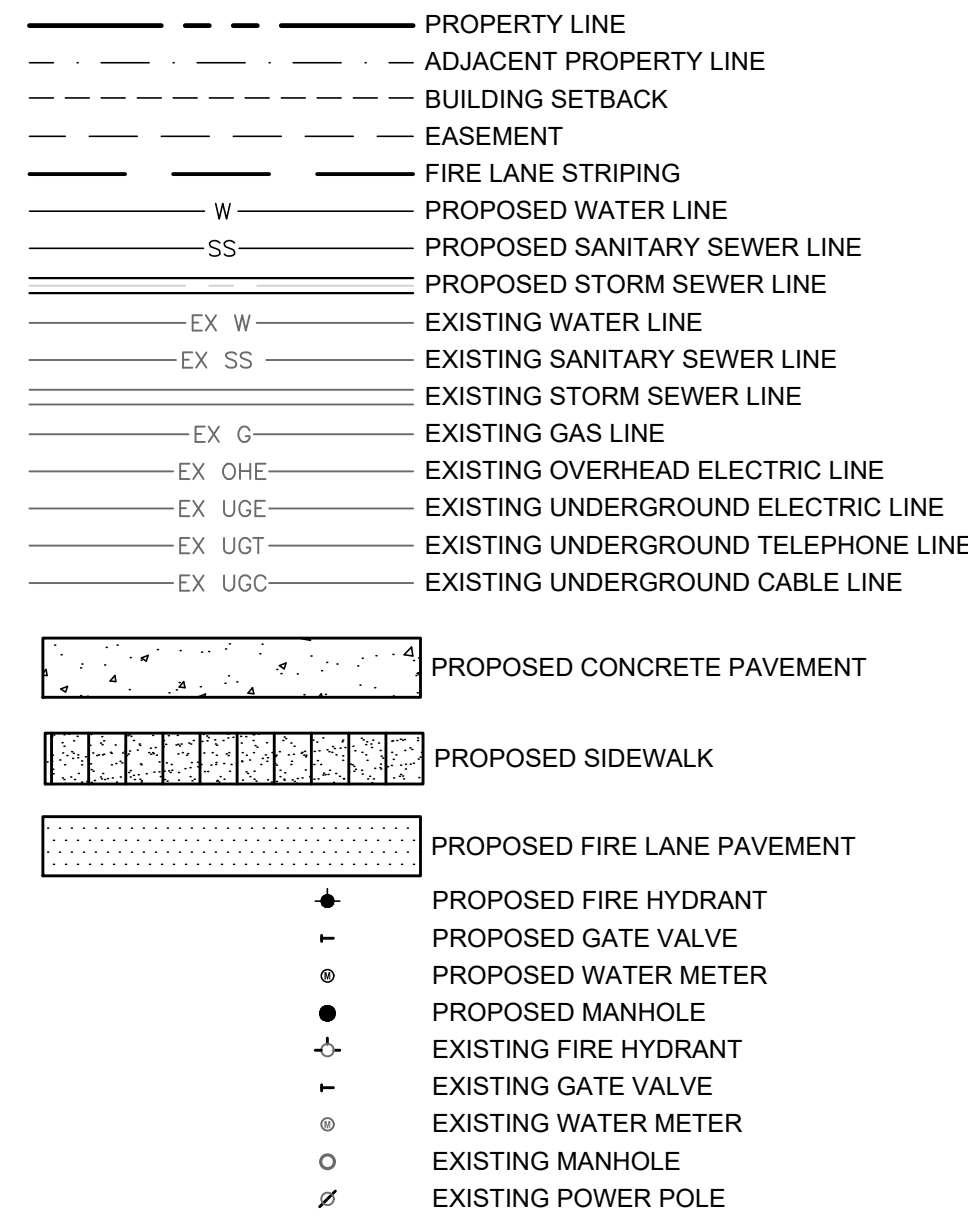
SCALE: 1"=20'



INSTALL:
12 LF ROCK CHECK DAM
12.3 LF 18" RCP PIPE @ 0.50%
FL IN = 601.6
FL OUT=601.5



LEGEND - SITE PLAN



PAVING NOTES

- FOR SOIL PREPARATION SPECIFICATIONS UNDER PAVEMENT, SEE SHEET C5.0
- CONCRETE FOR THE CONCRETE PAVEMENT SHALL HAVE A 28 DAY DESIGN COMPRESSIVE STRENGTH OF 4,000 PSI, A MINIMUM OF 6 SACKS OF PORTLAND CEMENT PER CUBIC YARD, 20% (MAX) CLASS C FLYASH, 4% TO 6% AIR CONTENT USING AIR ENTRAINING AGENT AS REQUIRED, MID RANGE WATER REDUCING AGENT AND A 5-6" SLUMP.
- CONCRETE FOR PRIVATE SIDEWALKS, CURBS AND GUTTERS AND DRAINAGE STRUCTURES SHALL HAVE A 28 DAY DESIGN COMPRESSIVE STRENGTH OF 3,600 PSI, A MINIMUM OF 5.5 SACKS OF CEMENT PER CUBIC YARD, 4% TO 6% AIR CONTENT USING AIR ENTRAINING AGENT AS REQUIRED, 20% CLASS C FLYASH A 5-6 INCH SLUMP, REFER TO CITY OF LUCAS AND/OR NCT-COG STANDARD SPECIFICATIONS FOR ALL PUBLIC IMPROVEMENTS.
- THE MID RANGE WATER REDUCING AGENT ADMIXTURE CONFORMING TO ASTM C-494, TYPE A OR D SHALL BE CHOSEN FROM ONE OF THE FOLLOWING (OR APPROVED EQUAL):
 - EUCON X-20 OR EUCON MR BY EUCLID
 - SIKAMENT NL BY SIKA
 - PLASTIMIX MR BY PROMIX TECHNOLOGIES
 - MIRA 85 BY W.R.GRACE AND CO.
 - POLYHEED 1020 BY DEUSSA ADMIXTURESTHE AMOUNT OF MID RANGE WATER REDUCER SHALL BE AS RECOMMENDED BY THE ADMIXTURE SUPPLIER TO INCREASE THE SLUMP OF THE CONCRETE BY 50 PERCENT OVER THE SLUMP WITHOUT THE ADMIXTURE. THE SLUMP GIVEN IN THE CONCRETE NOTES ARE AT THE POINT OF DISCHARGE.
- IF THE AIR TEMPERATURE IS GREATER THAN 90 DEGREES WITHIN 24 HOURS AFTER PLACEMENT, HOT WEATHER CONCRETE PROCEDURES SHALL BE USED. THE CONTRACTOR SHALL SUBMIT A PROCEDURE TO THE ENGINEER FOR APPROVAL. THESE PROCEDURES MAY INCLUDE THE FOLLOWING:
 - A. PLACING THE CONCRETE IN THE EARLY MORNING HOURS
 - B. THE USE OF EVAPORATION REDUCER (SEE BELOW)
 - C. THE USE OF MISTING AS A CURING METHOD
 - D. THE USE OF WET BLANKETS AS A CURING METHOD
 - E. THE USE OF A RETARDING ADMIXTURE (NOT PREFERRED)
- ANY CONCRETE TO BE PLACED FURTHER THAN 15 FEET FROM THE END OF A CONCRETE TRUCK SHALL BE PUMPED WITH A COMMERCIAL CONCRETE PUMPING TRUCK OR OTHER PLACEMENT METHOD APPROVED BY THE ENGINEER. THE CONCRETE TRUCK SHALL NOT BE ALLOWED TO DRIVE OVER THE SUBGRADE OR THE PAVEMENT REINFORCEMENT UNLESS APPROVED BY THE ENGINEER.
- REINFORCING STEEL SHALL BE NEW DOMESTIC DEFORMED BILLET STEEL CONFORMING TO A.S.T.M. A-615 GRADE 80.
- REINFORCING BARS, BAR SUPPORTS, AND SPACERS SHALL BE DETAILED AND PROVIDED IN ACCORDANCE WITH THE A.C.I. DETAILING MANUAL. CHAIRS SHALL NOT BE PLACED FURTHER THAN 4 FEET APART. BAR SUPPORTS SHALL BE DAYTON/RICHMOND PRODUCTS (800-745-3703) OR EQUAL.
- AT CONCRETE PAVEMENT: (CONCRETE THICKNESS MINUS 1 1/2 INCHES) HIGH, TYPE R21, OR TYPE BBP
- MASTER BUILDERS CONFLIM OR EUCOBAR EVAPORATION REDUCERS SHALL BE USED AFTER EACH FINISHING OPERATION ON THE CAST-IN-PLACE CONCRETE PAVEMENT UNLESS PRIOR APPROVAL FROM THE ENGINEER HAS BEEN OBTAINED TO NOT USE THIS PRODUCT.
- SAWCUTS IN CONCRETE PAVEMENT SHALL BE MADE AS SOON AS THE CONCRETE IS OF SUFFICIENT STRENGTH TO SAW WITHOUT RAVELING THE AGGREGATE. ANY TIME LAPSE GREATER THAN 8 HOURS AFTER PLACING THE CONCRETE SHALL BE PERMITTED ONLY IF APPROVED BY THE ENGINEER.
- NO PIPING OR CONDUITS SHALL BE INSTALLED IN ANY CONCRETE WITHOUT THE APPROVAL OF THE ENGINEER.
- THE CONTRACTOR SHALL PROVIDE, CONSTRUCT AND MAINTAIN BARRICADES AND SIGNS IN ACCORDANCE WITH THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
- SAWCUTS SHALL HAVE A MAXIMUM SPACING OF 15' EACH WAY.
- EXPANSION JOINTS SHALL BE SMOOTH DOWEL JOINTS WITH THE PAVEMENT THICKNESS INCREASED BY 25%. ONE END OF DOWELS TO BE GREASED AND CAPPED AND USE 1" EXPANSION JOINT MATERIAL IN THE JOINT. REDWOOD OR OTHER RIGID MATERIAL SHOULD BE AVOIDED. SPACE EXPANSION JOINTS BETWEEN 80' AND 100' APART AND AT ALL LOCATIONS IN WHICH LARGE PAVEMENT SECTIONS INTERSECT SMALLER SECTIONS.
- ALL EXPANSION JOINTS MUST BE SEALED WITH A BITUMINOUS JOINT SEALANT OR APPROVED EQUAL.
- IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO ACQUIRE ALL NECESSARY PERMITS FROM THE CITY OF LUCAS BEFORE CONSTRUCTION WITHIN CITY RIGHT-OF-WAY.
- ALL DIMENSIONS ARE TO FACE OF CURB OR EDGE OF PAVEMENT, UNLESS OTHERWISE NOTED.
- GREASE TRAPS, MANHOLES, AND VALVE COVERS IN PAVED AREAS SHALL BE TRAFFIC BEARING AND RIM ELEVATIONS SHALL MATCH FINAL PAVING ELEVATION.

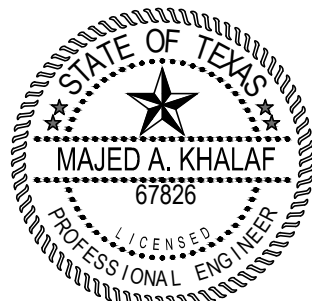
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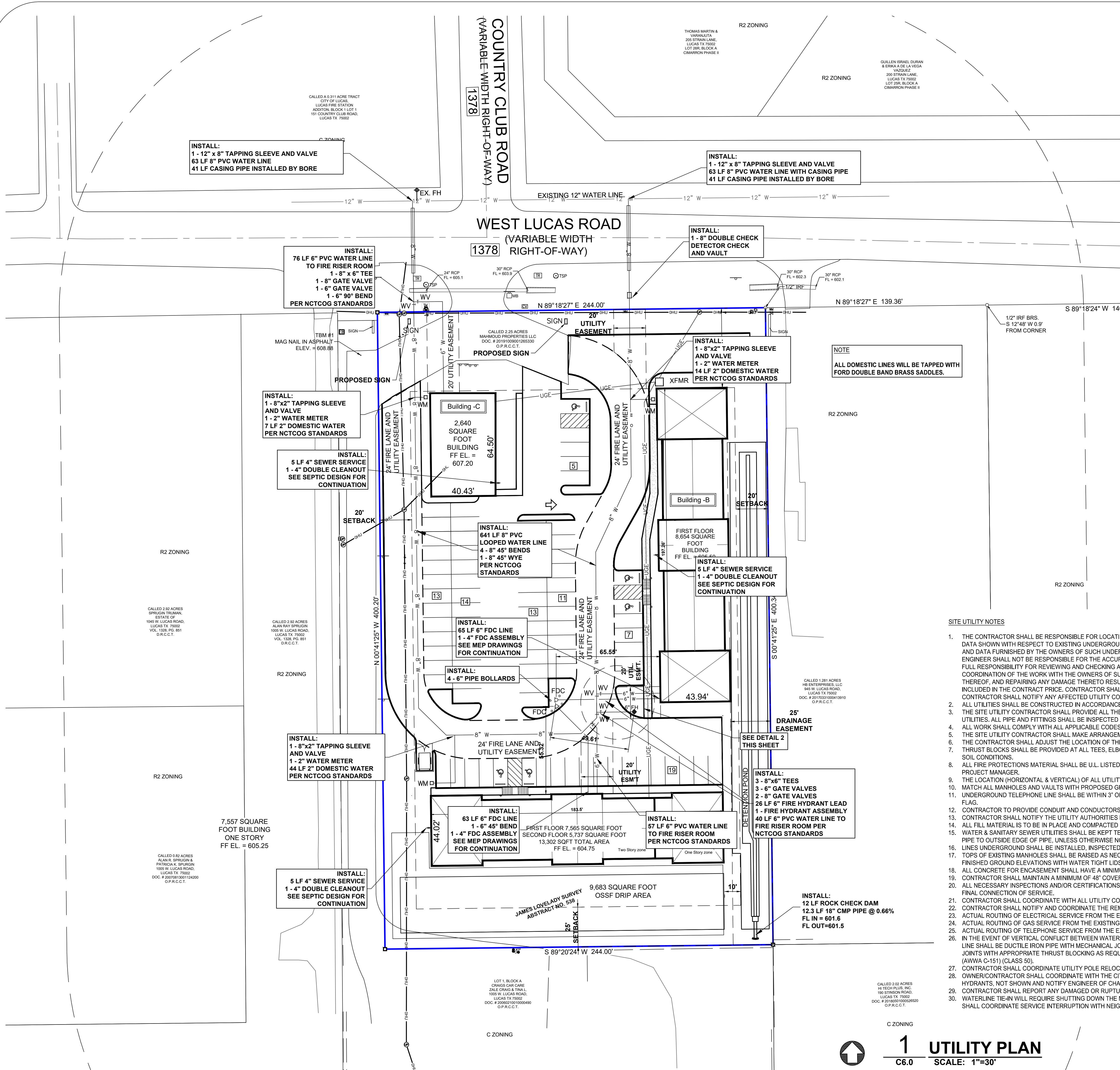


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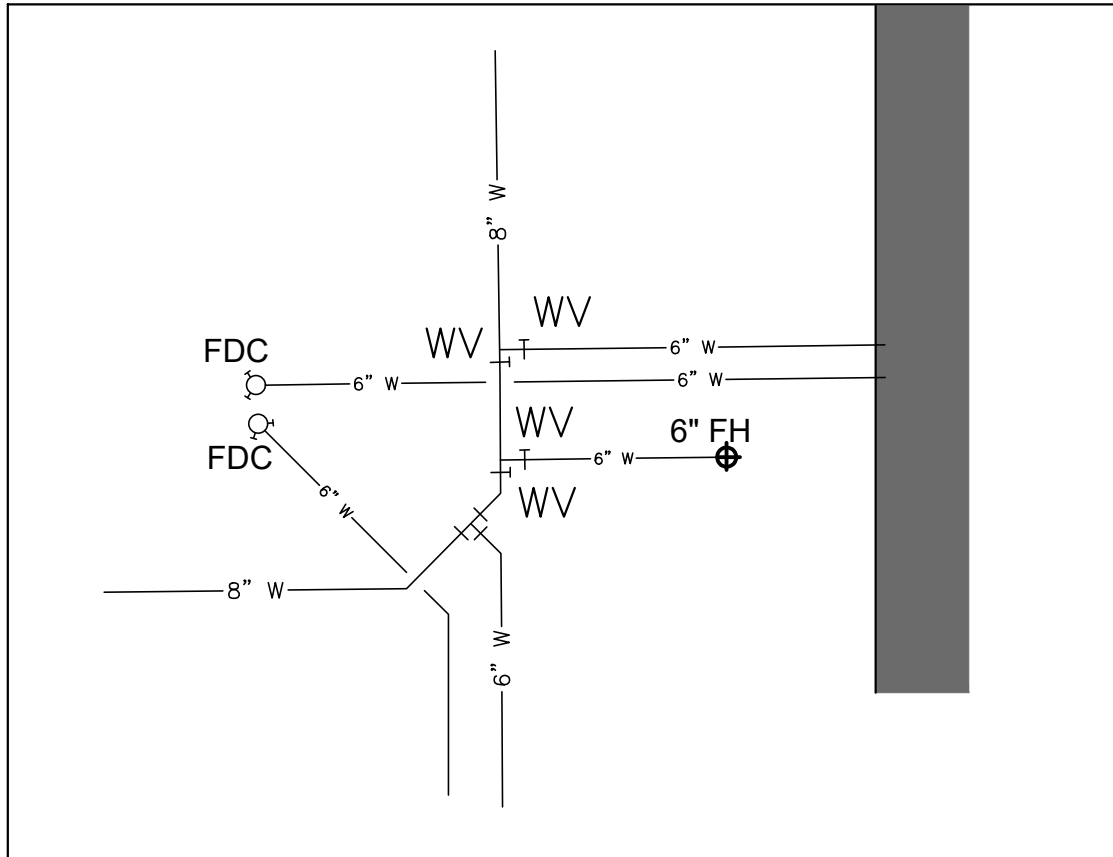
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Project No: 22014

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Project	220014	Sheet
Date	03/16/23	C5.0
Scale	1" = 20'	



LEGEND - UTILITY PLAN	
	PROPERTY LINE
	ADJACENT PROPERTY LINE
	BUILDING SETBACK
	EASEMENT
	FIRE LANE STRIPING
	PROPOSED WATER LINE
	PROPOSED SANITARY SEWER LINE
	PROPOSED STORM SEWER LINE
	EXISTING WATER LINE
	EXISTING SANITARY SEWER LINE
	EXISTING STORM SEWER LINE
	EXISTING GAS LINE
	EXISTING OVERHEAD ELECTRIC LINE
	EXISTING UNDERGROUND ELECTRIC LINE
	EXISTING UNDERGROUND TELEPHONE LINE
	EXISTING UNDERGROUND CABLE LINE
	EXISTING TREE TO REMAIN
	PROPOSED FIRE HYDRANT
	PROPOSED GATE VALVE
	PROPOSED WATER METER
	PROPOSED MANHOLE
	EXISTING FIRE HYDRANT
	EXISTING GATE VALVE
	EXISTING WATER METER
	EXISTING MANHOLE
	EXISTING POWER POLE



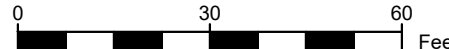
2 WATER CONNECTION
C6.0 SCALE: NTS

SITE UTILITY NOTES

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES, WHETHER PRIVATE OR PUBLIC, PRIOR TO EXCAVATING. THE INFORMATION AND DATA SHOWN WITH RESPECT TO EXISTING UNDERGROUND FACILITIES AT OR CONTIGUOUS TO THE SITE IS APPROXIMATE AND BASED ON THE INFORMATION AND DATA FURNISHED BY THE OWNERS OF SUCH UNDERGROUND FACILITIES OR ON PHYSICAL APPEARANCES OBSERVED IN THE FIELD. THE OWNER AND ENGINEER SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ANY SUCH INFORMATION OR DATA, AND THE CONTRACTOR SHALL HAVE FULL RESPONSIBILITY FOR REVIEWING AND CHECKING ALL SUCH INFORMATION AND DATA FOR LOCATING ALL UNDERGROUND FACILITIES. FOR COORDINATION OF THE WORK WITH THE OWNERS OF SUCH UNDERGROUND FACILITIES DURING CONSTRUCTION, FOR THE SAFETY AND PROTECTION THEREOF, AND REPAIRING ANY DAMAGE THERETO RESULTING FROM THE WORK, THE COST OF ALL OF WHICH WILL BE CONSIDERED AS HAVING BEEN INCLUDED IN THE CONTRACT PRICE. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATIONS OF EXISTING UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY ANY AFFECTED UTILITY COMPANIES OR AGENCIES AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.
- ALL UTILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF LUCAS PUBLIC WORKS SPECIFICATIONS AND/OR NCTCOG STANDARDS.
- THE SITE UTILITY CONTRACTOR SHALL PROVIDE ALL THE MATERIALS AND APPURTENANCES NECESSARY FOR THE COMPLETE INSTALLATION OF THE UTILITIES. ALL PIPE AND FITTINGS SHALL BE INSPECTED BY THE CITY INSPECTOR PRIOR TO BEING COVERED.
- ALL WORK SHALL COMPLY WITH ALL APPLICABLE CODES, REGULATIONS, AND/OR LOCAL STANDARDS AND REQUIREMENTS.
- THE SITE UTILITY CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE COMMUNITY WATER CO. FOR THE CONNECTIONS TO THE EXISTING WATER MAIN.
- THE CONTRACTOR SHALL ADJUST THE LOCATION OF THE PROPOSED WATER LINES AS REQUIRED TO AVOID CONFLICTS WITH THE OTHER UTILITIES.
- THRUST BLOCKS SHALL BE PROVIDED AT ALL TEES, ELBOWS AND BENDS, AND WILL BE OF SUFFICIENT SIZE TO COMPLY WITH CITY STANDARDS FOR EXISTING SOIL CONDITIONS.
- ALL FIRE PROTECTION MATERIAL SHALL BE U.L. LISTED, FACTORY MUTUAL APPROVED, AND NFPA STANDARDS, UNLESS OTHERWISE DIRECTED BY THE PROJECT MANAGER.
- THE LOCATION (HORIZONTAL & VERTICAL) OF ALL UTILITY LEAD-INS TO THE BUILDING SHALL BE VERIFIED WITH THE BUILDING MECHANICAL PLANS.
- MATCH ALL MANHOLES AND VAULTS WITH PROPOSED GROUND ELEVATIONS.
- UNDERGROUND TELEPHONE LINE SHALL BE WITHIN 3' OF CONDUIT, BURIED A MINIMUM OF 24", AND TERMINATING AT RIGHT-OF-WAY WITH PULL STRING AND FLAG.
- CONTRACTOR TO PROVIDE CONDUIT AND CONDUCTORS FROM BUILDING TO POLE AND COORDINATE WITH UTILITY PROVIDER FOR CONNECTION.
- CONTRACTOR SHALL NOTIFY THE UTILITY AUTHORITIES INSPECTORS 72 HOURS BEFORE CONNECTING TO ANY EXISTING LINE.
- ALL FILL MATERIAL IS TO BE IN PLACE AND COMPACTED BEFORE INSTALLATION OF PROPOSED UTILITIES.
- WATER & SANITARY SEWER UTILITIES SHALL BE KEPT TEN FEET (10') APART (PARALLEL) OR WHEN CROSSING 24" VERTICAL CLEARANCE (OUTSIDE EDGE OF PIPE TO OUTSIDE EDGE OF PIPE, UNLESS OTHERWISE NOTED.)
- LINES UNDERGROUND SHALL BE INSTALLED, INSPECTED AND APPROVED BEFORE BACKFILLING.
- TOPS OF EXISTING MANHOLES SHALL BE RAISED AS NECESSARY TO BE FLUSH WITH PROPOSED PAVEMENT ELEVATIONS, AND TO BE ONE FOOT ABOVE FINISHED GROUND ELEVATIONS WITH WATER TIGHT LIDS.
- ALL CONCRETE FOR ENCASMENT SHALL HAVE A MINIMUM 28-DAY COMPRESSION STRENGTH AT 3000 P.S.I.
- CONTRACTOR SHALL MAINTAIN A MINIMUM OF 48" COVER BELOW FINISHED GRADE ON ALL WATERLINES.
- ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODES AND/OR UTILITY SERVICE COMPANIES SHALL BE IN POSSESSION BEFORE THE FINAL CONNECTION OF SERVICE.
- CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES FOR INSTALLATION REQUIREMENTS AND SPECIFICATIONS.
- CONTRACTOR SHALL NOTIFY AND COORDINATE THE REMOVAL OF ALL TAP CONNECTIONS WITH THE CITY OF LUCAS.
- ACTUAL ROUTING OF ELECTRICAL SERVICE FROM THE EXISTING TRANSFORMER IS TO BE COORDINATED WITH THE ELECTRICAL UTILITY.
- ACTUAL ROUTING OF GAS SERVICE FROM THE EXISTING GAS LINE TO THE TERMINUS POINT TO THE BUILDING IS TO BE COORDINATED WITH THE GAS UTILITY.
- ACTUAL ROUTING OF TELEPHONE SERVICE FROM THE EXISTING TELEPHONE LINE TO THE BUILDING IS TO BE COORDINATED WITH THE TELEPHONE UTILITY.
- IN THE EVENT OF VERTICAL CONFLICT BETWEEN WATERLINES, SANITARY LINES, STORM LINES AND GAS LINES (EXISTING AND PROPOSED), THE SANITARY LINE SHALL BE DUCTILE IRON PIPE WITH MECHANICAL JOIST AT LEAST 10 FEET ON BOTH SIDES OF CROSSING. THE WATERLINE SHALL HAVE MECHANICAL JOINTS WITH APPROPRIATE THRUST BLOCKING AS REQUIRED TO PROVIDE A MINIMUM OF 24" CLEARANCE, MEETING REQUIREMENTS OF ANSI A21.10 OR A21.11 (AWWA C-151) (CLASS 50).
- CONTRACTOR SHALL COORDINATE UTILITY POLE RELOCATION WITH THE UTILITY COMPANY.
- OWNER/CONTRACTOR SHALL COORDINATE WITH THE CITY FIRE MARSHALL TO PROVIDE ANY ADDITIONAL FIRE SAFETY FEATURES, INCLUDING FIRE HYDRANTS, NOT SHOWN AND NOTIFY ENGINEER OF CHANGES.
- CONTRACTOR SHALL REPORT ANY DAMAGED OR RUPTURE TO ANY UTILITIES TO THE APPROPRIATE AUTHORITIES AND TO THE CITY OF LUCAS.
- WATERLINE TIE-IN WILL REQUIRE SHUTTING DOWN THE MAIN, WHICH WILL REQUIRE INTERRUPTING SERVICE TO ADJACENT PROPERTIES. CONTRACTOR SHALL COORDINATE SERVICE INTERRUPTION WITH NEIGHBOR AND/OR SHUTDOWN THE MAIN AT NIGHT.



1 UTILITY PLAN
C6.0 SCALE: 1"=30'



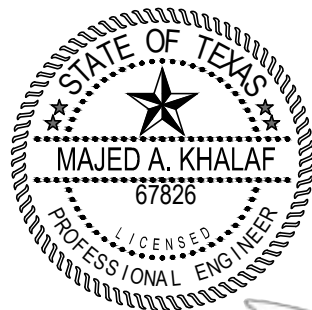
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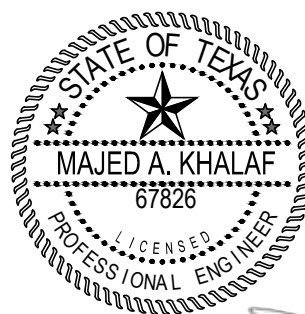
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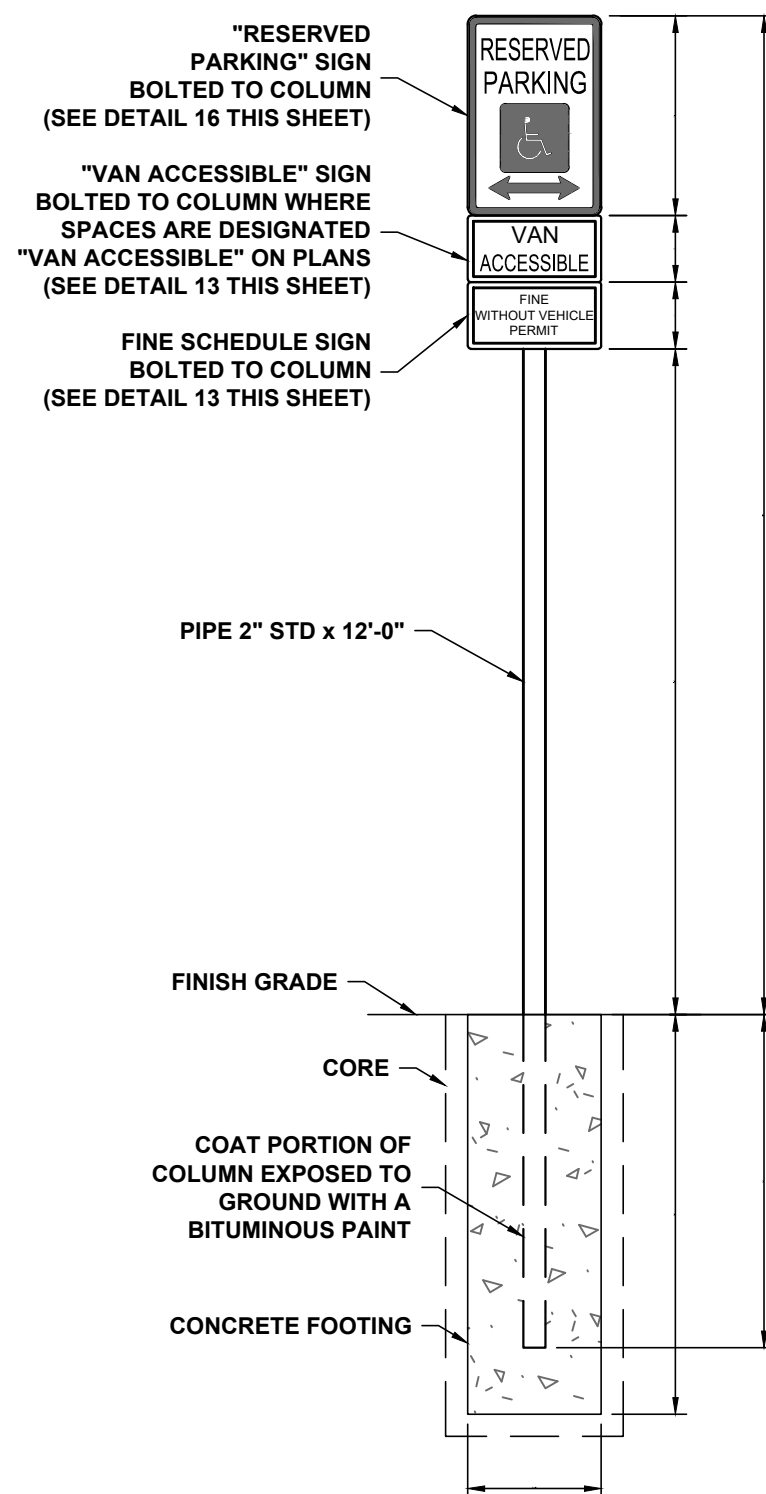
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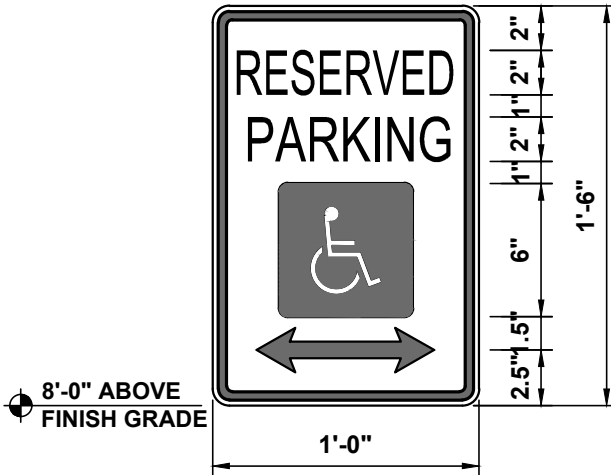
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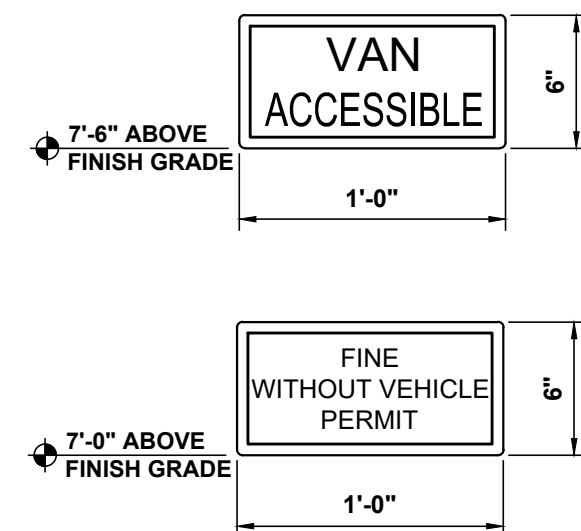
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220014	C7.0
Date	
03/16/23	



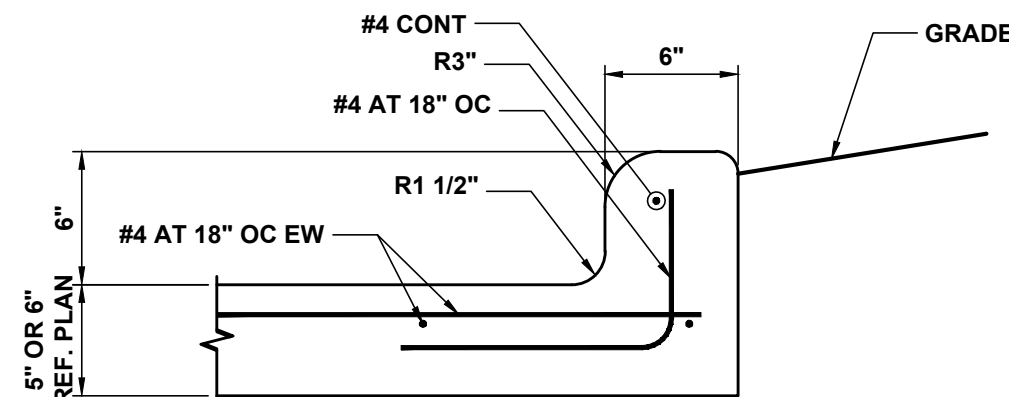
14 TYPICAL ADA
SIGN POST DETAIL
C7.0 NOT TO SCALE



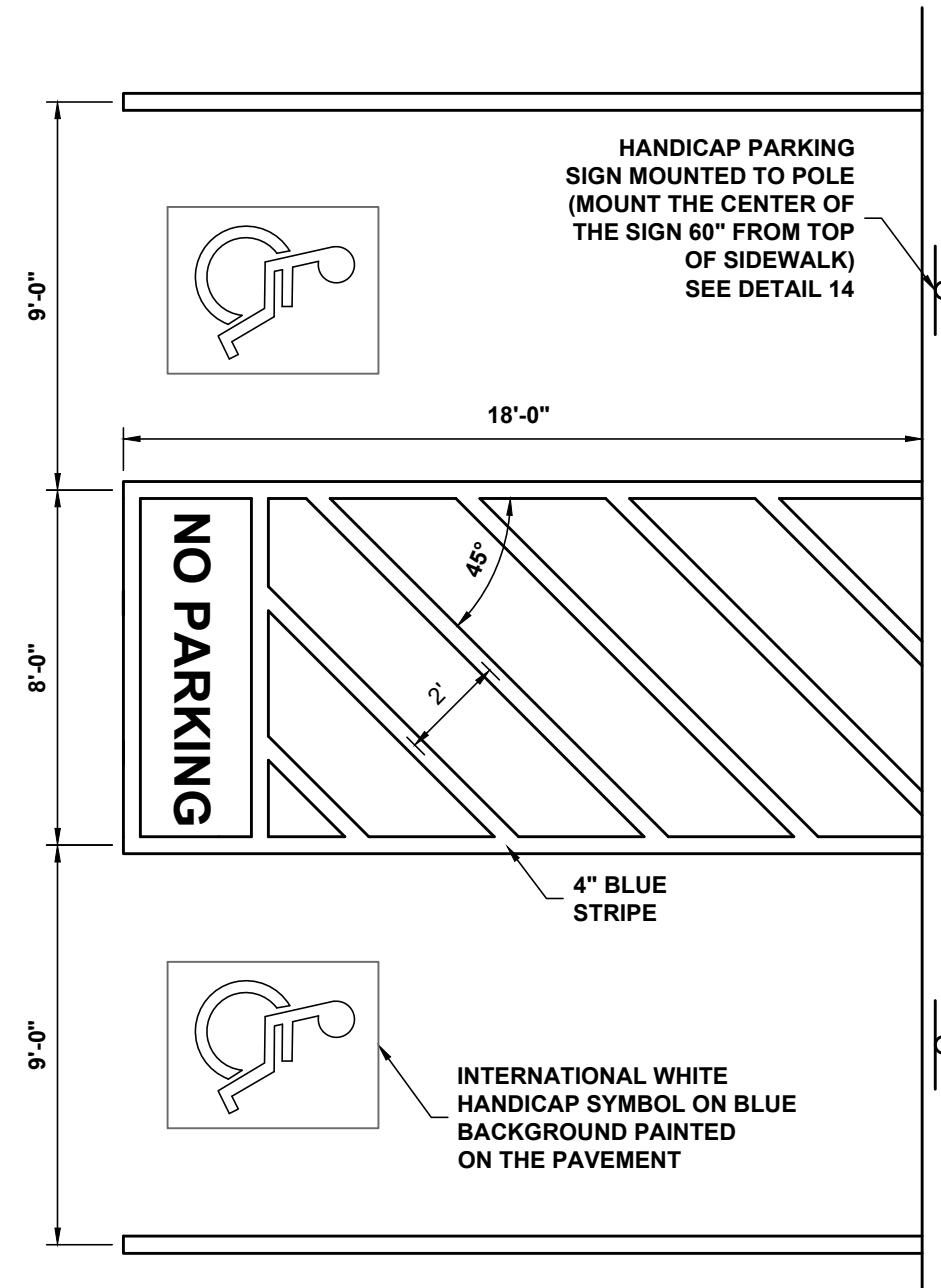
16 RESERVED PARKING SIGN
C7.0 NOT TO SCALE



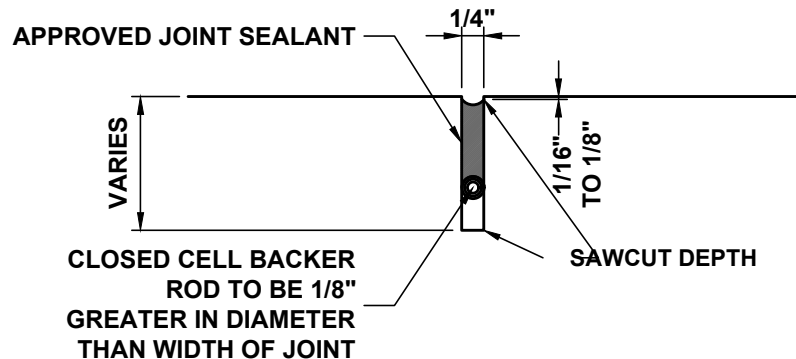
13 VAN ACCESSIBLE AND
FINE SCHEDULE SIGN
C7.0 NOT TO SCALE



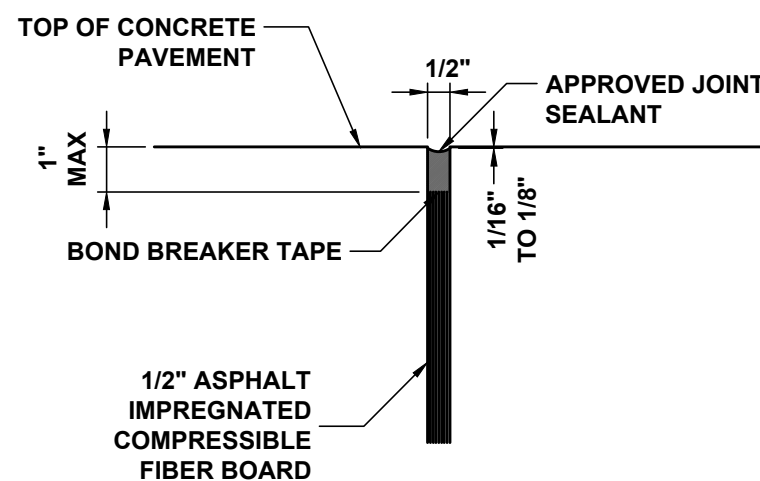
12 TYPICAL CURB SECTION
C7.0 NOT TO SCALE



