



City of Colleyville Planning and Zoning Commission Special Meeting Agenda

City Hall
100 Main Street
Colleyville, Texas 76034
817. 503.1000
www.colleyville.com

Monday, May 23, 2022

Executive Conference Room

SPECIAL MEETING IMMEDIATELY FOLLOWING WORKSESSION EXECUTIVE CONFERENCE ROOM THIRD FLOOR

1. PUBLIC HEARING AGENDA ITEMS

- 1a** Consideration of a Preliminary/Final Plat for Lots 2AR-1, 2AR-2, 3, 4, 5, & 6, Block 1, Shirley Allgood Addition, being Tracts 3P1, 3R1, & 6A17, and 6A15, Abstract 328, Simon Cotrail Survey, and Lots 2R1 & 2R2, Block 1, Shirley Allgood Addition, located at 1804 Tyler Street, 1900 Tyler Street, 1907 Renfro Road, and 1911 Renfro Road, Case PC22-006, TABLED FROM THE MAY 9, 2022 PLANNING AND ZONING COMMISSION MEETING

2. CITIZEN COMMENTS

3. ADJOURNMENT

I hereby certify this agenda was posted on City Hall bulletin boards May 20, 2022 by 5:00 p.m.

Dakari Hill
Planner

A quorum of the Colleyville City Council may be in attendance at this meeting.

Any matter on this agenda may, at the discretion of the governing body, be opened for public comment and discussion.

If you plan to attend this public meeting and have a disability that requires special accommodations, please advise the City Secretary at least 48 hours in advance at 817.503.1133, and reasonable accommodations will be made to assist you.



City of Colleyville Planning and Zoning Commission Agenda Briefing

City Hall
100 Main Street
Colleyville, Texas 76034
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Agenda Number 1a	Agenda Date 5/23/2022	Number
Type Public Hearing Agenda Items		
Department Planning and Zoning Commission		

Title

Consideration of a Preliminary/Final Plat for Lots 2AR-1, 2AR-2, 3, 4, 5, & 6, Block 1, Shirley Allgood Addition, being Tracts 3P1, 3R1, & 6A17, and 6A15, Abstract 328, Simon Cotrail Survey, and Lots 2R1 & 2R2, Block 1, Shirley Allgood Addition, located at 1804 Tyler Street, 1900 Tyler Street, 1907 Renfro Road, and 1911 Renfro Road, Case PC22-006, TABLED FROM THE MAY 9, 2022 PLANNING AND ZONING COMMISSION MEETING

Explanation

Greg Chapa, the applicant, has submitted a request for a Preliminary/Final Plat for Lots 2AR-1, 2AR-2, 3,4,5, & 6, Block 1, Shirley Allgood Addition, being Tract 3P1, 3R1, & Tract 6A17, and Tract 6A15, Abstract 328, Simon Cotrail Survey, and Lots 2R1 & 2R2, Block 1, Shirley Allgood Addition, being approximately 6.56 acres, and zoned R-40 Single Family Residential district. The purpose is to plat/replat the property in order to allow for the construction of new single family homes.

Existing Conditions/Background: The subject properties, 1804 & 1900 Tyler Street & 1911 Renfro Road, resides on the south side of Renfro Road and north side of Tyler Street and have R-40 zoning.

Lot Dimensions and Setbacks: Per Section 3.24 G, Schedule of District Regulations in the Land Development Code, the R-40 zoning regulations require the following standards:

Minimum Lot Size	40,000 sf.
Minimum Lot Width	150 feet
Minimum Lot Depth	150 feet
Front Building Line	40 feet
Side Building Line	15 feet
Rear Building Line	25 feet
Max. Lot Coverage	20%
Max. Impervious Coverage	50%

As submitted, the lots shown on the proposed plat meets the requirements of the R-40 zoning as described in the Land Development Code.

Surrounding Development: The surrounding area consists of properties zoned R-40 Single Family Residential district to the north, south, east and west and are improved with single-family residential homes.

Analysis: The proposed plat creates four new single-family residential lots. Two lots are being redesigned and currently have an existing home. Access for five lots will be off Tyler Street and one lot's access is along Renfro Street.

Plat Status: The properties are a combination of unplatted and platted land; Tract 3P1, 3R1, & Tract 6A17, and Tract 6A15, Abstract 328, Simon Cotrail Survey, and Lots 2R1 & 2R2, Block 1, Shirley Allgood Addition.

DRC Review: The DRC met on March 22nd and offered the following comments to the applicant:

1. Lot 2AR-2, Block 1 the square footage is incorrect please update.
2. Any of the existing easements that are in the middle of proposed lots cannot be built over without an encroachment agreement. It is best to abandon these where possible and to abandon will require clearance from all utility companies with rights those easements.
3. Any existing buildings over property lines cannot remain and existing buildings with existing utilities serving them should have an easement if that utility crosses onto a proposed adjacent property. Additionally, no accessory building can be on a lot without a primary structure and therefore need to be removed. (Lot 6,5, & 2AR-1)
4. Along all the side lot lines provide 7.5' drainage and utility easements and along the rear property lines provide 16' easements.
5. Topography divides these properties into two distinct drainage areas, drainage calculations are needed pre and post development showing no adverse impact, particularly onto 1711/1801 Tyler Street as discharged waters cross directly onto these properties.
6. Some of the lots currently have structures and have paid impact fees, others have not. The City of Colleyville needs guidance on which lots will keep the transference of any impact fees paid to date.
7. Provide the following notes:

Drainage Easements Restriction: No construction or filling, without the written approval of the City of Colleyville, shall be allowed within a drainage easement, and then only after a detailed engineering plans and studies show that no flooding will result, that no obstructions to the natural flow of water will result, and subject to all owners of the property by affected such construction becoming a party to the request. Where construction is permitted, all finished floor elevations shall be a minimum of 2 feet above the 100-year water surface/base flood elevation. The Property Owner of any permanent storm water management facilities/ponds either HOA/private owner must file an "Operations and Maintenance Plan as required by City Of Colleyville Ordinance O-20-2151 Sec. 42-73. This plan must be filed with the County Deed Office of Tarrant County. This Operations and Maintenance Plan is to be permanently linked to the deed of the land, regardless of changes in ownership.

8. If there will be any grading required or approved with the approval of this plat, an Urban Forestry Plan will be required. Please be aware that the building permit review for each lot will require preservation of 50% of tree canopy outside building footprints, possible tree planting to meet a certain site canopy cover, as well as mitigation for any heritage tree removed (even in building footprints). Between proposed lots 4 & 5 there are several post oaks and blackjack oaks. Most of those will be classified as heritage trees.

On March 30th the applicant provided an updated plat.

Fees: Park Land Dedication fees are required in the amount of \$1,802 per residential lot. Park Land Dedication fees are due prior to filing the Final Plat for record. Impact Fees are also required per Chapter 13 (Impact Fees) of the Land Development Code and are due prior to the issuance of a Building Permit.

Tree Preservation: Any subdivision of the subject property must comply with Chapter 5 (Tree Preservation) of the Land Development Code. Where any tree is slated for removal, no site grading, dirt disturbance or new construction may occur on the property until a Tree Removal Permit has been issued that is associated with an approved Tree Preservation Plan.

In addition to the requirements for submittal of a Tree Removal Permit and Tree Preservation Plan, future development on the site must maintain the minimum existing protected tree canopy coverage as required in Chapter 5.

Staff Recommendation: Staff recommends approval of the replat.

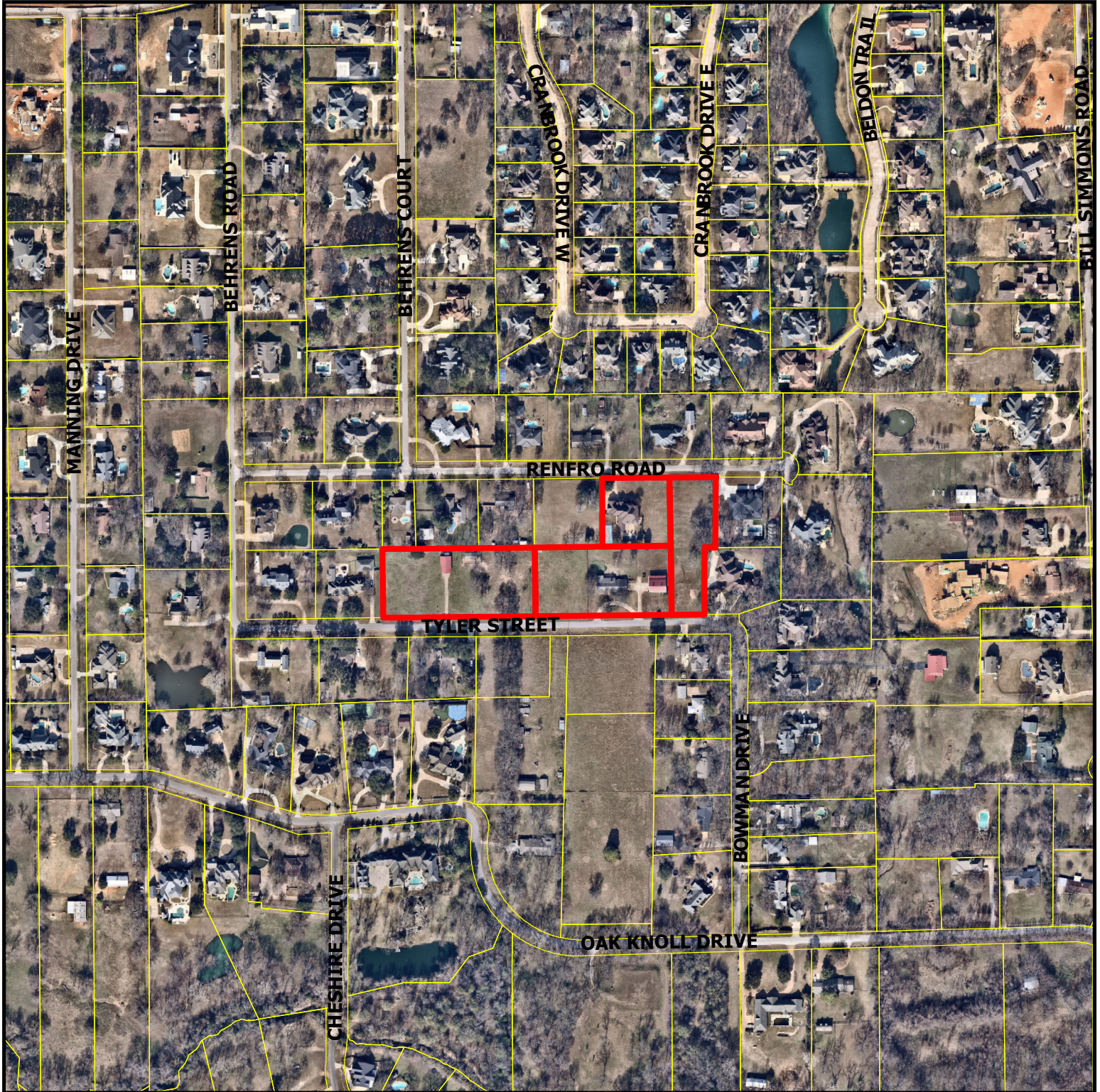
Recommendation

Approve

Attachments

1. Aerial Map
2. Zoning Map
3. Future Land Use Map
4. Preliminary & Final Plat
5. Existing Conditions Exhibit
6. Aerial View
7. Water and Sewer Line Map
8. Drainage Plan
9. Notification Map
10. Notification Letter
11. Notification List
12. Draft Resolution

Aerial Map

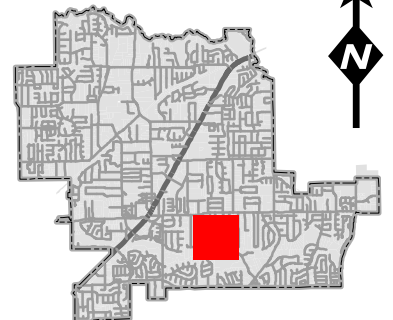


PC22-006
1900 Tyler Street

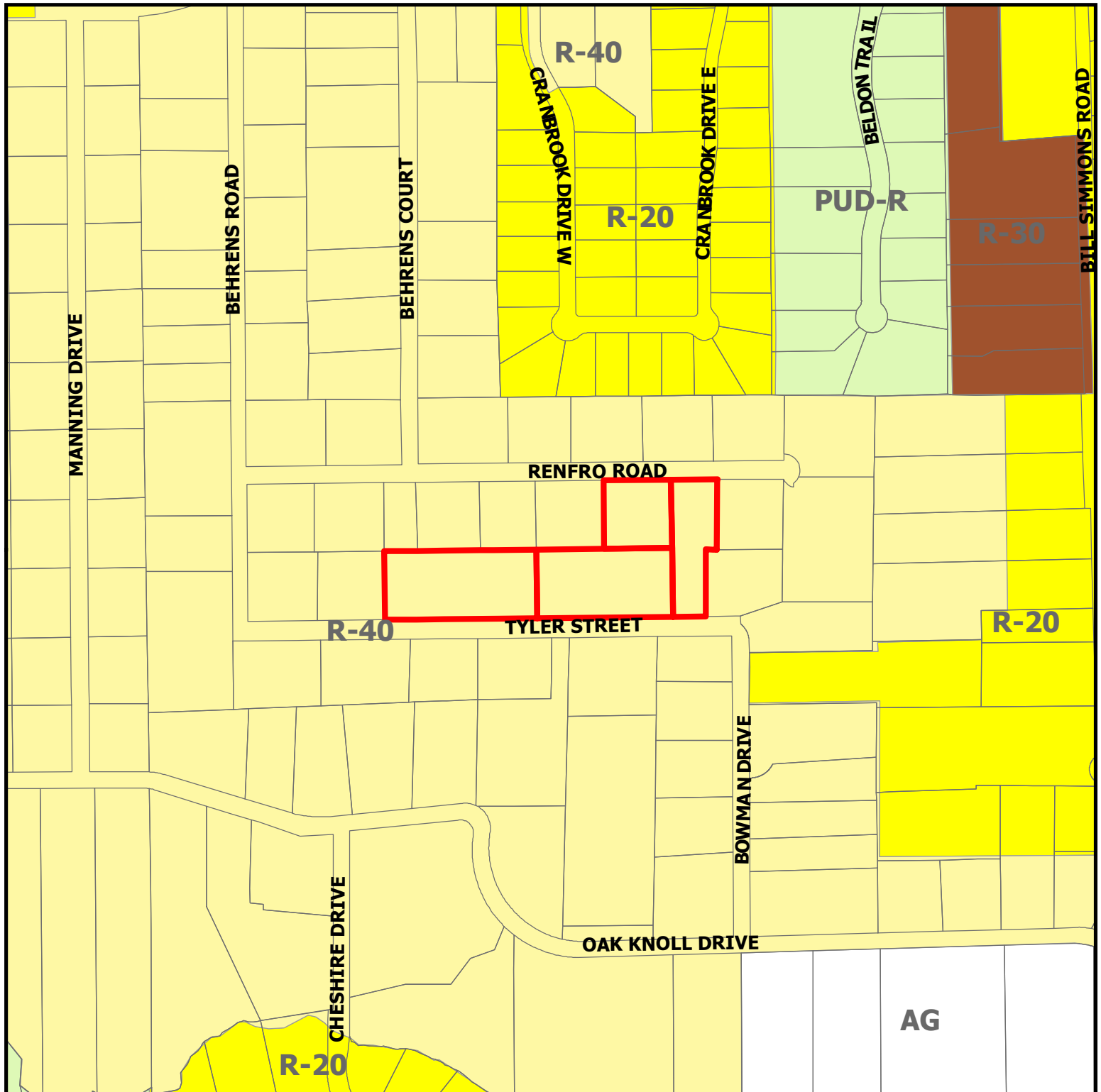
DISCLAIMER:
This map and information contained in it were developed exclusively for use by the City of Colleyville. Any use or reliance on this map by anyone else is at that party's risk and without liability to the City of Colleyville, its officials or employees for any discrepancies, errors, or variances which may exist.