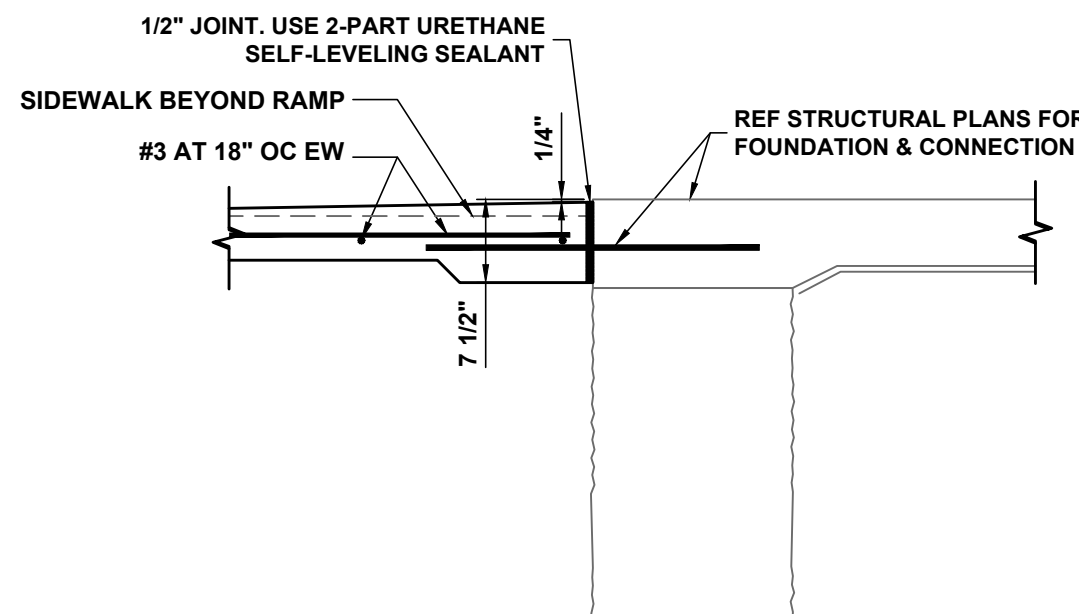
11 HANDICAP PARKING
SPACE DETAIL
C7.0 NOT TO SCALE



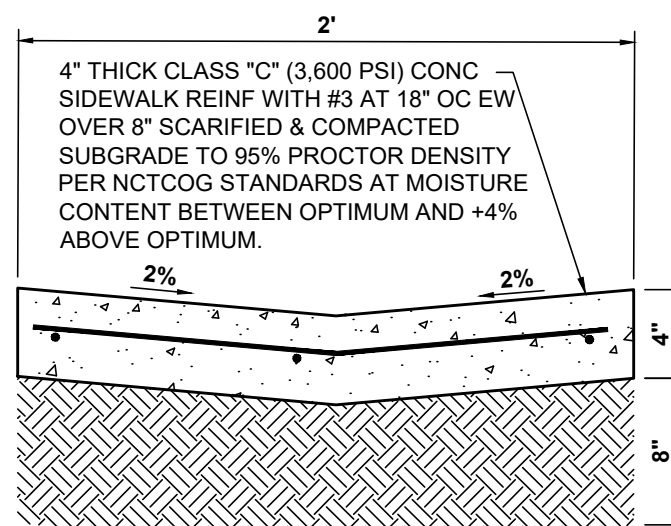
10 LONGITUDINAL JOINT
SEALING DETAIL
C7.0 NOT TO SCALE



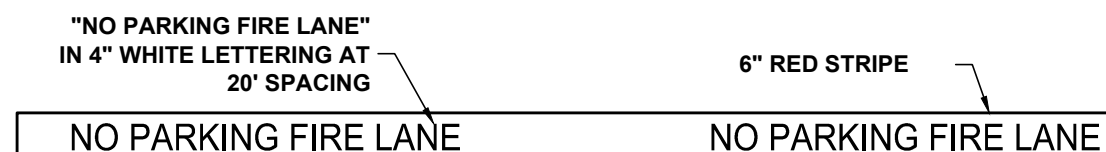
9 EXPANSION JOINT
SEALING DETAIL
C7.0 NOT TO SCALE



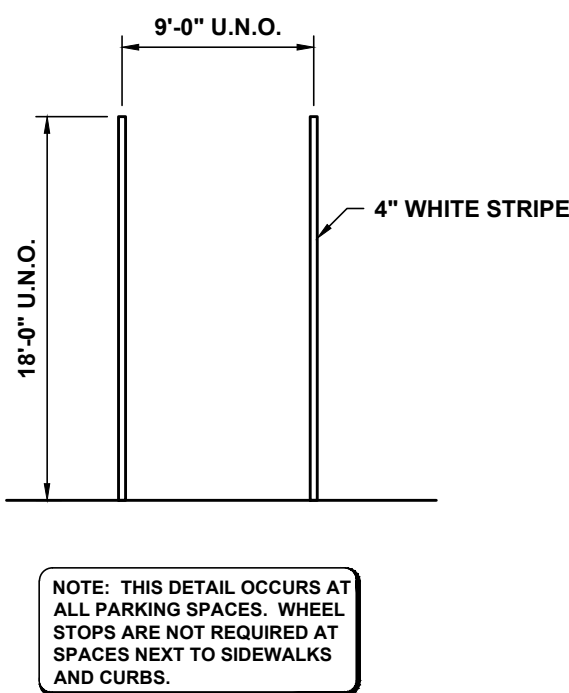
8 SIDEWALK AT
DOOR SECTION DETAIL
C7.0 NOT TO SCALE



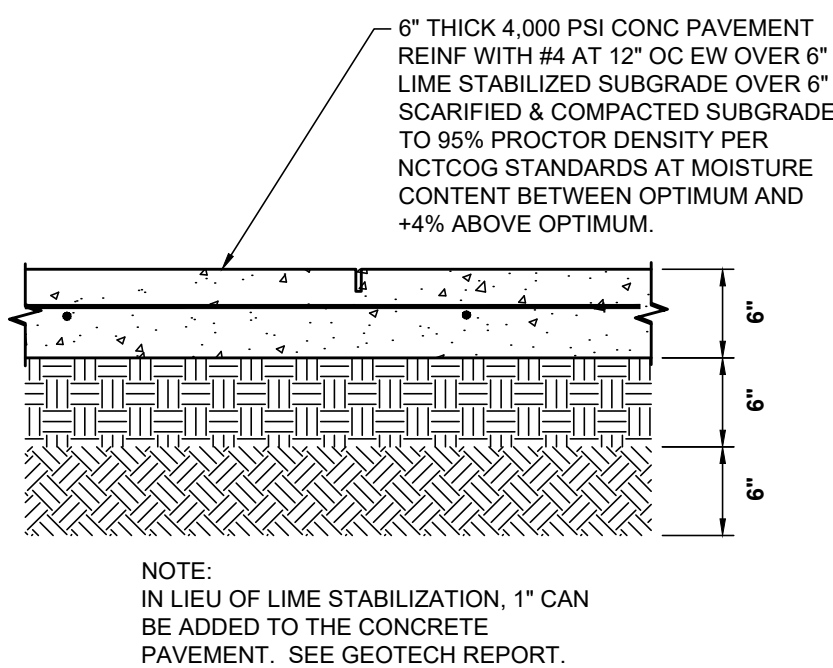
7 LOW FLOW PILOT CHANNEL
C7.0 NOT TO SCALE



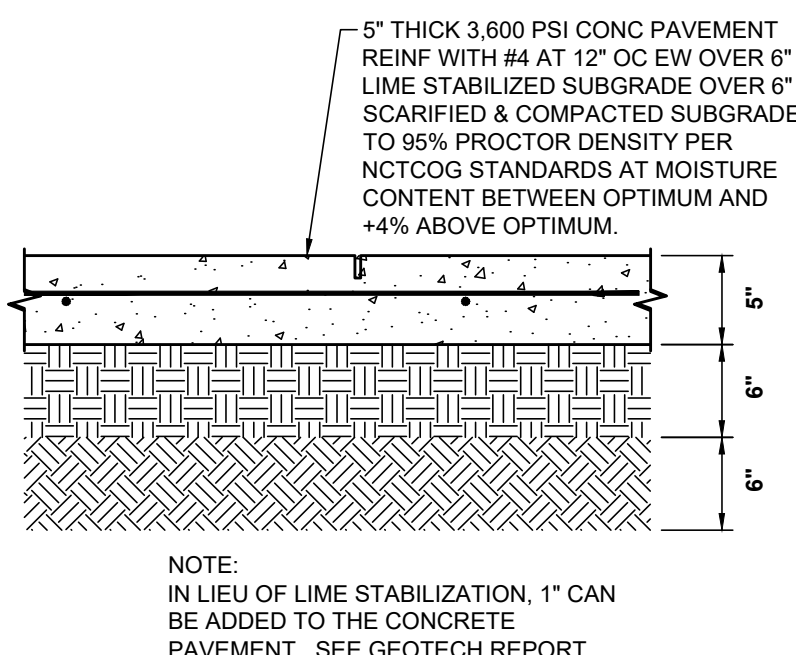
6 TYPICAL FIRE LANE
STRIPING DETAIL
C7.0 NOT TO SCALE



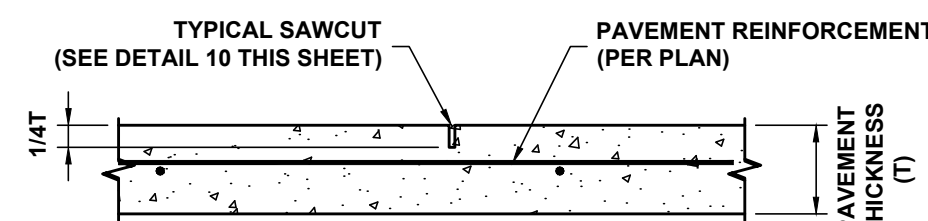
5 TYPICAL PARKING
STRIPES DETAIL
C7.0 NOT TO SCALE



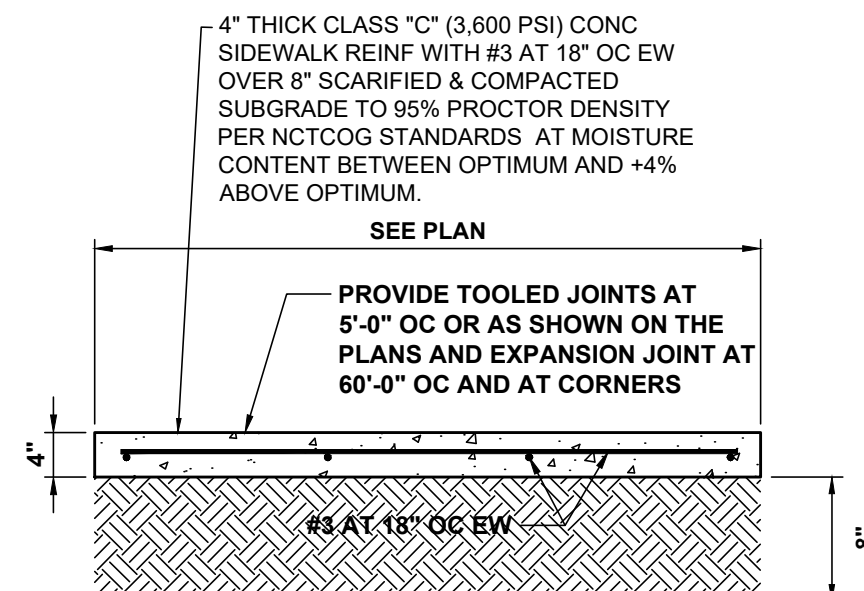
4 FIRE LANE PAVEMENT SECTION
C7.0 NOT TO SCALE



3 SITE PAVEMENT SECTION
C7.0 NOT TO SCALE

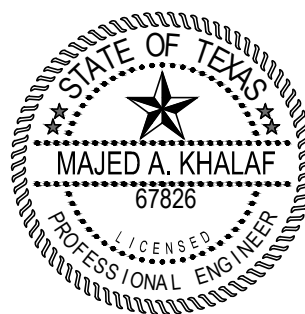


2 TYPICAL SAWCUT
SECTION DETAIL
C7.0 NOT TO SCALE



1 TYPICAL SIDEWALK SECTION
C7.0 NOT TO SCALE

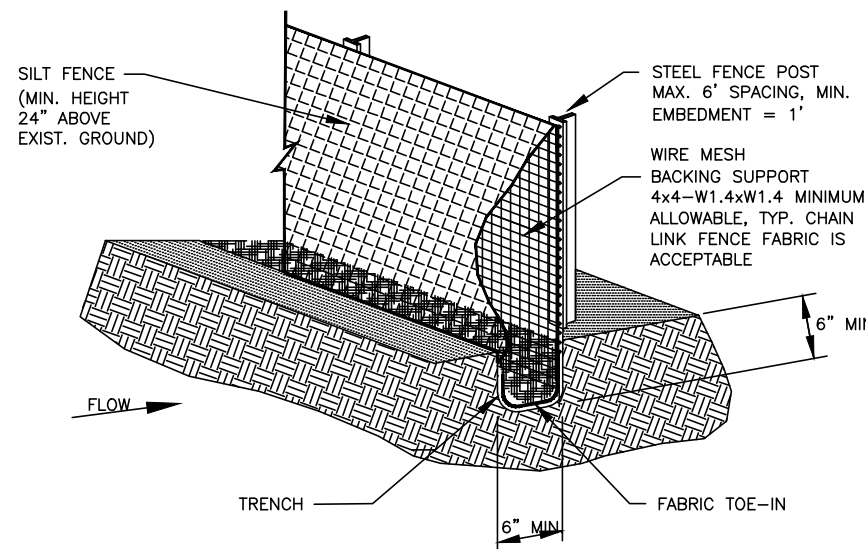
No.	Revision/Issue	Date



03/16/2023

Issued Date: 03-16-23
Project No: 22014
Drawn By: JPK
Checked By: MAK
Designed By: JPK

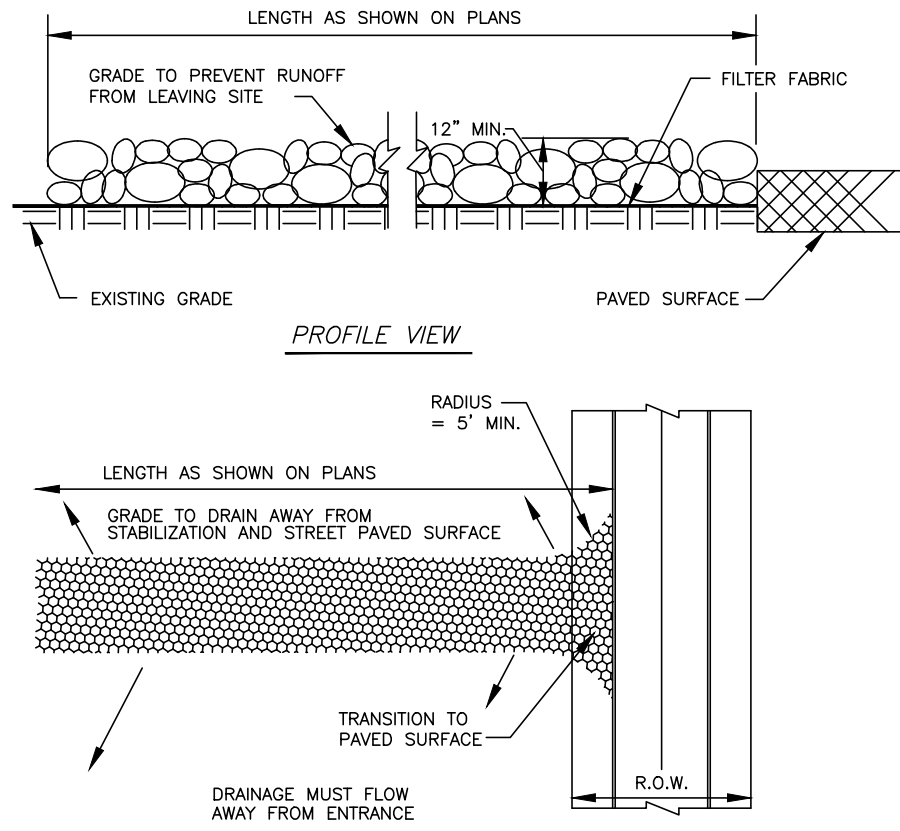
Project	220014	Sheet
Date	03/16/23	C7.1
Scale		



SILT FENCE GENERAL NOTES:

- STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF ONE FOOT.
- THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (e.g. PAVEMENT), WEIGHT FABRIC FLAP WITH ROCK ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.
- THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
- SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IN TURN IS ATTACHED TO THE STEEL FENCE POST. THERE SHALL BE A 3 FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
- INSPECTION SHALL BE MADE EVERY TWO WEEKS AND AFTER EACH 1/2" RAINFALL. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
- SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
- ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF HALF THE HEIGHT OF THE FENCE. THE SILT SHALL BE DISPOSED OF AT AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.

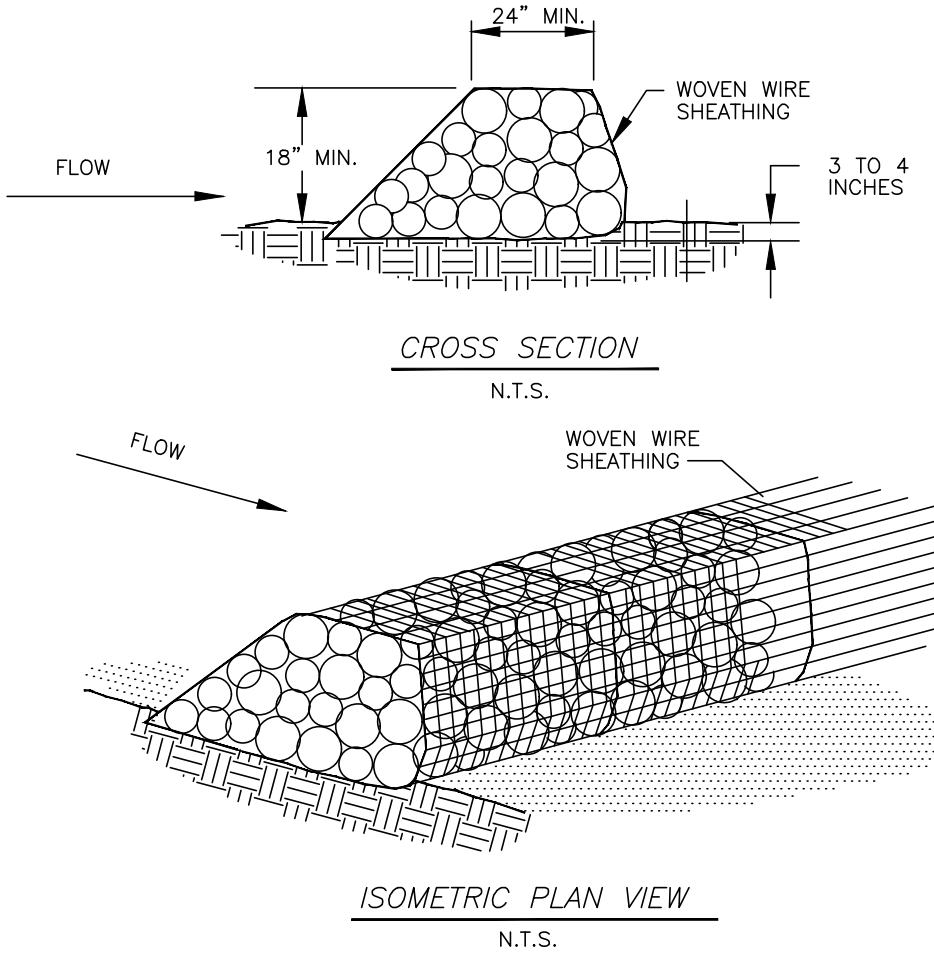
7
C7.1
SILT FENCE
NOT TO SCALE



NOTES:

- STONE SHALL BE 3 TO 5 INCH DIAMETER CRUSHED ROCK.
- LENGTH SHALL BE SHOWN ON PLANS, WITH A MINIMUM LENGTH OF 30 FEET FOR LOTS WHICH ARE LESS THAN 150 FEET FROM EDGE OF PAVEMENT. THE MINIMUM DEPTH IN ALL OTHER CASES SHALL BE 50 FEET.
- THE THICKNESS SHALL NOT BE LESS THAN 12 INCHES.
- THE WIDTH SHALL BE NO LESS THAN THE FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
- WHEN NECESSARY, VEHICLES SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO A PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WITH DRAINAGE FLOWING AWAY FROM BOTH THE STREET AND THE STABILIZED ENTRANCE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PAVED SURFACES. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PAVED SURFACES MUST BE REMOVED IMMEDIATELY.
- THE ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

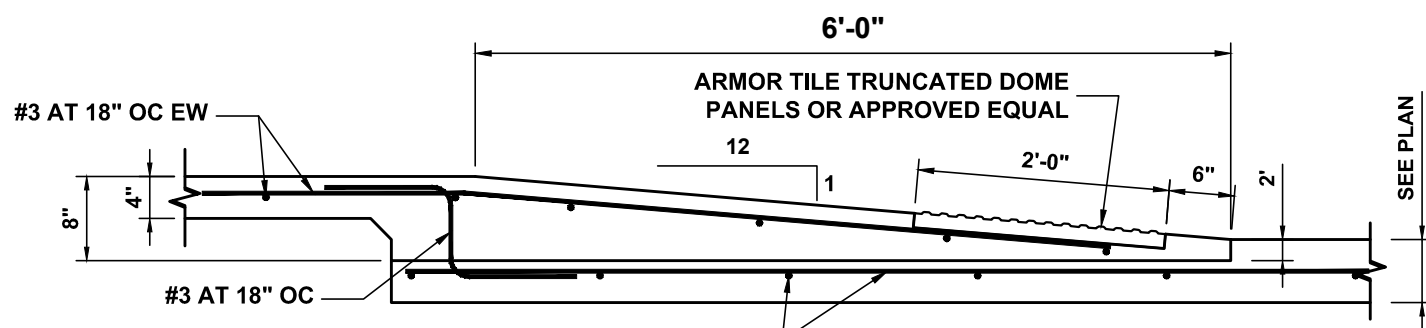
8
C7.1
**TEMPORARY STABILIZED
CONSTRUCTION ENTRANCE**
NOT TO SCALE



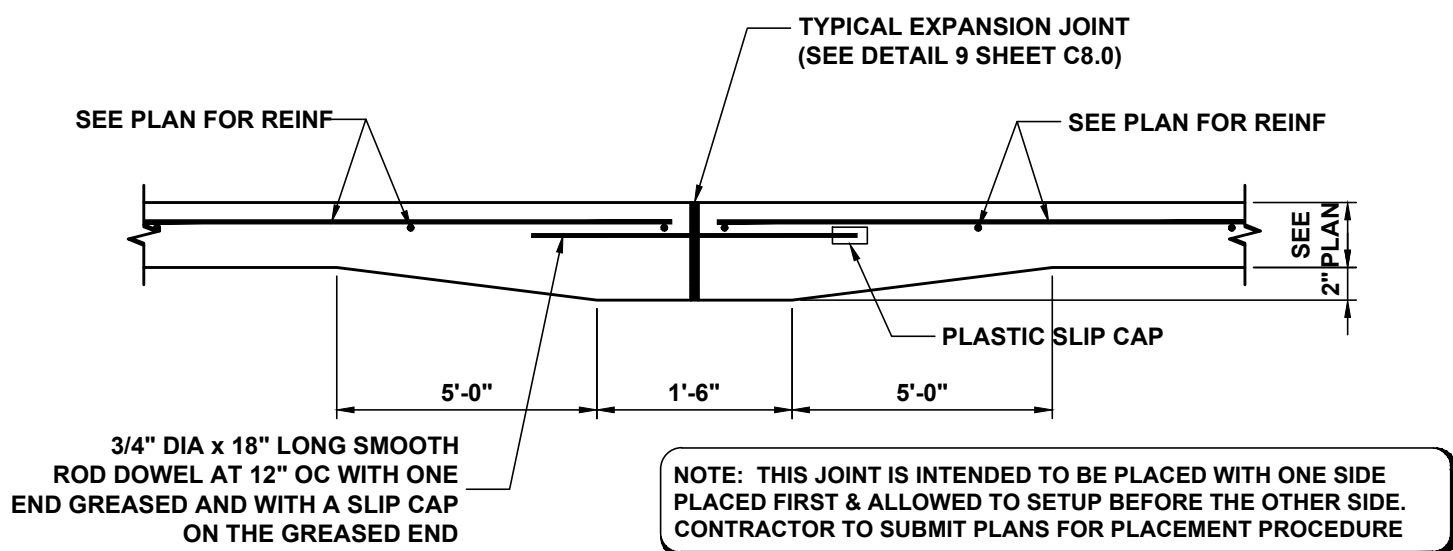
ROCK CHECK DAM GENERAL NOTES:

- USE ONLY OPEN GRADED ROCK 4-8 INCHES IN DIAMETER FOR STREAM FLOW CONDITION. USE OPEN GRADED ROCK 3-5 INCHES IN DIAMETER FOR OTHER CONDITIONS.
- THE ROCK CHECK DAM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING A MAXIMUM OPENING OF 1 INCH AND A MINIMUM WIRE SIZE OF 20 GAUGE AND SHALL BE BURIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP.
- THE ROCK CHECK DAM SHALL BE INSPECTED EVERY TWO WEEKS OR AFTER EACH 1/2" RAIN EVENT AND SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
- WHEN SILT REACHES A DEPTH EQUAL TO ONE-THIRD OF THE HEIGHT OF THE DAM OR ONE FOOT, WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF PROPERLY.

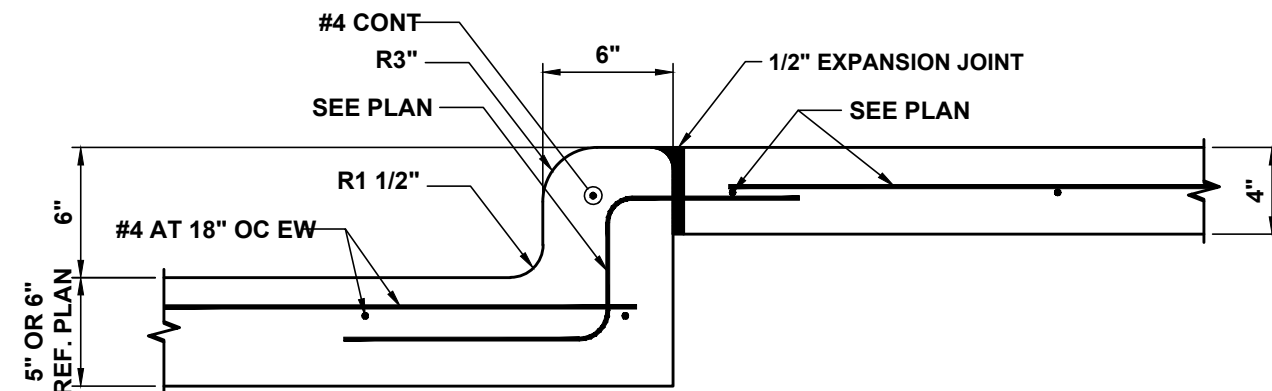
9
C7.1
ROCK CHECK DAM
NOT TO SCALE



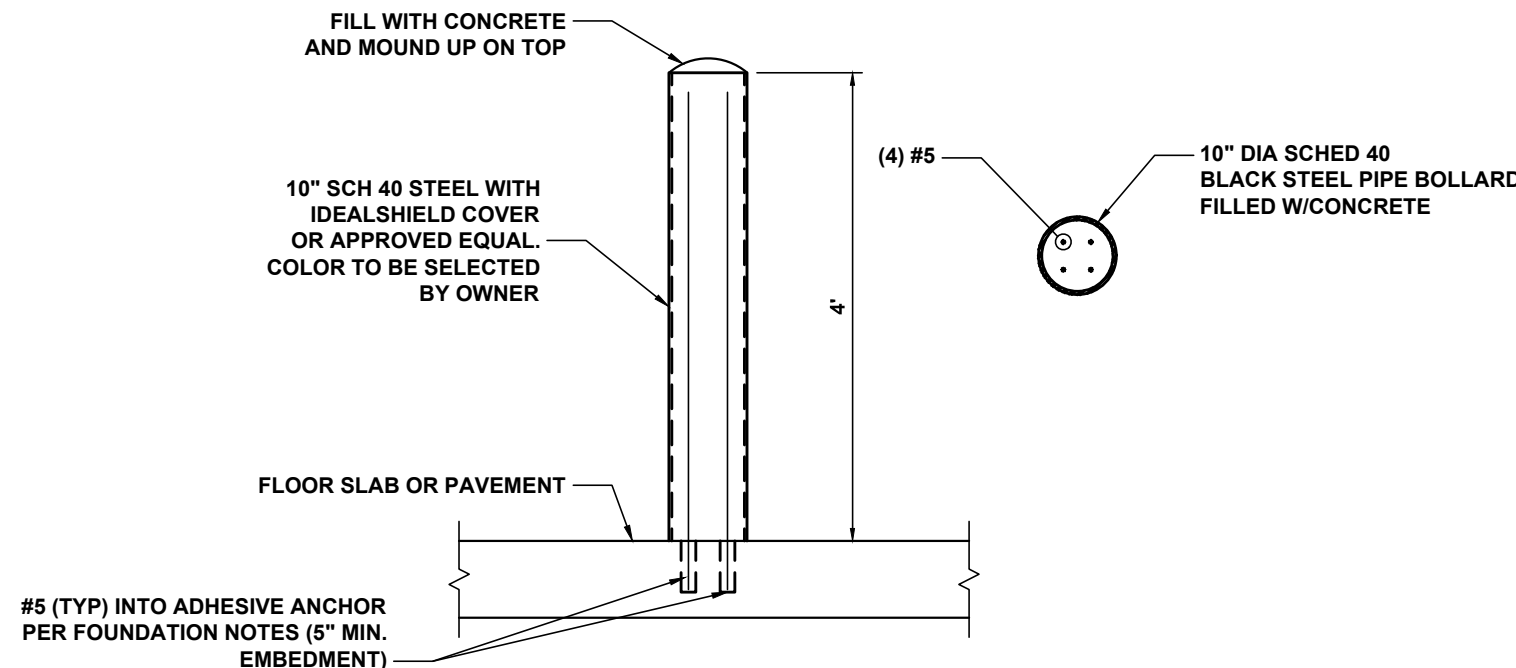
5
C7.1
BARrier FREE RAMP DETAIL
NOT TO SCALE



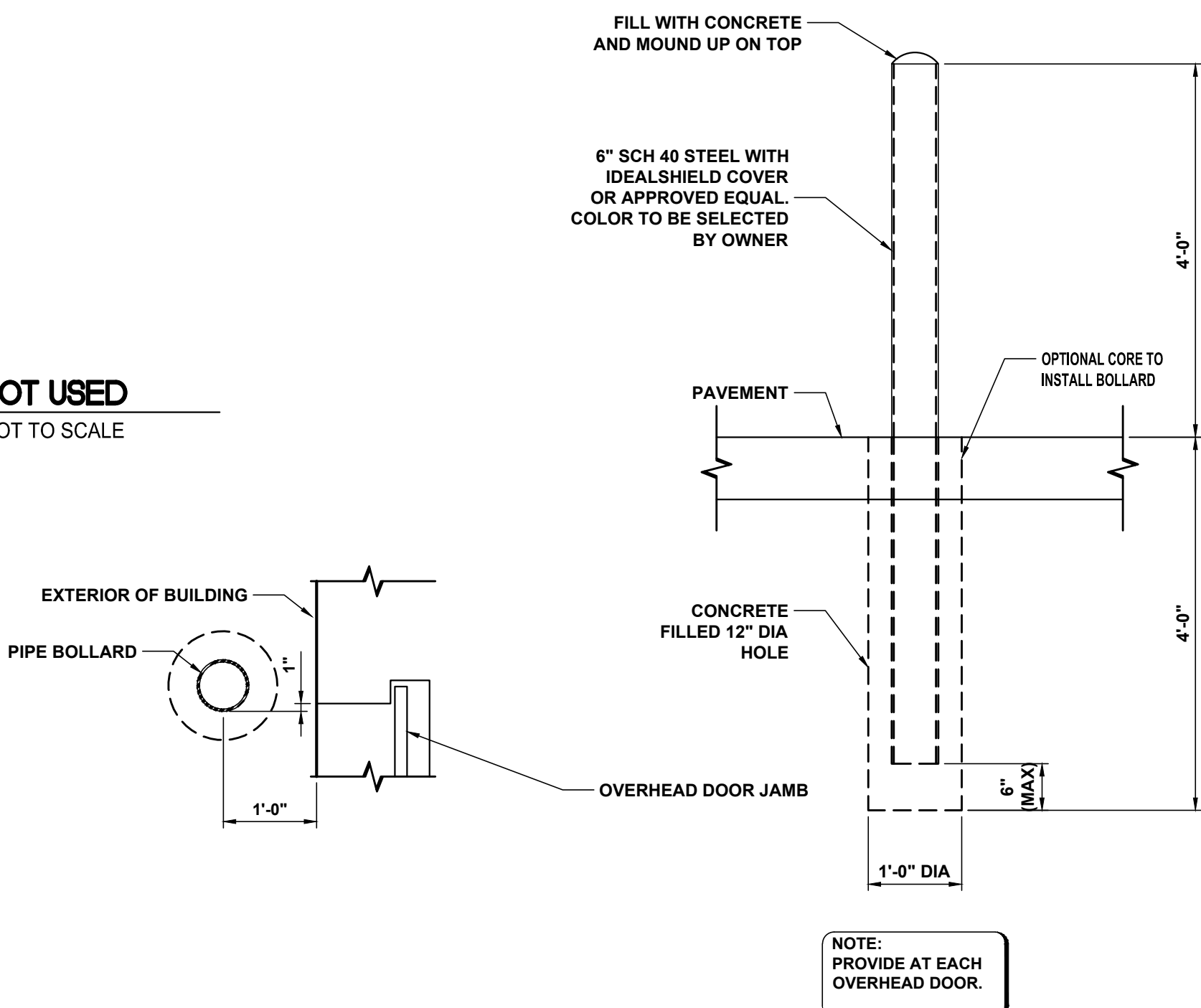
2
C7.1
**TYPICAL EXPANSION
JOINT SECTION DETAIL**
NOT TO SCALE



4
C7.1
**TYPICAL CURB AT
SIDEWALK SECTION DETAIL**
NOT TO SCALE

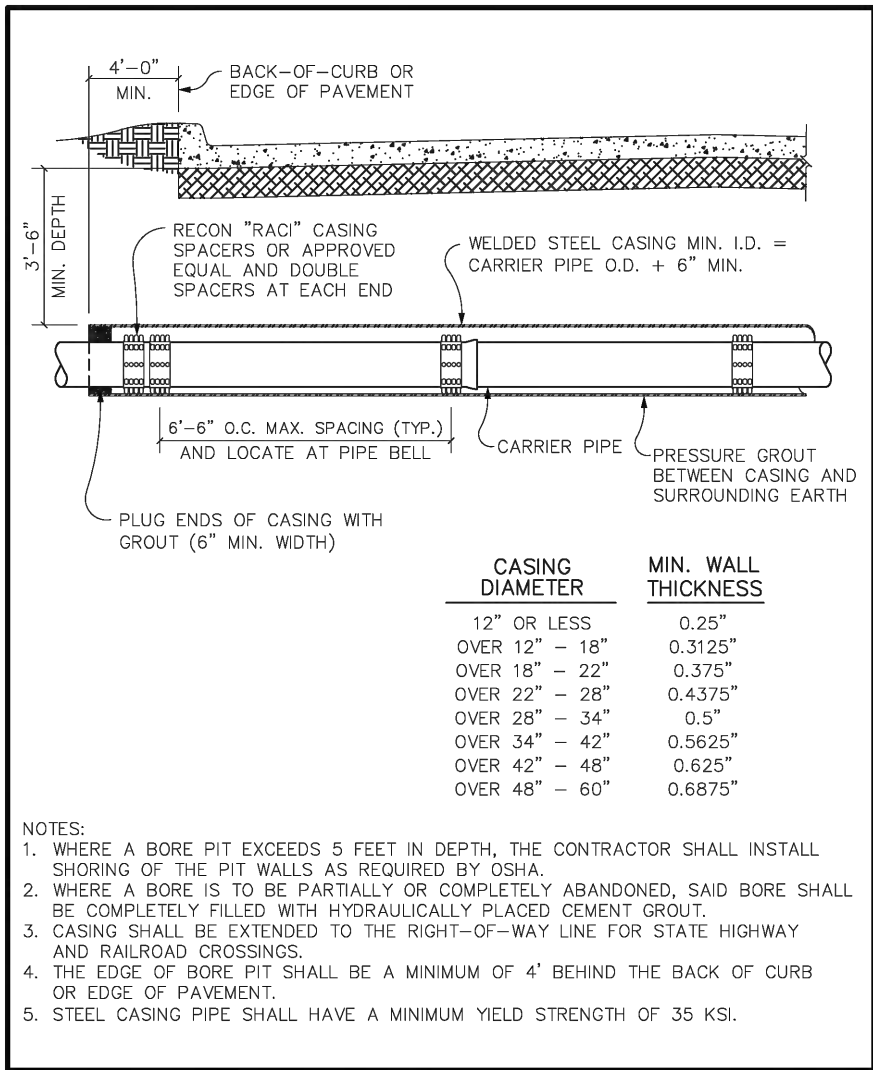


1
C7.1
**TYPICAL SHALLOW
BOLLARD DETAIL**
NOT TO SCALE

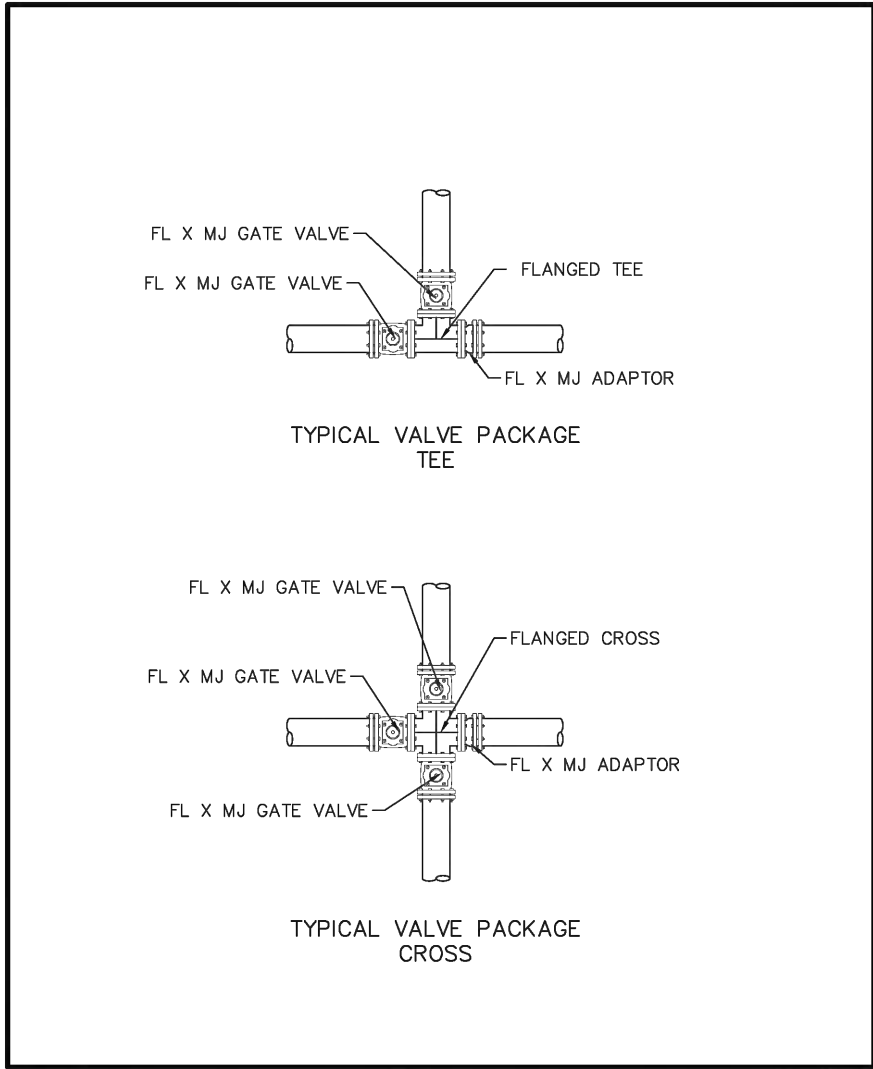


3
C7.1
**TYPICAL DEEP
BOLLARD DETAIL**
NOT TO SCALE

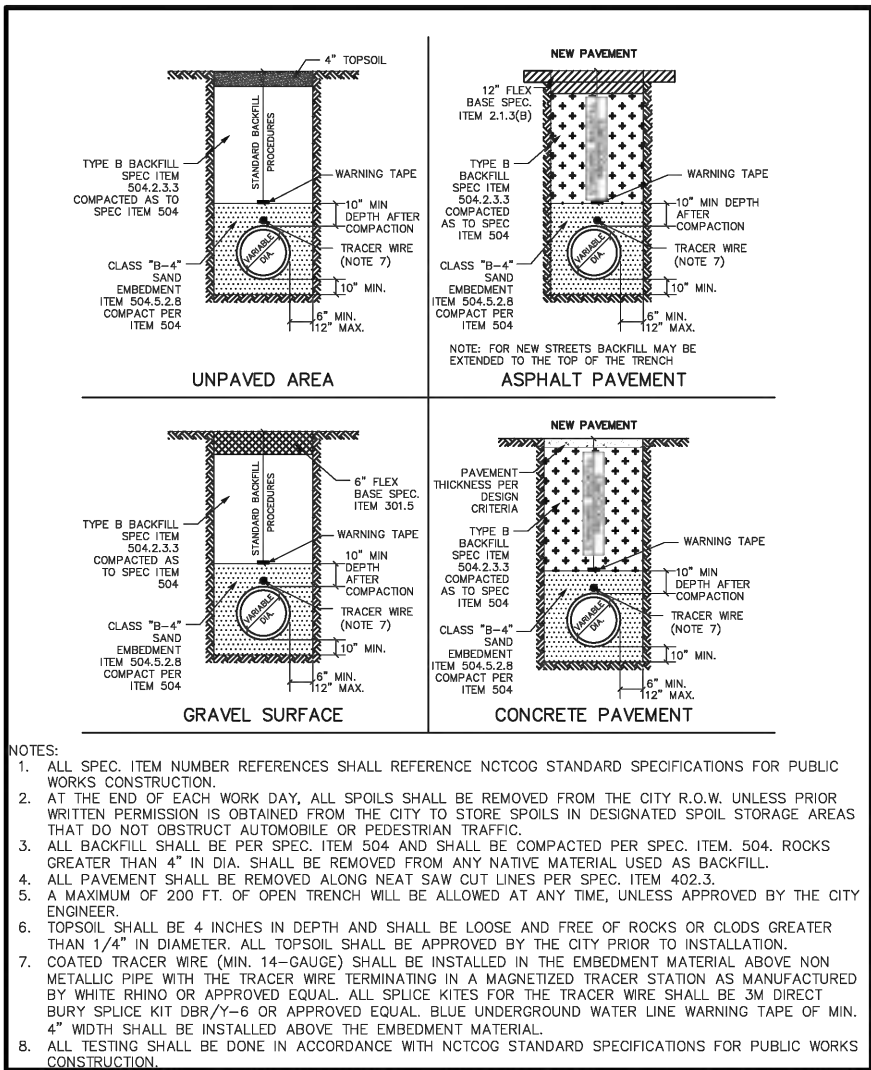
6
C7.1
NOT USED
NOT TO SCALE



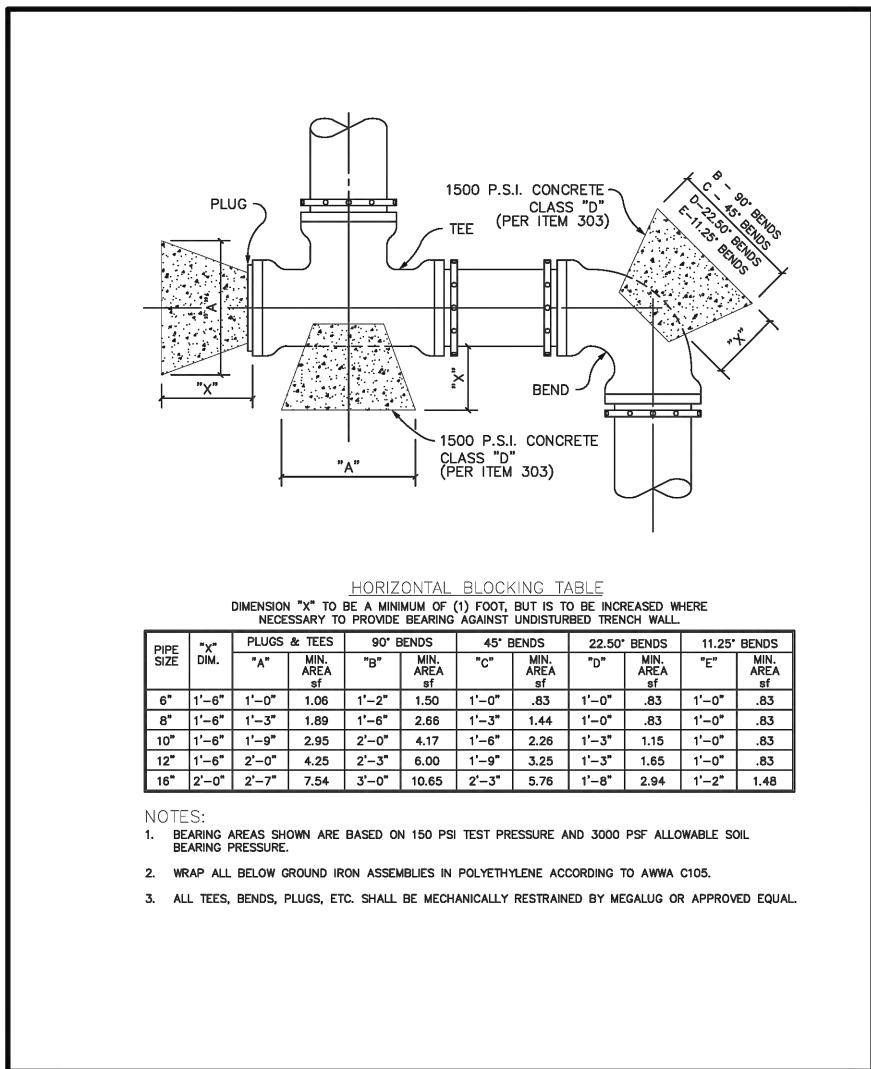
BORE AND CASING



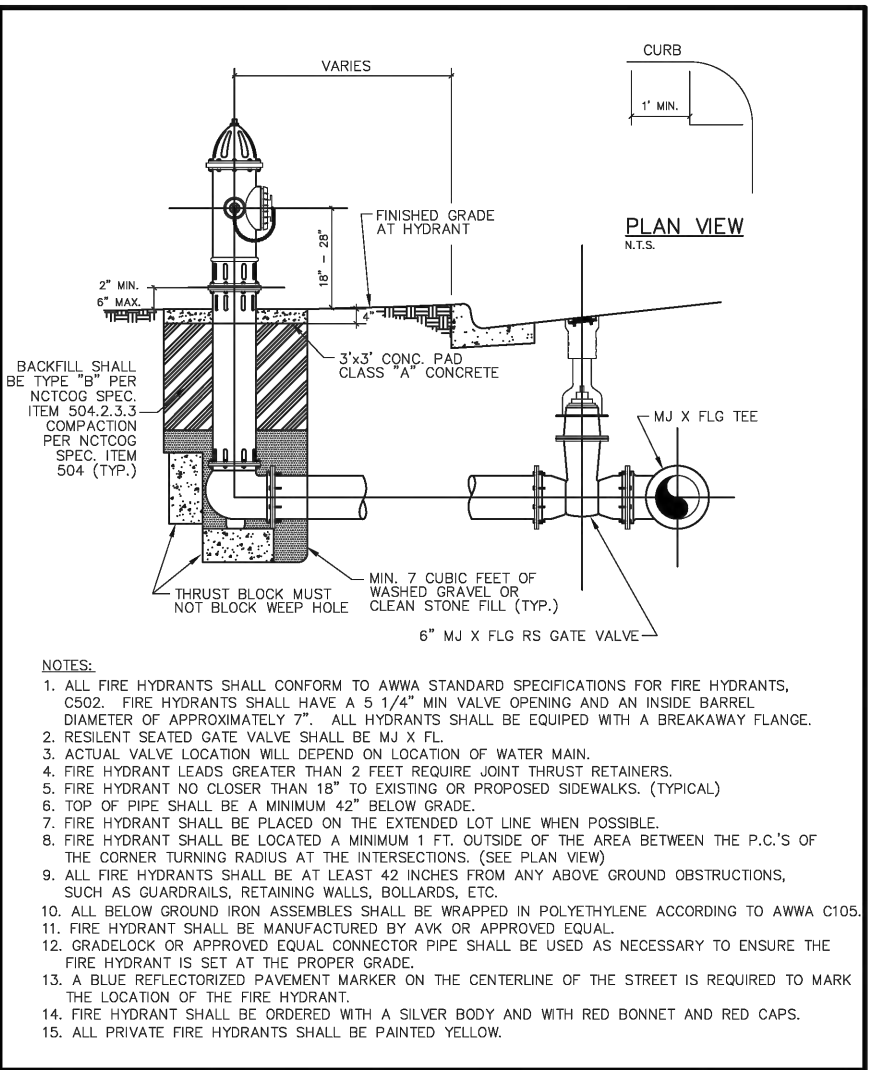
VALVE INSTALLATION



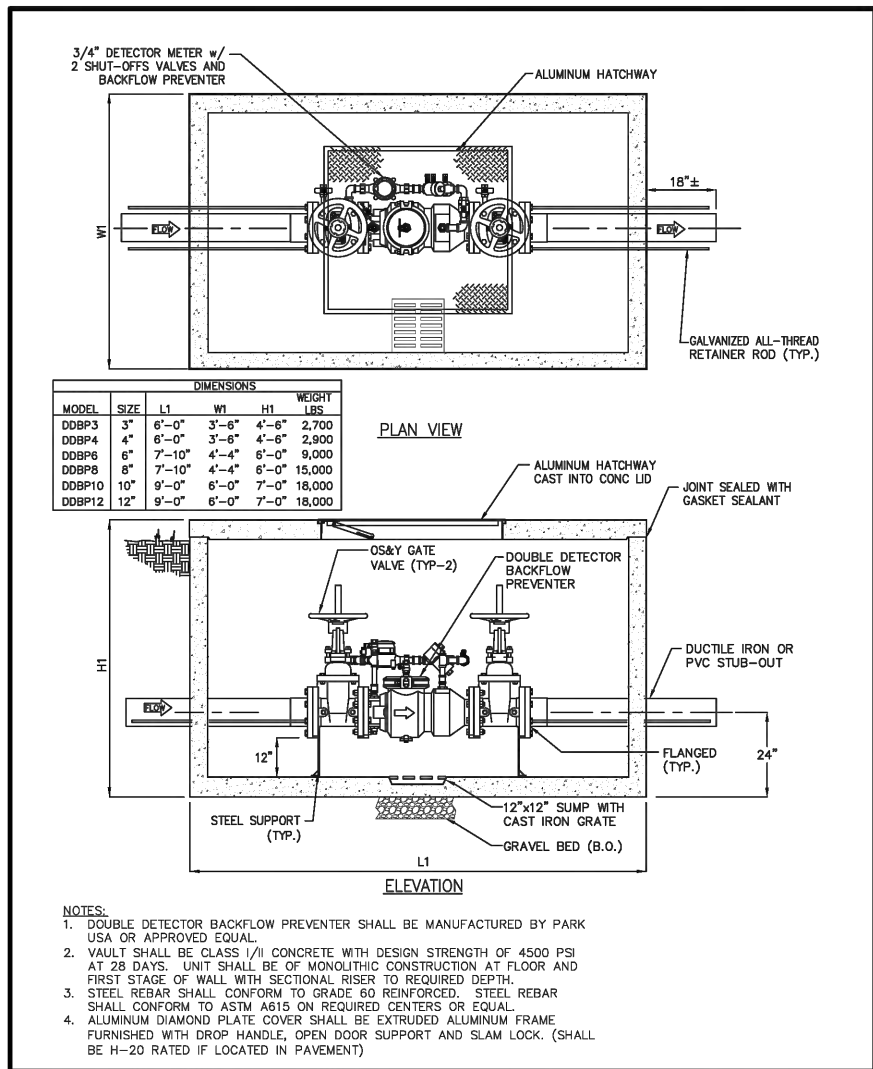
WATER LINE EMBEDMENT AND BACKFILL



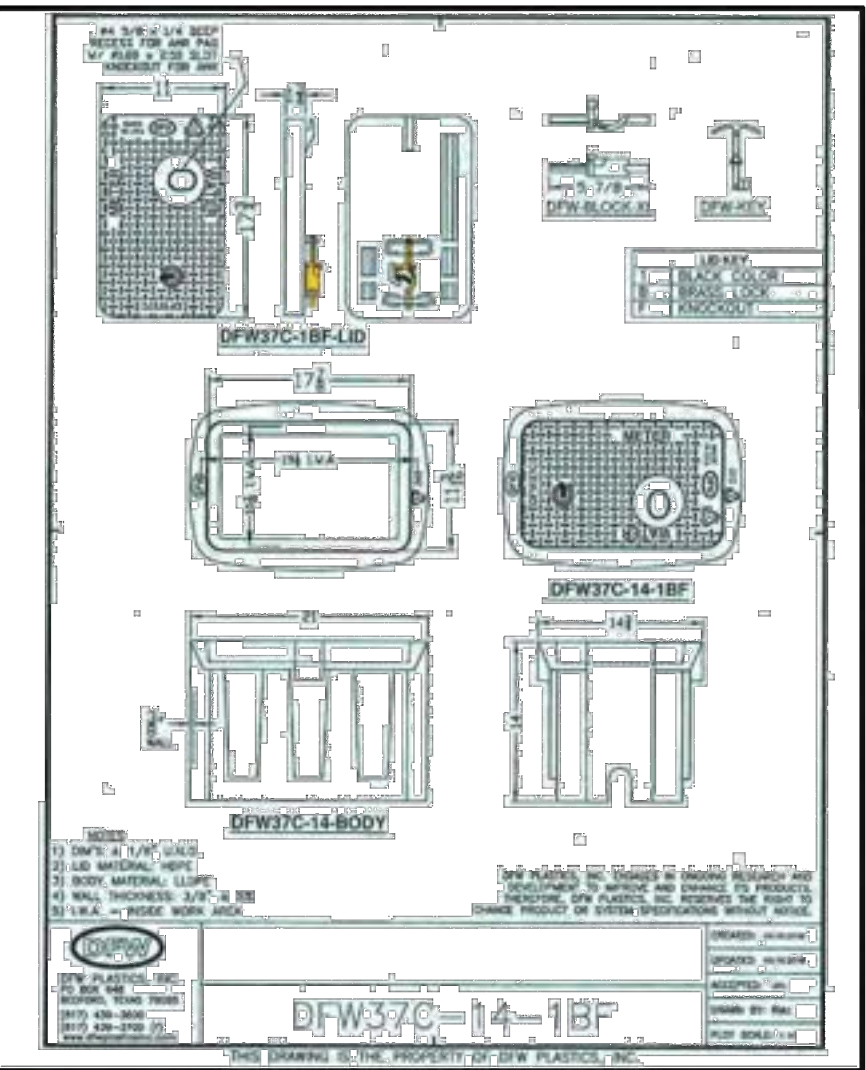
HORIZONTAL BLOCKING



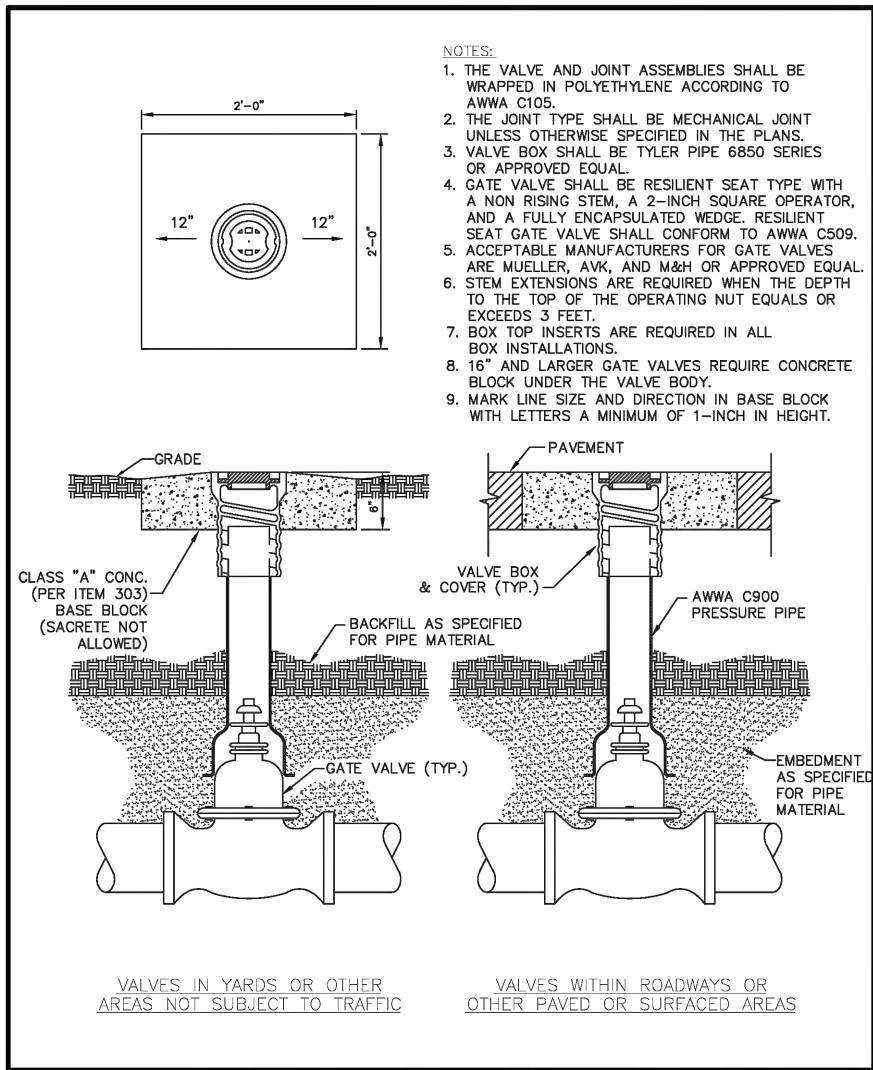
FIRE HYDRANT INSTALLATION



DOUBLE DETECTOR BACKFLOW PREVENTER

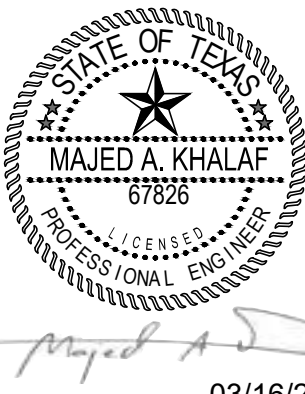


WATER METER DETAIL



GATE VALVE AND BOX

No.	Revision/Issue	Date



03/16/2023

Issued Date:	03-16-23
Project No:	22014
Drawn By:	JPK
Checked By:	MAK
Designed By:	JPK

Project	220014	Sheet
Date	03/16/23	C7.2
Scale		





City of Lucas

Planning and Zoning Agenda Request

April 13, 2023

Item No. 06

Requester: Development Services Director Joe Hilbourn

Agenda Item Request

Discuss updates on the Barrett Lakes Estates Addition.

Background Information

Barratt Lakes Estates' final plat was conditionally approved by the Planning and Zoning Commission on February 9, 2023 with the following conditions:

- Grout and add riprap at outfall at pond number one.
- Grade and correct outfall pipe at pond number two and verify with the City engineer concerning drainage and outflow at pond number two and add a certification from Corwin Engineering that it meets City ordinances.
- Adjust valve pad on fire hydrant on Derby Drive.
- Remove rounded rock on drive on Winningkoff Lane and add road base.
- Clean up grade on driveway from construction entrance at Christian Lane.

During the Planning and Zoning Commission meeting, a neighboring resident was present and had some concerns about potential erosion leading up to his property on Christian Lane. Staff did meet with the citizen about his concerns and let him know that the issue would be addressed.

Staff asked the Planning and Zoning Commission to approve the final plat with the above conditions in accordance with the City's Code of Ordinances, Chapter 10 Subdivisions, Article 10.03 Subdivision and Development Ordinance, Section 10.03.086 Issuance of Building Permits and Certificates of Occupancy, which states, "No certificate of occupancy shall be issued for a building or the use of property unless all subdivision improvements have been completed and a final plat approved has been recorded. Notwithstanding the above, the city building official may authorize the occupancy of a structure provided that an agreement providing cash escrow, a letter of credit, or other sufficient surety is approved for the completion of all remaining public improvements." Staff has given notice for each permit issued that no certificate of occupancy would be issued until the above items were addressed (see example in Attachment D).

To date, all original outstanding items are complete, including the area the concerned citizen wanted covered in rip rap (see corresponding photos in Attachment C). Three new items of concern have come up through the process, two of which are now complete; grading needs adjacent to Derby Drive and grading around the valve stacks at Derby Drive and Vaquero Way. The only outstanding item is concrete on the valve stack cover that needs to be removed.

Attachments/Supporting Documentation

1. Certification on Drainage from Corwin Engineering
2. As built - Construction Plans
3. Pictures of Corrections
4. Permit Correspondence



City of Lucas
Planning and Zoning Agenda Request
April 13, 2023

Item No. 06

Budget/Financial Impact

NA

Recommendation

NA

Motion

NA



CORWIN ENGINEERING, INC.

200 W. Belmont • Suite E • Allen, TX 75013
(972) 396-1200 • FAX (972) 396-4987

March 14, 2023

Joe Hilbourn, Development Services Director
City of Lucas
165 Country Club Road, Lucas, TX 75002

RE: Barratt Lake Estates

As requested by the Planning and Zoning Commission, below is a summary of the drainage leaving the above-referenced site and draining onto the Paxton and Adams properties that are located east of the site.

Existing Conditions

As shown on sheet 12, the Existing Conditions Drainage Area Map, of the as-built drawings for Barratt Lake Estates, drainage area EX7 and EX8 show that 5.59 acres drains off the east side of the site toward the north end of the Paxton and Adams properties under pre-development conditions. The runoff coefficient for undeveloped land (Area EX7) in the City of Lucas Drainage Manual is 0.35, the runoff coefficient for single family use (Area EX8) is 0.5, and the 100 year storm rainfall intensity is 7.86 inches per hour. The peak flow for existing conditions is determined by the formula $Q=C*I*A$, where Q is the peak flow in cubic feet per second (cfs), I is the 100 year storm rainfall intensity, and A is the drainage area in acres.

EX7 - $Q=0.35*7.86 \text{ in/hr} * 5.45 \text{ in/hr} = 15.0 \text{ cfs}$.

EX8 - $Q=0.35*7.86 \text{ in/hr} * 0.14 \text{ in/hr} = 0.6 \text{ cfs}$.

Pre-Development Total Q = 15.6 cfs

Proposed Conditions

As shown on sheet 13, the Proposed Conditions Drainage Area Map, of the as-built drawings for Barratt Lake Estates, drainage area 10 shows that 5.36 acres drains off the east side of the site toward the north end of the Paxton and Adams properties under post-development conditions.

Drainage Area 10 - $Q=0.5 * 7.86 \text{ in/hr} * 5.36 \text{ acres} = 23.1 \text{ cfs}$.

Since this flow rate is greater than pre-development conditions, a detention pond was constructed at the east end of the site to reduce the flow rate. As shown on sheet 17, the Northeast Detention Pond Plan, the peak discharge for the 100 year storm is 13.2 cfs, which is 2.4 cfs less than the pre-development flow. The detention pond also provides detention for the 2 year, 5 year and 25 year storms so that the peak release rate from these events for post-development conditions do not exceed pre-development conditions.

Based on the above analysis, which is included on the as-built engineering drawings, the post-development flow is less than the pre-development flow.

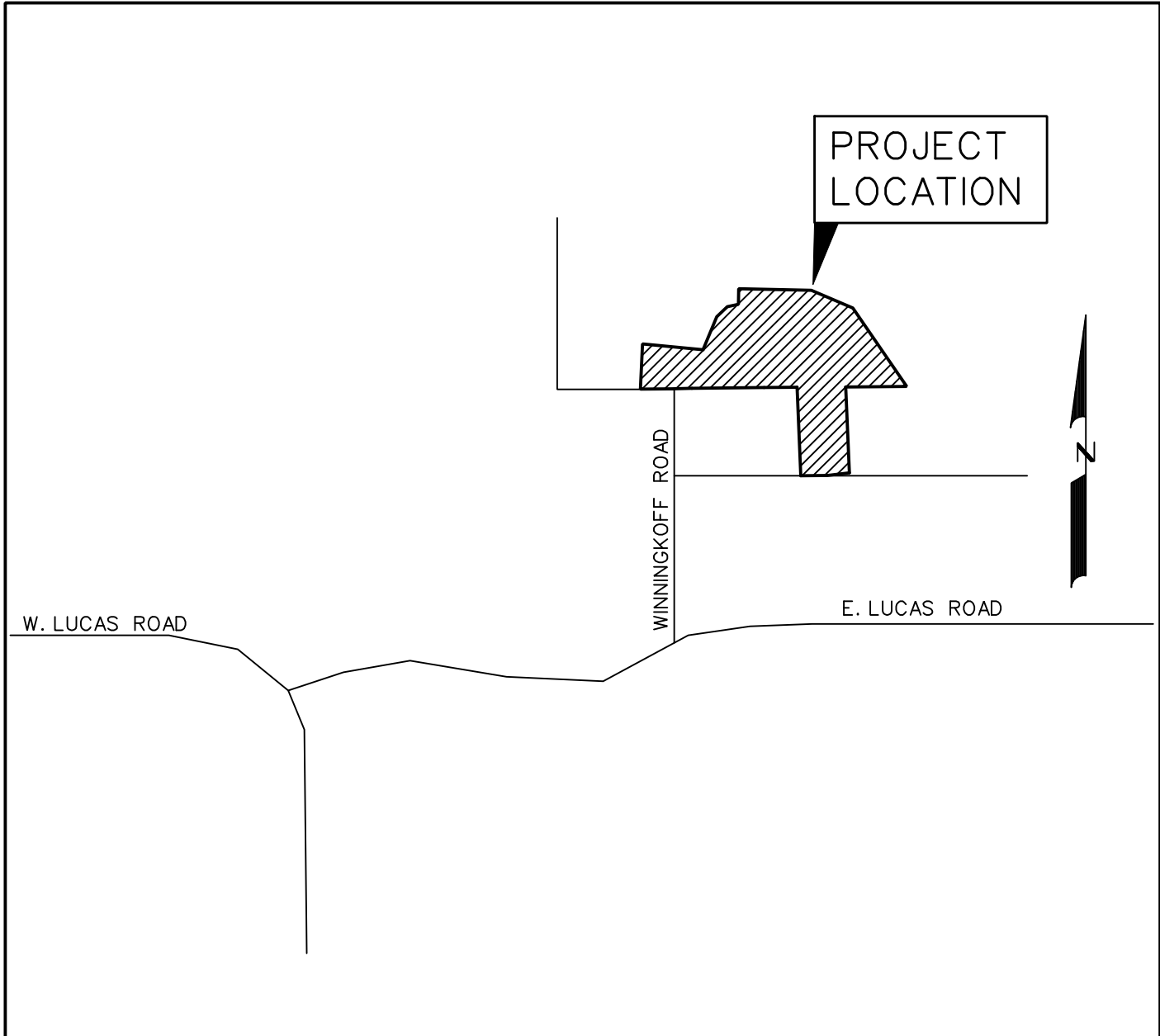
Sincerely,
CORWIN ENGINEERING, INC.

Brandon Davidson, P.E.



DEVELOPMENT PLANS
FOR
BARRATT LAKE
ESTATES
LUCAS, TEXAS

BARRATT LAKE ESTATES
20013



LOCATION MAP

PREPARED FOR
BARRATT LAKES ESTATE, LLC.

P.O. BOX 863264
PLANO, TEXAS 75086

CORWIN ENGINEERING, INC. — CONSULTING ENGINEERS

200 W. BELMONT, SUITE E

TBPE FIRM #5951

ALLEN, TEXAS 75013

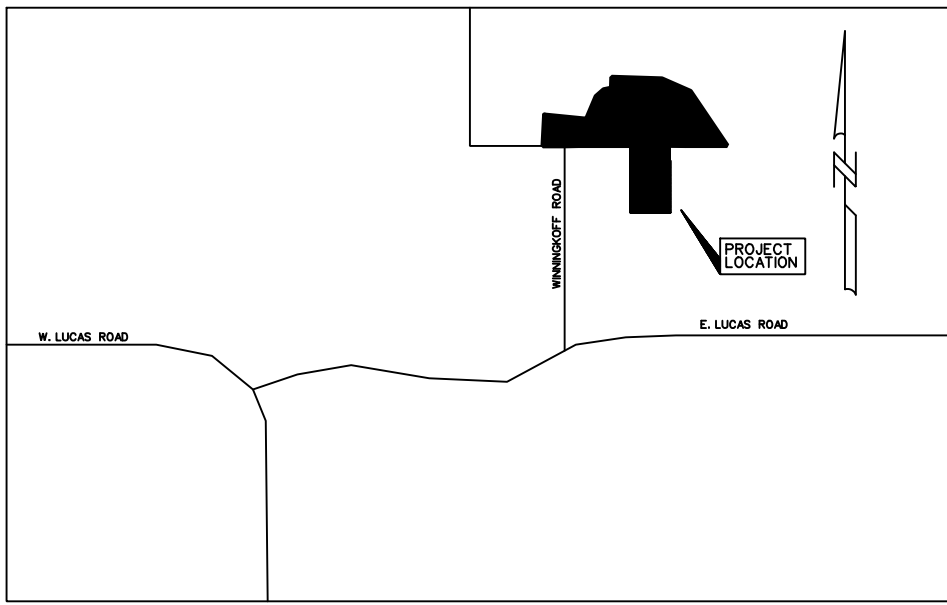
INDEX

- 1 TITLE
- 2 PLAT
- 3 PLAT
- 4 VAQUERO WAY (STA. 0+00 TO 12+00)
- 5 VAQUERO WAY (STA. 12+00 TO END)
- 6 VAQUERO WAY NORTH
- 7 DERBY DRIVE
- 8 COWBOY COURT
- 9 GRADING PLAN
- 10 GRADING PLAN
- 11 WATER PLAN
- 12 EXISTING CONDITIONS DRAINAGE AREA MAP
- 13 PROPOSED CONDITIONS DRAINAGE AREA MAP
- 14 STORM SEWER PLAN AND PROFILES LINES 'D-1', 'D-2' AND 'D-3'
- 15 STORM SEWER PLAN AND PROFILES LINE 'D-6'
- 16 NORTHWEST DETENTION POND PLAN
- 17 NORTHEAST DETENTION POND PLAN
- 18 SOUTHEAST DETENTION POND PLAN
- 19 SIGNAGE AND STREET LIGHT PLAN
- 20 EROSION CONTROL PLAN
- 21 STANDARD DETAILS



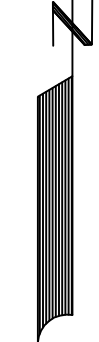
AS-BUILT FEBRUARY 2023
INFORMATION PROVIDED BY
CONTRACTORS AND DEVELOPER
(NOT FIELD VERIFIED)

NO.	REVISIONS	DATE



VICINITY MAP
Scale: NTS

0 50 100 200
SCALE: 1" = 100'



LOT 3, BLOCK A
RICHARD RIZOS
ROLLING HILLS ESTATES
VOL. H, PG. 10

LOT 3
6.27 AC.
MIN. FF-532.7
ZONE A PER FEMA
FIRM PANEL 48065C0405J
REVISED JUNE 2, 2009

1090 WINNINGKOFF, LLC.
DOC. NO. 20200608000847300

UNITED STATES
OF AMERICA
VOL. 738, PG. 132

CURVE TABLE

CURVE NO.	DELTA	RADIUS	LENGTH	CHORD	BEARING
C1.	86°58'03"	42.00'	63.75'	57.80'	N46°04'37"E
C2.	37°37'21"	112.00'	73.54'	73.23'	S71°37'41"E
C3.	38°34'01"	112.00'	75.39'	73.91'	S72°06'01"E
C4.	49°46'50"	55.00'	41.79'	46.30'	N63°43'33"E
C5.	00°47'09"	2988.00'	40.99'	40.99'	N89°00'33"E
C6.	89°22'23"	125.00'	194.98'	175.81'	N44°42'56"E
C7.	25°50'08"	255.00'	114.98'	114.01'	N12°53'20"W
C8.	49°14'56"	60.00'	325.42'	50.00'	N64°11'41"E
C9.	268°44'11"	60.00'	279.33'	87.23'	N24°01'13"W
C10.	57°14'22"	250.00'	249.75'	239.50'	N27°14'09"E

LINE TABLE

LINE NO.	BEARING	DISTANCE
1.	N 38°50'08" E	38.62'
2.	N 02°35'36" E	46.40'
3.	N 00°35'53" W	14.71'
4.	N 36°17'06" E	13.56'
5.	N 65°12'33" E	15.96'
6.	N 83°24'48" E	11.67'
7.	N 54°37'06" E	33.91'
8.	N 24°35'03" E	20.36'
9.	N 28°05'09" W	31.62'
10.	N 03°58'11" W	18.62'
11.	N 37°53'36" E	34.01'
12.	N 16°05'48" E	55.48'
13.	N 43°44'22" E	36.93'
14.	N 13°51'21" E	36.80'
15.	N 43°51'15" E	23.69'
16.	N 04°07'10" E	22.05'
17.	N 26°32'55" E	14.62'
18.	N 56°53'47" E	15.60'
19.	N 37°09'54" E	39.11'
20.	N 64°20'05" E	20.99'
21.	N 82°43'33" E	39.27'
22.	S 73°02'27" E	41.72'
23.	S 46°40'43" W	33.67'
24.	S 65°33'05" W	20.21'
25.	S 80°56'51" W	54.60'
26.	S 33°39'31" W	23.41'
27.	S 21°41'45" W	58.70'
28.	S 36°13'21" W	16.24'
29.	N 01°18'48" E	24.08'
30.	S 06°31'35" E	23.60'
31.	N 01°23'02" E	48.00'
32.	N 34°08'40" W	5.47'
33.	N 67°23'19" W	20.00'

MARK McDONALD
DOC. NO. 92-0057656

JAMES ADAMS
VOL. 5976, PG. 1149

DANIEL PAXTON
DOC. NO. 2014-11120001234800

ADAM SUSSMAN &
ROBYN OUBRE
DOC. NO. 20090330000362690

LOT 1-9

LOT 3B

CHRISTIAN SUBDIVISION
VOL. H, PG. 429

NOTES

- Bearing are referenced to a 14.985 acre tract, as recorded in Doc. No. 20210114000088080, in the Deed Records of Collin County, Texas.
- All lot lines are radial or perpendicular to the street unless otherwise noted by bearing.
- 1/2" iron rods with "CORWIN ENGR. INC." caps set at all boundary corners, block corners, points of curvature, points of tangency, and angle points in public right-of-way unless otherwise noted.
- "Notice: Selling a portion of this addition by metes and bounds is a violation of city ordinance and state law and is subject to fines and withholding of utilities and building permits."
- Lots or portions of lots within the floodplain or areas of special flood hazard as depicted on FEMA FIRM Panel 48065C0405J, Revised June 2, 2009, require a development permit prior to issuance of a building permit or commencement of construction including site grading, on all or part of those lots.
- Access to Christian Lane is limited to emergency access only.
- Private streets are dedicated to and maintained by the Homeowners Association (H.O.A.).
- All lots must utilize alternative type On-Site Sewage Facilities.
- Must maintain state-mandated setback of all On-Site Sewage Facility components from any/all easements and drainage areas.
- Final grading, per the grading plan, will be required prior to installation/operation of On-Site Sewage Facilities.
- Individual site evaluations and OSSF design plans must be submitted to and approved by Collin County for each lot prior to construction of any OSSF system.
- All drainage easements shall be owned/maintained by the HOA.
- All landscape easements shall be maintained by the HOA.
- Lot 1 driveways shall only connect to Cowboy Court. Lot 1 has no access to Winningkoff Road nor Vaquero Way.

15. OSSF notes:

All lots must utilize alternative type On-Site Sewage Facilities.

Presence of fractured rock throughout the subdivision may further limit the type of alternative type On-Site Sewage Facilities to Aerobic Treatment with Surface Application on individual lots.

Must maintain state-mandated setback of all On-Site Sewage Facility components from any/all easements and drainage areas, water distribution lines, sharp breaks and/or creeks/ponds, etc. (Per State regulations). No variances will be granted for setbacks or for OSSF reduction. There is a large, variable-width drainage easement/creek/waterway on lots 1, 2, 3, 4, 5, 6, 7, 9 and 12 to which OSSF setbacks apply.

- There is a 20' drainage and utility easement along every road-adjacent property line of each lot to which OSSF setbacks apply.
- There is a 15' access easement along the southern property line of lot 8 to which OSSF setbacks apply.
- There is additionally a bisecting 20' easement and an existing pond along the southern half of lot 1 to both of which OSSF setbacks apply. Lot 13A is not a buildable lot and is not approved for OSSF.

There are no easements other than those noted above.

There were no permitted/approved existing structures with associated OSSF(s) on any lot at the time of approval. Any existing structures or OSSFs on lots must be reviewed and permitted by Collin County Development Services prior to any use.

- A portion of lots 2, 3, 4, 5, 6 and 7 is located within the 100-year flood plain. Any OSSF that is located within the 100-year flood plain may be subject to special planning requirements or may be restricted from being within the flood plain.
- Any future structures and OSSFs must follow Flood Plain regulations in effect at the time of permitting.
- A pre-planning meeting with RS/PE and Development Services is recommended prior to any development planning.