Subject Property



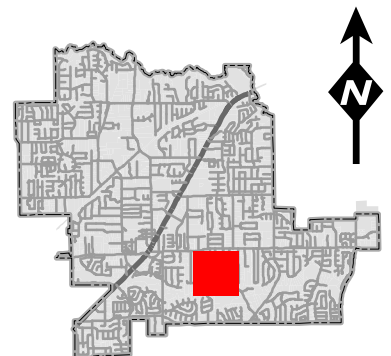
Zoning Map



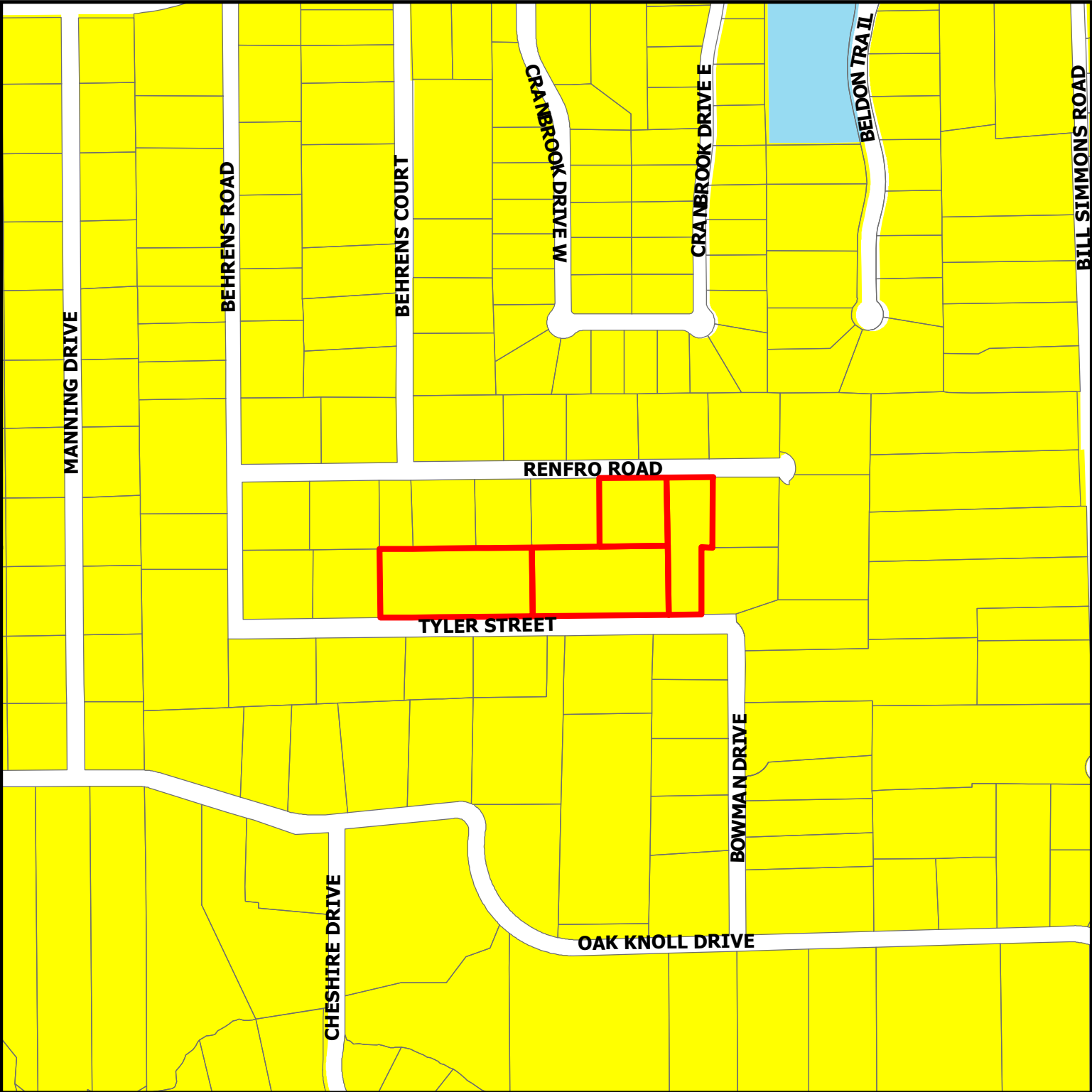
PC22-006
1900 Tyler Street

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 Subject Property



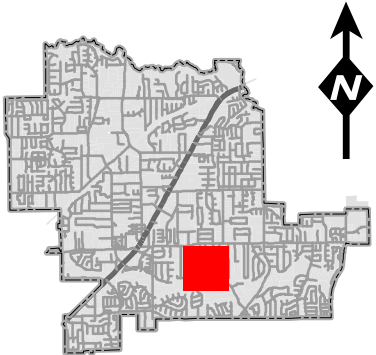
Future Land Use Map

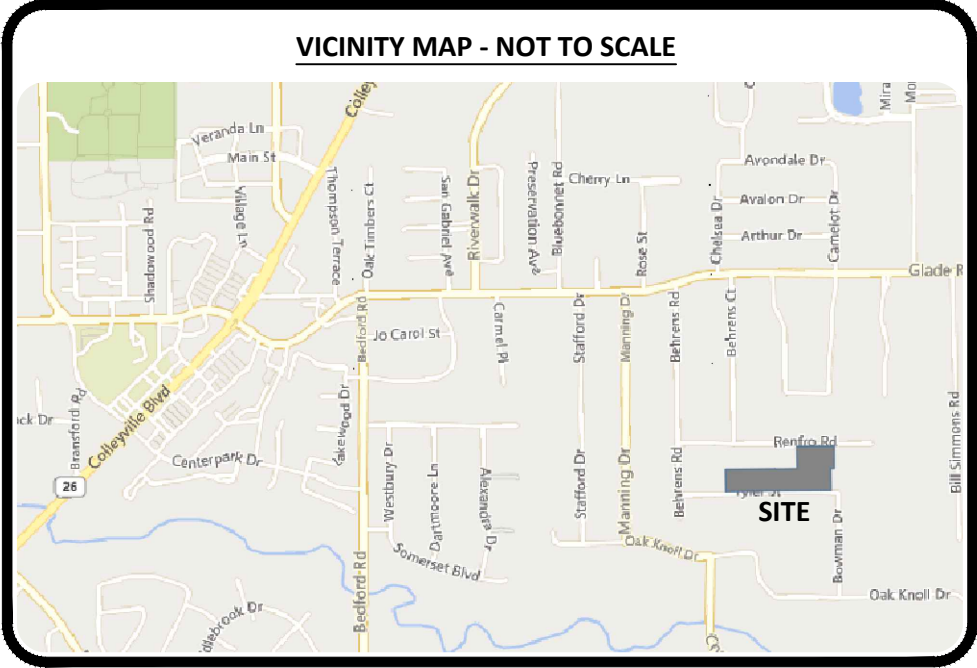


PC22-006
1900 Tyler Street

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-  Subject Property
-  Residential
-  Water Body





- LEGEND OF ABBREVIATIONS
- D.R.T.C.T. DEED RECORDS, TARRANT COUNTY, TEXAS
 - P.R.T.C.T. PLAT RECORDS, TARRANT COUNTY, TEXAS
 - O.P.R.T.C.T. OFFICIAL PUBLIC RECORDS, TARRANT COUNTY, TEXAS
 - DOC.# DOCUMENT NUMBER
 - C.M. CONTROLLING MONUMENT
 - SQ. FT. SQUARE FEET
 - ROW RIGHT OF WAY
 - CRS CAPPED REBAR SET

SURVEYOR'S NOTES:

- Bearings are based on the State Plane Coordinate System, Texas North Central Zone (4202) North American Datum of 1983 (NAD '83), distances are surface with a combined scale factor of 1.00012.
- This property lies within Zone "X" of the Flood Insurance Rate Map for Tarrant County, Texas and Incorporated Areas, map no. 48439C0095K, with an effective date of September 25, 2009, via scaled map location and graphic plotting.
- Monuments are found unless specifically designated as set.
- The purpose of this plat is to subdivide two existing lots and two tracts of land into six separate lots.

STATE OF TEXAS §
COUNTY OF TARRANT §

WHEREAS GLADE ROAD CAPITAL, LLC, TERRY LYONS AND SUSAN LYONS are the owners of a tract of land out of the Simon Cotrail Survey, Abstract Number 328, in the City of Colleyville, Tarrant County, Texas, and being that same tract of land described by deed to Glade Capital, LLC, as recorded under Document Number D2122102284, Official Public Records, Tarrant County, Texas, (O.P.R.T.C.T.), together with that tract of land described by deed to Terry Lyons and Susan Lyons as recorded under Document Number D212098875, (O.P.R.T.C.T.), and with all of Lot 2R-1 and Lot 2R-2 in Block 1 of Shirley Allgood Addition, an addition in the City of Colleyville, Tarrant County, Texas, according to the plat recorded under Cabinet B, Slide 779, Plat Records, Tarrant County, Texas, (P.R.T.C.T.), the subject tract being more particularly described by metes and bounds as follows (bearings are based on State Plane Coordinate System, Texas North Central Zone (4202) North American Datum of 1983 (NAD '83)):

BEGINNING at a 1/2 inch rebar for the northwest corner of said Glade Road Capital tract, same being the westernmost northwest corner of the herein described tract;

THENCE North 89 degrees 18 minutes 10 seconds East, with the north line of said Glade Road Capital tract, a distance of 464.40 feet to a 1/2 inch rebar with pink cap stamped, "BARTON CHAPA" set (hereinafter called "capped rebar set") for the northeast corner thereof;

THENCE South 01 degrees 13 minutes 50 seconds East, with the east line of said Glade Road Capital tract, a distance of 2.07 feet to a capped rebar set at the northwest corner of said Lot 2R-1;

THENCE with the perimeter and to the corners of said Lot 2R-1 and said Lot 2R-2, the following calls:

- North 89 degrees 16 minutes 36 seconds East, a distance of 208.71 feet to a capped rebar set;
 - North 01 degrees 13 minutes 59 seconds West, a distance of 208.72 feet to a point from which a 1 inch iron pipe found bears South 85 degrees West, a distance of 1.23 feet;
 - North 89 degrees 16 minutes 36 seconds East, a distance of 212.66 feet to a 1/2 inch rebar with cap stamped, "VOGT 1928" found for the northeast corner of said Lot 2R-2, same being the northwest corner of said Lyons tract;
- THENCE** with the perimeter and to the corners of said Lyons tract, the following calls:
- North 89 degrees 46 minutes 15 seconds East, a distance of 138.67 feet to a 1/2 inch rebar with cap stamped, "VOGT 1928" found;
 - South 00 degrees 14 minutes 16 seconds East, a distance of 208.13 feet to a 1/2 inch rebar found;
 - South 86 degrees 10 minutes 34 seconds West, a distance of 33.36 feet to a 1/2 inch rebar found in a tree;
 - South 00 degrees 42 minutes 20 seconds East, a distance of 205.85 feet to a MAG nail found in a wood fence;
 - South 89 degrees 54 minutes 05 seconds West, a distance of 99.84 feet to a capped rebar set for the southwest corner of said Lyons tract, same being the southeast corner of said Lot 2R-1;

THENCE South 89 degrees 37 minutes 59 seconds West, with the south line of said Lot 2R-1, a distance of 421.40 feet to a 3/8 inch rebar found for the southwest corner thereof, same being the southeast corner of said Glade Road Capital tract;

THENCE South 89 degrees 09 minutes 10 seconds West, with the south line of said Glade Road Capital tract, a distance of 465.80 feet to a capped rebar set for the southwest corner thereof;

THENCE North 00 degrees 50 minutes 31 seconds West, with the west line of said Glade Road Capital tract, a distance of 207.84 feet to the **POINT OF BEGINNING** and enclosing 6.359 acres (276,978 square feet) of land, more or less.

NOW THEREFORE, KNOW ALL PERSONS BY THESE PRESENTS:

That WE, **GLADE ROAD CAPITAL, LLC, TERRY LYONS AND SUSAN LYONS**, do hereby adopt this plat designating the hereinbefore described property as **LOTS 2AR-1, 2AR-2, 3, 4, 5, & 6, BLOCK 1, SHIRLEY ALLGOOD ADDITION**, an addition to the City of Colleyville, Tarrant County, Texas, and do hereby dedicate fee simple to the public use forever all streets, rights-of-way, and alleys shown thereon, and do hereby reserve the easements shown on this plat for the mutual use and accommodation of all public utilities desiring to use or using the same. Any public utility shall have the right to remove and keep removed all or part of any buildings, fences, trees, shrubs or other improvements or growths in which any way endanger or interfere with the construction, maintenance or efficiency of its respective systems on any of these easements, and any public utility shall at all times have the right of ingress and egress to and from and upon the said easement for the purpose of constructing, reconstructing, inspecting, and patrolling, without the necessity at any time of procuring the permission of anyone. This plat approved subject to all platting ordinances, rules, regulations, and resolutions of the City of Colleyville, Texas.

Witness my hand this _____ day of _____, 20____.

Glade Road Capital (authorized agent)

STATE OF TEXAS §
COUNTY OF _____ §

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

Notary Public in and for
the State of Texas

Witness my hand this _____ day of _____, 20____.

Terry Lyons

STATE OF TEXAS §
COUNTY OF _____ §

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

Notary Public in and for
the State of Texas

Witness my hand this _____ day of _____, 20____.

Susan Lyons

STATE OF TEXAS §
COUNTY OF _____ §

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

Notary Public in and for
the State of Texas

SURVEYOR'S CERTIFICATE

This is to certify that I, John H. Barton III, a Registered Professional Land Surveyor of the State of Texas, do hereby certify that this Plat is true and correct and was prepared from an actual survey made under my supervision on the ground. Further, this survey conforms to the general rules of procedures and practices of the most current Professional Land Surveying Practices Act. Fieldwork was completed on February 23, 2022.

Date of Plat/Map: **March 13, 2022**

PRELIMINARY

**THIS DOCUMENT SHALL NOT BE RECORDED FOR ANY PURPOSE
AND SHALL NOT BE USED, VIEWED, OR RELIED UPON AS A FINAL
SURVEY DOCUMENT March 30, 2022**

John H. Barton III, RPLS# 6737

Date

Planning and Zoning Commission Approval

WHEREAS The Planning and Zoning Commission of the City of Colleyville, Texas voted affirmatively on this _____ day of _____, 20____, to approve this Plat.

Chairman, Planning and Zoning Commission

City Council Approval

WHEREAS The City Council of the City of Colleyville, Texas voted affirmatively on this _____ day of _____, 20____, to approve this Plat.