Tree removal and/or grading for OSSF may be required on individual lots.

There are no water wells noted in this subdivision and no water wells are allowed without prior approval from Collin County Development Services.

Each lot is limited to a maximum of 5,000 gallons of treated/discharged sewage each day.

Individual site evaluations and OSSF design plans (meeting all State and County requirements) must be submitted to and approved by Collin County for each lot prior to construction of any OSSF system.

TOTAL RESIDENTIAL LOTS 12
TOTAL ACRES 41.512

FEBRUARY 2023 SCALE: 1"=100'

SHEET 1 OF 2

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS:

THAT BARRATT LAKE ESTATES, LLC., acting herein by and through its duly authorized officers, does hereby certify and adopt this final plat designating the herein above described property as BARRATT LAKES ESTATES, an addition to the City of Lucas. The streets shown on this plat as access easements are for the use and benefit of the owners of the property in this subdivision, their leaseses, invitees and licensees. By acceptance of a deed conveying title to any lot in this subdivision, the owner thereof shall be deemed to have agreed and acknowledged and does certify the following:

1. The streets are private streets and are dedicated to the City of Lucas as Access, Utility, and Drainage Easements. The City has no responsibility or liability to make any repairs to such streets as long as they are private streets, except repairs made necessary by reason of installation, repair or replacement of municipal utilities located therein or in the utility easements adjacent thereto.
2. So long as such streets are private, the sole responsibility for maintenance and replacement thereof shall be borne by the owners of the lots in this subdivision and/or any homeowners' association hereafter established for the owners of lots in this subdivision (the "Association"). Such maintenance and replacement shall be in conformance with the requirements, standards, and specifications of the City of Lucas, as presently in effect or as same may be hereafter amended. This provision may be enforced by specific performance or by any other remedy allowed by law.
3. Neither the property owners within this subdivision nor the Association nor any other association or other organization or entity representing them shall have the right to request dedication (whether by voluntary or involuntary act or omission) of such private streets to the City unless and until the City has inspected such streets and determined that, at the time in question, they meet the City's standards. If the City desires to accept a dedication of said streets, the Association, its successors or assigns, or the owners of the lots in the subdivision will make, at the owners' or the Association's expense, all repairs required by the City to comply with then City standards. The City shall have sole discretion to accept or reject a proposed dedication of the private streets to the City. Before dedication, all public improvements and dedications shall be free and clear of all debt, liens, and/or encumbrances.
4. The easements and public use areas, as shown, are dedicated for the benefit of the owners of the property in this subdivision, their leasees, invitees and licensees use forever, for the purposes indicated on this plat.
5. The provisions hereof shall be binding upon and enforceable against all property owners in this subdivision, their successors and assigns and the Association and its successors and assigns. The provisions hereof may be enforced by the City, any property owner in the subdivision, and/or the Association.
6. These covenants and restrictions shall run with the land and be binding on the owners of the property in this subdivision, their successors and assigns, the Association, its successors and assigns and all parties claiming by, through and under them. In the event a replat is requested on all or part of this property, the City may require any similar or additional restrictions and covenants in it's sole discretion. These covenants and restrictions shall terminate when all the access easements shown on this plat are included within a replat of all or part of this property and are dedicated to the City as public streets and alleys. In addition, all modifications to this document shall be by means of plat and approved by the City of Lucas.
7. If the owners of the property in this subdivision should open the private streets to the public, such use shall be considered a temporary license only. The owners of property in this subdivision through the Association reserve the right to close the street to the public at any time prior to formal dedication of the street to the public, and acceptance of the same by the City.
8. The owners of property in this subdivision and the Association shall allow access to the subdivision and the streets in the subdivision to all City employees and contractors acting on behalf of the City and all governmental service vehicles, including, without limitation, law enforcement, fire, ambulance, sanitation, inspection and health vehicles. In addition, Utility Easements may also be used for the mutual use and accommodation of all public utilities desiring to use or using the same unless the easement limits the use to particular utilities, said use by public utilities being subordinate to the City's use thereof. The City of Lucas and public utilities shall, at all times, have the full right of ingress and egress to or from their respective easements for the purpose of constructing, reconstructing, inspecting, patrolling, maintaining, reading meters, and adding to or removing all or parts of their respective systems without the necessity of procuring permission from anyone.
9. The owners of property within this subdivision hereby agree and recognize that the entire subdivision is benefited by the City allowing the owners to maintain and control access to the private streets shown hereon, and that the City is benefited by having the value of the property enhanced for ad valorem tax purposes and not being under any maintenance obligations with respect to the private streets and alleys. For purposes of enforcement of these covenants, the benefits shall constitute sufficient and valid consideration.
10. The owner of each lot affected by a drainage easement across the rear portion of such lot may not construct any improvements within such lot except those improvements which (a) do not impeded the natural flow of water across the property affected by such drainage easement (such as swimming pools and open fences) and (b) are built in accordance with and pursuant to a building permit issued by the City. In no event shall BARRATT LAKES ESTATES, LLC., the City, the Association or any of their successors or assigns have any liability for any improvements built in any drainage or utility easement. Each lot owner shall build in such area at his or her own risk and shall indemnify BARRATT LAKES ESTATES, LLC., the City, the Association and their successors and assigns against any and all losses, damages and liability arising out of or associated with the construction of improvements on such owner's lot in any drainage or utility easement.
11. No buildings, fences, trees, shrubs or other improvements or growths shall be constructed or placed upon, over or across the easements as shown, except that landscape improvements may be placed in Landscape Easements, if approved by the HOA. Landscaping may be placed in/or near other easements with city approval. The City and public utility entities shall have the right to remove and keep removed all or parts of any buildings, fences, trees, shrubs or other improvements or growths which may in any way endanger or interfere with the construction, maintenance, or efficiency of their respective systems in said easements. The City of Lucas is not responsible for replacing any improvements in, under, or over any easements caused by maintenance or repair.
12. Invalidaion of any word, phrase, sentence, paragraph, covenant or restriction by court judgment or otherwise, shall not affect the validity of the other covenants or restrictions contained herein.

This plat approved subject to all platting ordinances, rules, regulations and resolutions of the City of Lucas, Texas.

WITNESS, my hand, this the ____ day of _____, 2023.

BY:

Stephen Dinapoli
President

THE STATE OF TEXAS
COUNTY OF COLLIN

BEFORE ME, the undersigned, a Notary Public for the State of Texas, on this day personally appeared STEPHEN DINAPOLI, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that the same is his act and deed in the capacity therein stated and for the purposes and considerations therein expressed.

WITNESS MY HAND AND SEAL OF OFFICE, this the ____ day of _____, 2023.

NOTARY PUBLIC, STATE OF TEXAS

LEGAL DESCRIPTION

WHEREAS, BARRATT LAKE ESTATES, LLC., is the owner of a tract of land situated in the John Thompson Survey, Abstract No. 893 and Goodman Ducase Survey, Abstract No. 270, being all of a 14.985 acre tract and a 14.088 acre tract, as described in Doc. No. 20210114000088080 in the Deed Records of Collin County, Texas, and a 4.417 acre tract, as described in 20210107000041130 in said Deed Records and a 8.0 acre tract, as described in Doc. No. 202104080007053300 in said Deed Records and being more particularly described as follows:

BEGINNING, at a PK nail set at the southwest corner of said 4.417 acre tract being in Winningkoff Road (Variable R.O.W.);

THENCE, North 02° 37'29" East, along the west line of said 4.417 acre tract, for a distance of 407.18 feet, to a 1/2 inch iron rod found at the northwest corner of said 4.417 acre tract;

THENCE, South 84° 33'00" East, along the north line of said 4.417 acre tract, for a distance of 548.02 feet, to a 1/2 inch iron rod found at the northeast corner of said 4.417 acre tract and being in the west line of said 14.088 acre tract;

THENCE, North 22° 36'41" East, along the west line of said 14.088 acre tract, for a distance of 321.06 feet, to a 1/2 inch iron rod found;

THENCE, North 46° 36'18" East, continuing along said west line, for a distance of 133.81 feet, to a 1/2 inch iron rod found;

THENCE, North 77° 54'25" East, continuing along said west line, for a distance of 101.61 feet, to a 1/2 inch iron rod found;

THENCE, North 01° 17'02" East, continuing along said west line, for a distance of 141.23 feet, to a 1/2 inch iron rod found at the northwest corner of said 14.088 acre tract;

THENCE, South 88° 34'42" East, along the north line of said 14.088 acre tract, for a distance of 654.99 feet, to a Corp. of Engineer Monument stamped 1413-3 found at the northeast corner of said 14.088 acre tract and the northwest corner of said 14.985 acre tract;

THENCE, South 67° 02'54" East, along the north line of said 14.985 acre tract, for a distance of 405.22 feet, to a Corp. of Engineer Monument stamped 1413-2 found;

THENCE, South 34° 25'06" East, continuing along said north line, for a distance of 857.82 feet, to a Corp. of Engineer Monument Stamped 1413-1 found, at the most easterly corner of said 14.985 acre tract;

THENCE, South 89° 35'25" West, along the south line of said 14.985 acre tract, for a distance of 548.93 feet, to a 1/2 inch iron rod found at the northeast corner of said 8.0 acre tract;

THENCE, South 02° 27'53" East, departing said south line and with the east line of said 8.0 acre tract, for a distance of 776.75 feet, to a 1/2 inch iron rod found at the southeast corner of said 8.0 acre tract;

THENCE, South 83° 30'27" West, along the south line of said 8.0 acre tract, for a distance of 200.03 feet, to a 1/2 inch iron rod found;

THENCE, South 89° 35'53" West, continuing along said south line, for a distance of 240.17 feet, to a 1/2 inch iron rod found at the southwest corner of said 8.0 acre tract;

THENCE, North 02° 23'58" West, along the west line of said 8.0 acre tract, for a distance of 796.75 feet, to a 1/2 inch iron rod found at the northwest corner of said 8.0 acre tract being in south line of said 14.985 acre tract;

THENCE, South 89° 30'55" West, along the south line of said 14.985 acre tract, for a distance of 297.06 feet, to a 1/2 inch iron rod found at the southwest corner of said 14.985 acre tract and being the southeast corner of said 14.088 acre tract;

THENCE, South 89° 30'55" West, along the south line of said 14.088 acre tract, for a distance of 649.52 feet, to a 1/2 inch iron rod found;

THENCE, South 88° 22'34" West, continuing along said south line, for a distance of 183.74 feet, to a Railroad spike found at the southwest corner of said 14.088 acre tract and being the southeast corner of said 4.417 acre tract;

THENCE, South 89° 33'39" West, along the south line of said 4.417 acre tract, for a distance of 282.19 feet, to the POINT OF BEGINNING and containing 41.512 acres of land.

SURVEYOR'S CERTIFICATE

I, WARREN L. CORWIN, a registered Professional Land Surveyor in the State of Texas, do hereby certify that I prepared this plat from actual and accurate survey of the land and that the corner monuments shown thereon were properly placed, under my personal supervision, in accordance with the subdivision regulations of the City of Lucas, Texas.

THE STATE OF TEXAS
COUNTY OF COLLIN

Before me, the undersigned, a Notary Public in and for the State of Texas, on this day personally appeared WARREN L. CORWIN, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed same for the purpose and consideration therein expressed.

Given under my hand and seal of office, this ____ day of _____, 2023.

NOTARY PUBLIC, STATE OF TEXAS

This plat is hereby approved by the Planning and Zoning Commission of the City of Lucas, Texas

Chairman, Planning and Zoning Commission
Dusty Kuykendall

Date

ATTEST:

Signature

Date

Name & Title

The Director of Public Works of the City of Lucas, Texas hereby certifies that to the best of his/her knowledge or belief, this subdivision plat conforms to all requirements of the Code of Ordinances and with engineering construction standards and processes adopted by the City of Lucas, Texas as to which his/her approval is required.

Director of Public Works
Scott Holden

Date

The Development Services Director of the City of Lucas, Texas hereby certifies that to the best of his/her knowledge or belief, this subdivision plat conforms to all requirements of the Code of Ordinances, or as may have been amended or modified, as allowed, by the Planning and Zoning Commission as to which his/her approval is required.

Development Services Director
Joseph Hilbourn

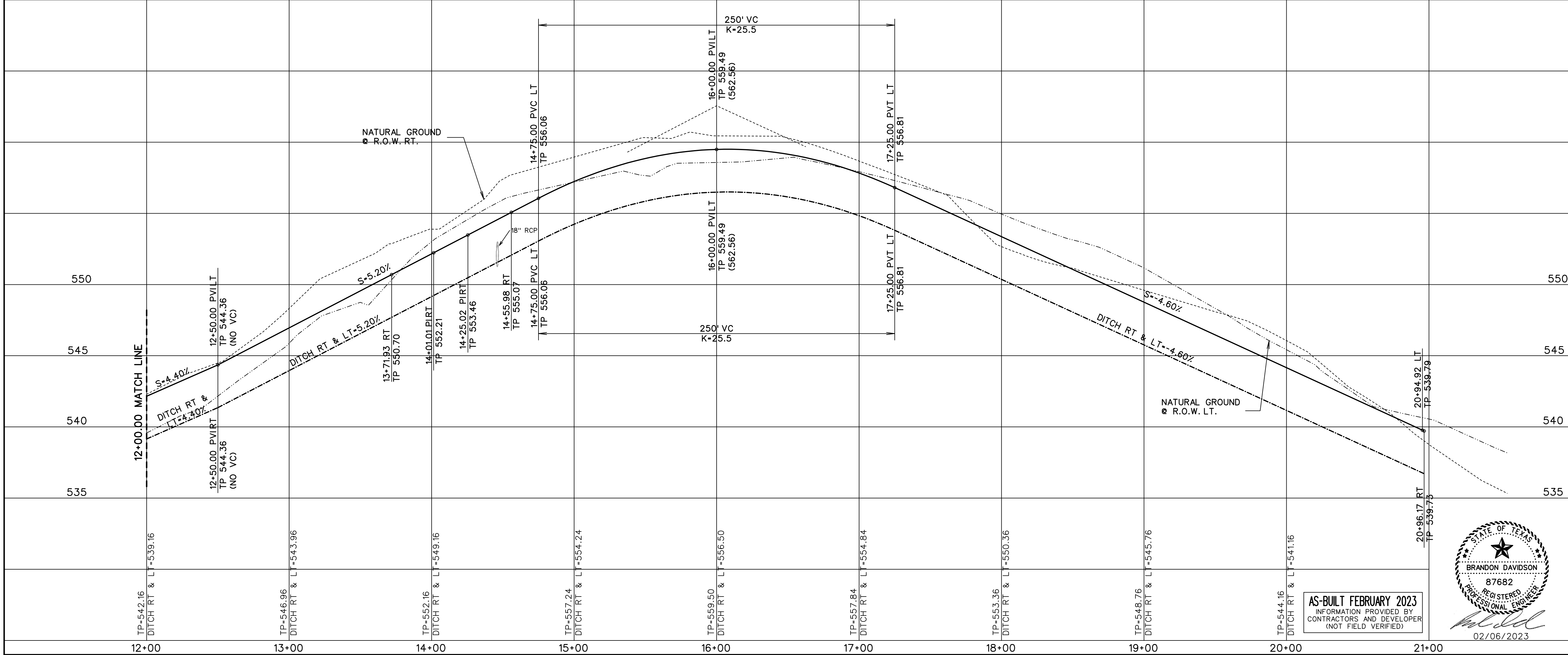
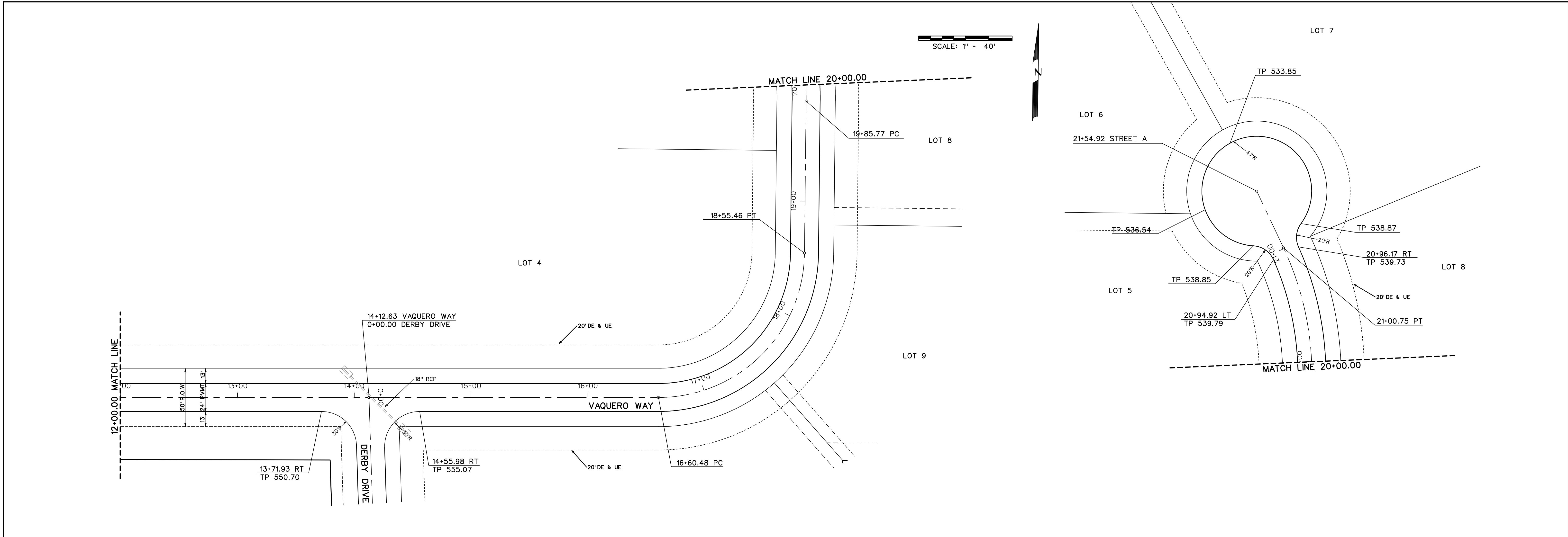
Date

Health Department Certification:

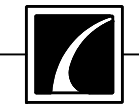
I, as a representative of Collin County Development Services, do hereby certify that the on-site sewage facilities described on this plat conform to the applicable OSSF laws of the State of Texas, that site evaluations have been submitted representing the site conditions in the area in which on-site sewage facilities are planned to be used.

Designated Representative for Collin County Development Services

FINAL PLAT
BARRATT LAKE ESTATES
LOTS 1-13 BLOCK A
OUT OF THE
JOHN THOMPSON SURVEY ABSTRACT NO. 893
GOODMAN DUCASE SURVEY, ABSTRACT NO. 270
IN THE
CITY OF LUCAS
COLLIN COUNTY, TEXAS
ZONING: R-2
OWNER
BARRATT LAKE ESTATES, LLC.
PO BOX 863264
PLANO, TEXAS 75086
PREPARED BY
CORWIN ENGINEERING, INC.
TBPELS FIRM #5951
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013
972-396-1200
FEBRUARY 2023



AS-BUILT FEBRUARY 2023
INFORMATION PROVIDED BY
CONTRACTORS AND DEVELOPER
(NOT FIELD VERIFIED)

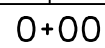


CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TPE FIRM #5951

DEVELOPMENT PLANS FOR
BARRATT LAKE
ESTATES
LUCAS, TEXAS

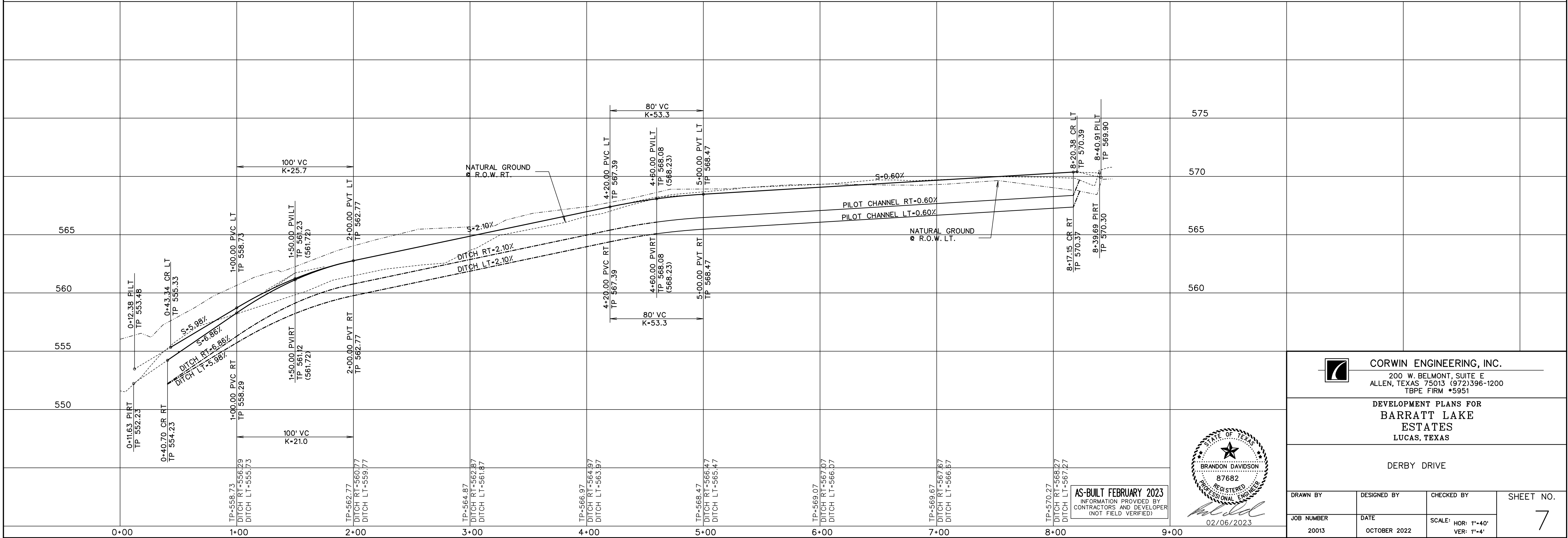
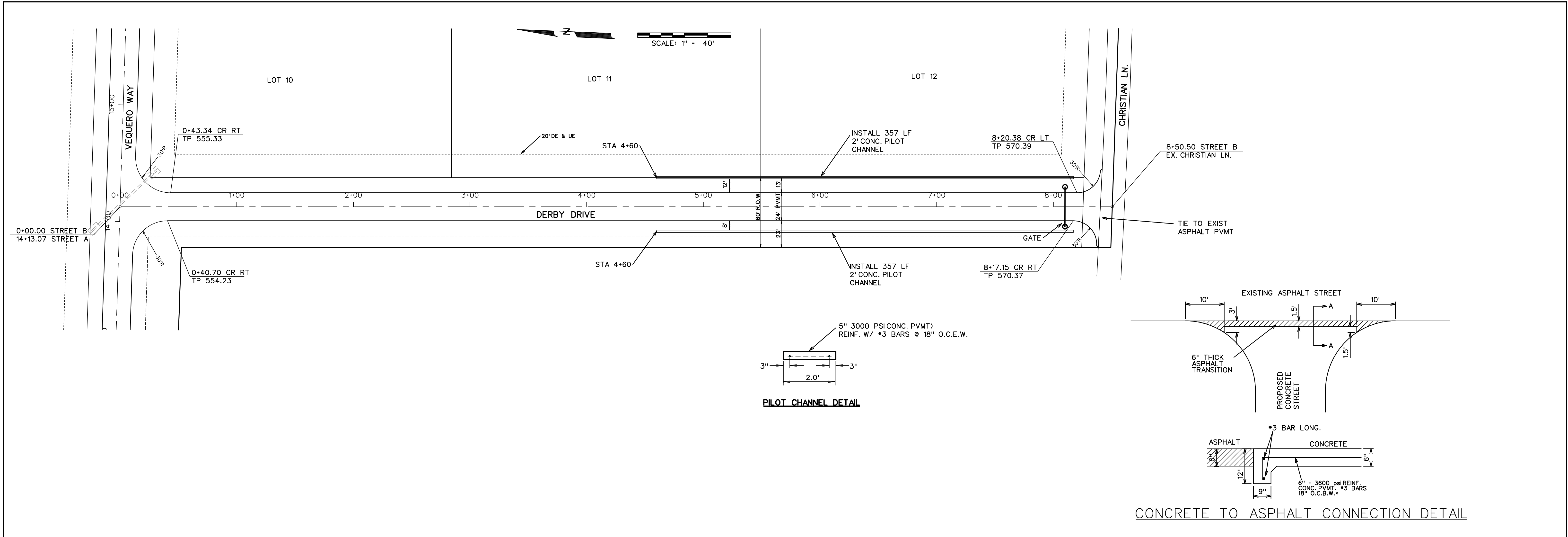
VAQUERO WAY
STA 12+00.00 TO END

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO. 5
JOB NUMBER 20013	DATE OCTOBER 2022	SCALE: HOR: 1"=40' VER: 1"=4'	



VAQUERO WAY NORTH

6

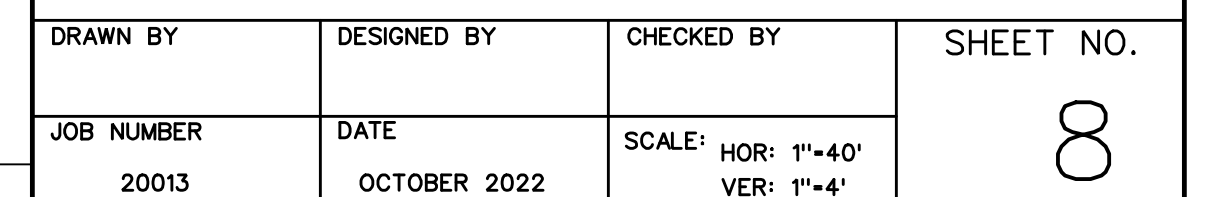
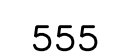
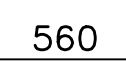
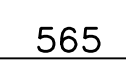
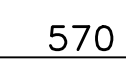
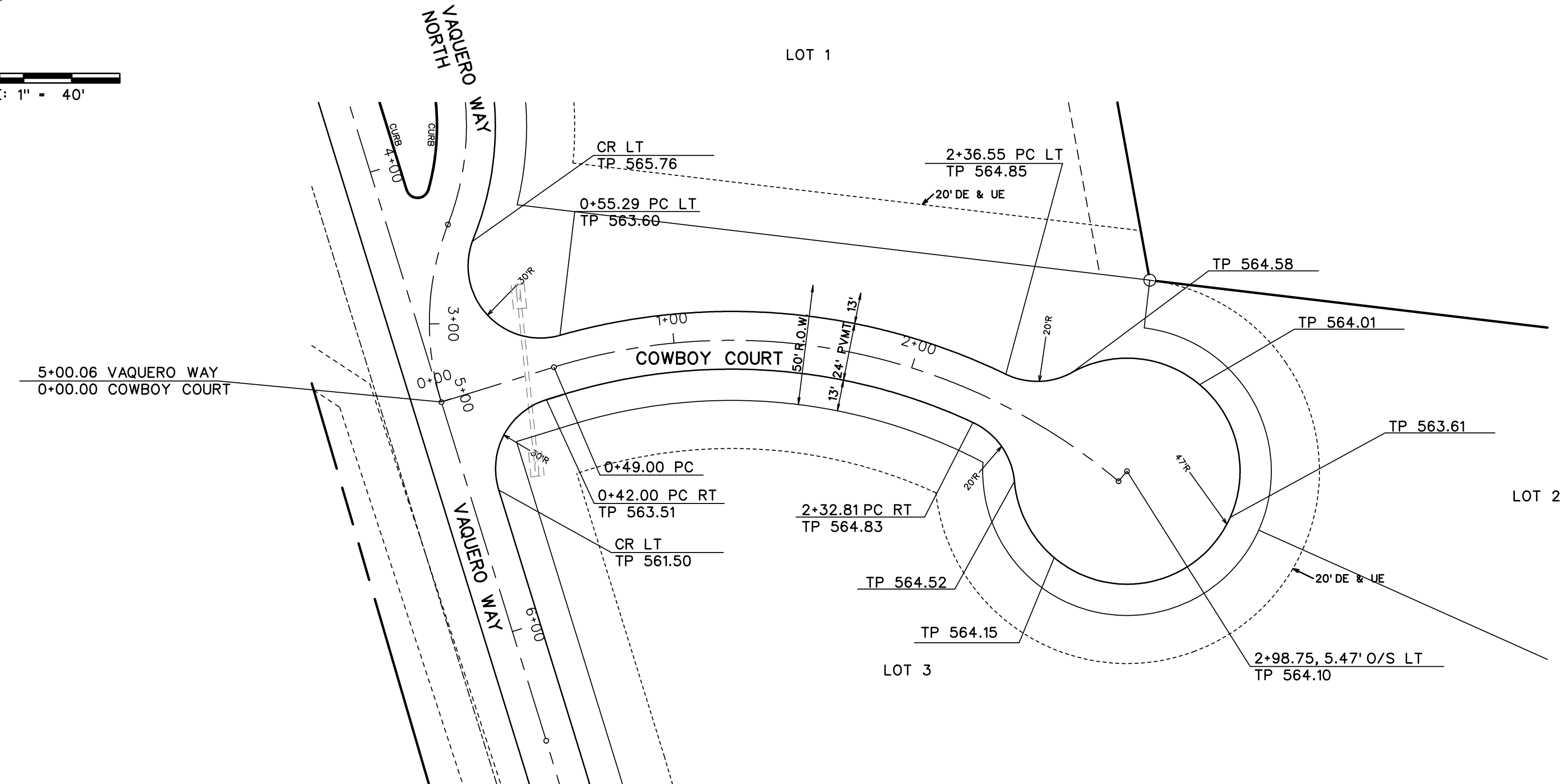


CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

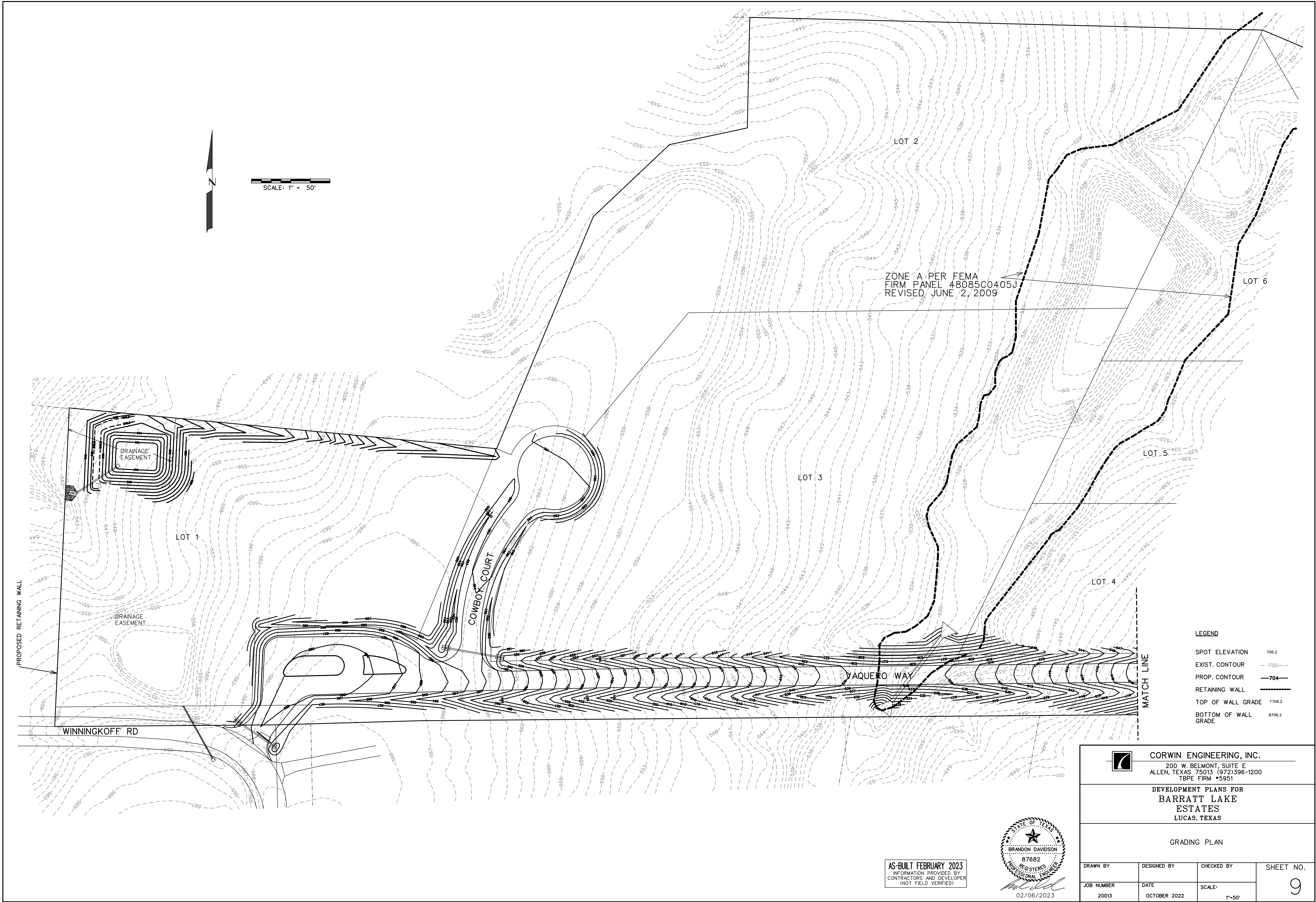
DEVELOPMENT PLANS FOR
BARRATT LAKE ESTATES
LUCAS, TEXAS

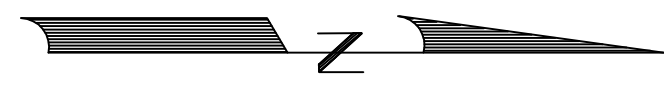
DERBY DRIVE

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER	DATE	SCALE: HOR: 1"=40' VER: 1"=4'	7
20013	OCTOBER 2022		

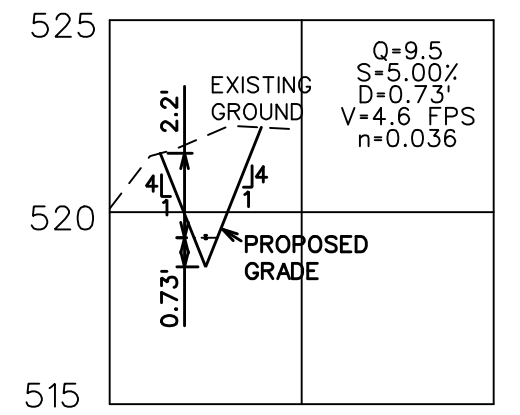
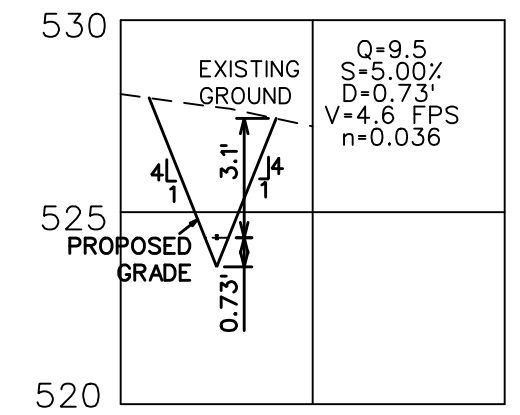
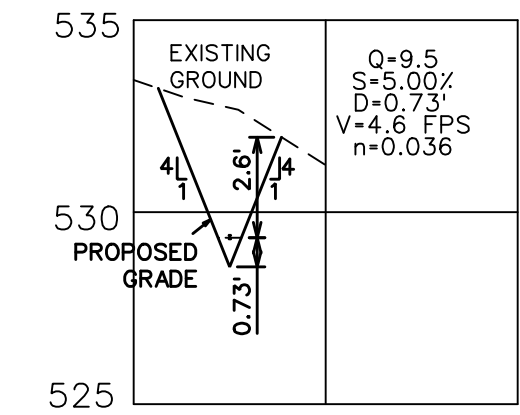


AS-BUILT FEBRUARY 2023
INFORMATION PROVIDED BY
CONTRACTORS AND DEVELOPER
(NOT FIELD VERIFIED)



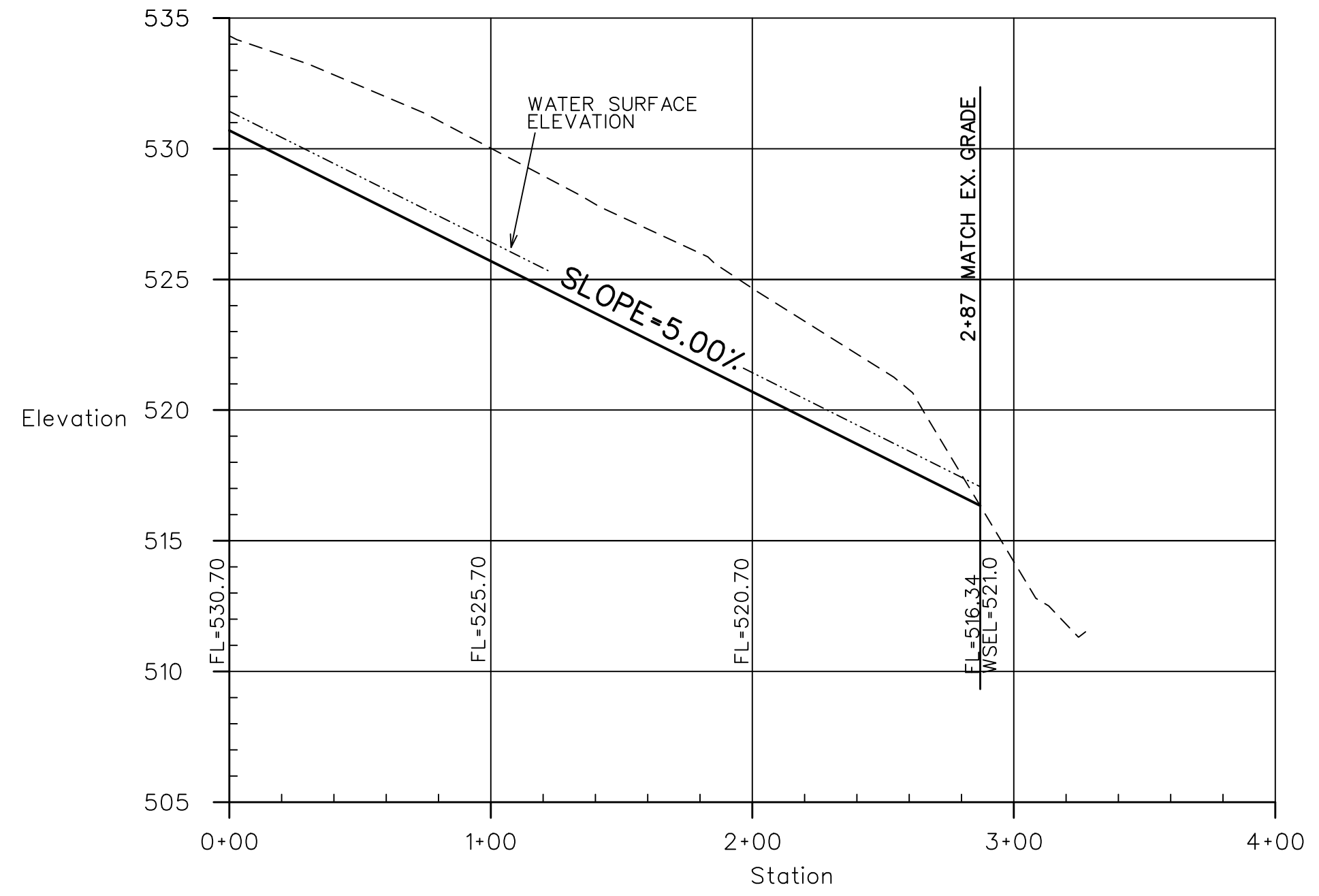


SCALE: 1" = 50'



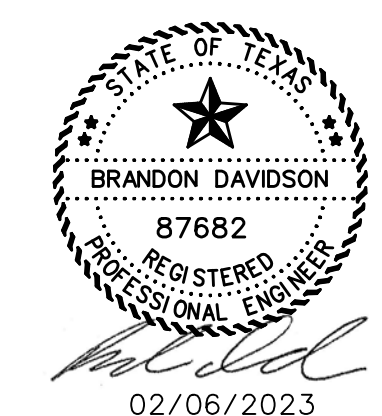
ZONE A PER FEMA
FIRM PANEL 48085C0405J
REVISED JUNE 2, 2009

LOT 6/7 GRADE TO DRAIN PROFILE



- LEGEND**
- SPOT ELEVATION 706.2
 - EXIST. CONTOUR -700-
 - PROP. CONTOUR -704-
 - RETAINING WALL
 - TOP OF WALL GRADE 1706.2
 - BOTTOM OF WALL GRADE 8706.2

AS-BUILT FEBRUARY 2023
INFORMATION PROVIDED BY:
CONTRACTORS AND DEVELOPER
(NOT FIELD VERIFIED)

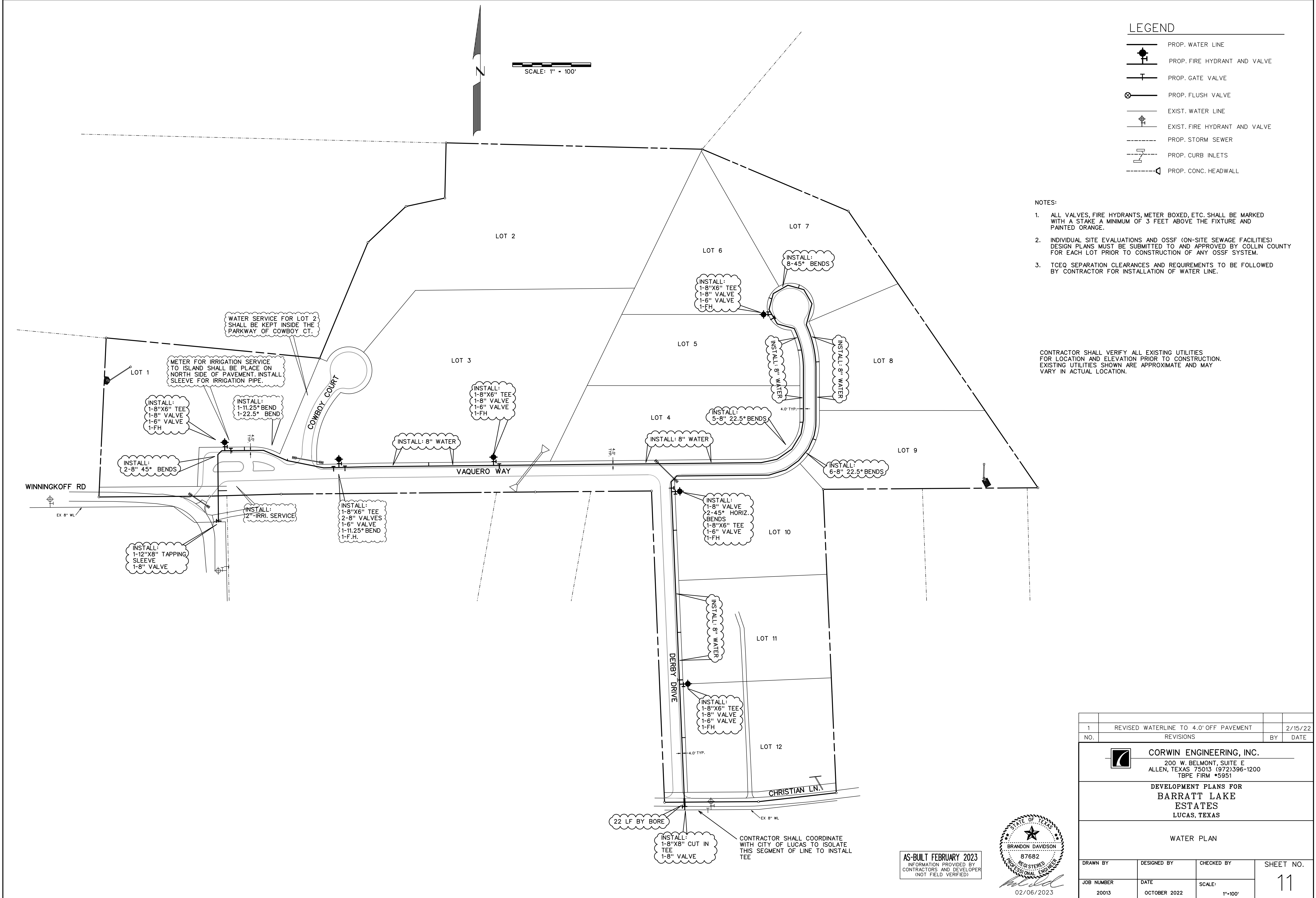


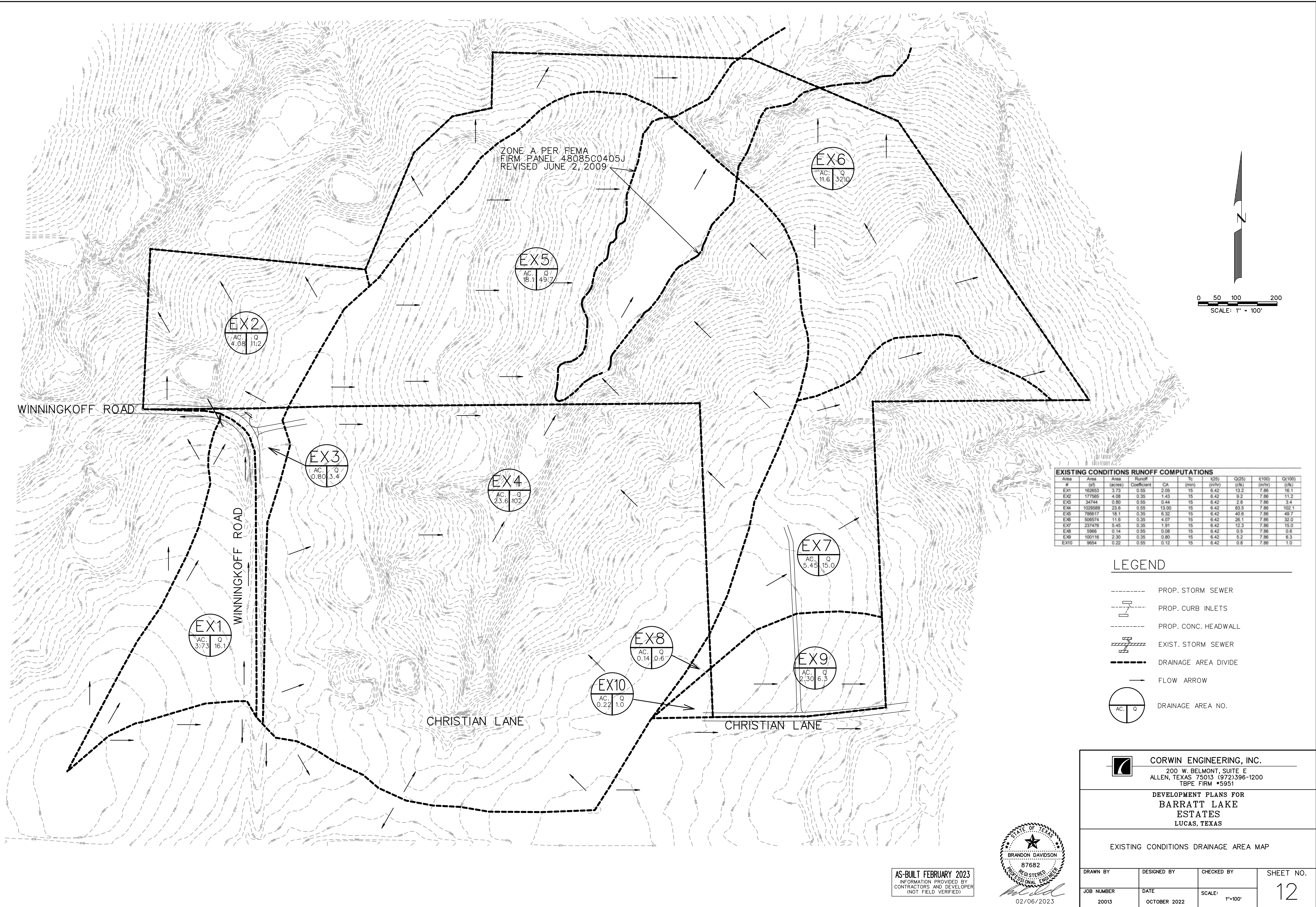
CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

DEVELOPMENT PLANS FOR
**BARRATT LAKE
ESTATES**
LUCAS, TEXAS

GRADING PLAN

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER	DATE	SCALE:	10
20013	OCTOBER 2022	1"=50'	





ZONE A PER FEMA
FIRM PANEL 48085C0405J
REVISED JUNE 2, 2009

EXISTING CONDITIONS RUNOFF COMPUTATIONS									
#	Area (sq)	Area (acres)	Runoff Coefficient	CA (mm)	Tc (min)	I(25) (in/hr)	Q(25) (cfs)	I(100) (in/hr)	Q(100) (cfs)
EX1	162653	3.73	0.55	2.05	15	6.42	13.2	7.86	16.1
EX2	177565	4.08	0.35	1.43	15	6.42	9.2	7.86	11.2
EX3	34744	0.80	0.55	0.44	15	6.42	2.8	7.86	3.4
EX4	1029588	23.6	0.55	13.00	15	6.42	83.5	7.86	102.1
EX5	786617	18.1	0.35	6.32	15	6.42	40.6	7.86	49.7
EX6	506574	11.6	0.35	4.07	15	6.42	26.1	7.86	32.0
EX7	237476	5.45	0.35	1.91	15	6.42	12.3	7.86	15.0
EX8	5966	0.14	0.55	0.08	15	6.42	0.5	7.86	0.6
EX9	100116	2.30	0.35	0.80	15	6.42	5.2	7.86	6.3
EX10	9654	0.22	0.55	0.12	15	6.42	0.8	7.86	1.0

LEGEND

- PROP. STORM SEWER
- PROP. CURB INLETS
- PROP. CONC. HEADWALL
- EXIST. STORM SEWER
- DRAINAGE AREA DIVIDE
- FLOW ARROW
- DRAINAGE AREA NO.

CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBP# FIRM #5951

DEVELOPMENT PLANS FOR
BARRATT LAKE
ESTATES
LUCAS, TEXAS

EXISTING CONDITIONS DRAINAGE AREA MAP

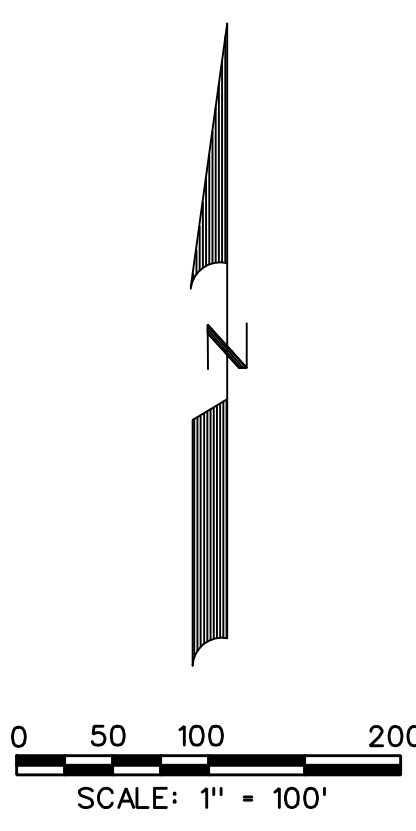
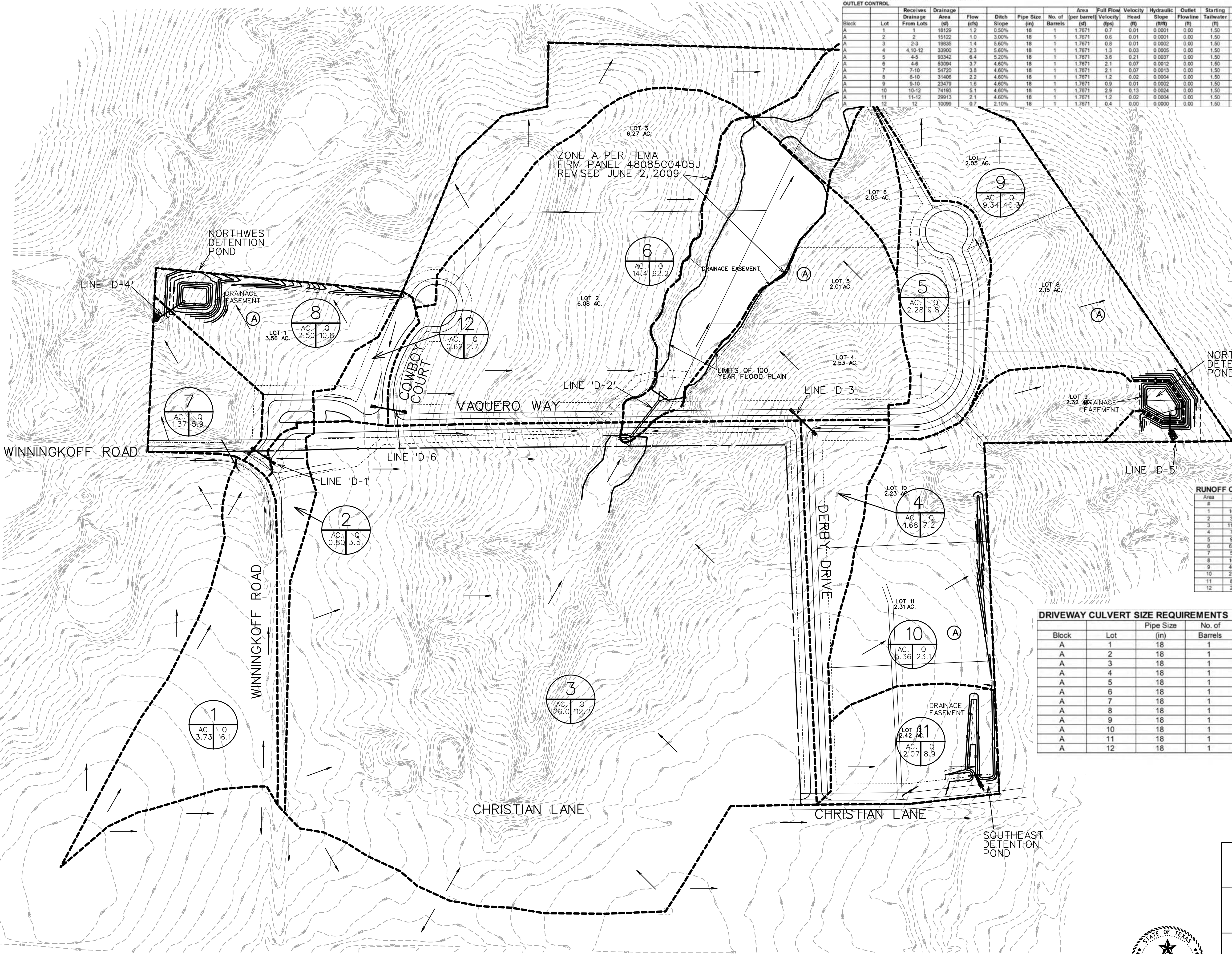
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JOB NUMBER	DATE	SCALE:	12
20013	OCTOBER 2022	1"=100'	

AS-BUILT FEBRUARY 2023
INFORMATION PROVIDED BY
CONTRACTORS AND DEVELOPER
(NOT FIELD VERIFIED)



DRIVEWAY CULVERT CALCULATIONS

OUTLET CONTROL										INLET CONTROL									
Block	Lot	Receives Drainage From Lots	Drainage Area (sf)	Flow (cfs)	Ditch Slope (in)	Pipe Size (in)	No. of Barrels	Area (per barrel) (sf)	Full Flow Velocity (fps)	Hydraulic Head (ft)	Slope (ft/ft)	Outlet Flowline (ft)	Starting Tailwater (ft)	Length (ft)	Headwater Elevation (ft)	Upstream Soffit Elev. (ft)	Headwater/Inlet Required (ft)	Flowline Elevation (ft)	Headwater/Inlet or Control? Elev. (ft)
A	1	1	18129	1.2	0.50%	18	1	1.7671	0.7	0.01	0.0001	0.00	1.50	28	1.51	1.64	0.02	0.14	0.91
A	2	2	19122	1.0	0.50%	18	1	1.7671	0.6	0.01	0.0001	0.00	1.50	28	1.51	2.34	0.01	0.84	1.60
A	3	2-3	19635	1.4	0.50%	18	1	1.7671	0.8	0.01	0.0002	0.00	1.50	28	1.51	3.07	0.03	1.57	2.34
A	4	4,10-12	33900	2.3	0.50%	18	1	1.7671	1.3	0.03	0.0005	0.00	1.50	28	1.53	3.07	0.08	1.57	2.39
A	5	4-5	93342	6.4	0.50%	18	1	1.7671	3.6	0.21	0.0037	0.00	1.50	28	1.71	2.96	0.57	1.46	2.78
A	6	4-6	53394	3.7	0.50%	18	1	1.7671	2.1	0.07	0.0012	0.00	1.50	28	1.57	2.79	0.18	1.29	2.22
A	7	7-10	54720	3.8	0.50%	18	1	1.7671	2.1	0.07	0.0013	0.00	1.50	28	1.57	2.79	0.20	1.29	2.23
A	8	8-10	31406	2.2	0.50%	18	1	1.7671	1.2	0.02	0.0004	0.00	1.50	28	1.62	2.79	0.06	1.29	2.10
A	9	9-10	23479	1.6	0.50%	18	1	1.7671	0.9	0.01	0.0002	0.00	1.50	28	1.51	2.79	0.04	1.29	2.07
A	10	10-12	74193	5.1	0.50%	18	1	1.7671	2.9	0.13	0.0024	0.00	1.50	28	1.63	2.79	0.36	1.29	2.40
A	11	11-12	28913	2.1	0.50%	18	1	1.7671	1.2	0.02	0.0004	0.00	1.50	28	1.52	2.79	0.06	1.29	2.10
A	12	12	10099	0.7	2.10%	18	1	1.7671	0.4	0.00	0.0000	0.00	1.50	28	1.50	2.09	0.01	0.59	1.34



RUNOFF COMPUTATIONS

#	Area (sf)	Area (acres)	Area Coefficient	CA (min)	Tc (min)	I(25) (cfs)	Q(25) (cfs)	I(100) (cfs)	Q(100) (cfs)
1	162053	3.73	0.55	2.05	15	6.42	13.2	7.86	16.1
2	35063	0.80	0.55	0.44	15	6.42	2.8	7.86	3.5
3	1131392	26.0	0.55	14.29	15	6.42	91.7	7.86	112.2
4	72975	1.68	0.55	0.92	15	6.42	5.9	7.86	7.2
5	99227	2.28	0.55	1.25	15	6.42	8.0	7.86	9.8
6	627536	14.4	0.55	7.92	15	6.42	50.9	7.86	62.2
7	59646	1.37	0.55	0.75	15	6.42	4.8	7.86	5.9
8	106739	2.50	0.55	1.37	15	6.42	8.8	7.86	10.8
9	406634	9.34	0.55	5.13	15	6.42	33.0	7.86	40.3
10	233322	5.36	0.55	2.95	15	6.42	18.9	7.86	23.1
11	89992	2.07	0.55	1.14	15	6.42	7.3	7.86	8.9
12	26956	0.62	0.55	0.34	15	6.42	2.2	7.86	2.7

DRIVEWAY CULVERT SIZE REQUIREMENTS

Block	Lot	Pipe Size (in)	No. of Barrels
A	1	18	1
A	2	18	1
A	3	18	1
A	4	18	1
A	5	18	1
A	6	18	1
A	7	18	1
A	8	18	1
A	9	18	1
A	10	18	1
A	11	18	1
A	12	18	1

LEGEND

- PROP. STORM SEWER
- PROP. CURB INLETS
- PROP. CONC. HEADWALL
- EXIST. STORM SEWER
- DRAINAGE AREA DIVIDE
- FLOW ARROW
- AC, Q DRAINAGE AREA NO.



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200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBP E FIRM #5951

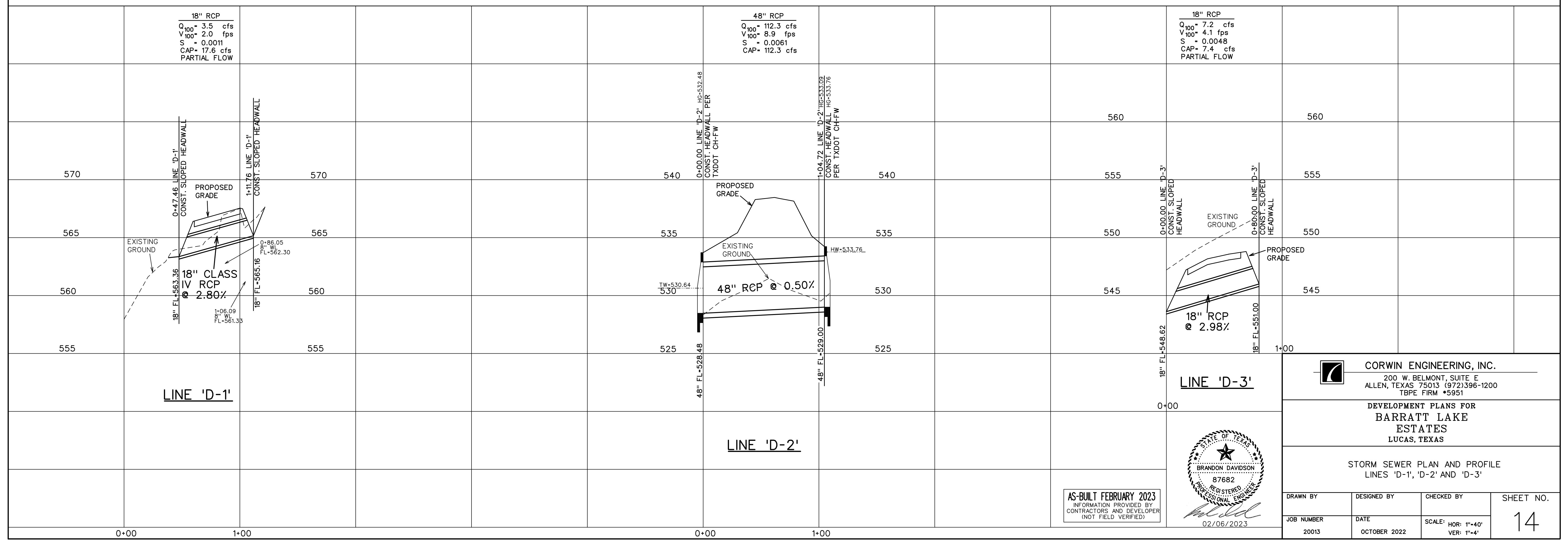
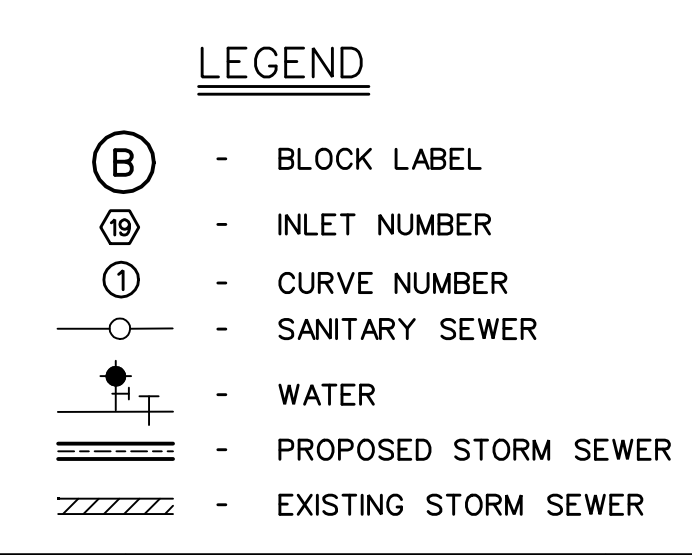
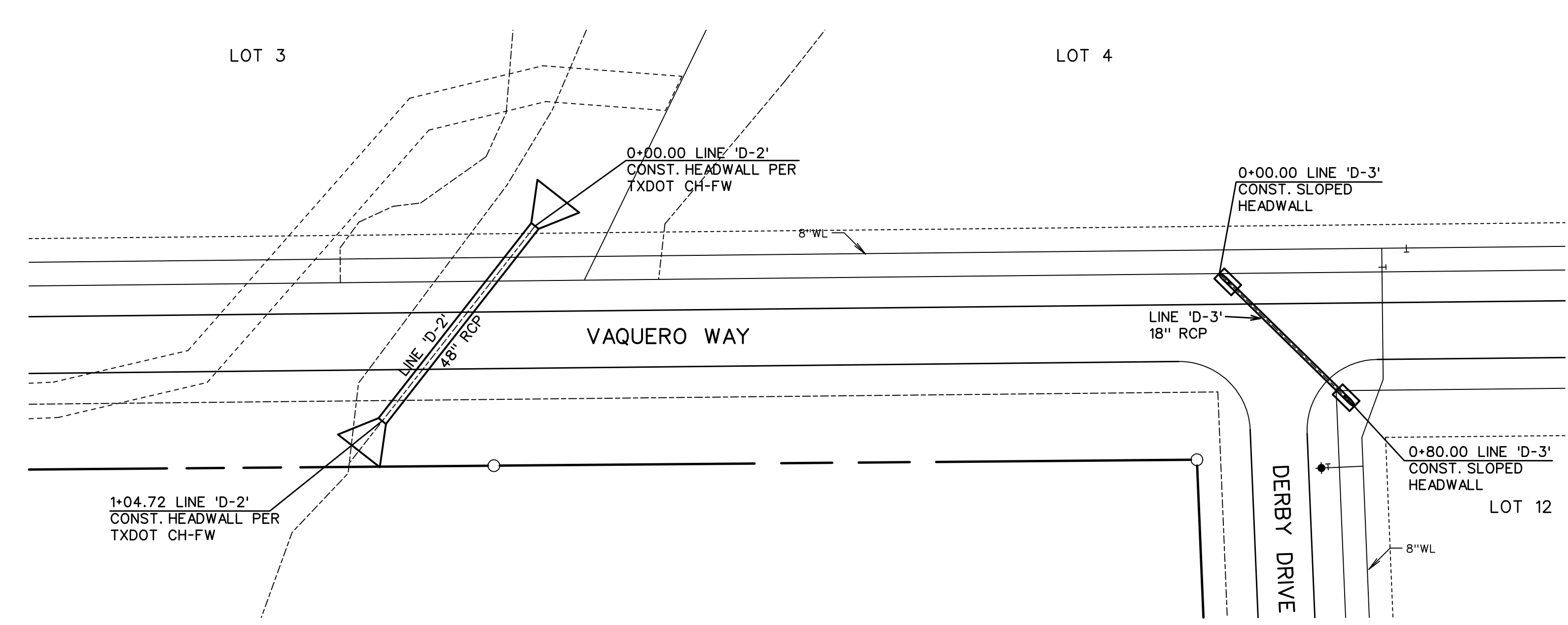
DEVELOPMENT PLANS FOR
BARRATT LAKE
ESTATES
LUCAS, TEXAS

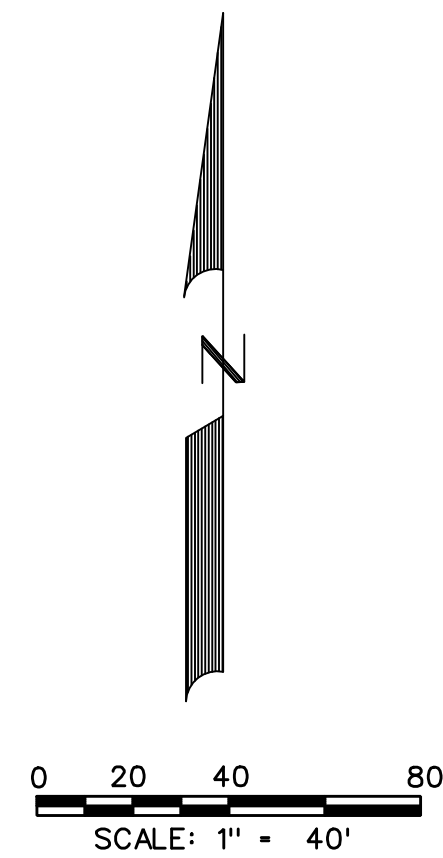
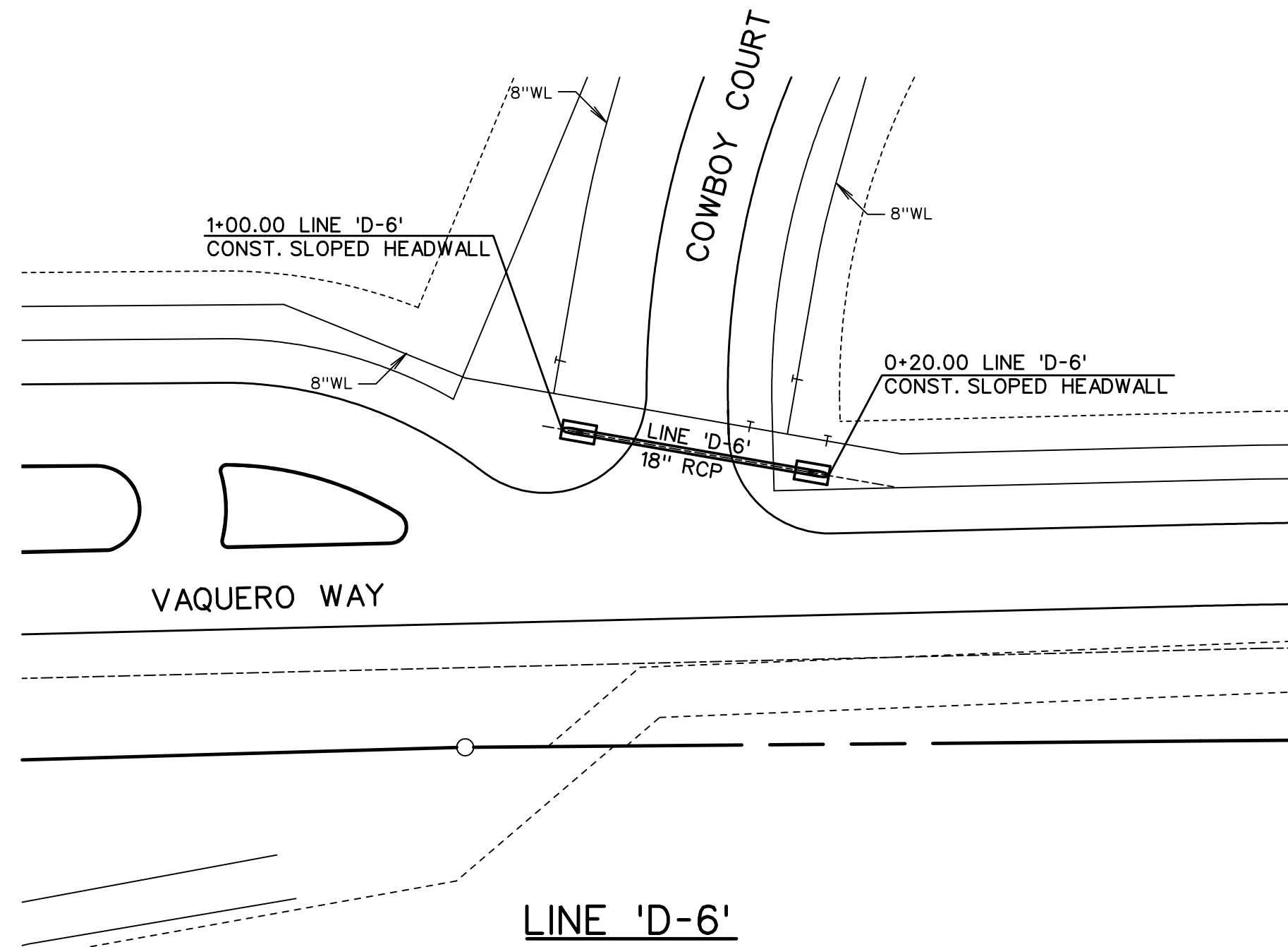
PROPOSED CONDITIONS DRAINAGE AREA MAP

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER	DATE	SCALE:	13
20013	OCTOBER 2022	1"=100'	

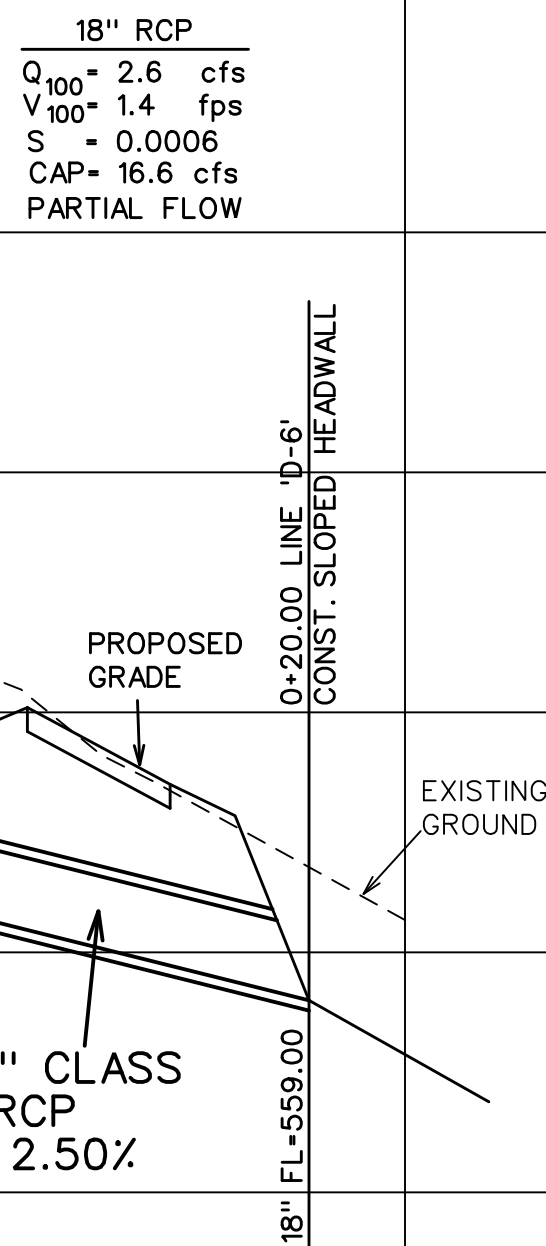
AS-BUILT FEBRUARY 2023
INFORMATION PROVIDED BY
CONTRACTORS AND DEVELOPER
(NOT FIELD VERIFIED)







- LEGEND**
- (B) - BLOCK LABEL
 - (19) - INLET NUMBER
 - (1) - CURVE NUMBER
 - - SANITARY SEWER
 - ⬆ - WATER
 - ==== - PROPOSED STORM SEWER
 - //// - EXISTING STORM SEWER



AS-BUILT FEBRUARY 2023
INFORMATION PROVIDED BY
CONTRACTORS AND DEVELOPER
(NOT FIELD VERIFIED)

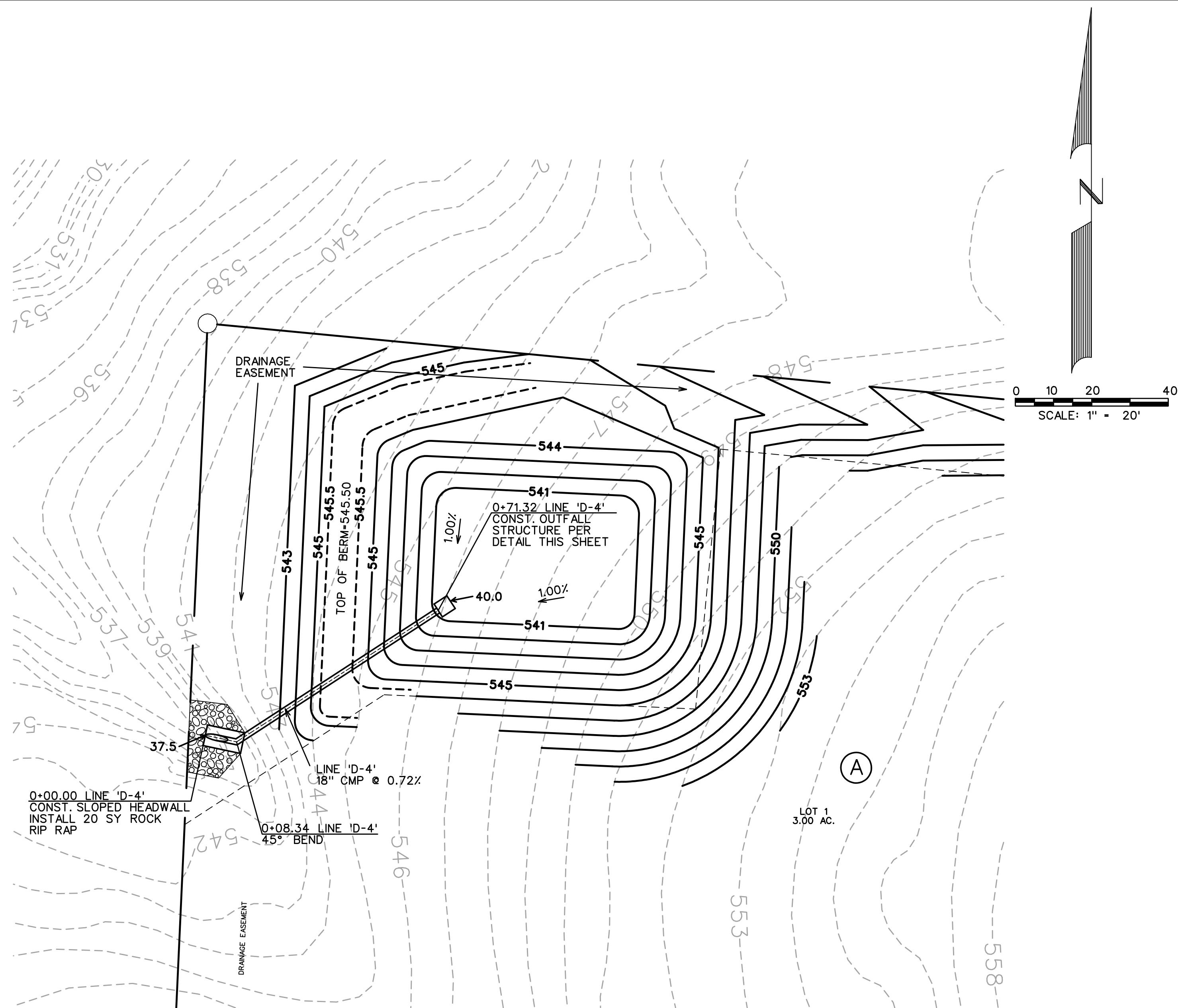


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DEVELOPMENT PLANS FOR
**BARRATT LAKE
ESTATES**
LUCAS, TEXAS

STORM SEWER PLAN AND PROFILE
LINE 'D-6'

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO. 15
JOB NUMBER 20013	DATE OCTOBER 2022	SCALE: HOR: 1"=40' VER: 1"=4'	