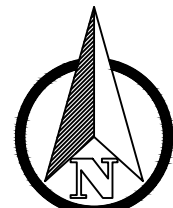
Mayor, City of Colleyville

Attest: City Secretary

Attest: Secretary, Planning and Zoning Commission

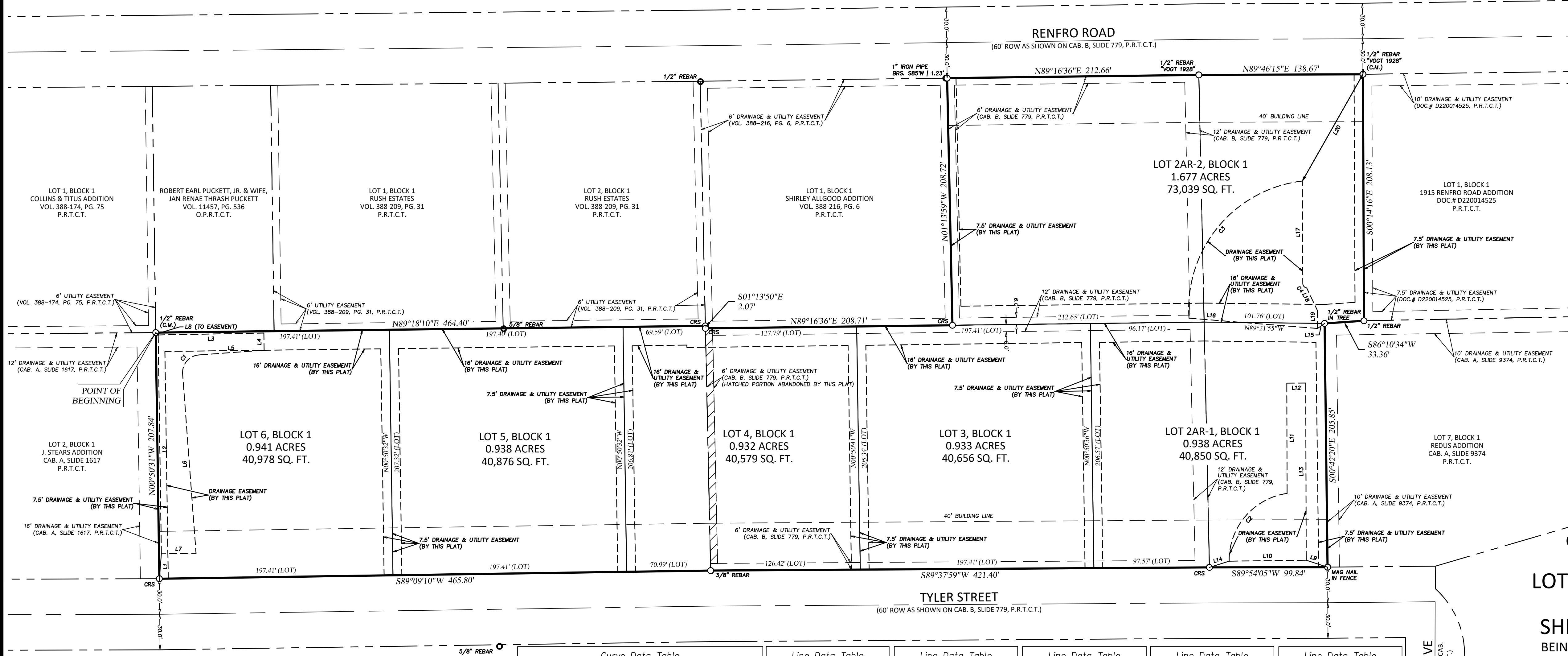
PLAT NOTES:

- Any existing drainage easement and facilities must be maintained and operated according to their intended function and use.
- Drainage Easements Restriction: No construction or filling, without the written approval of the City of Colleyville, shall be allowed within a drainage easement, and then only after a detailed engineering plans and studies show that no flooding will result, that no obstructions to the natural flow of water will result, and subject to all owners of the property by affected such construction becoming a party to the request. Where construction is permitted, all finished floor elevations shall be a minimum of 2 feet above the 100-year water surface/base flood elevation.
- The Property Owner of any permanent storm water management facilities/ponds either HOA/private owner must file an "Operations and Maintenance Plan as required by City Of Colleyville Ordinance O-20-2151 Sec. 42-73. This plan must be filed with the County Deed Office of Tarrant County. This Operations and Maintenance Plan is to be permanently linked to the deed of the land, regardless of changes in ownership.
- Any existing structures within Lots 2AR-1, 3, 4, 5, and 6 will be demolished prior to issuance of building permits by the City of Colleyville.



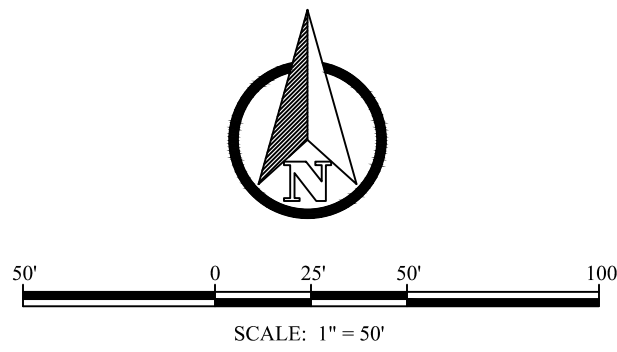
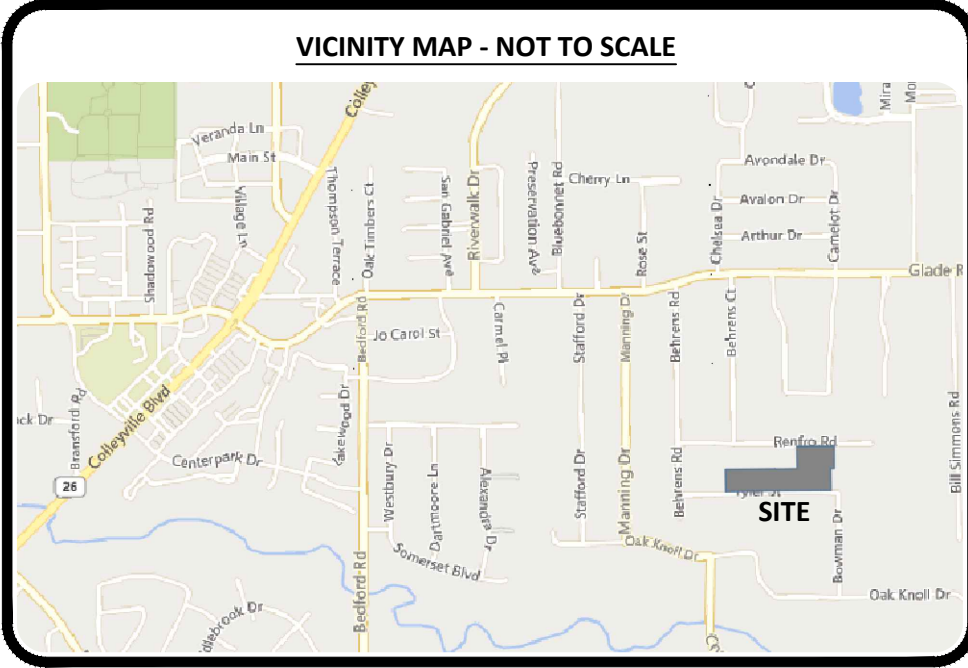
SCALE: 1" = 50'

COMBINATION PRELIMINARY
& FINAL PLAT
**LOTS 2AR-1, 2AR-2, 3, 4, 5, & 6
BLOCK 1
SHIRLEY ALLGOOD ADDITION**
BEING A REPLAT OF LOTS 2R-1 & 2R-2, BLOCK 1,
SHIRLEY ALLGOOD ADDITION
TOGETHER WITH A TWO TRACTS OF LAND OUT OF THE
SIMON COTRAIL SURVEY, ABSTRACT #328
6.359 ACRES
CITY COLLEYVILLE, TARRANT COUNTY, TEXAS
MARCH 2022



Curve Data Table					Line Data Table		Line Data Table		Line Data Table		Line Data Table		Line Data Table	
Curve #	Arc	Radius	Delta	Chord Bearing	Chord	Line #	Distance	Bearing	Line #	Distance	Bearing	Line #	Distance	Bearing
C1	23.35'	14.84'	090°08'41"	S40°47'27"W	21.01'	L1	21.10'	N04°35'52"E	L5	55.28'	S85°51'47"W	L9	19.01'	N71°57'57"W
C2	82.25'	57.07'	082°34'18"	N40°33'43"E	75.31'	L2	184.83'	N00°50'31"W	L6	152.02'	S04°16'54"E	L10	65.12'	S89°17'40"W
C3	165.95'	108.67'	087°29'48"	N39°35'15"E	150.29'	L3	89.33'	N88°58'55"E	L7	29.31'	S89°09'29"W	L11	93.10'	N00°08'37"W
C4	5.59'	4.00'	080°00'48"	S40°14'09"E	5.14'	L4	14.48'	S00°50'50"E	L8	2.83'	S45°46'11"E	L12	16.00'	N89°38'29"E

THIS PLAT RECORDED ON (DATE) _____, IN INSTRUMENT NO. _____.



NOTES:

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- This property lies within Zone "X" of the Flood Insurance Rate Map for Tarrant County, Texas and Incorporated Areas, map no. 48439C0095K, with an effective date of September 25, 2009, via scaled map location and graphic plotting.
- Monuments are found unless specifically designated as set.
- Improvements shown hereon are existing unless otherwise noted.

LEGEND OF ABBREVIATIONS

- D.R.T.C.T. DEED RECORDS, TARRANT COUNTY, TEXAS
- P.R.T.C.T. PLAT RECORDS, TARRANT COUNTY, TEXAS
- O.P.R.T.C.T. OFFICIAL PUBLIC RECORDS, TARRANT COUNTY, TEXAS
- DOC.# DOCUMENT NUMBER
- C.M. CONTROLLING MONUMENT
- SQ. FT. SQUARE FEET
- ROW RIGHT OF WAY
- CRS CAPPED REBAR SET

SURVEYOR



BARTON CHAPA
SURVEYING

5200 State Highway 121
Colleyville, TX 76034
Phone: 817-864-1957
info@bcsdfw.com
TBPLS Firm #10194474

OWNER
TERRY LYONS & SUSAN LYONS
1907 RENFRO ROAD
COLLEYVILLE, TX 76034

OWNER
GLADE ROAD CAPITAL, LLC
1804 TYLER STREET
COLLEYVILLE, TX 76034

JOB NO. 2022.132.004

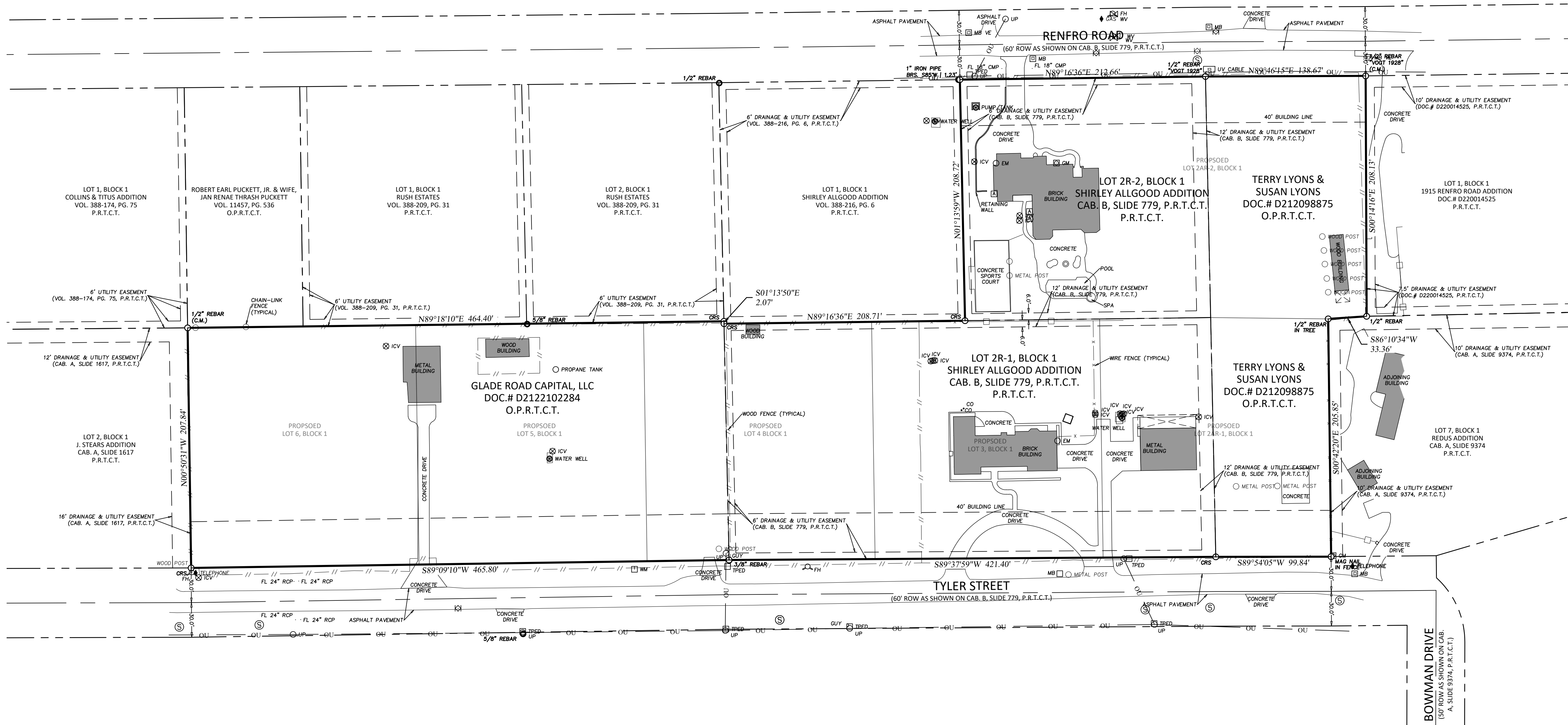
DRAWN: BCS

CHECKED: JHB

TABLE OF REVISIONS

DATE	SUMMARY

COLLEYVILLE,
TEXAS



EXISTING CONDITIONS EXHIBIT
LOTS 2AR-1, 2AR-2, 3, 4, 5, & 6
BLOCK 1
SHIRLEY ALLGOOD ADDITION
BEING A REPLAT OF LOTS 2R-1 & 2R-2, BLOCK 1,
SHIRLEY ALLGOOD ADDITION
TOGETHER WITH A TWO TRACTS OF LAND OUT OF THE
SIMON COTRAIL SURVEY, ABSTRACT #328
6.359 ACRES
CITY COLLEYVILLE, TARRANT COUNTY, TEXAS

11/2020

Leatherneck Arms

RED LINE REPRESENTS
AN EXISTING SEWER LINE
LOCATED IN AN EXISTING
12' UTILITY EASEMENT ON
LOT 2R2

Renfro Rd

Renfro Rd

Renfro Rd

Renfro Rd

**ALL SECTIONS
COMBINED WILL BE
TREATED AS ONE PLAT
APPLICATION**

APPX 1907 RENFRO - LOT
2R2 WEST P/L

APPX 1911 RENFRO -
UNPLATTED TRACT WEST
P/L

SURVEY/REPLAT SECTION 1

COMBINE EXISTING LOT 2R2 W/ 1911 RENFRO TRACT TO EAST
EXISTING HOME ON LOT 2R2 TO WILL DEMO'D AND NEW HOME RE-BUILT
NEW HOME WILL BE CONSTRUCTED ENTIRELY ON WEST SIDE OF SEWER LINE
EASEMENT (ON FORMER LOT 2R2)

APPX 1804 TYLER - LOT
2R1 WEST P/L

COMBINE WESTERN PORTION OF LOT 2R1 WITH UN-PLATTED TRACT TO WEST
EXISTING BARN TO REMAIN UNTIL FUTURE DEMO & REBUILD
PLAT INTO 3, R-40 LOTS OF APPX 41,000 SF EACH

SURVEY/REPLAT SECTION 3

LOT ??/
APPX 197'W X 210'D

LOT ??/
APPX 197'W X 210'D

LOT ??/
APPX 197'W X 210'D

COMBINE EXISTING HOME ON LOT 2R1 W/ SOUTH PORTION OF 1911 RENFRO TRACT TO EAST
EXISTING HOME & BARN TO REMAIN UNTIL FUTURE DEMO & REBUILD
DECREASE SIZE OF 2R1 AND ADD LAND TO WEST TRACT RE-PLAT
PLAT INTO 2, R-40 LOTS OF APPX 41,000 SF EACH
SEWER LINE WILL EVENTUALLY NEED TO BE MOVED BUT WILL ASK FOR PROVISION IN ORDINANCE
TO MOVE SEWER LATER ONLY WHEN READY TO BUILD

SURVEY/REPLAT SECTION 2

LOT ??/
APPX 197'W X 210'D

LOT ??/
APPX 197'W X 210'D

HOME TO
REMAIN UNTIL
TIME TO
REBUILD NEW
HOME ON LOT

BARN TO
REMAIN UNTIL
TIME TO
REBUILD NEW
HOME ON LOT

Tyler St

Tyler St

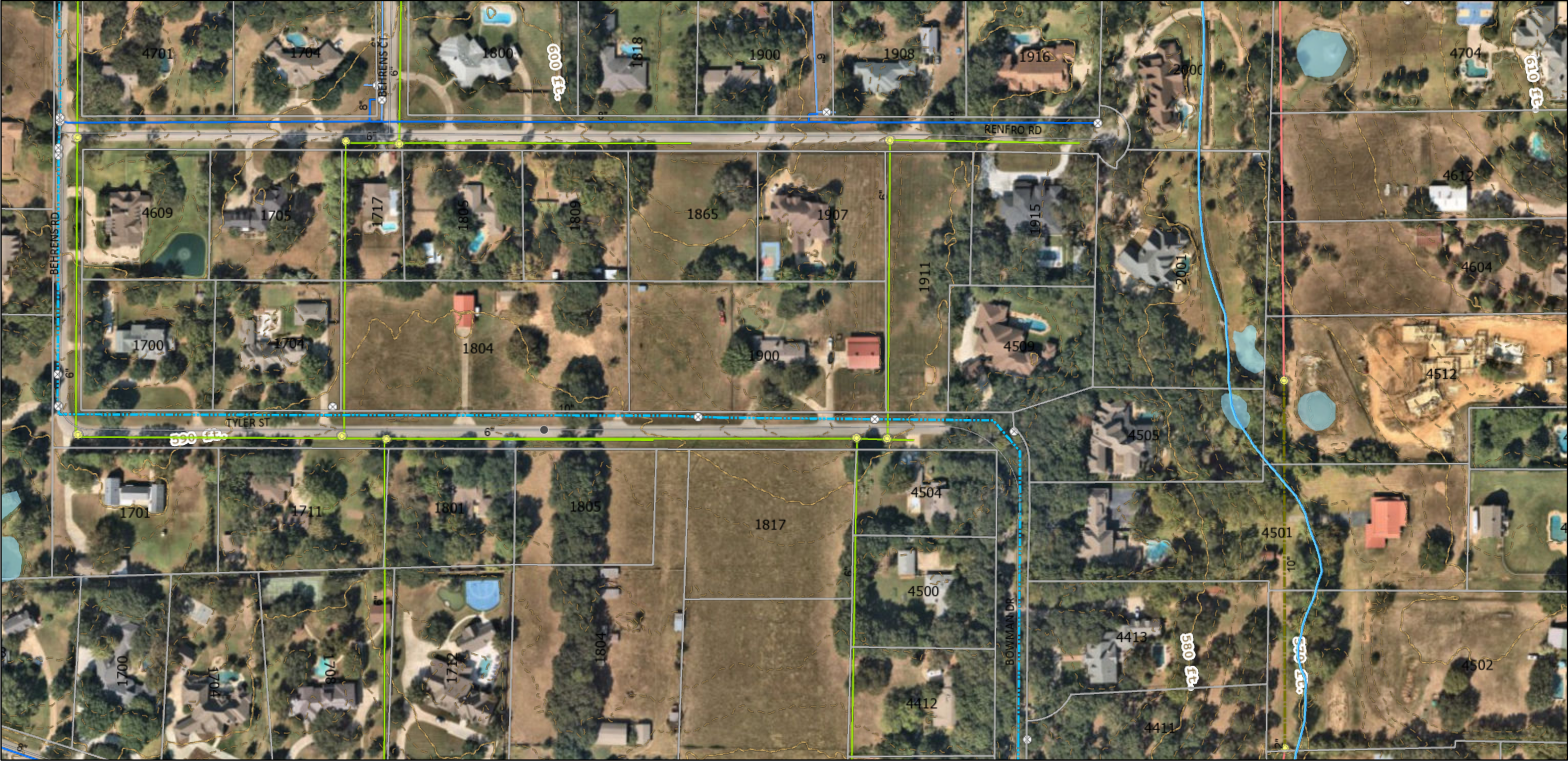
Tyler St

Google Earth

1965

32°52'38.27" N 97°08'27.12" W elev 597 ft eye alt 1518 ft

Colleyville Web Map



12/16/2021 3:42:12 PM

City Limit

Ponds

Streams

Residential / Local

Parcel

Water Line

6"

8"

10"

12"

Other

Water Valve

Flush Valve

Gate Valve

Sewer Line

8"

10"

12"

6"

Sewer Manhole

Precast Manhole

Contour_10FT

Contour_2FT

1:2,257

00.020.040.09

mi

00.040.070.14

km

GIS

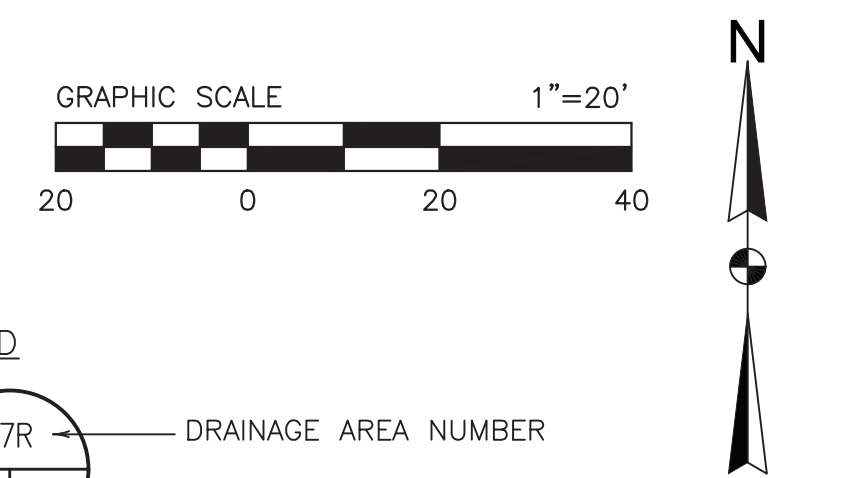


Diagram illustrating a circular drainage area divided into two parts. The top part is labeled "17R" and the bottom part is labeled "0.842 3.36". Arrows point from these labels to the text "DRAINAGE AREA NUMBER" and "RUNOFF IN C.F.S." respectively. An arrow points from the bottom part to the text "DRAINAGE AREA IN ACRES". A large arrow at the bottom points to the right, labeled "FLOW DIRECTION".



CAUTION!!!
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UTILITY LOCATES PRIOR TO CONSTRUCTION
1-800-344-8377

NO.	DATE	REVISIONS	APP.

EXISTING CONDITIONS
DRAINAGE AREA MAP

JSGE NO. _____ DWG. NO. _____

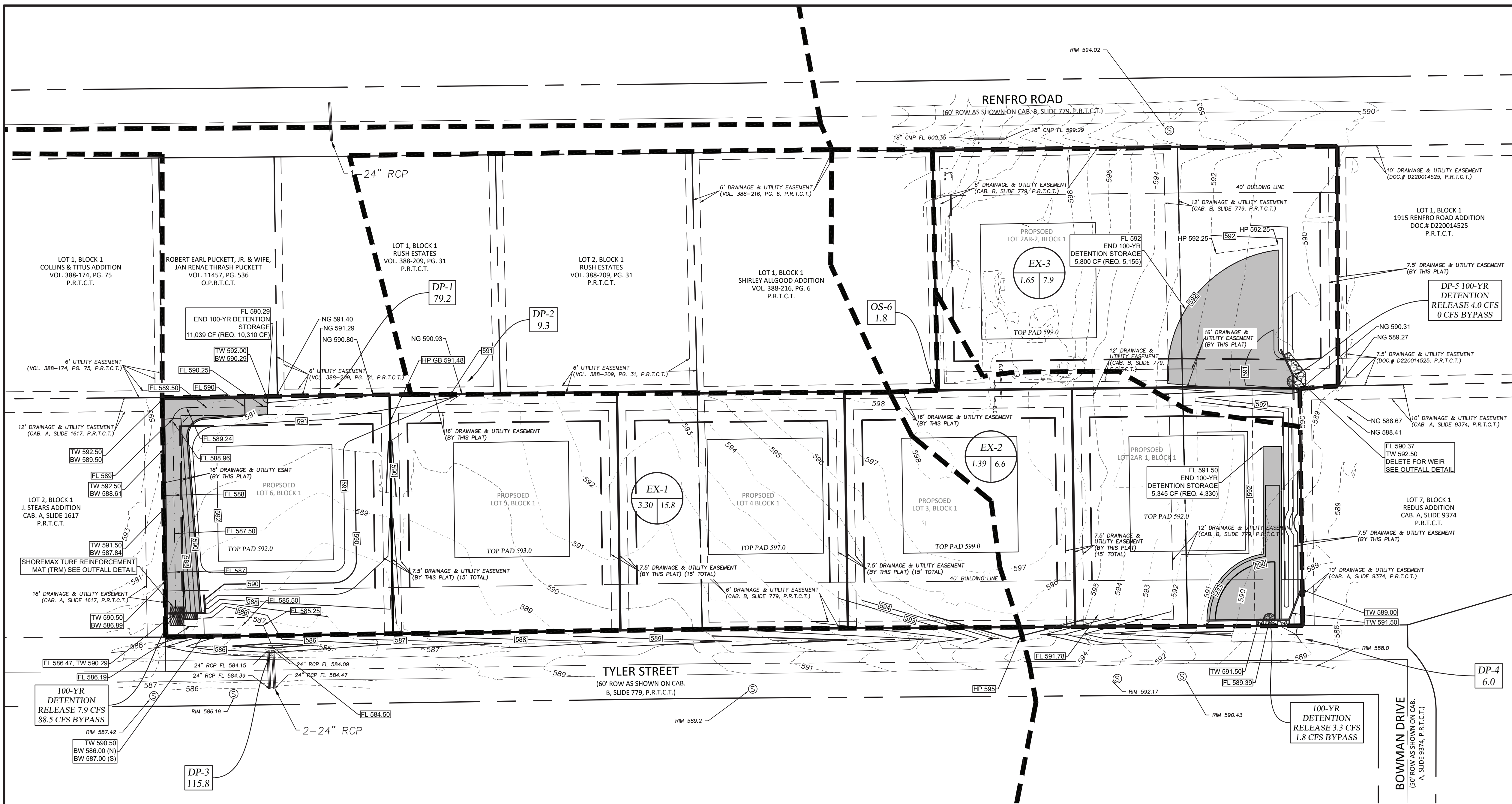


C1

EXISTING CONDITIONS																	NOTES	
DA	SF	ACRES	C	Tc	i ₂	Q ₂	i ₅	Q ₅	i ₁₀	Q ₁₀	i ₂₅	Q ₂₅	i ₅₀	Q ₅₀	i ₁₀₀	Q ₁₀₀		
OS-1	659,533	15.14	0.6	15	3.9	35.4	4.86	44.2	5.53	50.2	6.46	58.7	7.2	65.4	7.98	72.5	OFFSITE INFLOW TO OS-2	
OS-2	60,576	1.39	0.6	15	3.9	3.3	4.86	4.1	5.53	4.6	6.46	5.4	7.2	6.0	7.98	6.7		
DP-1																79.2	OFFSITE INFLOW TO EX-1	
OS-3	84,732	1.95	0.6	15	3.9	4.6	4.86	5.7	5.53	6.5	6.46	7.5	7.2	8.4	7.98	9.3		
DP-2																9.3	OFFSITE INFLOW TO EX-1	
DP-1 + DP-2 (BYPASS FLOW THROUGH EX-1)																88.5	COMBINED INFLOW TO EX-1	
EX-1	143,934	3.304	0.3	0	3.9	3.9	4.86	4.8	5.53	5.5	6.46	6.4	7.2	7.1	7.98	7.9	PREDEVELOPED DISCHARGE	
DP-1 + DP-2 + EX-1 (PRE DEVELOPMENT)																96.4	EX-1 ALLOWABLE DISCHARGE	
OS-4	155,475	3.57	0.6	15	3.9	8.4	4.86	10.4	5.53	11.8	6.46	13.8	7.2	15.4	7.98	17.1		
OS-5	21,284	0.49	0.6	15	3.9	1.1	4.86	1.4	5.53	1.6	6.46	1.9	7.2	2.1	7.98	2.3		
DP-3																115.8	DISCHARGE TO TYLER ST. ROW	
OS-6	16,133	0.370	0.6	15	3.9	0.9	4.86	1.1	5.53	1.2	6.46	1.4	7.2	1.6	7.98	1.8	OFFSITE INFLOW TO EX-2	
BYPASS FLOW THROUGH EX-2																1.8		
EX-2	60,451	1.388	0.3	15	3.9	1.6	4.86	2.0	5.53	2.3	6.46	2.7	7.2	3.0	7.98	3.3	PREDEVELOPED DISCHARGE	
OS-6 + EX-2 (PREDEVELOPMENT)																5.1	EX-2 ALLOWABLE DISCHARGE	
OS-7	7,998	0.184	0.6	15	3.9	0.4	4.86	0.5	5.53	0.6	6.46	0.7	7.2	0.8	7.98	0.9		
DP-4																6.0	DISCHARGE TO TYLER ST. ROW	
EX-3	71,959	1.652	0.3	15	3.9	1.9	4.86	2.4	5.53	2.7	6.46	3.2	7.2	3.6	7.98	4.0	PREDEVELOPED DISCHARGE	
DP-5																4.0	DISCHARGE BTWN 1915 & 4505	

PREDEVELOPED CONDITIONS																
DA	SF	ACRES	C	Tc	I_2	Q_2	I_5	Q_5	I_{10}	Q_{10}	I_{25}	Q_{25}	I_{50}	Q_{50}	I_{100}	Q_{100}
EX-1	143,934	3.304	0.30	15	3.9	3.9	4.86	4.8	5.53	5.5	6.46	6.4	7.2	7.1	7.98	7.9
EX-2	60,451	1.388	0.30	15	3.9	1.6	4.86	2.0	5.53	2.3	6.46	2.7	7.2	3.0	7.98	3.3
EX-3	71,959	1.652	0.30	15	3.9	1.9	4.86	2.4	5.53	2.7	6.46	3.2	7.2	3.6	7.98	4.0

I, Jeffrey S. Ground, a Professional Engineer licensed in the State of Texas, have prepared this drainage study and/or plan in compliance with the published requirements and criteria of the City of Colleyville, and have verified that the topographic information used in this study and/or plan is in compliance with said requirements and is otherwise suitable for developing this workable plan of drainage which can be implemented through proper subsequent detailed construction planning.



GRAPHIC SCALE 1"=50'

LEGEND

- 17R — DRAINAGE AREA NUMBER
- 0.842/3.36 — RUNOFF IN C.F.S. (C=0.6)
- DRAINAGE AREA IN ACRES
- FLOW DIRECTION
- DETENTION AREA

TOP OF PAD ELEVATIONS MAY BE REVISED WITH AN ENGINEERED GRADING AND DRAINAGE PLAN TO A SPECIFIC SITE LAYOUT PLAN.