Stage-Discharge Table									
Opening #1 - 0.7' w x 0.5' h opening					Opening #2 2' Weir @ 544.35				
Stage	H	Area	Discharge	Weir Length	Depth of Flow Over Weir	Weir Discharge	Total Discharge	Allowable Discharge	Above (Below)
540.00	0	0	0				0.0		
541.00	0.75	0.35	1.5				1.5		
542.00	1.75	0.35	2.2				2.2		
542.75	2.50	0.35	2.7				2.7	2.7	(0.0)
543.00	2.75	0.35	2.8				2.8		
543.26	3.01	0.35	2.9				2.9	3.3	(0.4)
544.00	3.75	0.35	3.3				3.3		
543.95	3.70	0.35	3.2				3.2	4.3	(1.1)
544.48	4.23	0.35	3.5	12.0	0.13	1.9	5.3	5.3	0.0
545.00	4.75	0.35	3.7	12.0	0.65	20.9	24.6		
546.00	5.75	0.35	4.0	12.0	1.65	64.7	68.7		

Elevation-Storage Table					Elevation Calculations			
Elevation	Volume	Event	Maximum Release Rate	Storage Requirement	Occurs at	Storage	Occurs at	Elevation
540	0	2-year	2.7	5411	542.75			
541	917	5-year	3.3	7204	543.26			
542	3131	25-year	4.3	9878	543.95			
543	6163	100-year	5.3	12583	544.48			
544	10128							
545	15251							

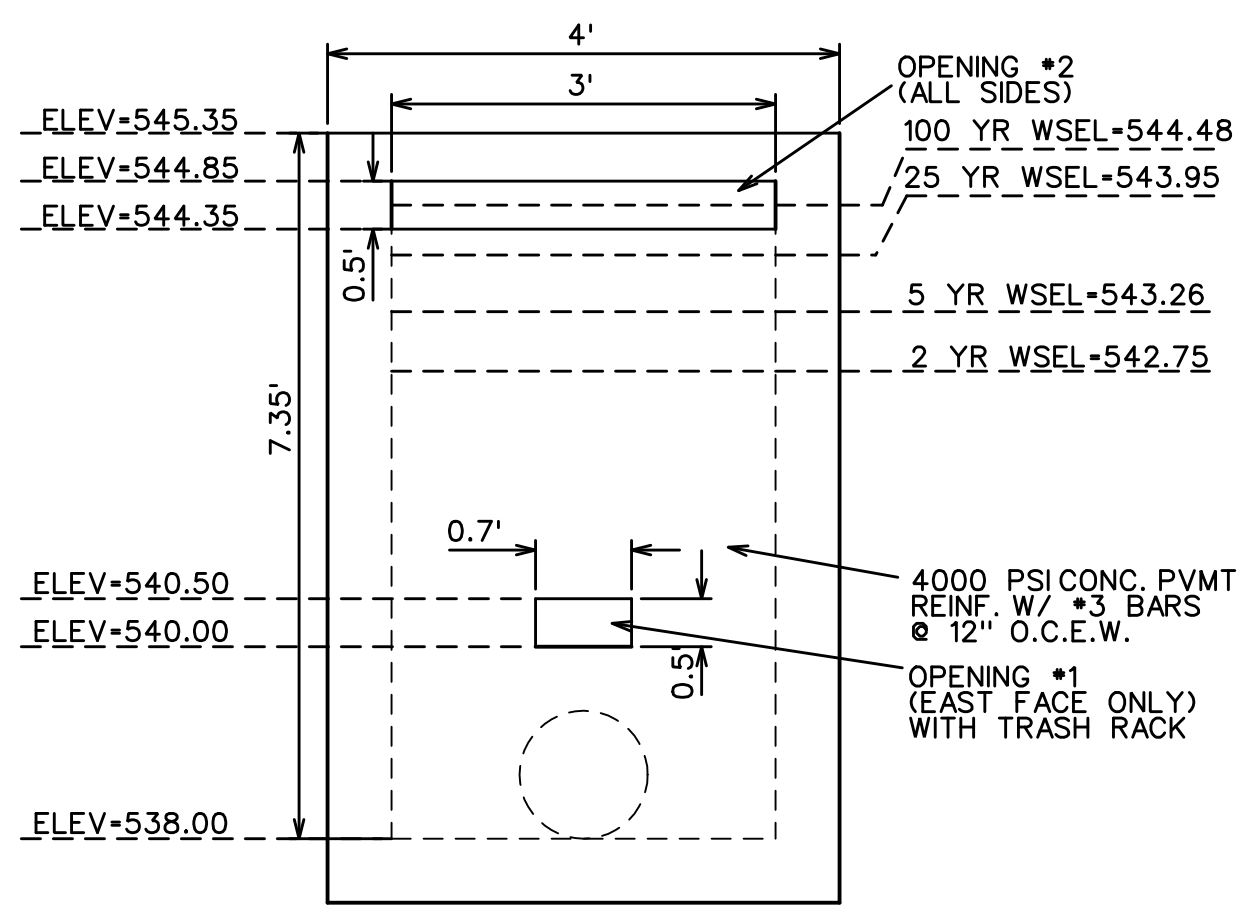
Northwest Detention Pond									
2-Year Storm									
Pre-Project Runoff Calculations									
Existing Runoff Bypass	Area #	Area (sf)	Area (acres)	Existing Runoff Coefficient	Tc - Existing (min)	Rainfall Intensity (in/hr)	Q - Undeveloped (cfs)		
	EX1-EX3	374962	8.61	0.40	15	4.00	13.9		
	1,7	222299	5.10	0.55	15	4.00	11.2		
								Allowed Release=	2.7
Post-Project Runoff Calculations									
	Area #	Area (sf)	Area (acres)	Proposed Runoff Coefficient	Tc - Existing (min)	Rainfall Intensity (in/hr)	Post Development (cfs)	Difference between Pre and Post Development Conditions	
	2,8	143802	3.30	0.55	15	4.00	7.3	4.6	
5-Year Storm									
Pre-Project Runoff Calculations									
Existing Runoff Bypass	Area #	Area (sf)	Area (acres)	Existing Runoff Coefficient	Tc - Existing (min)	Rainfall Intensity (in/hr)	Q - Undeveloped (cfs)		
	EX1-EX3	374962	8.61	0.40	15	4.91	17.1		
	1,7	222299	5.10	0.55	15	4.91	13.8		
								Allowed Release=	3.3
Post-Project Runoff Calculations									
	Area #	Area (sf)	Area (acres)	Existing Runoff Coefficient	Tc - Existing (min)	Rainfall Intensity (in/hr)	Post Development (cfs)	Difference between Pre and Post Development Conditions	
	2,8	143802	3.30	0.55	15	4.91	8.9	5.6	
25-Year Storm									
Pre-Project Runoff Calculations									
Existing Runoff Bypass	Area #	Area (sf)	Area (acres)	Existing Runoff Coefficient	Tc - Existing (min)	Rainfall Intensity (in/hr)	Q - Undeveloped (cfs)		
	EX1-EX3	374962	8.61	0.40	15	6.42	22.3		
	1,7	222299	5.10	0.55	15	6.42	18.0		
								Allowed Release=	4.3
Post-Project Runoff Calculations									
	Area #	Area (sf)	Area (acres)	Existing Runoff Coefficient	Tc - Existing (min)	Rainfall Intensity (in/hr)	Post Development (cfs)	Difference between Pre and Post Development Conditions	
	2,8	143802	3.30	0.55	15	6.42	11.7	7.3	
100-Year Storm									
Pre-Project Runoff Calculations									
Existing Runoff Bypass	Area #	Area (sf)	Area (acres)	Existing Runoff Coefficient	Tc - Existing (min)	Rainfall Intensity (in/hr)	Q - Undeveloped (cfs)		
	EX1-EX3	374962	8.61	0.40	15	7.86	27.3		
	1,7	222299	5.10	0.55	15	7.86	22.0		
								Allowed Release=	5.3
Post-Project Runoff Calculations									
	Area #	Area (sf)	Area (acres)	Existing Runoff Coefficient	Tc - Existing (min)	Rainfall Intensity (in/hr)	Post Development (cfs)	Difference between Pre and Post Development Conditions	
	2,8	143802	3.30	0.55	15	7.86	14.3	9.0	

2 Year	Storm Duration	Inflow Duration	Area (AC.)	Future "C"	Future "KF"	Future "CA"	Rainfall intensity	Inflow (cfs)	Inflow Volume (cubic ft.)	Outflow Volume (cubic ft.)	Storage Volume (cubic ft.)	Storage Volume (acre-ft.)	Outflow (cfs)
10	25	3.30	0.55	1.00	1.82	4.82	8.7	5248	2020	3228	0.07	2.7	
20	35	3.30	0.55	1.00	1.82	3.44	6.2	7488	2827	4661	0.11	2.7	
30	45	3.30	0.55	1.00	1.82	2.71	4.9	8867	3635	5232	0.12	2.7	
40	55	3.30	0.55	1.00	1.82	2.28	4.1	9854	4443	5411	0.12	2.7	
50	65	3.30	0.55	1.00	1.82	1.95	3.5	10620	5251	5369	0.12	2.7	
60	75	3.30	0.55	1.00	1.82	1.72	3.1	11247	6059	5188	0.12	2.7	
70	85	3.30	0.55	1.00	1.82	1.54	2.8	11778	6866	4911	0.11	2.7	
80	95	3.30	0.55	1.00	1.82	1.40	2.5	12238	7674	4564	0.10	2.7	
Maximum Storage Required											5411		

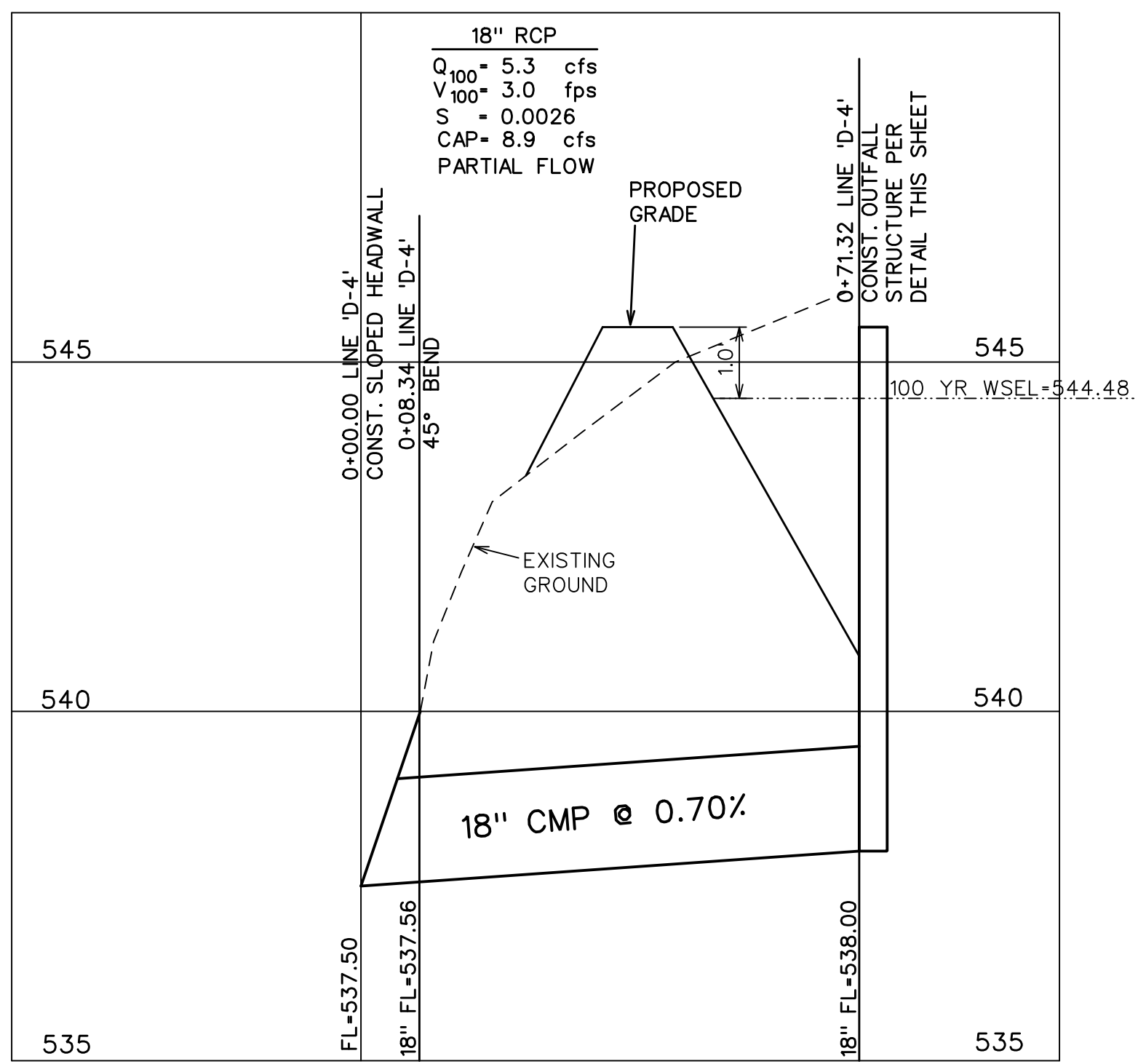
5 Year	Storm Duration	Inflow Duration	Area (AC.)	Future "C"	Future "KF"	Future "CA"	Rainfall intensity	Inflow (cfs)	Inflow Volume (cubic ft.)	Outflow Volume (cubic ft.)	Storage Volume (cubic ft.)	Storage Volume (acre-ft.)	Outflow (cfs)
10	25	3.30	0.55	1.00	1.82	5.82	10.6	6337	2483	3854	0.09	3.3	
20	35	3.30	0.55	1.00	1.82	4.28	7.8	9321	3476	5845	0.13	3.3	
30	45	3.30	0.55	1.00	1.82	3.43	6.2	11214	4469	6744	0.15	3.3	
40	55	3.30	0.55	1.00	1.82	2.89	5.2	12586	5463	7124	0.16	3.3	
50	65	3.30	0.55	1.00	1.82	2.51	4.6	13660	6456	7204	0.17	3.3	
60	75	3.30	0.55	1.00	1.82	2.22	4.0	14542	7449	7093	0.16	3.3	
70	85	3.30	0.55	1.00	1.82	2.01	3.6	15260	8442	6948	0.16	3.3	
80	95	3.30	0.55	1.00	1.82	1.83	3.3	15941	9435	6505	0.15	3.3	
Maximum Storage Required											7204		

25 Year	Storm Duration	Inflow Duration	Area (AC.)	Future "C"	Future "KF"	Future "CA"	Rainfall intensity	Inflow (cfs)	Inflow Volume (cubic ft.)	Outflow Volume (cubic ft.)	Storage Volume (cubic ft.)	Storage Volume (acre-ft.)	Outflow (cfs)
10	25	3.30	0.55	1.00	1.82	7.55	13.7	8226	3244	4982	0.11	4.3	
20	35	3.30	0.55	1.00	1.82	5.62	10.2	12242	4541	7701	0.18	4.3	
30	45	3.30	0.55	1.00	1.82	4.54	8.3	14853	5839	9014	0.21	4.3	
40	55	3.30	0.55	1.00	1.82	3.85	7.0	16782	7137	9645	0.22	4.3	
50	65	3.30	0.55	1.00	1.82	3.36	6.1	18313	8434	9978	0.23	4.3	
60	75	3.30	0.55	1.00	1.82	3.00	5.4	19584	9732	9853	0.23	4.3	
70	85	3.30	0.55	1.00	1.82	2.71	4.9	20674	11029	9645	0.22	4.3	
80	95	3.30	0.55	1.00	1.82	2.48	4.5	21630	12327	9304	0.21	4.3	
Maximum Storage Required											9878		

100 Year								Inflow	Outflow	Storage	Storage	
Storm Duration	Inflow Duration	Area (A.C.)	Future "C"	Future "KF"	Future "CA"	Rainfall intensity	Inflow (cfs)	Volume (cubic ft.)	Volume (cubic ft.)	Volume (cubic ft.)	Volume (acre-ft.)	Outflow (cfs)
10	25	3.30	0.55	1.00	1.82	9.20	16.7	10017	3969	6048	0.14	5.3
20	35	3.30	0.55	1.00	1.82	6.90	12.5	15036	5556	9479	0.22	5.3
30	45	3.30	0.55	1.00	1.82	5.62	10.2	18354	7144	11210	0.26	5.3
40	55	3.30	0.55	1.00	1.82	4.78	8.7	20835	8732	12104	0.28	5.3
50	65	3.30	0.55	1.00	1.82	4.19	7.6	22825	10319	12805	0.29	5.3
60	75	3.30	0.55	1.00	1.82	3.75	6.8	24490	11907	12583	0.29	5.3
70	85	3.30	0.55	1.00	1.82	3.40	6.2	25928	13494	12433	0.29	5.3
80	95	3.30	0.55	1.00	1.82	3.12	5.7	27195	15082	12113	0.28	5.3
Maximum Storage Required											12583	

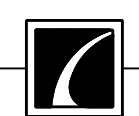


NORTHEAST FACE
SPECIAL INLET OPENINGS DETAIL
N.T.S.



LINE 'D-4'

AS-BUILT FEBRUARY 2023
INFORMATION PROVIDED BY
CONTRACTORS AND DEVELOPER
(NOT FIELD VERIFIED)

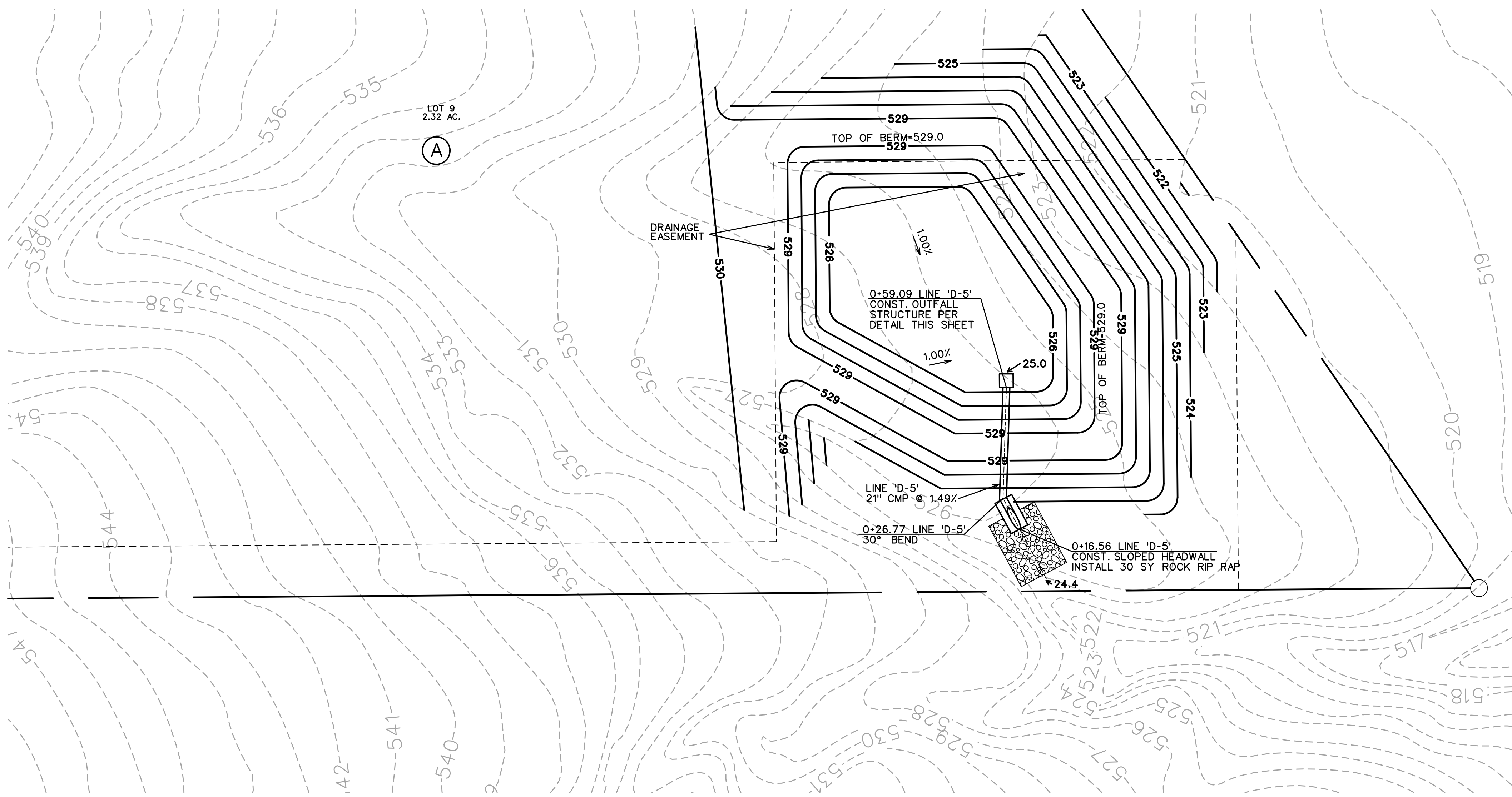


CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

DEVELOPMENT PLANS FOR
BARRATT LAKE
ESTATES
LUCAS, TEXAS

NORTHWEST DETENTION POND PLAN

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
20013	OCTOBER 2022	SCALE: 1"=20'	16



Northeast Detention Pond							
2-Year Storm							
Pre-Project Runoff Calculations							
Area #	Area (sf)	Area (acres)	Existing Runoff Coefficient	Tc - Existing (min)	Rainfall Intensity (in/hr)	Q - Undeveloped (cfs)	
EX7-EX8	243442	5.59	0.35	15	4.00	7.9	
Existing Runoff							Allowed Release= 7.9
Post-Project Runoff Calculations							
Area #	Area (sf)	Area (acres)	Proposed Runoff Coefficient	Tc - Existing (min)	Rainfall Intensity (in/hr)	Post Development (cfs)	Difference between Pre and Post Development Conditions
10	233322	5.36	0.55	15	4.00	11.8	3.8
5-Year Storm							
Pre-Project Runoff Calculations							
Area #	Area (sf)	Area (acres)	Existing Runoff Coefficient	Tc - Existing (min)	Rainfall Intensity (in/hr)	Q - Undeveloped (cfs)	
EX7-EX8	243442	5.59	0.35	15	4.91	9.7	
Existing Runoff							Allowed Release= 9.7
Post-Project Runoff Calculations							
Area #	Area (sf)	Area (acres)	Existing Runoff Coefficient	Tc - Existing (min)	Rainfall Intensity (in/hr)	Post Development (cfs)	Difference between Pre and Post Development Conditions
10	233322	5.36	0.55	15	4.91	14.5	4.7
25-Year Storm							
Pre-Project Runoff Calculations							
Area #	Area (sf)	Area (acres)	Existing Runoff Coefficient	Tc - Existing (min)	Rainfall Intensity (in/hr)	Q - Undeveloped (cfs)	
EX7-EX8	243442	5.59	0.35	15	6.42	12.7	
Existing Runoff							Allowed Release= 12.7
Post-Project Runoff Calculations							
Area #	Area (sf)	Area (acres)	Existing Runoff Coefficient	Tc - Existing (min)	Rainfall Intensity (in/hr)	Post Development (cfs)	Difference between Pre and Post Development Conditions
10	233322	5.36	0.55	15	6.42	18.9	6.2
100-Year Storm							
Pre-Project Runoff Calculations							
Area #	Area (sf)	Area (acres)	Existing Runoff Coefficient	Tc - Existing (min)	Rainfall Intensity (in/hr)	Q - Undeveloped (cfs)	
EX7-EX8	243442	5.59	0.35	15	7.86	15.6	
Existing Runoff							Allowed Release= 15.6
Post-Project Runoff Calculations							
Area #	Area (sf)	Area (acres)	Existing Runoff Coefficient	Tc - Existing (min)	Rainfall Intensity (in/hr)	Post Development (cfs)	Difference between Pre and Post Development Conditions
10	233322	5.36	0.55	15	7.86	23.1	7.6

2 Year	Storm Duration	Inflow Duration	Area (AC.)	Future "C"	Future "KF"	Future "CA"	Rainfall Intensity	Inflow (cfs)	Inflow Volume (cubic ft.)	Outflow Volume (cubic ft.)	Storage Volume (cubic ft.)	Storage (acre-ft.)	Outflow (cfs)
10	25	35	5.36	0.55	1.00	2.95	4.82	14.2	8514	5948	2568	0.06	7.9
20	35	55	5.36	0.55	1.00	2.95	3.44	10.1	12150	8325	3825	0.09	7.9
30	45	55	5.36	0.55	1.00	2.95	2.71	8.0	14357	10704	3654	0.08	7.9
40	55	55	5.36	0.55	1.00	2.95	2.28	6.7	15988	13082	2906	0.07	7.9
50	65	55	5.36	0.55	1.00	2.95	1.95	5.7	17231	15461	1770	0.04	7.9
Maximum Storage Required												3825	

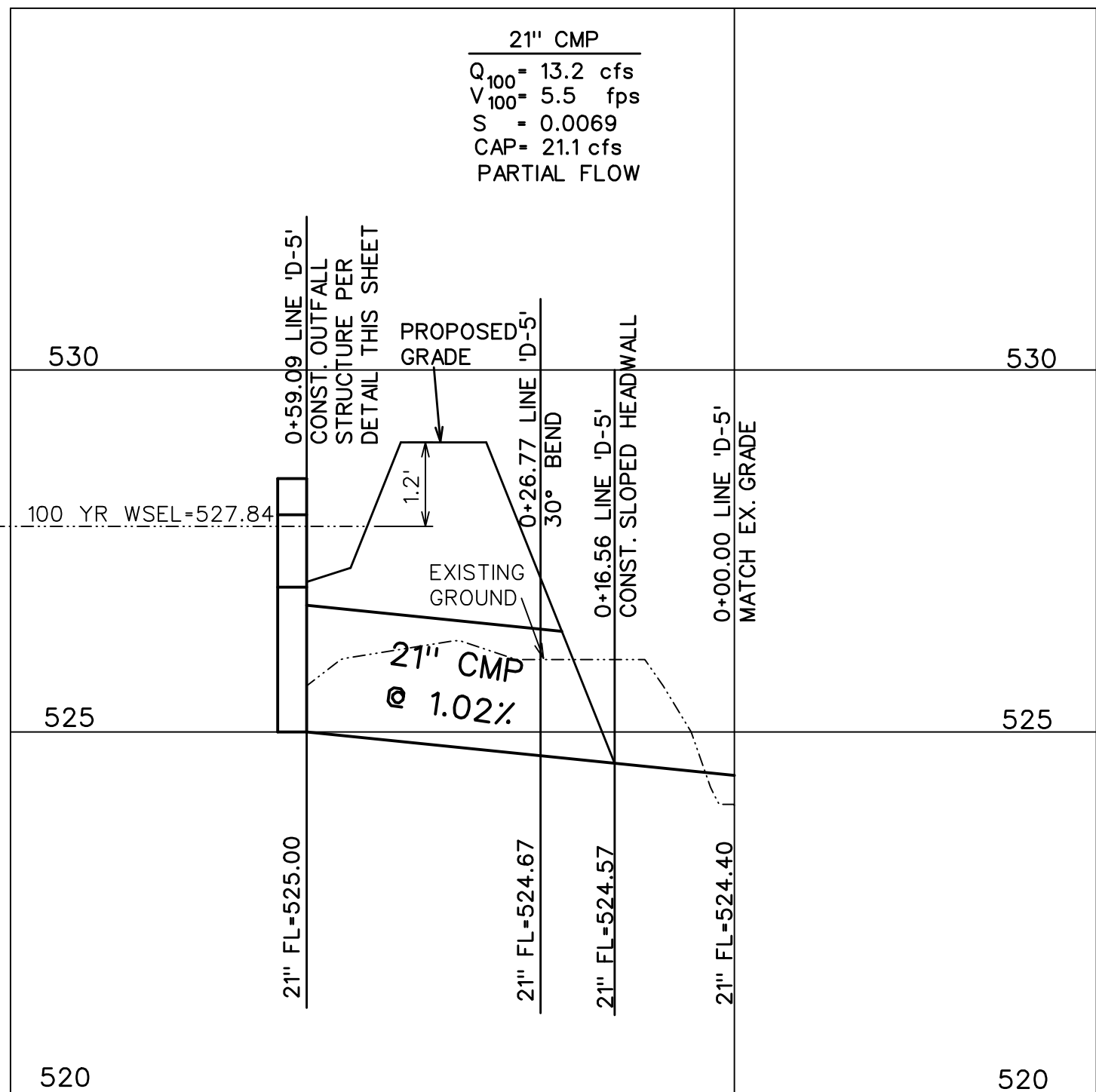
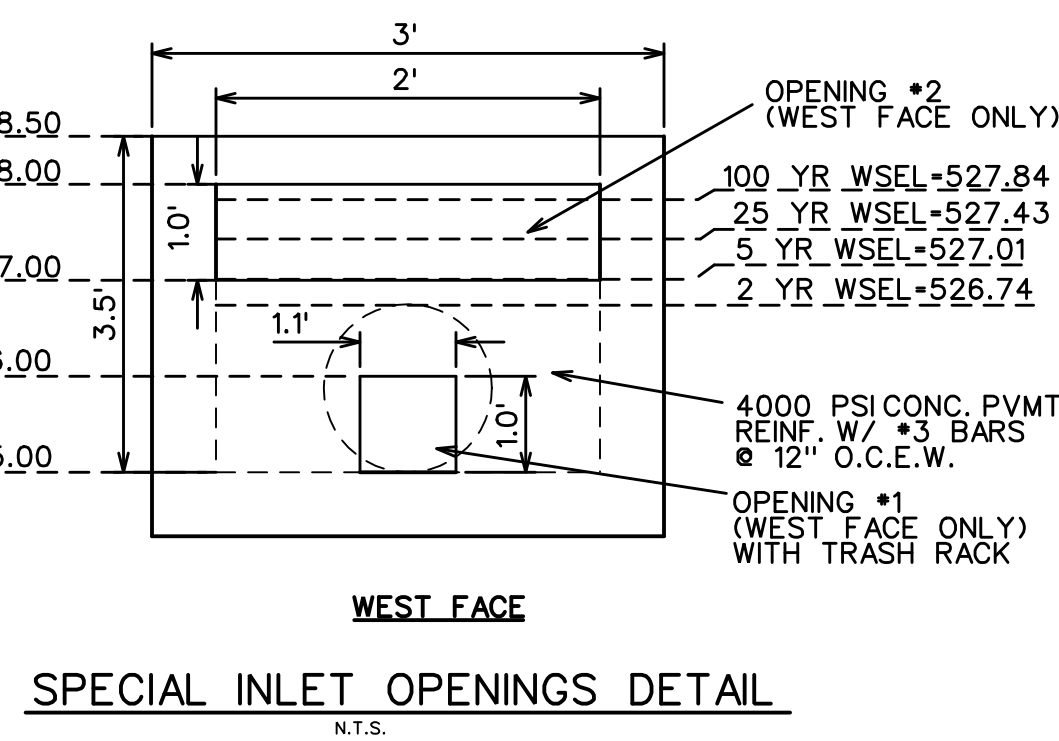
5 Year	Storm Duration	Inflow Duration	Area (AC.)	Future "C"	Future "KF"	Future "CA"	Rainfall Intensity	Inflow (cfs)	Inflow Volume (cubic ft.)	Outflow Volume (cubic ft.)	Storage Volume (cubic ft.)	Storage (acre-ft.)	Outflow (cfs)
10	25	35	5.36	0.55	1.00	2.95	5.82	17.1	10282	7311	2971	0.07	9.7
20	35	55	5.36	0.55	1.00	2.95	4.28	12.6	15123	10236	4888	0.11	9.7
30	45	55	5.36	0.55	1.00	2.95	3.43	10.1	18194	13160	5034	0.12	9.7
40	55	55	5.36	0.55	1.00	2.95	2.89	8.5	20421	16084	4337	0.10	9.7
50	65	55	5.36	0.55	1.00	2.95	2.51	7.4	22164	19009	3155	0.07	9.7
Maximum Storage Required												5034	

25 Year	Storm Duration	Inflow Duration	Area (AC.)	Future "C"	Future "KF"	Future "CA"	Rainfall Intensity	Inflow (cfs)	Inflow Volume (cubic ft.)	Outflow Volume (cubic ft.)	Storage Volume (cubic ft.)	Storage (acre-ft.)	Outflow (cfs)
10	25	35	5.36	0.55	1.00	2.95	7.55	22.2	13346	9552	3795	0.09	12.7
20	35	55	5.36	0.55	1.00	2.95	5.62	16.6	19863	13372	6491	0.15	12.7
30	45	55	5.36	0.55	1.00	2.95	4.54	13.4	24100	17193	6907	0.16	12.7
40	55	55	5.36	0.55	1.00	2.95	3.85	11.3	27229	21013	6216	0.14	12.7
50	65	55	5.36	0.55	1.00	2.95	3.38	9.9	29713	24834	4879	0.11	12.7
Maximum Storage Required												6907	

100 Year	Storm Duration	Inflow Duration	Area (AC.)	Future "C"	Future "KF"	Future "CA"	Rainfall Intensity	Inflow (cfs)	Inflow Volume (cubic ft.)	Outflow Volume (cubic ft.)	Storage Volume (cubic ft.)	Storage (acre-ft.)	Outflow (cfs)
10	25	35	5.36	0.55	1.00	2.95	9.20	27.1	16253	11686	4567	0.10	15.6
20	35	55	5.36	0.55	1.00	2.95	6.60	20.3	24396	16361	8035	0.18	15.6
30	45	55	5.36	0.55	1.00	2.95	5.62	16.5	29779	21035	8744	0.20	15.6
40	55	55	5.36	0.55	1.00	2.95	4.78	14.1	33806	25710	8096	0.19	15.6
50	65	55	5.36	0.55	1.00	2.95	4.19	12.3	37033	30384	6649	0.15	15.6
Maximum Storage Required												8744	

Elevation-Storage Table		Elevation Calculations			
Elevation	Volume (cf)	Event	Maximum Release Rate	Storage Requirement	Occurs at Elevation
525	0	2-year	2.7	3825	526.74
526	1506	5-year	3.3	5034	527.01
527	4979	25-year	4.3	6907	527.43
528	9437	100-year	13.2	8744	527.84
529	14996				

Stage-Discharge Table									
Opening #1 - 1.1' x 1.0' h opening				2' Weir @ 527					
Stage	H	Area	Discharge	Weir Length	Depth of Flow Over Weir	Weir Discharge	Total Discharge	Allowable Discharge	Above (Below)
525.00	0	0	0	0	0.0	0.0	0.0		
526.00	0.50	1.10	3.7			3.7			
526.74	1.24	1.10	5.9			5.9	7.9	(2.0)	2-year
527.00	1.50	1.10	6.5			6.5			
527.01	1.51	1.10	6.5			6.5	8.7	(3.2)	5-year
527.43	1.93	1.10	7.4	2.0	0.43	1.9	12.7	(3.5)	25-year
527.84	2.34	1.10	8.1	2.0	0.84	5.1	13.2	(2.4)	100-year
528.00	2.50	1.10	8.4	2.0	1.00	6.7	15.0		
529.00	3.50	1.10	9.9	2.0	2.00	18.8	28.7		



AS-BUILT FEBRUARY 2023
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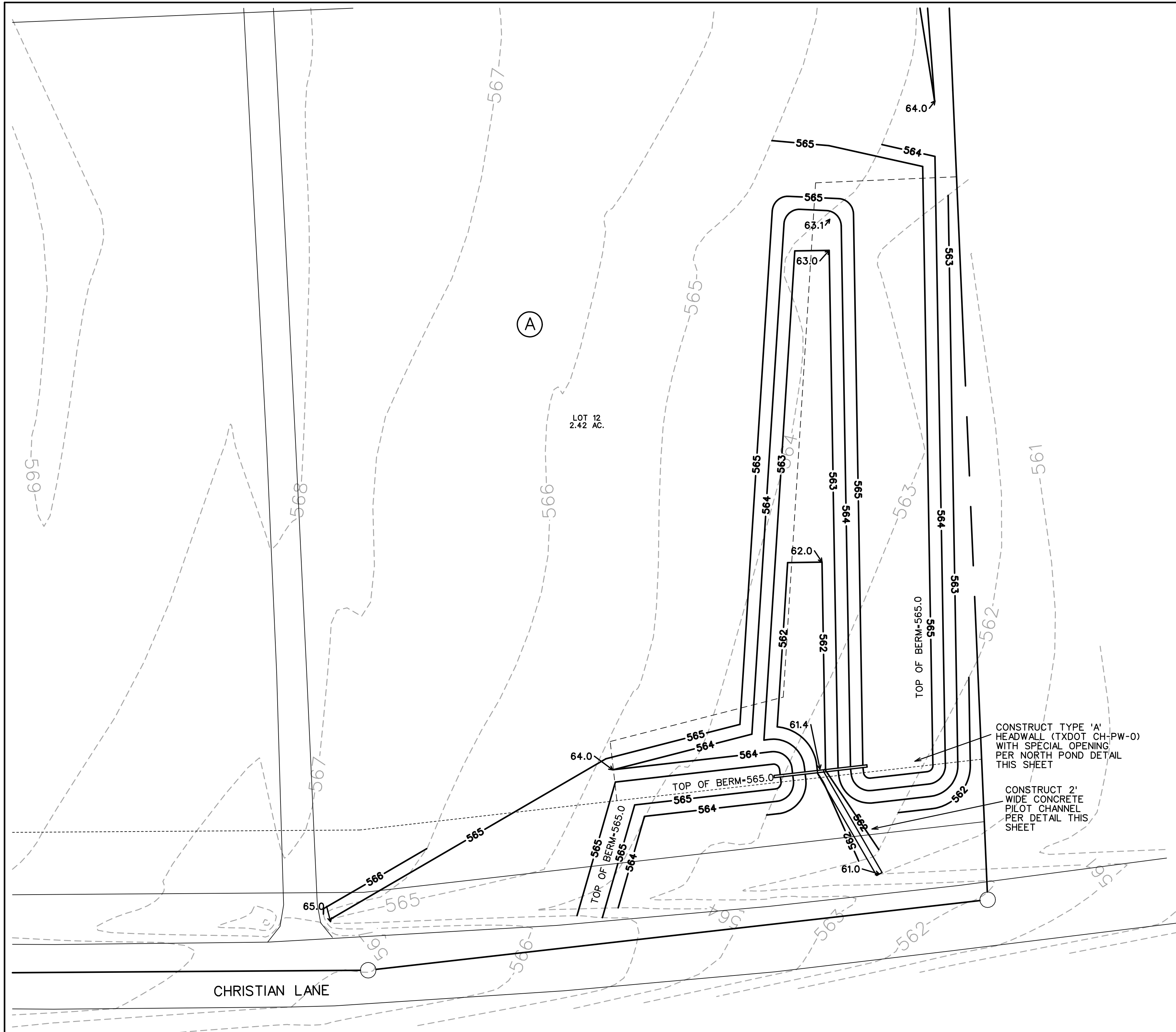


CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

DEVELOPMENT PLANS FOR
BARRATT LAKE
ESTATES
LUCAS, TEXAS

NORTHEAST DETENTION POND PLAN

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER	DATE	SCALE: 1"=20'	17
20013	OCTOBER 2022		