!!CAUTION!!
Contractor to Verify
Exact Location &
Depth of Exist
Facilities Prior to any
Construction Activities

CAUTION!!!
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UTILITY LOCATES PRIOR TO CONSTRUCTION
1-800-344-8377

DEVELOPED CONDITIONS																	NOTES	
DA	SF	ACRES	C	Tc	i ₂	Q ₂	i ₅	Q ₅	i ₁₀	Q ₁₀	i ₁₅	Q ₁₅	i ₂₀	Q ₂₀	i ₃₀₀	Q ₃₀₀		
OS-1	659,533	15.14	0.6	15	3.9	35.4	4.86	44.2	5.53	50.2	6.46	58.7	7.2	65.4	7.98	72.5	OFFSITE INFLOW TO OS-2	
OS-2	60,576	1.39	0.6	15	3.9	3.3	4.86	4.1	5.53	4.6	6.46	5.4	7.2	6.0	7.98	6.7		
DP-1 = (OS-1 + OS-2)																	79.2	OFFSITE INFLOW TO EX-1
OS-3	84,732	1.95	0.6	15	3.9	4.6	4.86	5.7	5.53	6.5	6.46	7.5	7.2	8.4	7.98	9.3		
DP-2																	9.3	OFFSITE INFLOW TO EX-1
DP-1 + DP-2 (BYPASS FLOW THROUGH EX-1)																	88.5	COMBINED INFLOW TO EX-1
EX-1	143,934	3.304	0.3	0	3.9	3.9	4.86	4.8	5.53	5.5	6.46	6.4	7.2	7.1	7.98	7.9	PREDEVELOPED DISCHARGE	
EX-1	#####	3.304	0.6	0	3.9	7.7	4.9	9.6	5.5	11.0	6.46	###	7.2	###	8	15.8	DEVELOPED W/OUT DETENTION	
DP-1 + DP-2 + EX-1 (PRE DEVELOPMENT)																	96.4	EX-1 ALLOWABLE DISCHARGE
OS-4	155,475	3.57	0.6	15	3.9	8.4	4.86	10.4	5.53	11.8	6.46	13.8	7.2	15.4	7.98	17.1		
OS-5	21,284	0.49	0.6	15	3.9	1.1	4.86	1.4	5.53	1.6	6.46	1.9	7.2	2.1	7.98	2.3		
DP-3																	115.8	DISCHARGE TO TYLER ST. ROW
OS-6	16,133	0.370	0.6	15	3.9	0.9	4.86	1.1	5.53	1.2	6.46	1.4	7.2	1.6	7.98	1.8	OFFSITE INFLOW TO EX-2	
BYPASS FLOW THROUGH EX-2																	1.8	
EX-2	60,451	1.388	0.3	15	3.9	1.6	4.86	2.0	5.53	2.3	6.46	2.7	7.2	3.0	7.98	3.3	PREDEVELOPED DISCHARGE	
EX-2	60,451	1.388	0.6	15	3.9	3.2	4.9	4.0	5.5	4.6	6.46	5.4	7.2	6.0	8	6.6	DEVELOPED W/OUT DETENTION	
OS-6 + EX-2 (PREDEVELOPMENT)																	5.1	EX-2 ALLOWABLE DISCHARGE
OS-7	7,998	0.184	0.6	15	3.9	0.4	4.86	0.5	5.53	0.6	6.46	0.7	7.2	0.8	7.98	0.9		
DP-4																	6.0	DISCHARGE TO TYLER ST. ROW
EX-3	71,959	1.652	0.3	15	3.9	1.9	4.86	2.4	5.53	2.7	6.46	3.2	7.2	3.6	7.98	4.0	PREDEVELOPED DISCHARGE	
EX-3	71,959	1.652	0.6	15	3.9	3.9	4.9	4.8	5.5	5.5	6.46	6.4	7.2	7.1	8	7.9	DEVELOPED W/OUT DETENTION	
DP-5																	4.0	DISCHARGE BTWN 1915 & 4509

I, Jeffrey S. Ground, a Professional Engineer licensed in the State of Texas, have prepared this drainage study and/or plan in compliance with the published requirements and criteria of the City of Colleyville, and have verified that the topographic information used in this study and/or plan is in compliance with said requirements and is otherwise suitable for developing this workable plan of drainage which can be implemented through proper subsequent detailed construction planning.

SHIRLEY ALLGOOD ADDITION
LOTS 2AR-1, 2AR-2, 3, 4, 5 & 6
BLOCK 1
COLLEYVILLE, TARRANT CO., TEXAS

DEVELOPED
DRAINAGE AREA MAP

J. S. Ground Engineering, LLC
4108 Dundee Court
Colleyville, Texas 76034
FIRM REGISTRATION NO. F-1276

SCALE: _____ DGN. BY: JSG
DATE: May 19, 2022 DWN. BY: WJW
JSGE NO. _____ DWG. NO. _____

STATE OF TEXAS
JEFFREY S. GROUND
82648
LICENSED PROFESSIONAL ENGINEER

J. S. Ground Engineering, LLC

SHEET NO. C2

5-19-22

EX-1 ₁₀₀						
RAINFALL DURATION T _i	RAINFALL INTENSITY i ₁₀₀	CA (3.304* 0.6)	PEAK RUNOFF RATE Q	STORM RUNOFF VOLUME V _{in}	STORM RUNOFF VOLUME V _{out}	STORM RUNOFF VOLUME V _{req}
5	11.09	1.98	22.0	6,596	4,746	1,850
10	9.24	1.98	18.3	10,991	5,933	5,059
15	7.98	1.98	15.8	14,239	7,119	7,119
20	7.05	1.98	14.0	16,772	8,306	8,467
25	6.33	1.98	12.5	18,824	9,493	9,332
30	5.76	1.98	11.4	20,555	10,679	9,876
35	5.3	1.98	10.5	22,066	11,866	10,200
40	4.91	1.98	9.7	23,363	13,052	10,310
45	4.58	1.98	9.1	24,516	14,239	10,278
50	4.3	1.98	8.5	25,575	15,425	10,150
55	4.06	1.98	8.0	26,562	16,612	9,950
60	3.84	1.98	7.6	27,407	17,798	9,608
120	2.42	1.98	4.8	34,544	32,037	2,507
180	1.81	1.98	3.6	38,755	46,276	(7,521)
360	1.09	1.98	2.2	46,677	88,992	(42,315)
REQUIRED STORAGE VOLUME (MAX. V _{req})						10,310 CF

DETENTION POND EX-1 (100-YR)	
Q ₁₀₀ (PRE) =	96.4 CFS
Q ₁₀₀ (BYPASS) =	88.5 CFS
Q ₁₀₀ (ALLOWABLE) = Q _{PRE} - Q _{BYPASS} =	7.9 CFS
Q ₁₀₀ TO POND:	
AREA = EX-1 =	3.304 ACRES
C =	0.6
i @ T _c = 15 MIN.	7.98 IN/HR
Q ₁₀₀	15.8 CFS

OUTFALL DESIGN	
MAX. RELAEASE RATE =	7.9 CFS
STORAGE REQUIRED =	10,310 CF

DETENTION POND (EX-1) ELEV. VS VOL.		
586.47	POND BOTTOM	
ELEV (FT)	VOL. (CF)	HEAD IN POND (FT)
586.47	0	0
587	141	0.53
588	1,277	1.53
589	3,754	2.53
590	9,495	3.53
590.29	11,039	3.82
(590.29-590) (X-590)		
(11,039-9,495) (10,310-9,495)		
X = 590.15 3.68		

ORIFICE FLOW EQUATION (EX-1; 100-YR)			
QTY	Q=C x A x (2 x g x h) ³		
2	Pipe Dia. 24 IN		
	0 FL		
C	0.6		
A	3.14 SF (ORIFICE OPENING)		
g	32.2 FT/SEC ²		
H	3.68 FT (FL TO WSEL HT.)		
h	2.68 FT (CL TO WSEL HT.)		
49.50	Q	24.75	CFS

WEIR FLOW EQUATION (EX-1; 100-YR)			
Q=c x L x H ^{3/2}			
L=L'-(0.1 x N x H)			
c	3.2	SHARP CRESTED WEIR (2.6 EARTHEN)	
H	0.66	HEAD (FT)	
L'	20.00	WEIR LENGTH (FT)	
N	2	NUMBER OF END CONTRACTIONS	
L	19.868	EFFECTIVE LENGTH	
Q	34.09	CFS	
Q _{TOTAL}	83.59 CFS (ORIFICE + WEIR)		

EX-1 ₅₀						
RAINFALL DURATION T _i	RAINFALL INTENSITY i ₅₀	CA (3.304* 0.6)	PEAK RUNOFF RATE Q	STORM RUNOFF VOLUME V _{in}	STORM RUNOFF VOLUME V _{out}	STORM RUNOFF VOLUME V _{req}
5	10.18	1.98	20.2	6,055	4,282	1,772
10	8.4	1.98	16.7	9,992	5,353	4,639
15	7.2	1.98	14.3	12,847	6,424	6,424
20	6.33	1.98	12.5	15,060	7,494	7,565
25	5.67	1.98	11.2	16,862	8,565	8,297
30	5.15	1.98	10.2	18,378	9,635	8,743
35	4.72	1.98	9.4	19,651	10,706	8,945
40	4.37	1.98	8.7	20,793	11,776	9,017
45	4.07	1.98	8.1	21,786	12,847	8,939
50	3.82	1.98	7.6	22,720	13,918	8,803
55	3.6	1.98	7.1	23,553	14,988	8,565
60	3.4	1.98	6.7	24,267	16,059	8,208
120	2.13	1.98	4.2	30,405	28,906	1,499
180	1.59	1.98	3.2	34,045	41,753	(7,708)
360	0.95	1.98	1.9	40,682	80,294	(39,612)
REQUIRED STORAGE VOLUME (MAX. V _{req})						9,017 CF

DETENTION POND EX-1 (50-YR)	
Q ₅₀ (PRE) =	87.0 CFS
Q ₅₀ (BYPASS) =	79.8 CFS
Q ₅₀ (ALLOWABLE) = Q _{PRE} - Q _{BYPASS} =	7.1 CFS
Q ₅₀ TO POND:	
AREA = EX-1 =	3.304 ACRES
C =	0.6
i @ T _c = 15 MIN.	7.2 IN/HR
Q ₅₀	14.3 CFS

OUTFALL DESIGN	
MAX. RELAEASE RATE =	7.1 CFS
STORAGE REQUIRED =	9,017 CF

DETENTION POND (EX-1) ELEV. VS VOL.		
586.47	POND BOTTOM	
ELEV (FT)	VOL. (CF)	HEAD IN POND (FT)
586.47	0	0
587	141	0.53
588	1,277	1.53
589	3,754	2.53
590	9,495	3.53
590.29	11,039	3.82
(590-589) (X-589)		
(9,495-3,754) (9,017-3,754)		
X = 589.92 3.45		

ORIFICE FLOW EQUATION (EX-1; 50-YR)			
QTY	Q=C x A x (2 x g x h) ³		
2	Pipe Dia. 24 IN		
	0 FL		
C	0.6		
A	3.14 SF (ORIFICE OPENING)		
g	32.2 FT/SEC ²		
H	3.45 FT (FL TO WSEL HT.)		
h	2.45 FT (CL TO WSEL HT.)		
47.33	Q	23.67	CFS

WEIR FLOW EQUATION (EX-1; 50-YR)			
Q=c x L x H ^{3/2}			
L=L'-(0.1 x N x H)			
c	3.2	SHARP CRESTED WEIR (2.6 EARTHEN)	
H	0.43	HEAD (FT)	
L'	20.00	WEIR LENGTH (FT)	
N	2	NUMBER OF END CONTRACTIONS	
L	19.914	EFFECTIVE LENGTH	
Q	17.97	CFS	
Q _{TOTAL}	65.30 CFS (ORIFICE + WEIR)		

EX-1 ₂₅						
RAINFALL DURATION T _i	RAINFALL INTENSITY i ₂₅	CA (3.304* 0.6)	PEAK RUNOFF RATE Q	STORM RUNOFF VOLUME V _{in}	STORM RUNOFF VOLUME V _{out}	STORM RUNOFF VOLUME V _{req}
5	9.17	1.98	18.2	5,454	3,842	1,612
10	7.55	1.98	15.0	8,981	4,803	4,178
15	6.46	1.98	12.8	11,527	5,763	5,763
20	5.67	1.98	11.2	13,489	6,724	6,765
25	5.07	1.98	10.1	15,077	7,684	7,393
30	4.6	1.98	9.1	16,416	8,645	7,771
35	4.21	1.98	8.3	17,528	9,606	7,922
40	3.89	1.98	7.7	18,509	10,566	7,943
45	3.62	1.98	7.2	19,378	11,527	7,851
50	3.39	1.98	6.7	20,163	12,487	7,675
55	3.19	1.98	6.3	20,870	13,448	7,423
60	3.02	1.98	6.0	21,554	14,408	7,146
120	1.88	1.98	3.7	26,836	25,935	901
180	1.4	1.98	2.8	29,976	37,461	(7,485)
360	0.83	1.98	1.6	35,543	72,041	(36,498)
REQUIRED STORAGE VOLUME (MAX. V _{req})						7,943 CF

DETENTION POND EX-1 (25-YR)	
Q ₂₅ (PRE) =	78.0 CFS
Q ₂₅ (BYPASS) =	71.6 CFS
Q ₂₅ (ALLOWABLE) = Q _{PRE} - Q _{BYPASS} =	6.4 CFS
Q ₂₅ TO POND:	
AREA = EX-1 =	3.304 ACRES
C =	0.6
i @ T _c = 15 MIN.	6.46 IN/HR
Q ₂₅	12.8 CFS

OUTFALL DESIGN	
MAX. RELAEASE RATE =	6.4 CFS
STORAGE REQUIRED =	7,943 CF

DETENTION POND (EX-1) ELEV. VS VOL.		
586.47	POND BOTTOM	
ELEV (FT)	VOL. (CF)	HEAD IN POND (FT)
586.47	0	0
587	141	0.53
588	1,277	1.53
589	3,754	2.53
590	9,495	3.53
590.29	11,039	3.82
(590-589) (X-589)		
(9,495-3,754) (7,943-3,754)		
X = 589.73 3.26		

ORIFICE FLOW EQUATION (EX-1; 25-YR)			
QTY	Q=C x A x (2 x g x h) ³		
2	Pipe Dia. 24 IN		
	0 FL		
C	0.6		
A	3.14 SF (ORIFICE OPENING)		
g	32.2 FT/SEC ²		
H	3.26 FT (FL TO WSEL HT.)		
h	2.26 FT (CL TO WSEL HT.)		
45.46	Q	22.73	CFS

WEIR FLOW EQUATION (EX-1; 25-YR)			
Q=c x L x H ^{3/2}			
L=L'-(0.1 x N x H)			
c	3.2	SHARP CRESTED WEIR (2.6 EARTHEN)	
H	0.24	HEAD (FT)	
L'	20.00	WEIR LENGTH (FT)	
N	2	NUMBER OF END CONTRACTIONS	
L	19.952	EFFECTIVE LENGTH	
Q	7.51	CFS	
Q _{TOTAL}	52.96 CFS (ORIFICE + WEIR)		

EX-1 ₁₀						
RAINFALL DURATION T _i	RAINFALL INTENSITY i ₁₀	CA (3.304* 0.6)	PEAK RUNOFF RATE Q	STORM RUNOFF VOLUME V _{in}	STORM RUNOFF VOLUME V _{out}	STORM RUNOFF VOLUME V _{req}
5	8	1.98	15.9	4,758	3,289	1,469
10	6.51	1.98	12.9	7,744	4,111	3,633
15	5.53	1.98	11.0	9,867	4,934	4,934
20	4.83	1.98	9.6	11,491	5,756	5,735
25	4.3	1.98	8.5	12,788	6,578	6,209
30	3.88	1.98	7.7	13,846	7,400	6,446
35	3.55	1.98	7.0	14,780	8,223	6,557
40	3.27	1.98	6.5	15,559	9,045	6,514
45	3.04	1.98	6.0	16,273	9,867	6,406
50	2.84	1.98	5.6	16,891	10,689	6,202
55	2.67	1.98	5.3	17,468	11,512	5,957
60	2.52	1.98	5.0	17,986	12,334	5,652
120	1.55	1.98	3.1	22,125	22,201	(76)
180	1.15	1.98	2.3	24,623	32,068	(7,445)
360	0.68	1.98	1.3	29,120	61,670	(32,550)
REQUIRED STORAGE VOLUME (MAX. V _{req})						6,557 CF

DETENTION POND EX-1 (10-YR)	
Q ₁₀ (PRE) =	66.8 CFS
Q ₁₀ (BYPASS) =	61.3 CFS
Q ₁₀ (ALLOWABLE) = Q _{PRE} - Q _{BYPASS} =	5.5 CFS
Q ₁₀ TO POND:	
AREA = EX-1 =	3.304 ACRES
C =	0.6
i @ T _c = 15 MIN.	5.53 IN/HR
Q ₁₀	11.0 CFS

OUTFALL DESIGN	
MAX. RELAEASE RATE =	5.5 CFS
STORAGE REQUIRED =	6,557 CF

DETENTION POND (EX-1) ELEV. VS VOL.		
586.47	POND BOTTOM	
ELEV (FT)	VOL. (CF)	HEAD IN POND (FT)
586.47	0	0
587	141	0.53
588	1,277	1.53
589	3,754	2.53
590	9,495	3.53
590.29	11,039	3.82
(590-589) (X-589)		
(9,495-3,754) (6,557-3,754)		
X = 589.49 3.02		

ORIFICE FLOW EQUATION (EX-1; 10-YR)			
QTY	Q=C x A x (2 x g x h) ³		
2	Pipe Dia. 24 IN		
	0 FL		
C	0.6		
A	3.14 SF (ORIFICE OPENING)		
g	32.2 FT/SEC ²		
H	3.02 FT (FL TO WSEL HT.)		
h	2.02 FT (CL TO WSEL HT.)		
42.98	Q	21.49	CFS

ORIFICE FLOW EQUATION (EX-1; 10-YR)			
QTY	Q=C x A x (2 x g x h) ³		
0	Pipe Dia. 15 IN		
	2 FL		
C	0.6		
A	1.23 SF (ORIFICE OPENING)		
g	32.2 FT/SEC ²		
H	1.02 FT (FL TO WSEL HT.)		
h	0.40 FT (CL TO WSEL HT.)		
0.00	Q	3.71	CFS
Q _{TOTAL}	42.98 CFS (2'-24" ORIFICE, 1'-12" ORIFICE)		

EX-1 ₅						
RAINFALL DURATION T _i	RAINFALL INTENSITY i ₅	CA (3.304* 0.6)	PEAK RUNOFF RATE Q	STORM RUNOFF VOLUME V _{in}	STORM RUNOFF VOLUME V _{out}	STORM RUNOFF VOLUME V _{req}
5	7.08	1.98	14.0	4,211	2,891	1,320
10	5.74	1.98	11.4	6,828	3,613	3,215
15	4.86	1.98	9.6	8,672	4,336	4,336
20	4.23	1.98	8.4	10,063	5,059	5,005
25	3.76	1.98	7.5	11,182	5,781	5,400
30	3.39	1.98	6.7	12,098	6,504	5,594
35	3.1	1.98	6.1	12,906	7,226	5,680
40	2.85	1.98	5.7	13,561	7,949	5,612
45	2.65	1.98	5.3	14,185	8,672	5,514
50	2.47	1.98	4.9	14,691	9,394	5,296
55	2.32	1.98	4.6	15,178	10,117	5,061
60	2.19	1.98	4.3	15,631	10,840	4,791
120	1.34	1.98	2.7	19,128	19,511	(384)
180	0.98	1.98	1.9	20,983	28,183	(7,200)
360	0.057	1.98	0.1	24,441	54,198	(51,757)
REQUIRED STORAGE VOLUME (MAX. V _{req})						5,680 CF

DETENTION POND EX-1 (5-YR)	
Q ₅ (PRE) =	58.7 CFS
Q ₅ (BYPASS) =	53.9 CFS
Q ₅ (ALLOWABLE) = Q _{PRE} - Q _{BYPASS} =	4.8 CFS
Q ₅ TO POND:	
AREA = EX-1 =	3.304 ACRES
C =	0.6
i @ T _c = 15 MIN.	4.86 IN/HR
Q ₅	9.6 CFS

OUTFALL DESIGN	
MAX. RELAEASE RATE =	4.8 CFS
STORAGE REQUIRED =	5,680 CF

DETENTION POND (EX-1) ELEV. VS VOL.		
586.47	POND BOTTOM	
ELEV (FT)	VOL. (CF)	HEAD IN POND (FT)
586.47	0	0
587	141	0.53
588	1,277	1.53

EX-2 ₁₀₀						
RAINFALL DURATION T _i	RAINFALL INTENSITY i ₁₀₀	CA (1.388* 0.6)	PEAK RUNOFF RATE Q	STORM RUNOFF VOLUME V _{in}	STORM RUNOFF VOLUME V _{out}	STORM RUNOFF VOLUME V _{req}
5	11.09	0.83	9.2	2,770	1,993	777
10	9.24	0.83	7.7	4,616	2,492	2,125
15	7.98	0.83	6.6	5,980	2,990	2,990
20	7.05	0.83	5.9	7,044	3,488	3,556
25	6.33	0.83	5.3	7,906	3,987	3,919
30	5.76	0.83	4.8	8,633	4,485	4,148
35	5.3	0.83	4.4	9,267	4,983	4,284
40	4.91	0.83	4.1	9,812	5,482	4,330
45	4.58	0.83	3.8	10,297	5,980	4,317
50	4.3	0.83	3.6	10,741	6,478	4,263
55	4.06	0.83	3.4	11,156	6,977	4,179
60	3.84	0.83	3.2	11,511	7,475	4,035
120	2.42	0.83	2.0	14,508	13,455	1,053
180	1.81	0.83	1.5	16,277	19,435	(3,159)
360	1.09	0.83	0.9	19,604	37,376	(17,772)
REQUIRED STORAGE VOLUME (MAX. V _{req})						4,330 CF

DETENTION POND EX-2 (100-YR)	
Q ₁₀₀ (PRE) =	5.1 CFS
Q ₁₀₀ (BYPASS) =	1.8 CFS
Q ₁₀₀ (ALLOWABLE) = Q _{PRE} - Q _{BYPASS} =	3.3 CFS
Q ₁₀₀ TO POND:	
AREA = EX-1 =	1.388 ACRES
C =	0.60
i @ T _c = 15 MIN.	7.98 IN/HR
Q ₁₀₀	6.6 CFS

OUTFALL DESIGN	
MAX. RELAEASE RATE =	3.3 CFS
STORAGE REQUIRED =	4,330 CF

DETENTION POND (EX-2) ELEV. VS VOL.		
589.39	POND BOTTOM	
ELEV (FT)	VOL. (CF)	HEAD IN POND (FT)
589.39	0	0
590	624	0.61
591	3,360	1.61
591.5	5,345	2.11
(591.50-591)	(X-591)	
(5,345-3,360)	(4,330-3,360)	
X = 591.24	1.85	

ORIFICE FLOW EQUATION (EX-2; 100-YR)

Q=C x A x (2 x g x h) ⁵	
Pipe Dia.	8 IN
	0 FL
C	0.6
A	0.35 SF (ORIFICE OPENING)
g	32.2 FT/SEC ²
H	1.85 FT (FL TO WSEL HT.)
h	1.52 FT (CL TO WSEL HT.)
Q	2.07 CFS

WEIR FLOW EQUATION (EX-2; 100-YR)

Q=c x L x H ^{3/2}	
L=L'-(0.1 x N x H)	
c	3.2 SHARP CRESTED WEIR (2.6 EARTHEN)
H	0.13 HEAD (FT)
L'	8.00 WEIR LENGTH (FT)
N	2 NUMBER OF END CONTRACTIONS
L	7.974 EFFECTIVE LENGTH
Q	1.20 CFS

Q_{TOTAL} 3.26 CFS (ORIFICE + WEIR)

EX-2 ₅₀						
RAINFALL DURATION T _i	RAINFALL INTENSITY i ₅₀	CA (1.388* 0.6)	PEAK RUNOFF RATE Q	STORM RUNOFF VOLUME V _{in}	STORM RUNOFF VOLUME V _{out}	STORM RUNOFF VOLUME V _{req}
5	10.18	0.83	8.5	2,543	1,799	744
10	8.4	0.83	7.0	4,197	2,248	1,948
15	7.2	0.83	6.0	5,396	2,698	2,698
20	6.33	0.83	5.3	6,325	3,147	3,177
25	5.67	0.83	4.7	7,082	3,597	3,485
30	5.15	0.83	4.3	7,719	4,047	3,672
35	4.72	0.83	3.9	8,253	4,496	3,757
40	4.37	0.83	3.6	8,733	4,946	3,787
45	4.07	0.83	3.4	9,150	5,396	3,754
50	3.82	0.83	3.2	9,542	5,845	3,697
55	3.6	0.83	3.0	9,892	6,295	3,597
60	3.4	0.83	2.8	10,192	6,745	3,447
120	2.13	0.83	1.8	12,770	12,140	629
180	1.59	0.83	1.3	14,298	17,536	(3,237)
360	0.95	0.83	0.8	17,086	33,723	(16,637)
REQUIRED STORAGE VOLUME (MAX. V _{req})						3,787 CF

DETENTION POND EX-2 (50-YR)	
Q ₅₀ (PRE) =	4.6 CFS
Q ₅₀ (BYPASS) =	1.6 CFS
Q ₅₀ (ALLOWABLE) = Q _{PRE} - Q _{BYPASS} =	3.0 CFS
Q ₅₀ TO POND:	
AREA = EX-1 =	1.388 ACRES
C =	0.60
i @ T _c = 15 MIN.	7.2 IN/HR
Q ₅₀	6.0 CFS

OUTFALL DESIGN	
MAX. RELAEASE RATE =	3.0 CFS
STORAGE REQUIRED =	3,787 CF

DETENTION POND (EX-2) ELEV. VS VOL.		
589.39	POND BOTTOM	
ELEV (FT)	VOL. (CF)	HEAD IN POND (FT)
589.39	0	0
590	624	0.61
591	3,360	1.61
591.5	5,345	2.11
(591.50-591)	(X-591)	
(5,345-3,360)	(3,360-3,360)	
X = 591.11	1.72	

ORIFICE FLOW EQUATION (EX-2; 50-YR)

Q=C x A x (2 x g x h) ⁵	
Pipe Dia.	8 IN
	0 FL
C	0.6
A	0.35 SF (ORIFICE OPENING)
g	32.2 FT/SEC ²
H	1.72 FT (FL TO WSEL HT.)
h	1.39 FT (CL TO WSEL HT.)
Q	1.98 CFS

EX-2 ₂₅						
RAINFALL DURATION T _i	RAINFALL INTENSITY i ₂₅	CA (1.388* 0.6)	PEAK RUNOFF RATE Q	STORM RUNOFF VOLUME V _{in}	STORM RUNOFF VOLUME V _{out}	STORM RUNOFF VOLUME V _{req}
5	9.17	0.83	7.6	2,291	1,614	677
10	7.55	0.83	6.3	3,772	2,017	1,755
15	6.46	0.83	5.4	4,841	2,421	2,421
20	5.67	0.83	4.7	5,665	2,824	2,841
25	5.07	0.83	4.2	6,332	3,227	3,105
30	4.6	0.83	3.8	6,894	3,631	3,264
35	4.21	0.83	3.5	7,362	4,034	3,327
40	3.89	0.83	3.2	7,774	4,438	3,336
45	3.62	0.83	3.0	8,138	4,841	3,297
50	3.39	0.83	2.8	8,468	5,244	3,224
55	3.19	0.83	2.7	8,765	5,648	3,117
60	3.02	0.83	2.5	9,053	6,051	3,001
120	1.88	0.83	1.6	11,271	10,892	378
180	1.4	0.83	1.2	12,590	15,733	(3,144)
360	0.83	0.83	0.7	14,928	30,257	(15,329)
REQUIRED STORAGE VOLUME (MAX. V _{req})						3,336 CF

DETENTION POND EX-2 (25-YR)	
Q ₂₅ (PRE) =	4.1 CFS
Q ₂₅ (BYPASS) =	1.4 CFS
Q ₂₅ (ALLOWABLE) = Q _{PRE} - Q _{BYPASS} =	2.7 CFS
Q ₂₅ TO POND:	
AREA = EX-1 =	1.388 ACRES
C =	0.60
i @ T _c = 15 MIN.	6.46 IN/HR
Q ₂₅	5.4 CFS

OUTFALL DESIGN	
MAX. RELAEASE RATE =	2.7 CFS
STORAGE REQUIRED =	3,336 CF

DETENTION POND (EX-2) ELEV. VS VOL.		
589.39	POND BOTTOM	
ELEV (FT)	VOL. (CF)	HEAD IN POND (FT)
589.39	0	0
590	624	0.61
591	3,360	1.61
591.5	5,345	2.11
(591-590)	(X-590)	
(3,360-624)	(3,336-624)	
X = 590.99	1.60	

ORIFICE FLOW EQUATION (EX-2; 25-YR)

Q=C x A x (2 x g x h) ⁵	
Pipe Dia.	8 IN
	0 FL
C	0.6
A	0.35 SF (ORIFICE OPENING)
g	32.2 FT/SEC ²
H	1.6 FT (FL TO WSEL HT.)
h	1.27 FT (CL TO WSEL HT.)
Q	1.89 CFS

EX-2 ₁₀						
RAINFALL DURATION T _i	RAINFALL INTENSITY i ₁₀	CA (1.388* 0.6)	PEAK RUNOFF RATE Q	STORM RUNOFF VOLUME V _{in}	STORM RUNOFF VOLUME V _{out}	STORM RUNOFF VOLUME V _{req}
5	8	0.83	6.7	1,998	1,381	617
10	6.51	0.83	5.4	3,252	1,727	1,526
15	5.53	0.83	4.6	4,144	2,072	2,072
20	4.83	0.83	4.0	4,826	2,417	2,409
25	4.3	0.83	3.6	5,371	2,763	2,608
30	3.88	0.83	3.2	5,815	3,108	2,707
35	3.55	0.83	3.0	6,207	3,453	2,754
40	3.27	0.83	2.7	6,535	3,799	2,736
45	3.04	0.83	2.5	6,834	4,144	2,690
50	2.84	0.83	2.4	7,094	4,489	2,605
55	2.67	0.83	2.2	7,337	4,835	2,502
60	2.52	0.83	2.1	7,554	5,180	2,374
120	1.55	0.83	1.3	9,292	9,324	(32)
180	1.15	0.83	1.0	10,342	13,468	(3,127)
360	0.68	0.83	0.6	12,230	25,901	(13,671)
REQUIRED STORAGE VOLUME (MAX. V _{req})						2,754 CF

DETENTION POND EX-2 (10-YR)	
Q ₁₀ (PRE) =	3.5 CFS
Q ₁₀ (BYPASS) =	1.2 CFS
Q ₁₀ (ALLOWABLE) = Q _{PRE} - Q _{BYPASS} =	2.3 CFS
Q ₁₀ TO POND:	
AREA = EX-1 =	1.388 ACRES
C =	0.60
i @ T _c = 15 MIN.	5.53 IN/HR
Q ₁₀	4.6 CFS