Southeast Detention Pond							
2-Year Storm							
Pre-Project Runoff Calculations							
Area #	Area (sf)	Area (acres)	Existing Runoff Coefficient	Tc - Existing (min)	Rainfall Intensity (in/hr)	Q - Undeveloped (cfs)	
EX9-EX10	215714	2.52	0.37	15	4.00	3.7	
Existing Runoff						Allowed Release=	3.7
Post-Project Runoff Calculations							
Area #	Area (sf)	Area (acres)	Proposed Runoff Coefficient	Tc - Existing (min)	Rainfall Intensity (in/hr)	Post Developm (cfs)	Difference between Pre and Post Development Conditions
11	89992	2.07	0.55	15	4.00	4.5	0.8
						Allowed Release=	4.5
5-Year Storm							
Pre-Project Runoff Calculations							
Area #	Area (sf)	Area (acres)	Existing Runoff Coefficient	Tc - Existing (min)	Rainfall Intensity (in/hr)	Q - Undeveloped (cfs)	
EX9-EX10	215714	2.52	0.37	15	4.91	4.6	
Existing Runoff						Allowed Release=	4.6
Post-Project Runoff Calculations							
Area #	Area (sf)	Area (acres)	Existing Runoff Coefficient	Tc - Existing (min)	Rainfall Intensity (in/hr)	Post Developm (cfs)	Difference between Pre and Post Development Conditions
11	89992	2.07	0.55	15	4.91	5.6	1.0
						Allowed Release=	5.6
25-Year Storm							
Pre-Project Runoff Calculations							
Area #	Area (sf)	Area (acres)	Existing Runoff Coefficient	Tc - Existing (min)	Rainfall Intensity (in/hr)	Q - Undeveloped (cfs)	
EX9-EX10	215714	2.52	0.37	15	6.42	5.9	
Existing Runoff						Allowed Release=	5.9
Post-Project Runoff Calculations							
Area #	Area (sf)	Area (acres)	Existing Runoff Coefficient	Tc - Existing (min)	Rainfall Intensity (in/hr)	Post Developm (cfs)	Difference between Pre and Post Development Conditions
11	89992	2.07	0.55	15	6.42	7.3	1.3
						Allowed Release=	7.3
100-Year Storm							
Pre-Project Runoff Calculations							
Area #	Area (sf)	Area (acres)	Existing Runoff Coefficient	Tc - Existing (min)	Rainfall Intensity (in/hr)	Q - Undeveloped (cfs)	
EX9-EX10	215714	2.52	0.37	15	7.86	7.3	
Existing Runoff						Allowed Release=	7.3
Post-Project Runoff Calculations							
Area #	Area (sf)	Area (acres)	Existing Runoff Coefficient	Tc - Existing (min)	Rainfall Intensity (in/hr)	Post Developm (cfs)	Difference between Pre and Post Development Conditions
11	89992	2.07	0.55	15	7.86	8.9	1.6
						Allowed Release=	8.9

Storm Duration	Inflow Duration	Area (AC.)	Future "C"	Future "KF"	Future "CA"	Rainfall intensity	Inflow (cfs)	Inflow Volume (cubic ft.)	Outflow Volume (cubic ft.)	Storage Volume (cubic ft.)	Storage Volume (acre-ft.)	Outflow (cfs)
10	25	2.07	0.55	1.00	1.14	4.82	5.5	3284	2262	1022	0.02	3.0
20	35	2.07	0.55	1.00	1.14	3.44	3.9	4695	3167	1519	0.03	3.0
30	45	2.07	0.55	1.00	1.14	2.71	3.1	5549	4072	1477	0.03	3.0
40	55	2.07	0.55	1.00	1.14	2.26	2.6	6166	4977	1190	0.03	3.0
50	65	2.07	0.55	1.00	1.14	1.95	2.2	6646	5882	764	0.02	3.0
Maximum Storage Required										1519		

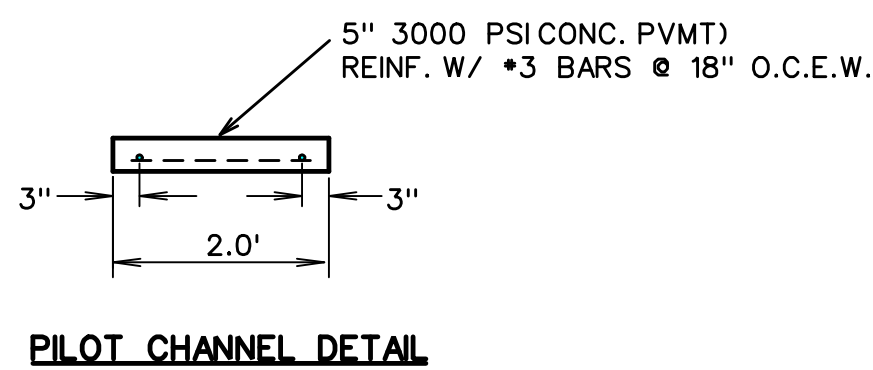
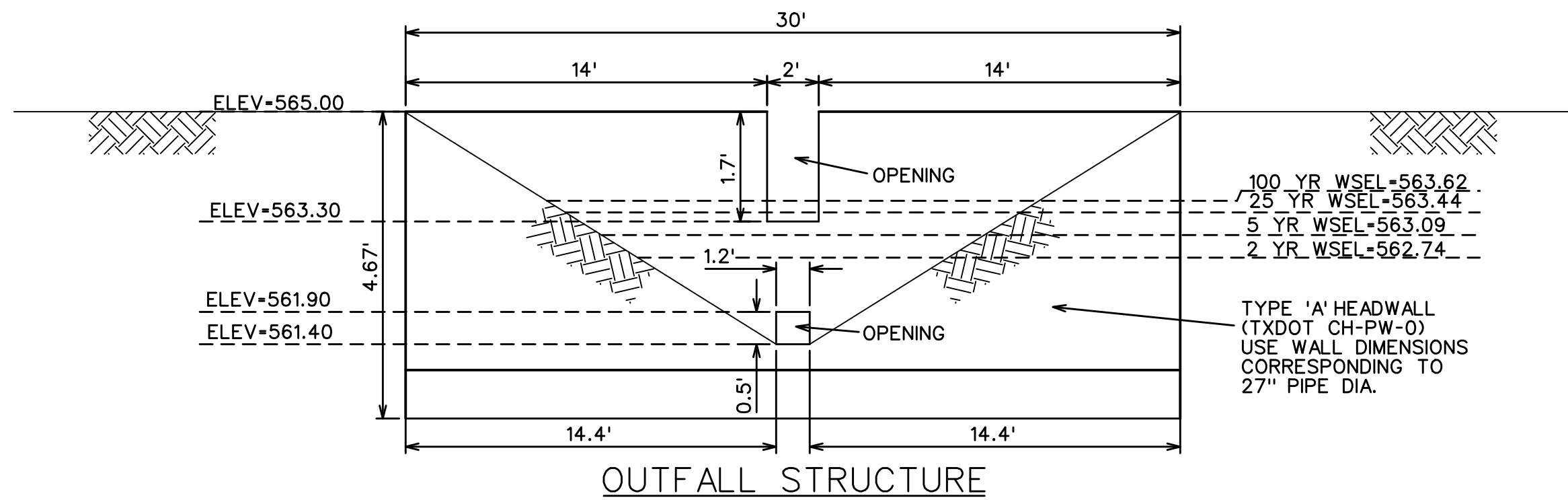
Storm Duration	Inflow Duration	Area (AC.)	Future "C"	Future "KF"	Future "CA"	Rainfall intensity	Inflow (cfs)	Inflow Volume (cubic ft.)	Outflow Volume (cubic ft.)	Storage Volume (cubic ft.)	Storage Volume (acre-ft.)	Outflow (cfs)
10	25	2.07	0.55	1.00	1.14	5.82	6.6	3966	2600	1366	0.03	3.5
20	35	2.07	0.55	1.00	1.14	4.28	4.9	5833	3640	2193	0.05	3.5
30	45	2.07	0.55	1.00	1.14	3.43	3.9	7018	4680	2337	0.05	3.5
40	55	2.07	0.55	1.00	1.14	2.88	3.3	7877	5720	2156	0.05	3.5
50	65	2.07	0.55	1.00	1.14	2.51	2.8	8548	6760	1788	0.04	3.5
Maximum Storage Required										2337		

Storm Duration	Inflow Duration	Area (AC.)	Future "C"	Future "KF"	Future "CA"	Rainfall intensity	Inflow (cfs)	Inflow Volume (cubic ft.)	Outflow Volume (cubic ft.)	Storage Volume (cubic ft.)	Storage Volume (acre-ft.)	Outflow (cfs)
10	25	2.07	0.55	1.00	1.14	7.55	8.6	5148	3143	2005	0.05	4.2
20	35	2.07	0.55	1.00	1.14	5.62	6.4	7851	4400	3362	0.07	4.2
30	45	2.07	0.55	1.00	1.14	4.54	5.2	9295	5657	3639	0.08	4.2
40	55	2.07	0.55	1.00	1.14	3.85	4.4	10502	6914	3588	0.08	4.2
50	65	2.07	0.55	1.00	1.14	3.36	3.8	11460	8171	3289	0.08	4.2
Maximum Storage Required										3639		

Storm Duration	Inflow Duration	Area (AC.)	Future "C"	Future "KF"	Future "CA"	Rainfall intensity	Inflow (cfs)	Inflow Volume (cubic ft.)	Outflow Volume (cubic ft.)	Storage Volume (cubic ft.)	Storage Volume (acre-ft.)	Outflow (cfs)
10	25	2.07	0.55	1.00	1.14	9.20	10.4	6269	3965	2303	0.05	5.3
20	35	2.07	0.55	1.00	1.14	6.90	7.8	9409	5552	3858	0.09	5.3
30	45	2.07	0.55	1.00	1.14	5.62	6.4	11486	7138	4348	0.10	5.3
40	55	2.07	0.55	1.00	1.14	4.78	5.4	13039	8724	4315	0.10	5.3
50	65	2.07	0.55	1.00	1.14	4.19	4.8	14294	10310	3974	0.09	5.3
Maximum Storage Required										4348		

Elevation-Storage Table				Elevation Calculations			
Elevation (cf)	Volume	Event	Maximum Release Rate	Storage Requirement	Occurs at Elevation		
561.4	0	2-year	2.7	1519	562.74		
562	193	5-year	3.3	2337	563.09		
563	1996	25-year	4.3	3639	563.44		
564	5760	100-year	7.3	4348	563.62		
565	11497						

Stage-Discharge Table									
Opening #1 - 1.2' w x 0.5' h opening					2' Weir @ Elev 563.3				
Stage	H	Area	Discharge	Weir Length	Depth of Flow Over Weir	Weir Discharge	Total Discharge	Allowable Discharge	Above (Below)
561.40	0	0	0				0.0		
562.00	0.35	0.60	1.7				1.7		
562.74	1.09	0.60	3.0				3.0	3.7	(0.7)
563.09	1.44	0.60	3.5				3.5	4.6	(1.1)
563.00	1.35	0.60	3.4				3.4		
563.44	1.78	0.60	3.9	2.0	0.13	0.3	4.2	6.9	(1.8)
563.62	1.97	0.60	4.1	2.0	0.32	1.2	5.3	7.3	(2.0)
564.00	2.35	0.60	4.4	2.0	0.70	3.9	8.3		
565.00	3.35	0.60	5.3	2.0	1.70	14.8	20.0		



AS-BUILT FEBRUARY 2023
INFORMATION PROVIDED BY
CONTRACTORS AND DEVELOPER
(NOT FIELD VERIFIED)

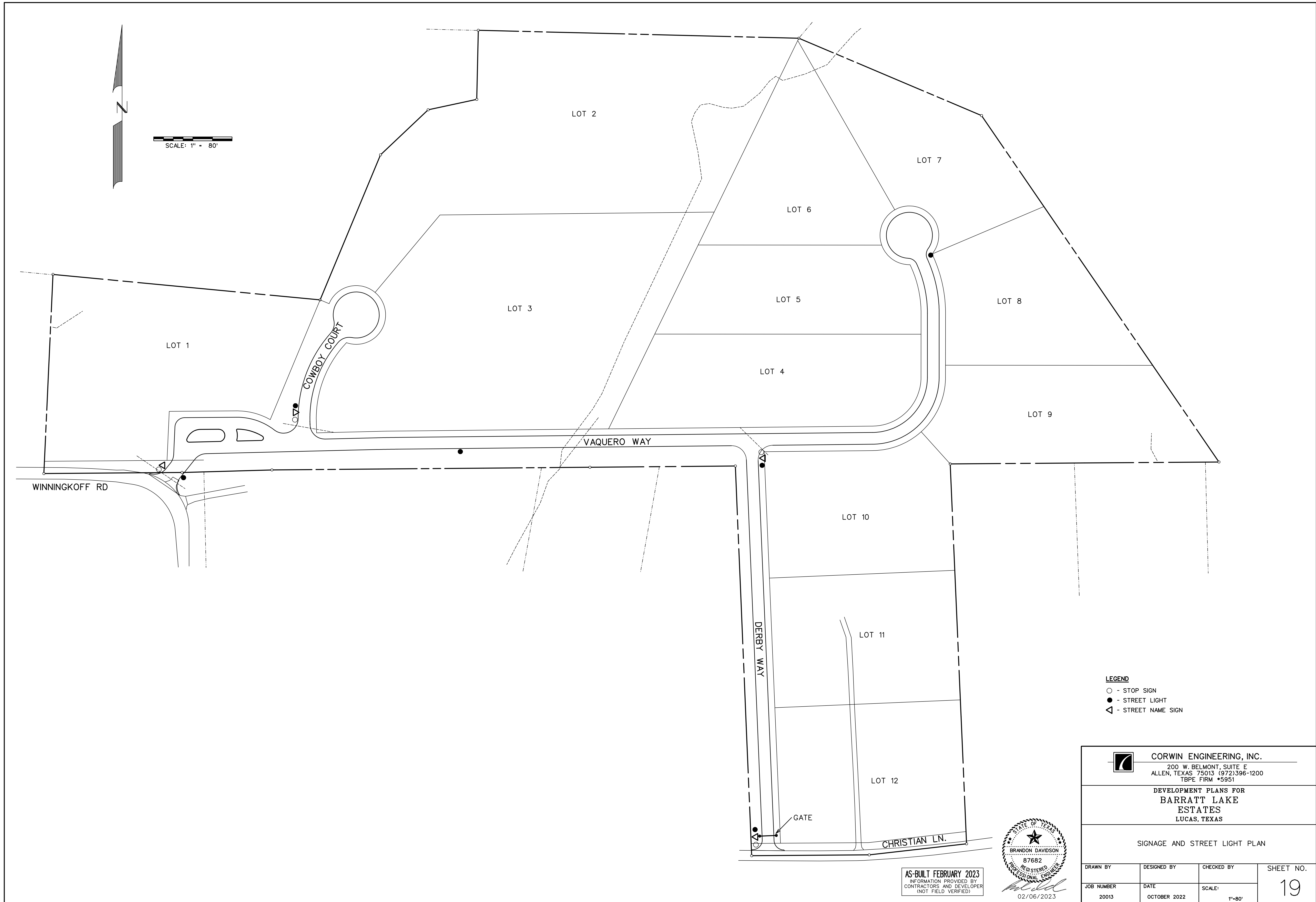


CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

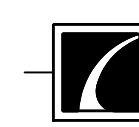
DEVELOPMENT PLANS FOR
BARRATT LAKE
ESTATES
LUCAS, TEXAS

SOUTHEAST DETENTION POND PLAN

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER	DATE	SCALE: 1"=20'	18
20013	OCTOBER 2022		



- LEGEND**
- - STOP SIGN
 - - STREET LIGHT
 - ◁ - STREET NAME SIGN

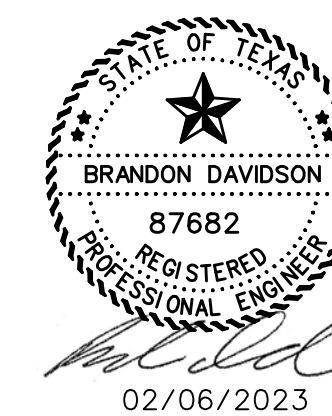
 **CORWIN ENGINEERING, INC.**
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

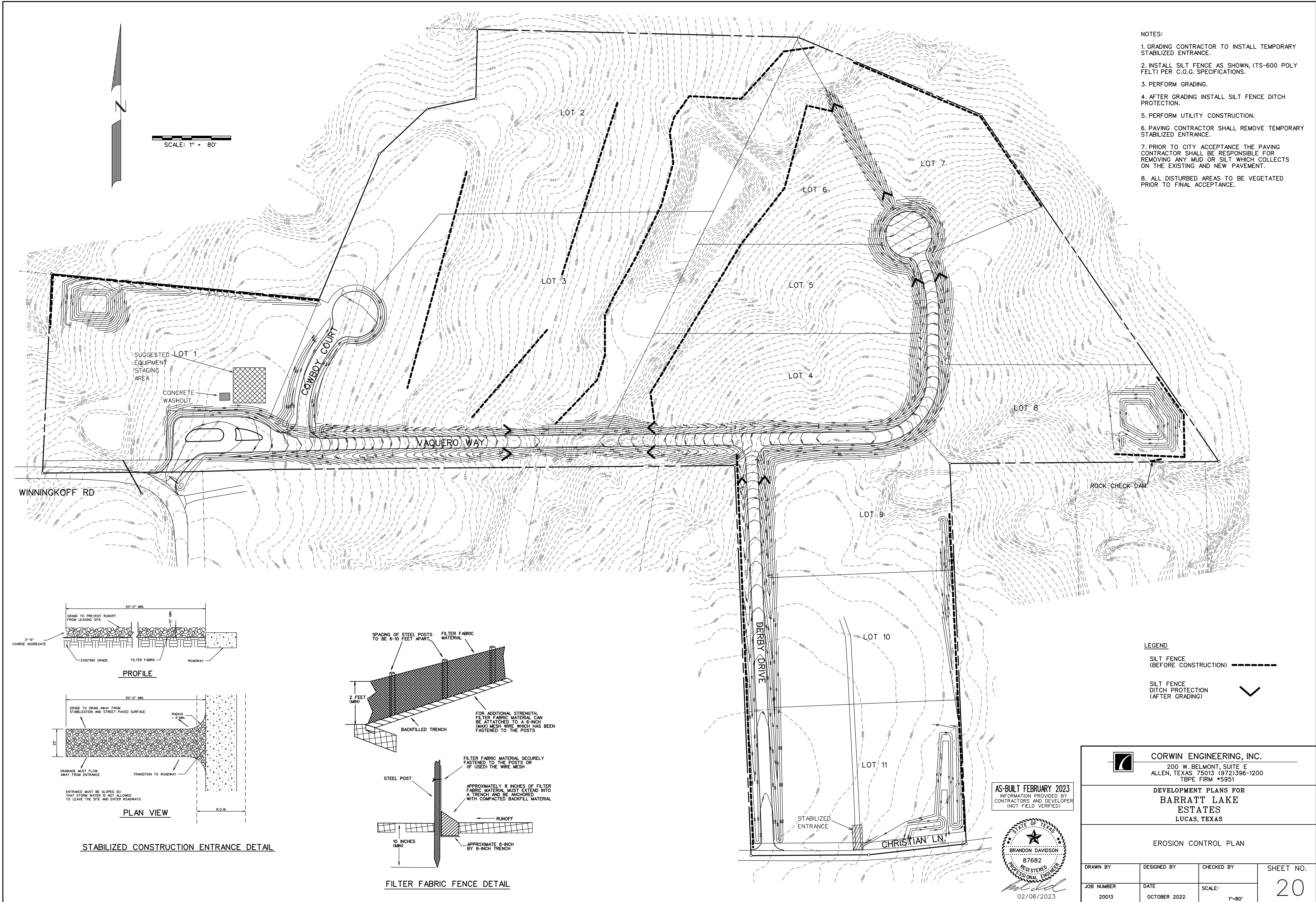
**DEVELOPMENT PLANS FOR
BARRATT LAKE
ESTATES
LUCAS, TEXAS**

SIGNAGE AND STREET LIGHT PLAN

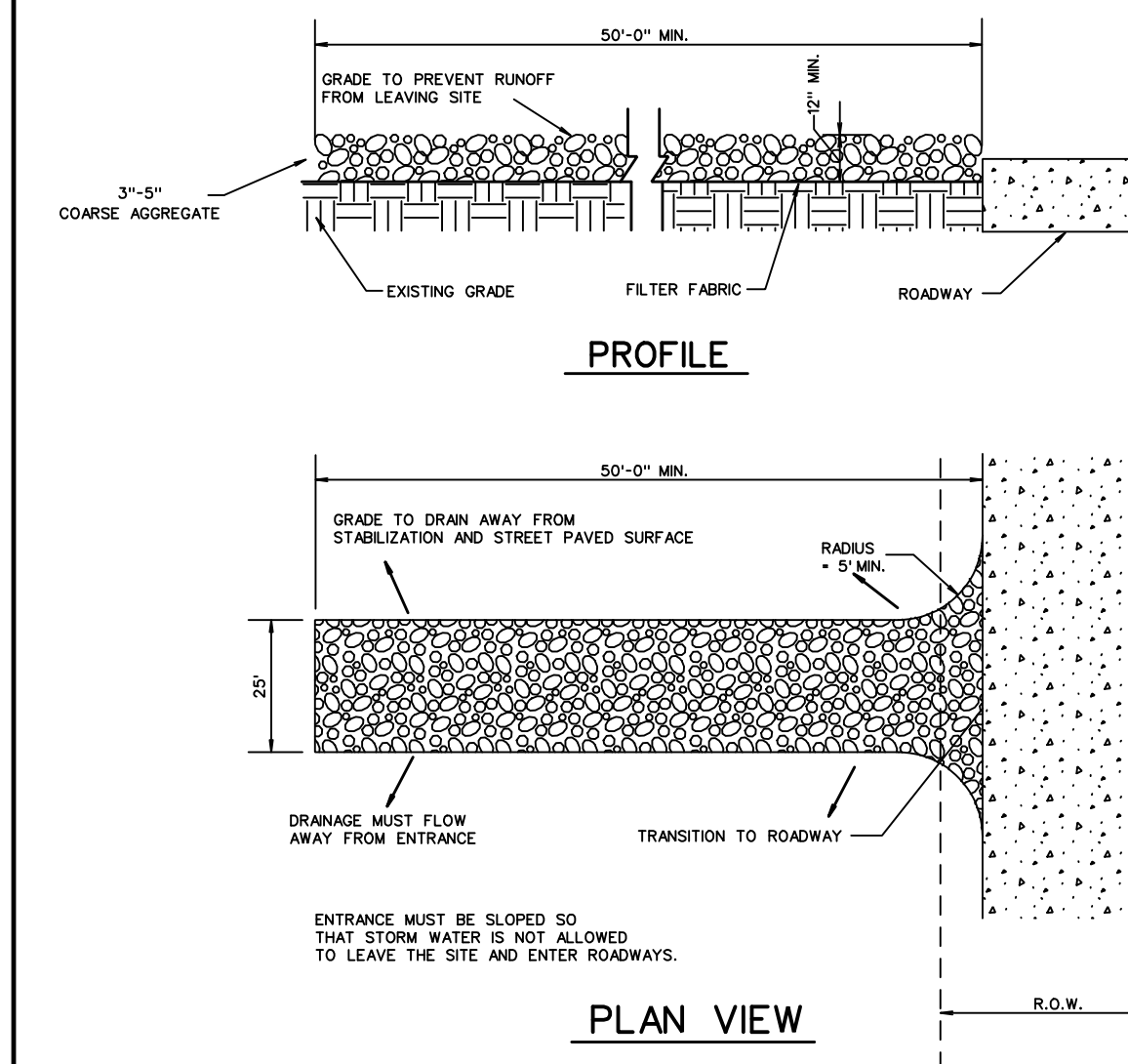
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JOB NUMBER	DATE	SCALE:	
20013	OCTOBER 2022	1"=80'	

AS-BUILT FEBRUARY 2023
INFORMATION PROVIDED BY
CONTRACTORS AND DEVELOPER
(NOT FIELD VERIFIED)

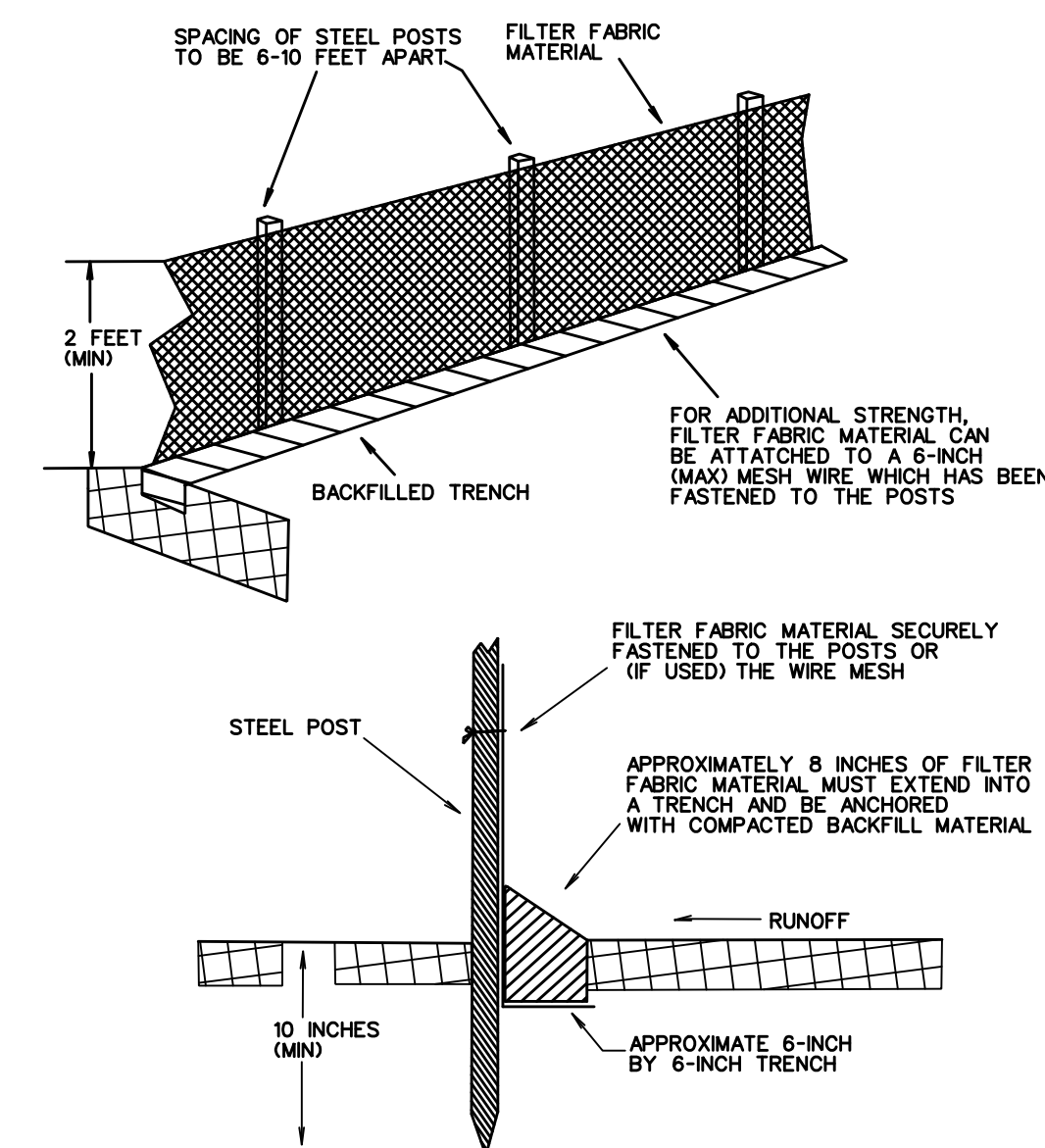




- NOTES:
1. GRADING CONTRACTOR TO INSTALL TEMPORARY STABILIZED ENTRANCE.
 2. INSTALL SILT FENCE AS SHOWN, (TS-600 POLY FELT) PER C.O.G. SPECIFICATIONS.
 3. PERFORM GRADING.
 4. AFTER GRADING INSTALL SILT FENCE DITCH PROTECTION.
 5. PERFORM UTILITY CONSTRUCTION.
 6. PAVING CONTRACTOR SHALL REMOVE TEMPORARY STABILIZED ENTRANCE.
 7. PRIOR TO CITY ACCEPTANCE THE PAVING CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ANY MUD OR SILT WHICH COLLECTS ON THE EXISTING AND NEW PAVEMENT.
 8. ALL DISTURBED AREAS TO BE VEGETATED PRIOR TO FINAL ACCEPTANCE.



STABILIZED CONSTRUCTION ENTRANCE DETAIL



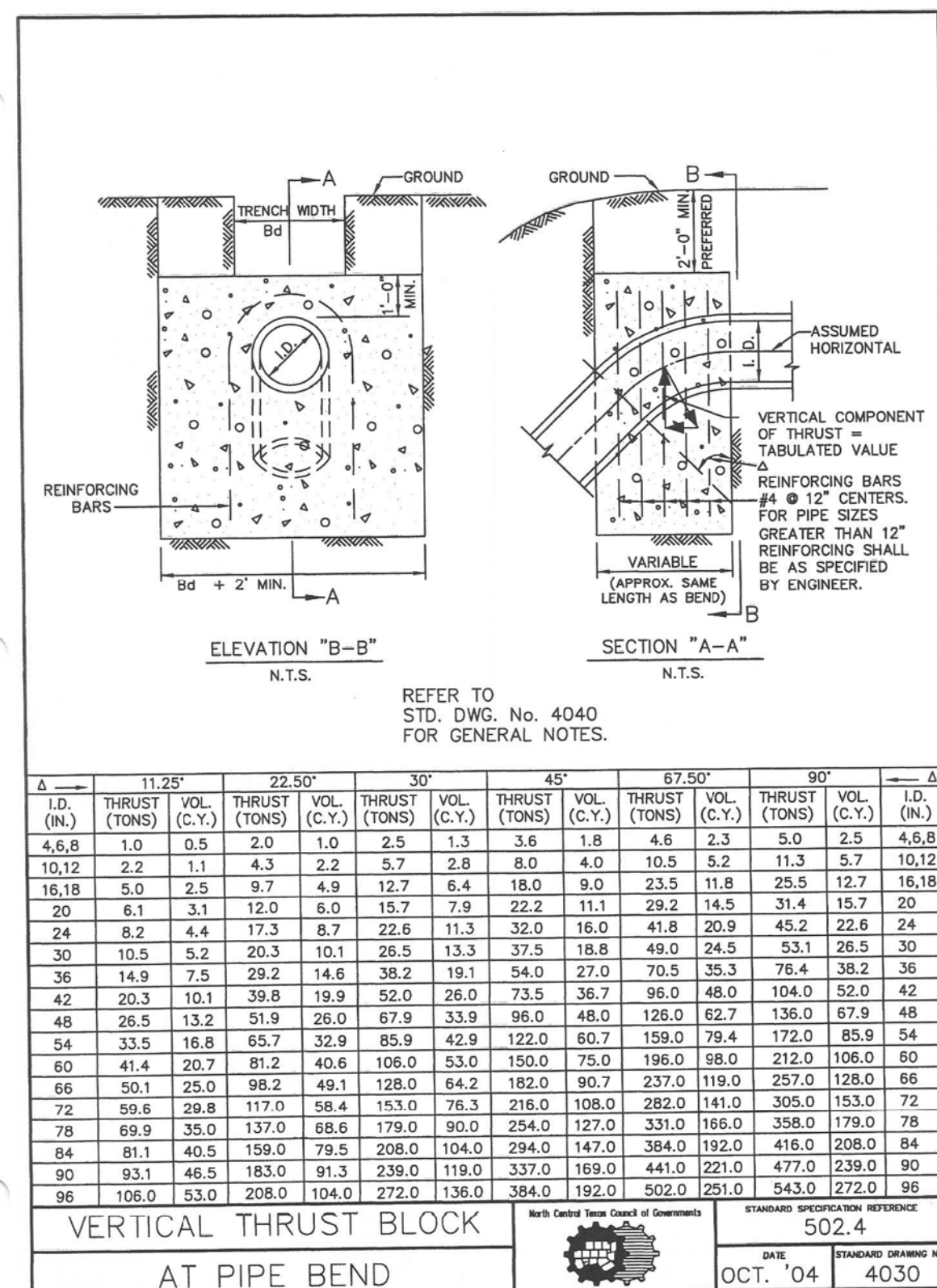
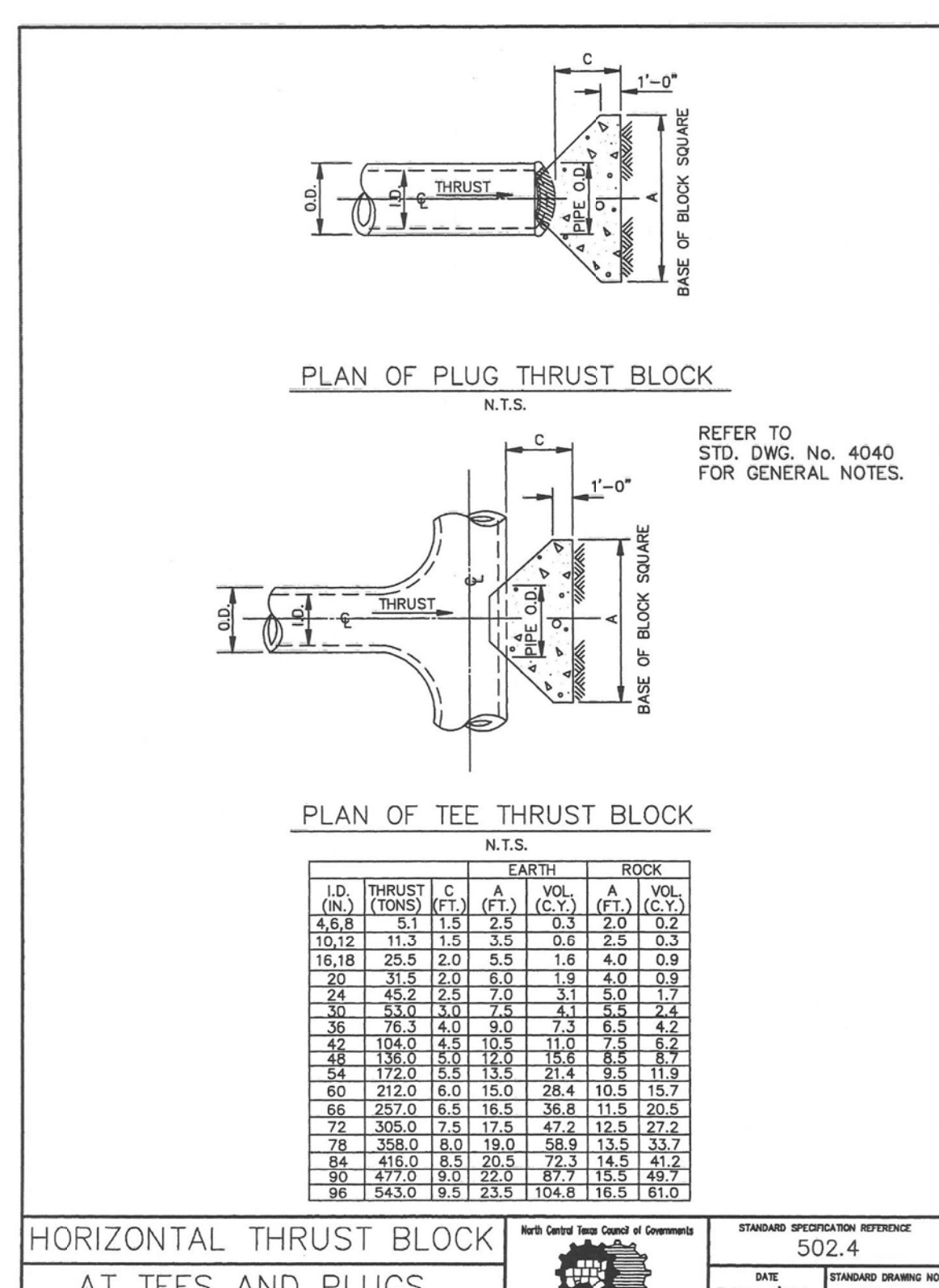
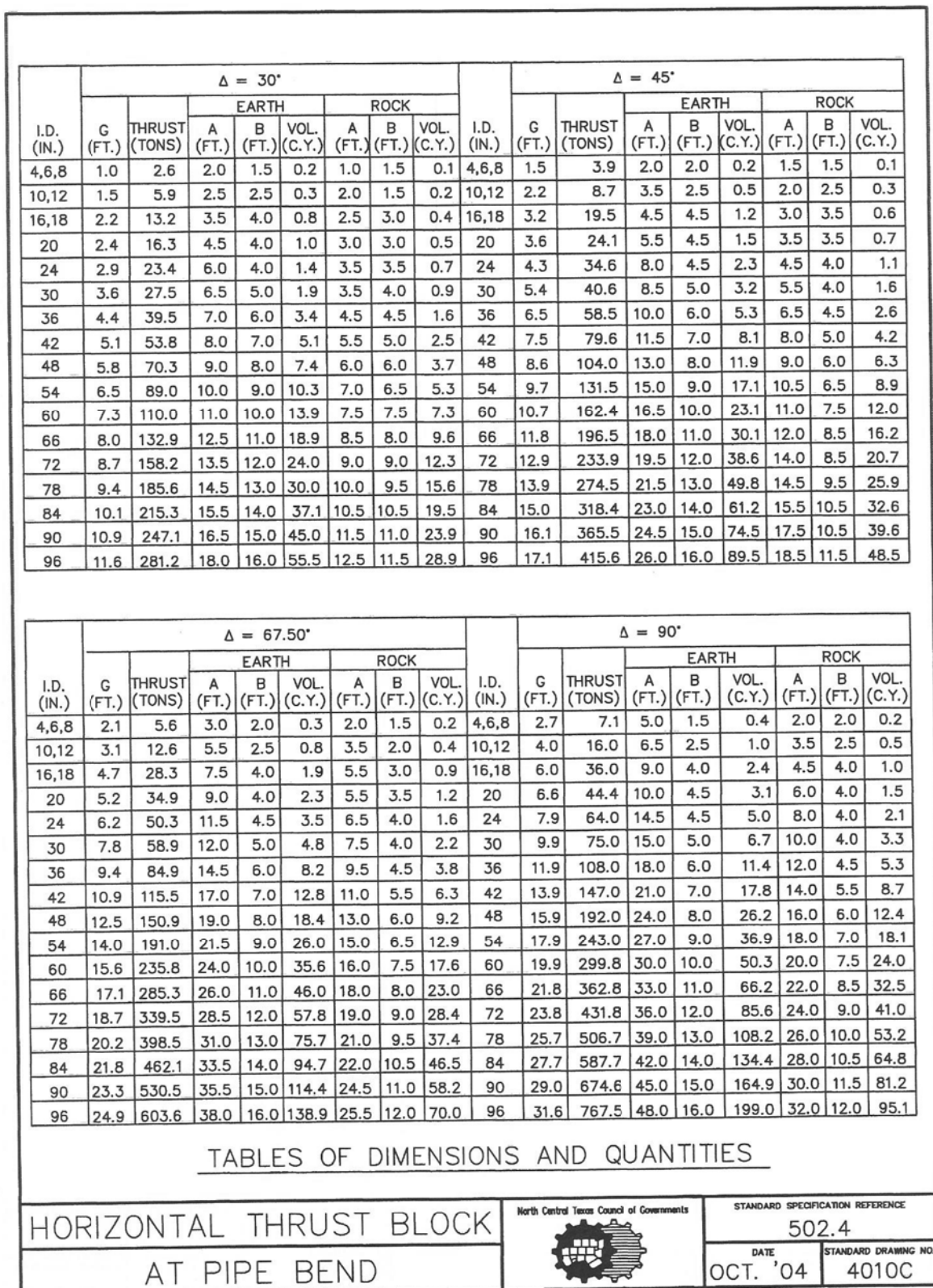
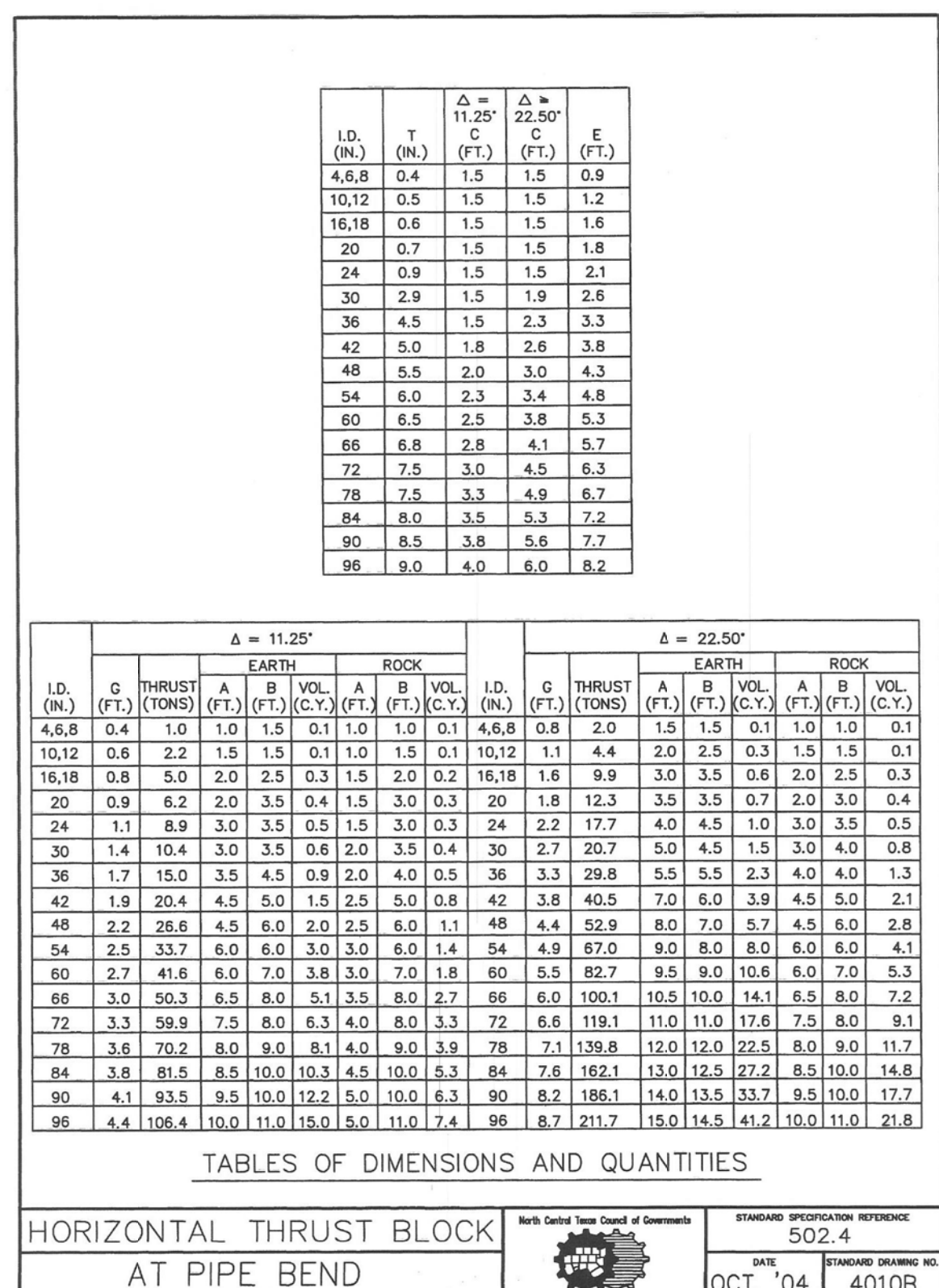
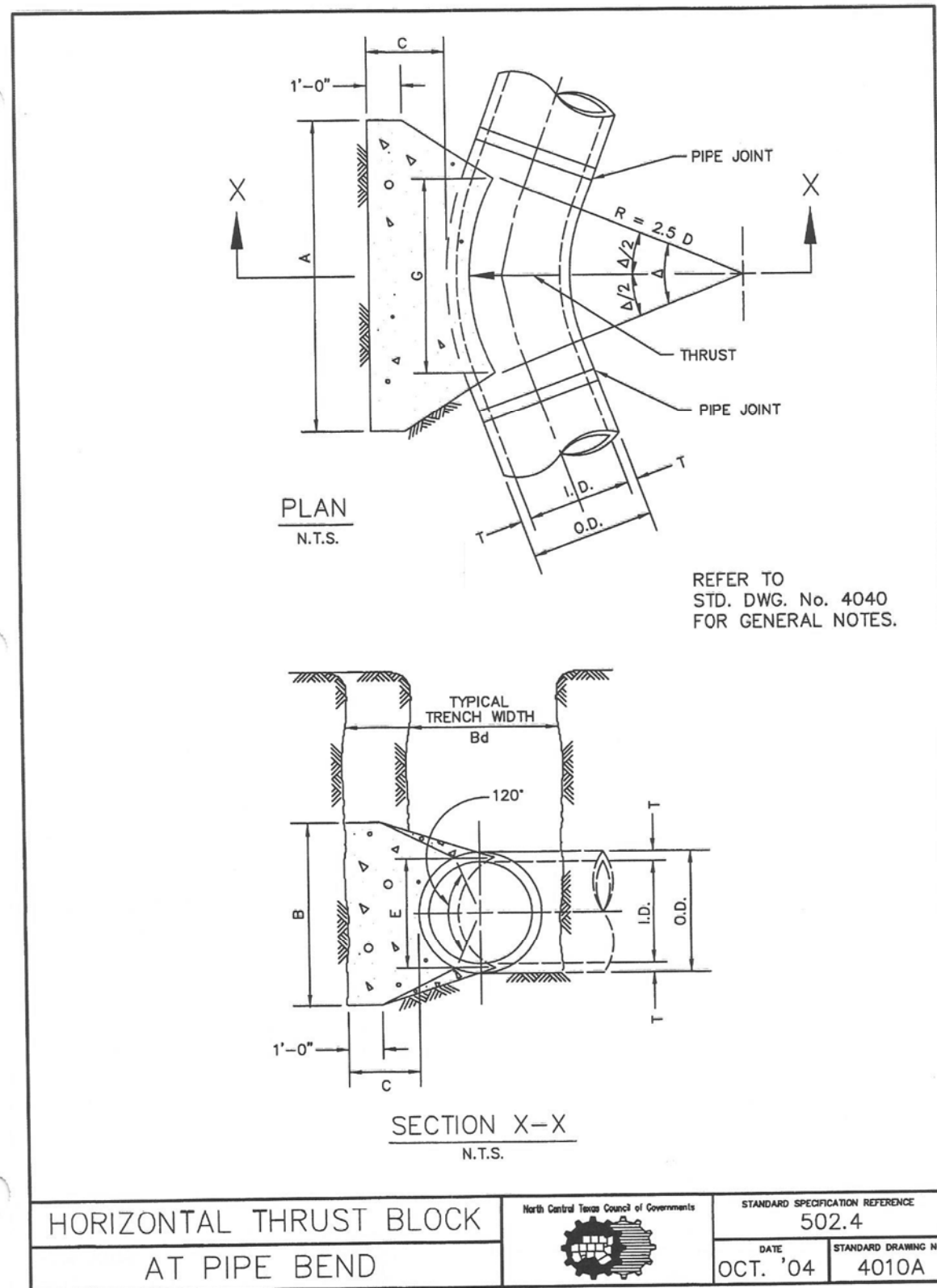
FILTER FABRIC FENCE DETAIL

- LEGEND**
- SILT FENCE (BEFORE CONSTRUCTION) -----
- SILT FENCE DITCH PROTECTION (AFTER GRADING) ✓

 CORWIN ENGINEERING, INC. 200 W. BELMONT, SUITE E ALLEN, TEXAS 75013 (972)396-1200 TBPE FIRM #5951			
DEVELOPMENT PLANS FOR BARRATT LAKE ESTATES LUCAS, TEXAS			
EROSION CONTROL PLAN			
DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER	DATE	SCALE:	20
20013	OCTOBER 2022	1"=80'	

AS-BUILT FEBRUARY 2023
INFORMATION PROVIDED BY
CONTRACTORS AND DEVELOPER
(NOT FIELD VERIFIED)





Christian Lane Cleanup



Barratt Lakes Estates Behind Mr. Adam's Property

















Erin Day

From: Joe Hilbourn
Sent: Wednesday, March 8, 2023 10:49 AM
To: Cleve Adamson
Subject: RE: 820 derby drive

Cleve your permit is ready for 820 Derby, the permit is \$18,206.61

The development has an outstanding list of items that will be required to be corrected prior to any certificate of occupancy being issued in Barratt Lakes Estates
, there is nothing major, the list is below, the developer had started to correct the minor deficiencies:

Grout and add rip rap pond number 1
Grade and correct outfall pipe pond number 2
Fire hydrant on Derby adjust valve pad, was moved during final grade. Correct grade around hydrant.
Remove rounded rock from drive on Winningkoff and add road base. (open cut in drive settled from water main connection)
Clean up grade on drive from construction entrance Christian Lane

From: Cleve Adamson <Cleve@adamsoncustomhomes.com>
Sent: Monday, August 29, 2022 1:54 PM
To: Permits <Permits@lucastexas.us>; Donna Bradshaw <dbradshaw@lucastexas.us>
Subject: 820 derby drive

Good afternoon

Attached is the application / blueprints / septic report / foundation plans / water meter application.

Please let me know what else I may have overlooked.

Thanks Cleve



Cleve Adamson
27 Manor Lane • Lucas, TX 75002
phone: 214-212-5377
fax: 214-556-3548
email: cleve@adamsoncustomhomes.com
www.CleveAdamsonCustomHomes.com





City of Lucas

City Council Agenda Request

April 13, 2023

Requesters: Chairman Dusty Kuykendall
Vice Chairman Tommy Tolson
Commissioner Joe Williams
Commissioner Peggy Rusterholtz
Commissioner Adam Sussman
Alternate Commissioner James Foster
Alternate Commissioner Chris Bierman
City Attorney Courtney Morris
City Manager Joni Clarke

Agenda Item Request

Consider the 88th Legislative Session and discuss any proposed bill or significant resolution that may have an impact on the City of Lucas and provide guidance to the City Attorney and City Manager.

Background Information

The 88th Legislature's regular session runs from January 10 to May 29, 2023. The last day to file bills was March 10, 2023.

Attachments/Supporting Documentation

1. TML Legislative Update Number 14 (April 7, 2023)

Budget/Financial Impact

NA

Recommendation

NA

Motion

NA

TML LEGISLATIVE UPDATE



April 7, 2023
Number 14

House Committee Approves Modified City Preemption Bill

Earlier this week, the House State Affairs Committee voted out House Bill 2127 by Representative Burrows. As [previously reported](#), H.B. 2127 seeks to prevent cities and counties from adopting or enforcing local ordinances or orders related to any activity contained in several state codes unless expressly allowed to do so by state law. The committee favorably voted out a committee substitute for H.B. 2127, the text of which can be read [here](#).

Committee Substitute Language

The committee substitute for H.B. 2127 varies significantly from the as-filed version. The bill now contains the following provisions, among others:

- A prohibition on a city ordinance “regulating conduct in a field of regulation that is occupied by a provision” of certain state codes, unless expressly authorized by another statute. The following codes contain a field preemption clause: (1) Agriculture Code; (2) Business and Commerce Code; (3) Finance Code; (4) Insurance Code; (5) Labor Code; (6) Natural Resources Code; (7) Occupations Code; and (8) Property Code.

- The Finance Code preemption language would seemingly preserve existing payday lending ordinances (pending existing litigation outcomes), but preempt cities from adopting new payday lending ordinances, or amending existing payday lending ordinances, moving forward.
- The Labor Code preemption language specifically provides that a field occupied by the Labor Code includes “employment leave, hiring practices, breaks, employment benefits, scheduling practices, and any other terms of employment that exceed or conflict with federal or state law for employers other than a municipality or county.”
- Creation of a cause of action for a person or trade association to sue a city for an ordinance that violates a “field preemption” clause above. Further, the bill would waive governmental immunity to suit and entitle a claimant to recover both court costs and reasonable attorney’s fees. The committee substitute adds a provision that would entitle a city to three months’ notice of a claim before a claimant may file suit.
- Language adding Sec. 51.002 of the Local Government Code stating that a city council may “adopt, enforce, or maintain an ordinance or rule only if the ordinance or rule is consistent with the laws of this state.”
- Specific preemption of a city ordinance that restricts or impedes a business “involving the breeding, care, treatment, or sale of animals or animal products, including a veterinary practice, or the business’s transactions if the person operating that business holds a license for the business that is issued the federal government or a state.”
- Uncodified language in the bill stating, among other things, that the bill does not prohibit: (1) a city or county from building or maintaining a road, imposing a tax, or carrying out any authority expressly authorized by statute; or (2) a home-rule city from providing the same services and imposing the same regulations that a general-law city is authorized to provide or impose.

Many Questions Remain

H.B. 2127’s lack of specificity on exactly when a city is considered to be preempted has only created more questions about the impact of the bill. At best, the bill would abdicate the legislature’s traditional role in setting specific limitations on city regulation to the courts. At worst, the bill attempts to dramatically scale back 110 years of Texas home rule city authority by running an end around of Article XI, Sec. 5 of the Texas Constitution. If the bill passes in something resembling its current form, city officials and residents will have to wait for years for the courts to resolve countless lawsuits authorized by the bill to determine the extent scope of the proposed preemption. For decades, Texas courts have explained that for the state legislature to preempt city authority, it must do so with unmistakable clarity. Courts have relied on this standard to evaluate specific state statutes’ impact on city ordinances and invalidate conflicting city regulations like local plastic bag bans. H.B. 2127, instead of clearly and unambiguously spelling out exactly which city ordinances

are preempted, cryptically states that city ordinances are preempted if they regulate conduct in a field of regulation occupied by one of the impacted state codes.

This begs the question – when does the state occupy a field of regulation? The bill doesn't answer that question, and instead punts it to the courts. Is a field occupied if a state code merely mentions a particular topic? What if state statute authorizes some governmental entities to act but not cities? Could a field be occupied if the legislature chooses not to regulate certain conduct? We simply don't know the answer to these questions right now.

H.B. 2127 provides that a city may continue to regulate if expressly authorized by statute. This language is helpful for cities in light of the rest of the bill, but still may not preserve home rule authority in certain areas. For instance, some state laws provide that a statute “shall not be construed” to limit a city's authority to act, or that state law does not affect a local ordinance. These provisions probably would not be construed as “expressly authorizing” city regulation. Under current law, a home rule city would clearly be authorized to regulate with that language in place due to home rule authority in the Texas Constitution. But the bill's preservation of only regulations “expressly authorized by statute” potentially preempts any city regulation that is expressly not prohibited by state statute.

New language in the committee substitute adds Section 51.002 of the Local Government Code to only allow a city to adopt an ordinance that is consistent with the laws of the state. This raises even more questions about the scope of the bill. If state law is silent in a certain area, can a home rule city regulate in that area? One might argue yes, since the Texas Constitution gives home rule cities the full power of self-government. But the bill certainly calls home rule authority in question in several areas. There's a real possibility that a court would determine that proposed Section 51.002 of the Local Government Code eliminates city regulatory authority in the absence of state regulation. Such an interpretation by the courts would effectively end home rule authority in Texas.

What's Next?

H.B. 2127 was voted out of the House State Affairs Committee on April 3. The bill will likely be considered on the House floor within the next week or two. The Senate companion bill, S.B. 814, was considered in the Senate Business and Commerce Committee on April 4.

We urge city officials with concerns about the impact of H.B. 2127 and S.B. 814 to communicate their concerns to their state representatives and senators immediately. Because of the legal complexities involved in these bills, city officials may wish to consult with their city attorneys over the impact on their city and have the city attorney's opinion inform conversations with their elected officials in Austin.

Bills on the Move

Significant Committee Action

H.B. 9 (Ashby), creating the Broadband, Equity, Access, and Deployment program and the Broadband Infrastructure Fund. Voted from House State Affairs.

H.B. 187 (Landgraf), requiring all bond elections to be held on the November uniform election date. TML provided [written testimony](#). Left pending after a hearing in House Pensions, Investments, and Financial Services.

H.B. 276 (Cortez), prohibiting cities from prohibiting the growing of fruits and vegetables and the raising of six chickens or six rabbits. Left pending after hearing in House Agriculture & Livestock.

H.B. 586 (E. Thompson), allowing a city to annex a road right-of-way to bring a voluntarily requested area into city limits. Voted from House Land & Resource Management.

H.B. 1204 (Martinez), authorizing an emergency service district (ESD) to object to the removal of annexed territory by a city if the removal would reduce the level of emergency services provided to the ESD territory or reduces ESD revenue. TML provided [written testimony](#). Left pending after hearing in House Land & Resource Management.

H.B. 1279 (Tepper), limiting the extent of a city's ETJ based on city population. TML provided [written testimony](#). Left pending after hearing in House Land & Resource Management.

H.B. 1307 (Toth), authorizing registered voters in a certain area to petition for disannexation of the area in the city limits and the ETJ. TML provided [written testimony](#). Left pending after hearing in House Land & Resource Management.

H.B. 1489 (Tepper), limiting the usage of certificates of obligation to only during a public emergency, in response to a court order, or to comply with state or federal regulation. TML provided [written testimony](#).

H.B. 1819 (Cook), repealing city juvenile curfew ordinance except for purposes of emergency management. Voted from House Select on Youth Health & Safety.

H.B. 2127 (Burrows), preemption of city regulations in a field occupied by the Agriculture, Finance, Insurance, Labor, Natural Resources, and Occupations Code. Committee substitute adds Property and Finance Code and prohibits a city from regulating licensed animal businesses. Committee substitute voted from House State Affairs.

H.B. 2224 (Hernandez), allowing a city to lower a residential speed limit to 25 mph without a traffic study. Committee substitute voted from House Transportation.

H.B. 2350 (Cody Harris), prohibiting city occupational license if state issues an occupational license, with exceptions. Voted from House Licensing & Administrative Procedures.

H.B. 2806 (Canales), allowing billboards to relocate in certain areas if the billboard use is discontinued due to a public construction project and require a city to provide for the relocation by a special exception to any applicable zoning ordinance. TML provided [written testimony](#). Committee substitute voted from House Transportation.

H.B. 3053 (Dean), requiring an election to be held November 7, 2023, on the question of disannexation of any area that was annexed by a city between March 3, 2015, and December 1, 2017. The committee substitute applies to cities over 500,000 in population. TML provided [written testimony](#). Committee substitute voted from House Land & Resource Management.

H.B. 3490 (Rogers), requiring a city to provide written notice containing certain information regarding any proposed zoning change that could result in the creation of a nonconforming use. If a nonconforming use is required by a city to cease operation, the owner or lessee of the property is entitled to receive either payment for costs associated with closing the operation or additional time to engage in the nonconforming use. TML provided [written testimony](#). Committee substitute voted from House Land Resource & Management.

H.B. 3921 (Goldman), prohibiting a city from requiring a residential lot to be larger than 1,400 square feet, wider than 20 feet, or deeper than 60 feet, and from adopting certain other requirements on small lots. The bill applies to cities in counties with a population of 300,000 or more. TML provided [written testimony](#). Left pending after hearing in House Land & Resource Management.

H.B. 4082 (Goldman), allowing for use of certificates of obligation for “public works” but prohibits their usage for stadiums, convention centers, civic centers, hotels, and arenas.

H.B. 4175 (Cody Harris), requiring a city to provide full municipal services to certain areas in the ETJ. TML provided [written testimony](#). Left pending after hearing in House Land & Resource Management.

H.B. 4215 (K. Bell), limiting the city size of a city’s ETJ to an amount not to exceed 50 percent of the gross acreage of the city. TML provided [written testimony](#). Left pending after hearing in House Land & Resource Management.

H.B. 4275 (Rogers), authorizing an ESD board to determine whether a city’s service plan is sufficient to ensure that the city services for an annexed area will meet or exceed the ESD’s level of service. TML provided [written testimony](#). Left pending after hearing in House Land & Resource Management.

H.B. 4285 (Rogers), prohibiting a city from enforcing its outdoor sign ordinance in its ETJ. Left pending after hearing in House Land & Resource Management.

S.B. 558 (Hughes), limiting parkland dedication and fees in lieu of dedication for cities over 800,000 in population. TML provided [written testimony](#). Committee substitute voted from Senate Natural Resources and Economic Development.

S.B. 814 (Creighton), preemption of city regulations in a field occupied by the Agriculture, Finance, Insurance, Labor, Natural Resources, and Occupations Code. Committee substitute adds Property and Finance Code and prohibits a city from regulating licensed animal businesses. TML provided [written testimony](#). Left pending after hearing in Senate Business and Commerce.

S.B. 946 (Sparks), requiring an election for bonds or a tax increase to be held on the November uniform election date. TML provided [written testimony](#). Voted from Senate State Affairs.

S.B. 990 (Hall), eliminating the countywide polling place program. Committee substitute voted from Senate State Affairs.

S.B. 1053 (Hughes), excluding the definition of “marketplace seller” an affiliate of the marketplace provider. Voted from Senate Finance.

S.B. 1117 (Hancock), defining video services to not include streaming for franchise fee purposes. Voted from Senate Business and Commerce.

S.B. 1412 (Hughes), allowing an accessory dwelling unit (ADU) in a single-family zoning or unzoned areas by right, and prohibit much of a city’s ability to regulate an ADU. TML provided [written testimony](#). Left pending after hearing in Senate Local Government.

S.B. 1419 (Birdwell), prohibiting cities from making a loan or grant of public money under a Chapter 380 economic development agreement from the proceeds of property taxes or other city obligations payable from property taxes and adding transparency measures. TML [testified](#) in committee. Left pending after hearing in Senate Natural Resources & Economic Development.

S.B. 1786 (Bettencourt), modifying approval procedures for property development application review and inspection for cities including allowing for third-party reviews and inspectors. TML [testified](#) in committee. Left pending after hearing in Senate Local Government.

S.B. 1787 (Bettencourt), prohibiting a city from requiring a residential lot to be larger than 1,400 square feet, wider than 20 feet, or deeper than 60 feet, and from adopting certain other requirements on small lots. Applies to cities in counties with a population of 300,000 or more. Left pending after hearing in Senate Local Government.

S.B. 2018 (Flores), requiring a city to create a public camping complaint system and investigate every complaint. TML provided [written testimony](#). Committee substitute voted from Senate Local Government.

S.B. 2037 (Bettencourt), prohibits cities from applying subdivision regulations and certain road and groundwater regulations in the ETJ. TML [testified](#) in committee. Left pending after hearing in Senate Local Government.

S.B. 2038 (Bettencourt), requiring a city to release an area from the ETJ if the population of an area is less than 200 and upon petition from more than 50 percent of qualified voters. Requires release of an area with a population of 200 or more from the ETJ after a petition and election. TML [testified](#) in committee. Left pending after hearing in Senate Local Government.

Significant Floor Action

H.B. 471 (Patterson), creating a paid injury and sick leave for first responders and expands workers compensation disease presumption. Passed the House.

H.B. 2468 (Burrows), expanding workers compensation lifetime benefits for certain injuries sustained in the course of employment. Passed the House.

S.B. 28 (Perry), creating the Texas water fund. Passed the Senate.

S.B. 130 (Campbell), prohibiting a city from regulating private wages or benefits. Passed the Senate.

S.B. 175 (Middleton), prohibiting cities and other political subdivisions from spending public funds to hire lobbyists or join nonprofit associations (like TML) that represent political subdivisions and contract with individuals who are required to register as lobbyists. TML provided [written testimony](#). Passed the Senate.

S.B. 224 (Alvarado), increasing penalties and punishment for theft of a catalytic converter. Passed the Senate.

S.B. 1015 (King), removing regulatory authorities, include cities, from the electricity rate-making process. Passed the Senate.

S.B. 1421 (Perry), limits city regulation of agricultural operations and vegetation height restrictions within city limits and the extraterritorial jurisdiction. TML provided [written testimony](#). Passed the Senate.

S.B. 1601 (Hughes), prohibiting a city library from receiving state funds if it hosts an event at which a person being dressed as the opposite gender reads a book or story to a minor for entertainment purposes. Passed the Senate.

2023 City Tax and Budget Deadline Memos Now Available

Every year, TML posts a memo containing the annual calendar deadlines for the budget adoption and tax rate setting process. Following the passage of Senate Bill 2 in 2019, the process for adopting a tax rate changed significantly. Because the tax rate adoption process differs significantly based on whether the city's tax rate will exceed the voter-approval tax rate, there is [one memo for deadlines when the rate exceeds the voter-approval rate](#) and [one memo for deadlines when the rate does not exceed the voter approval rate](#). (Note that this is a departure from previous year's practices, when we separated the memos based on city population.) Whatever the case may be, the deadlines in the document represent the last possible dates for a city to take certain actions related to the budget or tax rate in 2023. Cities should act well in advance of the deadlines in the calendar, if possible.

For more detailed information about S.B. 2, city officials are encouraged to read the [S.B. 2 Explanatory Q&A](#) posted on the TML website.

SLFRF Project and Expenditure Report Due April 30

The State and Local Fiscal Recovery Funds (SLFRF) Project and Expenditure Report is due for SLFRF receipts on April 30, 2023. The U.S. Treasury portal is now open and accepting reports. Recipients with questions about reporting, technical issues, eligible uses of funds, or other items can find information [here](#). The Compliance and Reporting Guidance can be found [here](#) and the project and expenditure user guide [here](#).

Cities may reach out to the help center by email at SLFRF@treasury.gov or by phone at (844) 529-9527. When reaching out to the help center, it is encouraged to include the following information in your communications: name, city, state, unique entity identifier (UEI) number, and federal tax identification number.

BDO Now Accepting Applications for Broadband Infrastructure Grant Program

On April 3, Comptroller Hegar [announced](#) that the Broadband Development Office (BDO) has begun accepting applications for its \$360 million Bringing Online Opportunities to Texas (BOOT) grant program. The BOOT program will provide funding to political subdivisions and broadband providers to carry out broadband infrastructure projects across the state. Eligible projects must be designed to provide broadband speeds of 100 Mbps or faster.

Applications must be submitted through the Comptroller's Office Broadband Development Office application system by **Friday, May 5, 2023**.

You can find more information about the BOOT grant program, including the Notice of Funding Availability and application instructions and evaluation criteria, [here](#).

Get Involved at the Legislature: Grassroots Involvement Program

During the 88th Legislative Session, Texas cities are facing many challenges and opportunities. TML will need to mobilize our membership at key points during session. The Grassroots Involvement Program (GRIP) is one way to do so. Our GRIP survey focuses on a variety of items including your areas of expertise and involvement with other professional organizations. Most importantly, the GRIP survey asks how well you know various state legislators and if you are willing to communicate with those legislators during the session. TML's grassroots approach is crucial to our efforts.

If you have a relationship with your legislator(s) or want to be more involved during session, please take the time to complete the [GRIP survey](#). Past efforts have proven that such participation is a highly effective tool.

We ask that you complete the survey as soon as possible.

City Officials Testify

When the legislature is in session, nothing compares to the effectiveness of city officials testifying at the Capitol. City officials who take the time to travel to Austin to speak out on important city issues should be applauded by us all. The League extends its thanks to all those who have vigilantly represented cities during this session. If we missed your testimony let us know by an email to alyssa@tml.org, and we'll recognize you in next week's edition.

- Jeff Achée, Parks and Recreation Director, City of Harker Heights
- Juan Ayala, Director of Military Affairs, City of San Antonio
- Alessandra Anello, Councilmember, City of El Paso
- Sally Bakko, Director of Policy and Governmental Relations, City of Galveston
- Roland Barrera, Councilmember, City of Corpus Christi
- Adam Bazaldua, Councilmember, City of Dallas
- Kenneth Bennett, Assistant City Attorney, City of Arlington
- Richard Boyer, Mayor, City of The Colony
- Chris Canales, Councilmember, City of El Paso
- Rod Carroll, Chief of Police, City of Vidor
- Sean Creegan, Assistant City Attorney, City of Austin
- Rocky Duque De Estrada, Senior Management Analyst, Parks and Recreation, City of San Antonio
- James Edge, Mayor Pro Tem, City of Bryan
- Wayne Emerson, Director of Economic Development, City of Denton
- Andrew Espinoza, Director/Chief Building Official, City of El Paso
- Ginger Faught, Deputy City Administrator, City of Dripping Springs
- Jessica Galleshaw, Director of Office of Community Care, City of Dallas
- Mike Harmon, Chief of Police, City of Cedar Park
- Jeryl Hoover, Mayor, City of Fredericksburg
- Tom Kilgore, Mayor, City of Lakeway
- Leanne Kirby, Tourism Director, City of Wimberley
- Mike Knox, Councilmember, City of Houston
- Erika Lopez, Assistant City Attorney, City of Austin
- Joel McElhany, Assistant Director, Parks & Recreation, City of Fort Worth
- Trey Mendez, Mayor, City of Brownsville
- Robin Mouton, Mayor, City of Beaumont
- Ken Myers, Deputy Chief of Police, City of Allen
- Jennifer Ostlind, Assistant Director of Community and Regional Planning, City of Houston
- Collyn A. Peddie, Sr. Assistant City Attorney, City of Houston

- Helen Ramirez, City Manager, City of Brownsville
- Melissa Ramirez, Assistant Director of Land Development, City of San Antonio
- Scott Rubin, Chief of Police, City of Blanco
- Cynthia Garza-Reyes, Director of External Affairs, City of Pharr
- Priscilla Rosales-Pina, Planning Manager, City of San Antonio
- Thomas Rowlinson, Principal Planner, Parks & Recreation, City of Austin
- Bruno Rumbelow, City Manager, City of Grapevine
- Daniel Scesney, Chief of Police, City of Grand Prairie
- Connie Schroeder, Mayor, City of Bastrop
- Martin Scribner, Director of Planning & Development Services, City of Baytown
- Norma Sepulveda, Mayor, City of Harlingen
- Rob Severance, Chief of Police, City of Cleburne
- Steve Stanford, Chief of Police, City of Bridgeport
- Patrick Smith, Tourism Manager, City of Bay City
- Elizabeth Triggs, Director of Economic and International Development, City of El Paso
- Vernon Young, Assistant Director of Development Services, City of Dallas

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City of Lucas

Planning and Zoning Agenda Request

April 13, 2023

Item No. 08

Requester: City Secretary Erin Day

Agenda Item Request

Consider approval of the minutes of the March 9, 2023 Planning and Zoning Commission meeting.

Background Information

NA

Attachments/Supporting Documentation

1. March 9, 2023 Planning and Zoning Commission Minutes

Budget/Financial Impact

NA

Recommendation

NA

Motion

I make a motion to approve the minutes of the March 9, 2023 Planning and Zoning Commission meeting.



MINUTES PLANNING AND ZONING COMMISSION MEETING

March 9, 2023 | 6:30 PM

Council Chambers

City Hall | 665 Country Club Road, Lucas, Texas

Call to Order

The meeting was called to order at 6:30 pm and the Pledge of Allegiance was recited.

Commissioners Present:

Vice Chairman Tommy Tolson
Commissioner Peggy Rusterholtz
Commissioner Joe Williams
Alternate Commissioner James Foster (*voting member*)
Alternate Commissioner Chris Bierman (*voting member*)

Staff Present:

City Manager Joni Clarke
Assistant City Manager Kent Souriyasak
Development Services Director Joe Hilbourn
City Attorney Courtney Morris
Management Analyst Joshua Menhennett

Commissioners Absent:

Chairman Dusty Kuykendall
Commissioner Adam Sussman

City Council Liaison Present:

Mayor Jim Olk

Regular Agenda

1. Discuss accessory building regulations in the City of Lucas.

Development Services Director Joe Hilbourn presented, advising that City Attorney Courtney Morris has attempted to draft ordinance language that would encompass all of the Planning and Zoning Commission and the City Council's recommendations. Mr. Hilbourn advised that there was one homeowner who requested a change allowing accessory buildings in the front yard detached from the main structure provided they were set back 300 feet from the edge of pavement.

Vice Chairman Tolson asked Mr. Hilbourn's opinion on accessory buildings in the front yard. Mr. Hilbourn indicated his concern would be unsightly metal buildings being in the front yard.

Alternate Commissioner Bierman indicated it would be better to leave out allowing accessory buildings in the front yard and have residents come before the Board of Adjustment for approval. Commissioner Rusterholtz advised that many residents in the city have the same issue of needing an accessory building in the front yard.

Jared Bunn, 253 East Blondy Jhune Road, spoke advising that his property is just over 19 acres and his family has been burglarized several times. Mr. Bunn advised their home is at the back of the property with 16 to 19 acres in the front. Vice Chairman Tolson asked what Mr. Bunn is trying to build. Mr. Bunn advised it will be a 50 by 70 foot barn to hold farm equipment.

Commissioner Rusterholtz asked if this issue could be approached as a specific use permit. City Attorney Courtney Morris indicated requiring a specific use permit would be the preference from a legal standpoint.

After some discussion, the Planning and Zoning Commission gave the direction that accessory buildings in the front yard should be a specific use permit request process.

Vice Chairman Tolson read Commissioner Adam Sussman's feedback received via email as he was not able to come to the meeting. Commissioner Sussman requested to simplify the language in the proposed ordinance to remove the need for specific use permits for additional square footage and recommended setting maximum size of accessory dwelling units (ADU) to a combined 600 square feet, with a specific use permit per lot size.

City Attorney Courtney Morris gave an update regarding the Legislative Session, which proposes House Bill 2789 and Senate Bill 1412 that, if passed, would severely restrict the city's ability to regulate ADUs. Ms. Morris advised if either bill passes after this ordinance is approved, the ordinance would have to be stricken. Ms. Morris gave some examples of restrictions cities would have if the bill is passed, including; cities will not be allowed to prohibit selling or renting an accessory dwelling unit, set a minimum lot size, require separate parking, or set a minimum setback requirement of more than five feet.

Alternate Commissioner Bierman asked about the calculation of square footage not including existing non habitable space. Commissioner Rusterholtz clarified that if a resident wants to use a small section of an existing building as a habitable area, then that should be allowed. Alternate Commissioner Bierman asked if separate meters would be allowed. Commissioner Rusterholtz opined that not allowing separate meters will not prevent people from renting out ADUs. Commissioner Williams agreed that being restrictive on utilities will not prevent people from renting out ADUs. Commissioner Bierman advised he was in agreement with not restricting utilities. Vice Chairman Tolson advised having a regulation on meters would be consistent with some surrounding cities.

Alternate Commissioner Bierman asked where the number of 600 square feet came from. Mr. Hilbourn responded that 600 square feet is an adequate size for an apartment or guest home. Commissioner Rusterholtz advised she is in agreement with the 600 square feet regulation, with anything larger requiring a specific use permit.

Commissioner Rusterholtz advised another issue that has been discussed is only allowing accessory dwelling units in R2 zoned properties. Commissioner Rusterholtz advised if they are not allowed in all zoning, that the definition would need to be cleaned up to clarify. Commissioner Rusterholtz indicated that another concern she has is that the proposed ordinance references that occupants of the accessory dwelling unit must be the owner/occupant of the main structure, and that additional family members should be included. Mayor Jim Olk advised the existing conditions in the ordinance were to give the Planning and Zoning Commission grounds to approve or deny a specific use permit. Commissioner Rusterholtz suggested changing language referring to "agricultural users" to "agricultural zoned".

Mayor Olk asked Mr. Hilbourn if there were any commercial uses currently in non-commercial zones. Mr. Hilbourn advised that there are several currently that are in Agriculture zoning. Mayor Olk suggested having language in the ordinance referring to the temporary use of commercial trailers would possibly prevent commercial uses on residentially zoned properties.

Commissioner Rusterholtz suggested the section relating to buildings for agricultural purposes be updated to include that habitable space would not be allowed in those buildings. Commissioner Rusterholtz also suggested some changes to the numbering to make the ordinance cleaner.

Vice Chairman Tolson indicated an area of concern is having more than one single family home on a lot, and another concern is discouraging ADUs from being a short term or long-term rental. Vice Chairman Tolson opined that having restrictions on utilities is one way to discourage rentals. Vice Chairman Tolson asked if allowing a kitchen in ADUs in R2 zoned properties is a necessity. Vice Chairman Tolson also opined that dropping specific use permits requirements and instead having people come before the Planning and Zoning Commission and the City Council would lessen the amount of specific use permits being issued. Vice Chairman Tolson addressed the language referring to ADUs having to meet the requirements of the International Residential Code (IRC), advising that some of the City ordinances go above and beyond the IRC's requirements, and therefore the language should also direct residents to have to follow all City ordinances. Mayor Olk indicated that the intention was that ADUs have to meet health and safety requirements of the IRC and to prevent unsafe buildings from being built. Mr. Hilbourn advised there are very few portions of the codes that would not apply with the way the ordinance is written.

Vice Chairman Tolson discussed his concern of slopes on ADUs not conforming to the slope requirement on a single-family home. Mr. Hilbourn advised the intent of the slope regulation on single family homes was to limit manufactured housing being in the area, but that it did not specifically relate to ADUs. Vice Chairman Tolson asked what the minimum slope is on an ADU. Mr. Hilbourn advised there is currently not a minimum standard.

Mayor Olk opined that regulating the size of an ADU is going to be more effective in dissuading renting out an ADU, rather than restricting how an ADU is built regarding slopes.

Vice Chairman Tolson asked about supporting structures on ADUs referenced in the ordinance, and indicated there might be an inconsistency in the language. Commissioner Rusterholtz clarified that one section is referring to setbacks and the other is referring to square footage. City Attorney Courtney Morris indicated that a patio is included in the square footage of the building, but they are exempted from the other regulations. Mayor Olk suggested putting language in the ordinance that would indicate that patios would not be excepted from the section relating to square footage.

Commissioner Rusterholtz suggested that if a kitchen will be allowed by right in an ADU that the definition needs to be changed, and that requiring a deed restriction could be in the ordinance. Commissioner Rusterholtz indicated it would be better to allow a kitchen by right because it would allow the City to ensure the requirements are being followed. Commissioner Williams advised that eliminating kitchens would cause people to construct the kitchen despite the ordinance.

The Commission was in agreement with the size limits indicated in the proposed ordinance, kitchens being allowed by right, size limits in Agriculture and Residential 1-Acre zones being the same, requiring a specific use permit for sizes above 600 square feet, deed restrictions on buildings above 600 square feet, and no restrictions on utilities.

Alternate Commissioner Bierman asked what the difference is between a workshop area and a vehicle storage area. Commissioner Rusterholtz explained that the interconnection within the building will determine the type of building. Mayor Olk further explained that as long as there is no interconnection it is clear what type of building it is.

Vice Chairman Tolson asked to have the clean draft of the ordinance sent to the Planning and Zoning Commission as early as possible and gave a deadline of March 17, 2023.

MOTION: There was no motion needed for this item.

2. Consider approval of the minutes of the February 9, 2023 Planning and Zoning Commission meeting.

MOTION: A motion was made by Commissioner Williams, seconded by Commissioner Rusterholtz to approve the minutes of the February 9, 2023 Planning and Zoning Commission meeting as presented. The motion passed unanimously by a 5 to 0 vote.

Vice Chairman Tolson asked for an item to be placed on the next agenda giving an update of Barratt Lakes Estates' progress on their outstanding items to be completed.

3. Adjournment.

MOTION: A motion was made by Commissioner Williams, seconded by Commissioner Rusterholtz to adjourn the meeting at 8:17 pm. The motion passed unanimously by a 5 to 0 vote.

Dusty Kuykendall, Chairman

Erin Day, City Secretary