OUTFALL DESIGN	
MAX. RELAEASE RATE =	2.3 CFS
STORAGE REQUIRED =	2,754 CF

DETENTION POND (EX-2) ELEV. VS VOL.		
589.39	POND BOTTOM	
ELEV (FT)	VOL. (CF)	HEAD IN POND (FT)
589.39	0	0
590	624	0.61
591	3,360	1.61
591.5	5,345	2.11
(591-590)	(X-590)	
(3,360-624)	(2,754-624)	
X = 590.78	1.39	

ORIFICE FLOW EQUATION (EX-2; 10-YR)

Q=C x A x (2 x g x h) ⁵	
Pipe Dia.	8 IN
	0 FL
C	0.6
A	0.35 SF (ORIFICE OPENING)
g	32.2 FT/SEC ²
H	1.39 FT (FL TO WSEL HT.)
h	1.06 FT (CL TO WSEL HT.)
Q	1.73 CFS

EX-2 ₅						
RAINFALL DURATION T _i	RAINFALL INTENSITY i ₅	CA (1.388* 0.6)	PEAK RUNOFF RATE Q	STORM RUNOFF VOLUME V _{in}	STORM RUNOFF VOLUME V _{out}	STORM RUNOFF VOLUME V _{req}
5	7.08	0.83	5.9	1,769	1,214	555
10	5.74	0.83	4.8	2,868	1,518	1,350
15	4.86	0.83	4.0	3,642	1,821	1,821
20	4.23	0.83	3.5	4,227	2,125	2,102
25	3.76	0.83	3.1	4,696	2,428	2,268
30	3.39	0.83	2.8	5,081	2,732	2,349
35	3.1	0.83	2.6	5,421	3,035	2,386
40	2.85	0.83	2.4	5,695	3,339	2,357
45	2.65	0.83	2.2	5,958	3,642	2,316
50	2.47	0.83	2.1	6,170	3,946	2,224
55	2.32	0.83	1.9	6,375	4,249	2,126
60	2.19	0.83	1.8	6,565	4,553	2,012
120	1.34	0.83	1.1	8,033	8,195	(161)
180	0.98	0.83	0.8	8,813	11,837	(3,024)
360	0.057	0.83	0.0	1,025	22,763	(21,738)
REQUIRED STORAGE VOLUME (MAX. V _{req})						2,386 CF

DETENTION POND EX-2 (5-YR)	
Q ₅ (PRE) =	3.1 CFS
Q ₅ (BYPASS) =	1.1 CFS
Q ₅ (ALLOWABLE) = Q _{PRE} - Q _{BYPASS} =	2.0 CFS
Q ₅ TO POND:	
AREA = EX-1 =	1.388 ACRES
C =	0.60
i @ T _c = 15 MIN.	4.86 IN/HR
Q ₅	4.0 CFS

OUTFALL DESIGN	
MAX. RELAEASE RATE =	2.0 CFS
STORAGE REQUIRED =	2,386 CF

DETENTION POND (EX-2) ELEV. VS VOL.		
589.39	POND BOTTOM	
ELEV (FT)	VOL. (CF)	HEAD IN POND (FT)
589.39	0	0
590	624	0.61
591	3,360	1.61
591.5	5,345	2.11
(591-590) (3,360-624)		(X-590) (2,386-624)
X = 590.64		1.25

EX-3 ₁₀₀						
RAINFALL DURATION T _i	RAINFALL INTENSITY i ₁₀₀	CA (1.652* 0.6)	PEAK RUNOFF RATE Q	STORM RUNOFF VOLUME V _{in}	STORM RUNOFF VOLUME V _{out}	STORM RUNOFF VOLUME V _{req}
5	11.09	0.99	11.0	3,298	2,373	925
10	9.24	0.99	9.2	5,495	2,966	2,529
15	7.98	0.99	7.9	7,119	3,559	3,559
20	7.05	0.99	7.0	8,385	4,153	4,233
25	6.33	0.99	6.3	9,411	4,746	4,665
30	5.76	0.99	5.7	10,276	5,339	4,938
35	5.3	0.99	5.3	11,032	5,932	5,100
40	4.91	0.99	4.9	11,680	6,525	5,155
45	4.58	0.99	4.5	12,257	7,119	5,138
50	4.3	0.99	4.3	12,786	7,712	5,074
55	4.06	0.99	4.0	13,280	8,305	4,975
60	3.84	0.99	3.8	13,702	8,898	4,804
120	2.42	0.99	2.4	17,270	16,017	1,253
180	1.81	0.99	1.8	19,375	23,135	(3,760)
360	1.09	0.99	1.1	23,336	44,491	(21,155)
REQUIRED STORAGE VOLUME (MAX. V _{req})						5,155 CF

DETENTION POND EX-3 (100-YR)	
Q ₁₀₀ (PRE) =	4.0 CFS
Q ₁₀₀ (BYPASS) =	0.0 CFS
Q ₁₀₀ (ALLOWABLE) = Q _{PRE} - Q _{BYPASS} =	4.0 CFS
Q ₁₀₀ TO POND:	
AREA = EX-1 =	1.652 ACRES
C =	0.60
i @ T _c = 15 MIN.	7.98 IN/HR
Q ₁₀₀	7.9 CFS

OUTFALL DESIGN	
MAX. RELAEASE RATE =	4.0 CFS
STORAGE REQUIRED =	5,155 CF

DETENTION POND (EX-3) ELEV. VS VOL.		
590.37	POND BOTTOM	
ELEV (FT)	VOL. (CF)	HEAD IN POND (FT)
590.37	0	0
591	427	0.63
592	5,800	1.63

(592-591)	(X-591)
(5,800-427)	(5,155-427)
X = 591.88	1.51

ORIFICE FLOW EQUATION (EX-3; 100-YR)

Q=C x A x (2 x g x h) ⁵		
Pipe Dia.	10 IN	
	0 FL	
C	0.6	
A	0.55	SF (ORIFICE OPENING)
g	32.2	FT/SEC ²
H	1.51	FT (FL TO WSEL HT.)
h	1.09	FT (CL TO WSEL HT.)
Q	2.74	CFS

WEIR FLOW EQUATION (EX-3; 100-YR)

Q=c x L x H ^{3/2}		
L=L'-(0.1 x N x H)		
c	3.2	SHARP CRESTED WEIR (2.6 EARTHEN)
H	0.12	HEAD (FT)
L'	9.00	WEIR LENGTH (FT)
N	2	NUMBER OF END CONTRACTIONS
L	8.98	EFFECTIVE LENGTH
Q	1.19	CFS

Q_{TOTAL} 3.94 CFS (ORIFICE + WEIR)

EX-3 ₅₀						
RAINFALL DURATION T _i	RAINFALL INTENSITY i ₅₀	CA (1.652* 0.6)	PEAK RUNOFF RATE Q	STORM RUNOFF VOLUME V _{in}	STORM RUNOFF VOLUME V _{out}	STORM RUNOFF VOLUME V _{req}
5	10.18	0.99	10.1	3,027	2,141	886
10	8.4	0.99	8.3	4,996	2,676	2,319
15	7.2	0.99	7.1	6,423	3,211	3,211
20	6.33	0.99	6.3	7,529	3,747	3,782
25	5.67	0.99	5.6	8,430	4,282	4,148
30	5.15	0.99	5.1	9,188	4,817	4,371
35	4.72	0.99	4.7	9,824	5,352	4,472
40	4.37	0.99	4.3	10,395	5,888	4,508
45	4.07	0.99	4.0	10,892	6,423	4,469
50	3.82	0.99	3.8	11,359	6,958	4,401
55	3.6	0.99	3.6	11,775	7,493	4,282
60	3.4	0.99	3.4	12,132	8,028	4,103
120	2.13	0.99	2.1	15,201	14,451	749
180	1.59	0.99	1.6	17,020	20,874	(3,854)
360	0.95	0.99	0.9	20,339	40,142	(19,804)
REQUIRED STORAGE VOLUME (MAX. V _{req})						4,508 CF

DETENTION POND EX-3 (50-YR)	
Q ₅₀ (PRE) =	3.6 CFS
Q ₅₀ (BYPASS) =	0.0 CFS
Q ₅₀ (ALLOWABLE) = Q _{PRE} - Q _{BYPASS} =	3.6 CFS
Q ₅₀ TO POND:	
AREA = EX-1 =	1.652 ACRES
C =	0.60
i @ T _c = 15 MIN.	7.2 IN/HR
Q ₅₀	7.1 CFS

OUTFALL DESIGN	
MAX. RELAEASE RATE =	3.6 CFS
STORAGE REQUIRED =	4,508 CF

DETENTION POND (EX-3) ELEV. VS VOL.		
590.37	POND BOTTOM	
ELEV (FT)	VOL. (CF)	HEAD IN POND (FT)
590.37	0	0
591	427	0.63
592	5,800	1.63

(592-591)	(X-591)
(5,800-427)	(4,508-427)
X = 591.76	1.39

ORIFICE FLOW EQUATION (EX-3; 50-YR)

Q=C x A x (2 x g x h) ⁵		
Pipe Dia.	10 IN	
	0 FL	
C	0.6	
A	0.55	SF (ORIFICE OPENING)
g	32.2	FT/SEC ²
H	1.39	FT (FL TO WSEL HT.)
h	0.97	FT (CL TO WSEL HT.)
Q	2.59	CFS

EX-3 ₂₅						
RAINFALL DURATION T _i	RAINFALL INTENSITY i ₂₅	CA (1.652* 0.6)	PEAK RUNOFF RATE Q	STORM RUNOFF VOLUME V _{in}	STORM RUNOFF VOLUME V _{out}	STORM RUNOFF VOLUME V _{req}
5	9.17	0.99	9.1	2,727	1,921	806
10	7.55	0.99	7.5	4,490	2,401	2,089
15	6.46	0.99	6.4	5,763	2,881	2,881
20	5.67	0.99	5.6	6,744	3,362	3,382
25	5.07	0.99	5.0	7,538	3,842	3,696
30	4.6	0.99	4.6	8,207	4,322	3,885
35	4.21	0.99	4.2	8,763	4,802	3,961
40	3.89	0.99	3.9	9,254	5,282	3,971
45	3.62	0.99	3.6	9,688	5,763	3,925
50	3.39	0.99	3.4	10,080	6,243	3,837
55	3.19	0.99	3.2	10,434	6,723	3,711
60	3.02	0.99	3.0	10,776	7,203	3,573
120	1.88	0.99	1.9	13,416	12,966	450
180	1.4	0.99	1.4	14,987	18,729	(3,742)
360	0.83	0.99	0.8	17,770	36,017	(18,247)
REQUIRED STORAGE VOLUME (MAX. V _{req})						3,971 CF

DETENTION POND EX-3 (25-YR)	
Q ₂₅ (PRE) =	3.2 CFS
Q ₂₅ (BYPASS) =	0.0 CFS
Q ₂₅ (ALLOWABLE) = Q _{PRE} - Q _{BYPASS} =	3.2 CFS
Q ₂₅ TO POND:	
AREA = EX-1 =	1.652 ACRES
C =	0.60
i @ T _c = 15 MIN.	6.46 IN/HR
Q ₂₅	6.4 CFS

OUTFALL DESIGN	
MAX. RELAEASE RATE =	3.2 CFS
STORAGE REQUIRED =	3,971 CF

DETENTION POND (EX-3) ELEV. VS VOL.		
590.37	POND BOTTOM	
ELEV (FT)	VOL. (CF)	HEAD IN POND (FT)
590.37	0	0
591	427	0.63
592	5,800	1.63

(592-591)	(X-591)
(5,800-427)	(3,971-427)
X = 591.66	1.29

ORIFICE FLOW EQUATION (EX-3; 25-YR)

Q=C x A x (2 x g x h) ⁵		
Pipe Dia.	10 IN	
	0 FL	
C	0.6	
A	0.55	SF (ORIFICE OPENING)
g	32.2	FT/SEC ²
H	1.29	FT (FL TO WSEL HT.)
h	0.87	FT (CL TO WSEL HT.)
Q	2.45	CFS

EX-3 ₁₀						
RAINFALL DURATION T _i	RAINFALL INTENSITY i ₁₀	CA (1.652* 0.6)	PEAK RUNOFF RATE Q	STORM RUNOFF VOLUME V _{in}	STORM RUNOFF VOLUME V _{out}	STORM RUNOFF VOLUME V _{req}
5	8	0.99	7.9	2,379	1,644	734
10	6.51	0.99	6.5	3,872	2,055	1,816
15	5.53	0.99	5.5	4,933	2,467	2,467
20	4.83	0.99	4.8	5,745	2,878	2,867
25	4.3	0.99	4.3	6,393	3,289	3,104
30	3.88	0.99	3.8	6,922	3,700	3,223
35	3.55	0.99	3.5	7,389	4,111	3,278
40	3.27	0.99	3.2	7,779	4,522	3,257
45	3.04	0.99	3.0	8,136	4,933	3,202
50	2.84	0.99	2.8	8,445	5,344	3,101
55	2.67	0.99	2.6	8,733	5,755	2,978
60	2.52	0.99	2.5	8,992	6,166	2,826
120	1.55	0.99	1.5	11,061	11,099	(38)
180	1.15	0.99	1.1	12,310	16,032	(3,722)
360	0.68	0.99	0.7	14,558	30,832	(16,273)
REQUIRED STORAGE VOLUME (MAX. V _{req})						3,278 CF

DETENTION POND EX-3 (10-YR)	
Q ₁₀ (PRE) =	2.7 CFS
Q ₁₀ (BYPASS) =	0.0 CFS
Q ₁₀ (ALLOWABLE) = Q _{PRE} - Q _{BYPASS} =	2.7 CFS
Q ₁₀ TO POND:	
AREA = EX-1 =	1.652 ACRES
C =	0.60
i @ T _c = 15 MIN.	5.53 IN/HR
Q ₁₀	5.5 CFS

OUTFALL DESIGN	
MAX. RELAEASE RATE =	2.7 CFS
STORAGE REQUIRED =	3,278 CF

DETENTION POND (EX-3) ELEV. VS VOL.		
590.37	POND BOTTOM	
ELEV (FT)	VOL. (CF)	HEAD IN POND (FT)
590.37	0	0
591	427	0.63
592	5,800	1.63

(592-591)	(X-591)
(5,800-427)	(3,278-427)
X = 591.53	1.16

ORIFICE FLOW EQUATION (EX-3; 10-YR)

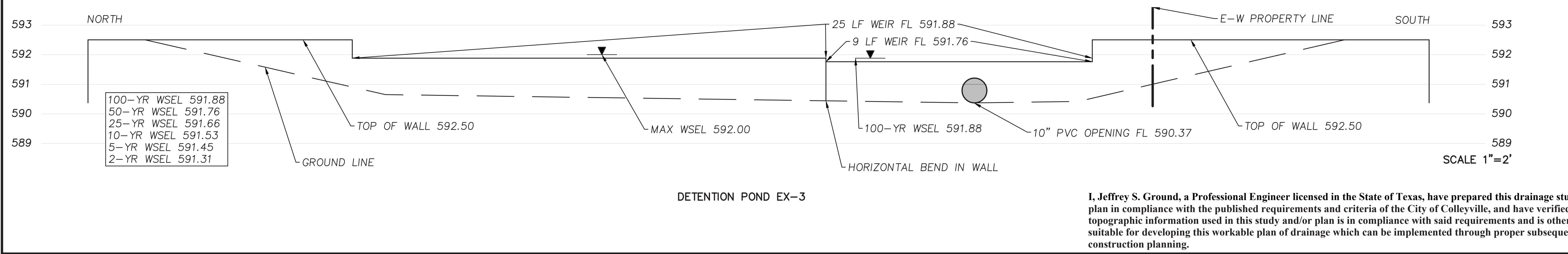
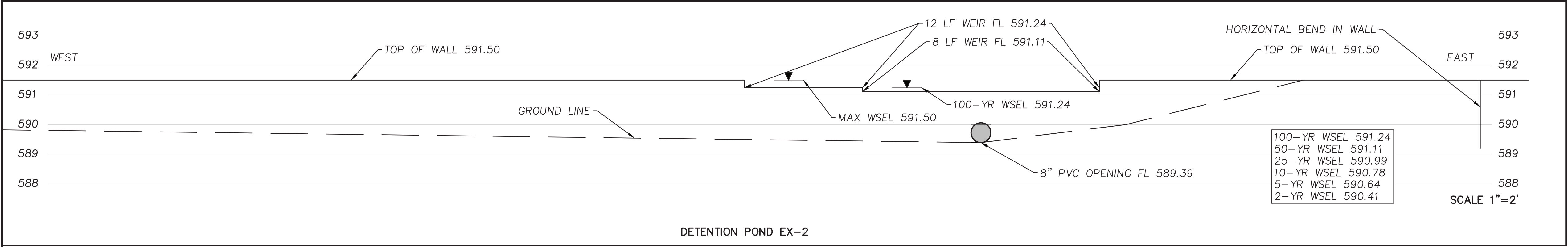
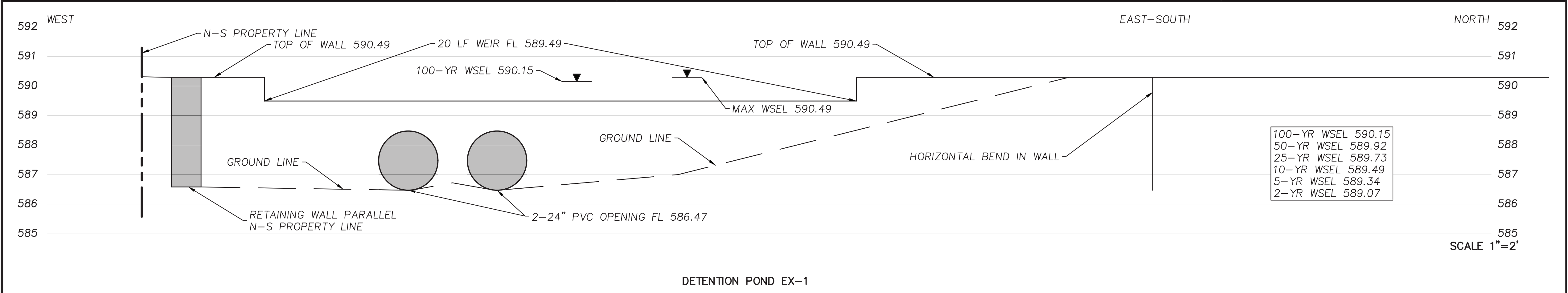
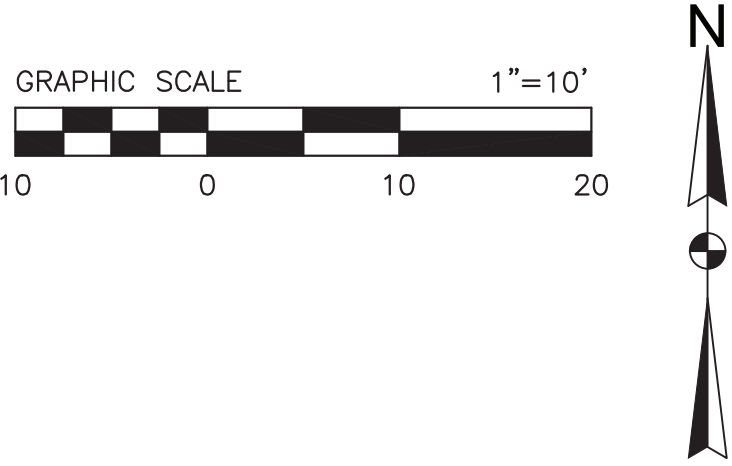
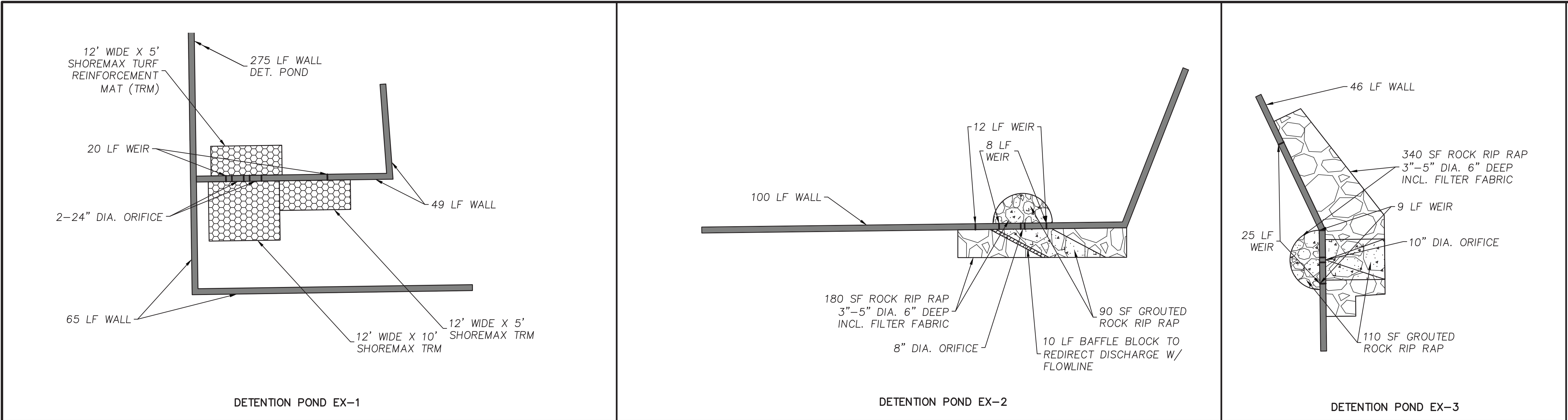
Q=C x A x (2 x g x h) ⁵		
Pipe Dia.	10 IN	
	0 FL	
C	0.6	
A	0.55	SF (ORIFICE OPENING)
g	32.2	FT/SEC ²
H	1.16	FT (FL TO WSEL HT.)
h	0.74	FT (CL TO WSEL HT.)
Q	2.26	CFS

EX-3 ₅						
RAINFALL DURATION T _i	RAINFALL INTENSITY i ₅	CA (1.652* 0.6)	PEAK RUNOFF RATE Q	STORM RUNOFF VOLUME V _{in}	STORM RUNOFF VOLUME V _{out}	STORM RUNOFF VOLUME V _{req}
5	7.08	0.99	7.0	2,105	1,445	660
10	5.74	0.99	5.7	3,414	1,806	1,607
15	4.86	0.99	4.8	4,335	2,168	2,168
20	4.23	0.99	4.2	5,031	2,529	2,502
25	3.76	0.99	3.7	5,590	2,890	2,700
30	3.39	0.99	3.4	6,048	3,252	2,797
35	3.1	0.99	3.1	6,453	3,613	2,840
40	2.85	0.99	2.8	6,780	3,974	2,806
45	2.65	0.99	2.6	7,092	4,335	2,756
50	2.47	0.99	2.4	7,345	4,697	2,648
55	2.32	0.99	2.3	7,588	5,058	2,530
60	2.19	0.99	2.2	7,814	5,419	2,395
120	1.34	0.99	1.3	9,563	9,755	(192)
180	0.98	0.99	1.0	10,491	14,090	(3,599)
360	0.057	0.99	0.1	1,220	27,096	(25,876)
REQUIRED STORAGE VOLUME (MAX. V _{req})						2,840 CF

DETENTION POND EX-3 (5-YR)	
Q ₅ (PRE) =	2.4 CFS
Q ₅ (BYPASS) =	0.0 CFS
Q ₅ (ALLOWABLE) = Q _{PRE} - Q _{BYPASS} =	2.4 CFS
Q ₅ TO POND:	
AREA = EX-1 =	1.652 ACRES
C =	0.60
i @ T _c = 15 MIN.	4.86 IN/HR
Q ₅	4.8 CFS

OUTFALL DESIGN	
MAX. RELAEASE RATE =	2.4 CFS
STORAGE REQUIRED =	2,840 CF

DETENTION POND (EX-3) ELEV. VS VOL.		
590.37	POND BOTTOM	
ELEV (FT)	VOL. (CF)	HEAD IN POND (FT)
590.37	0	0
591	427	0.63
592	5,800	1.63



I, Jeffrey S. Ground, a Professional Engineer licensed in the State of Texas, have prepared this drainage study and/or plan in compliance with the published requirements and criteria of the City of Colleyville, and have verified that the topographic information used in this study and/or plan is in compliance with said requirements and is otherwise suitable for developing this workable plan of drainage which can be implemented through proper subsequent detailed construction planning.

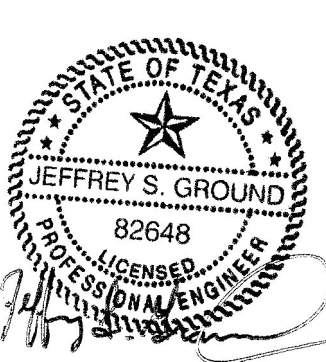
NO.	DATE	REVISIONS	APP.

SHIRLEY ALLGOOD ADDITION
LOTS 2AR-1, 2AR-2, 3, 4, 5 & 6
BLOCK 1
COLLEYVILLE, TARRANT CO., TEXAS

DETENTION POND OUTFALL STRUCTURES

J. S. Ground Engineering, LLC
4108 Dundee Court Colleyville, Texas 76034
FIRM REGISTRATION NO. F-1276

SCALE: _____ DGN. BY: JSG
DATE: May 19, 2022 DWN. BY: WJW
JSGE NO. _____ DWG. NO. _____

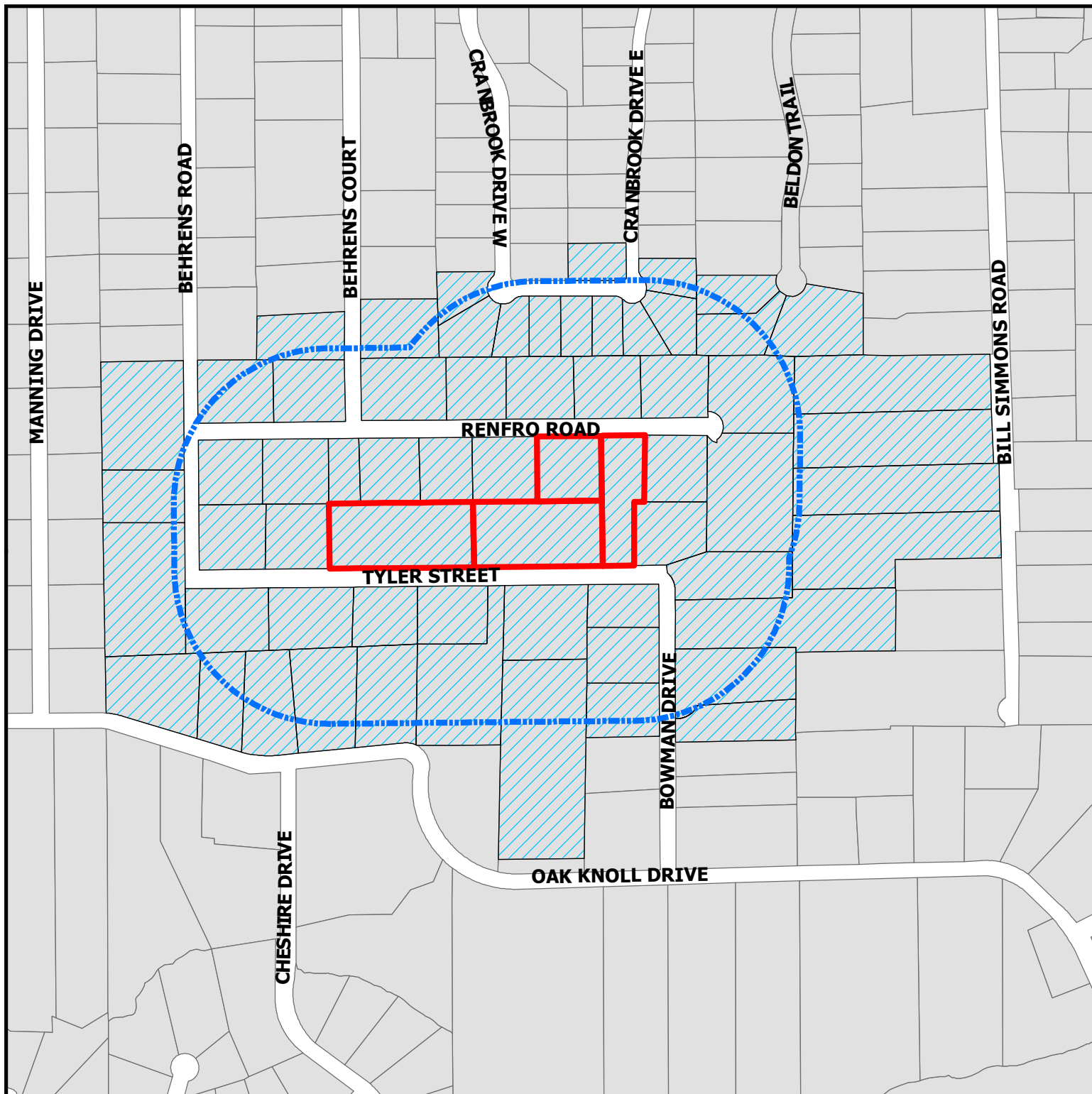


SHEET NO.

C6

5-19-22

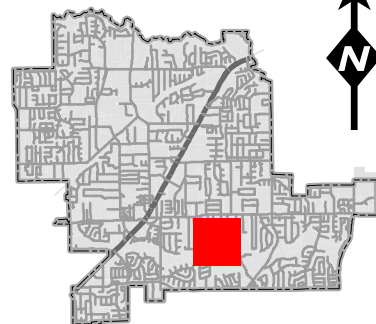
Notification Map



PC22-006
1900 Tyler Street

DISCLAIMER:
This map and information contained in it were developed exclusively for use by the City of Colleyville. Any use or reliance on this map by anyone else is at that party's risk and without liability to the City of Colleyville, its officials or employees for any discrepancies, errors, or variances which may exist.

-  Subject Property
-  500ft Buffer
-  Properties within 500ft





NOTICE OF PUBLIC HEARING

«Owner Name»

«Owner Address»

«Owner City» «Owner Zip»

The City of Colleyville has scheduled public hearings concerning the below referenced request on the following dates and location:

Planning and Zoning Commission Meeting: Monday, April 11, 2022 at 7:00 p.m.

City Council Meeting: Tuesday, May 3, 2022 at 7:30 p.m.

3rd floor of City Hall, 100 Main Street, Colleyville, Texas

Request: Consideration of a Preliminary and Final Plat for Lots 2AR-1, 2AR-2, 3, 4, 5, & 6, Block 1, Shirley Allgood Addition, being Tract 3P1, 3R1, & 6A17, and Tract 6A15, Abstract 328, Simon Cotrail Survey, and Lots 2R1 and 2R2, Block 1, Shirley Allgood Addition. The purpose of the request is to plat/replat the properties in order to allow for the construction of new single family homes. A total of 6 lots are proposed.

Zoning Case: PC22-006

Applicant: Greg Chapa

Owner: Terry Lyons

Location: 1804 & 1900 Tyler Street and 1907 & 1911 Renfro Road

Property Description: Tract 3P1, 3R1, & 6A17, and Tract 6A15, Abstract 328, Simon Cotrail Survey and Lots 2R1 & 2R2, Block 1, Shirley Allgood Addition

Present Zoning: R-40 Single Family Residential

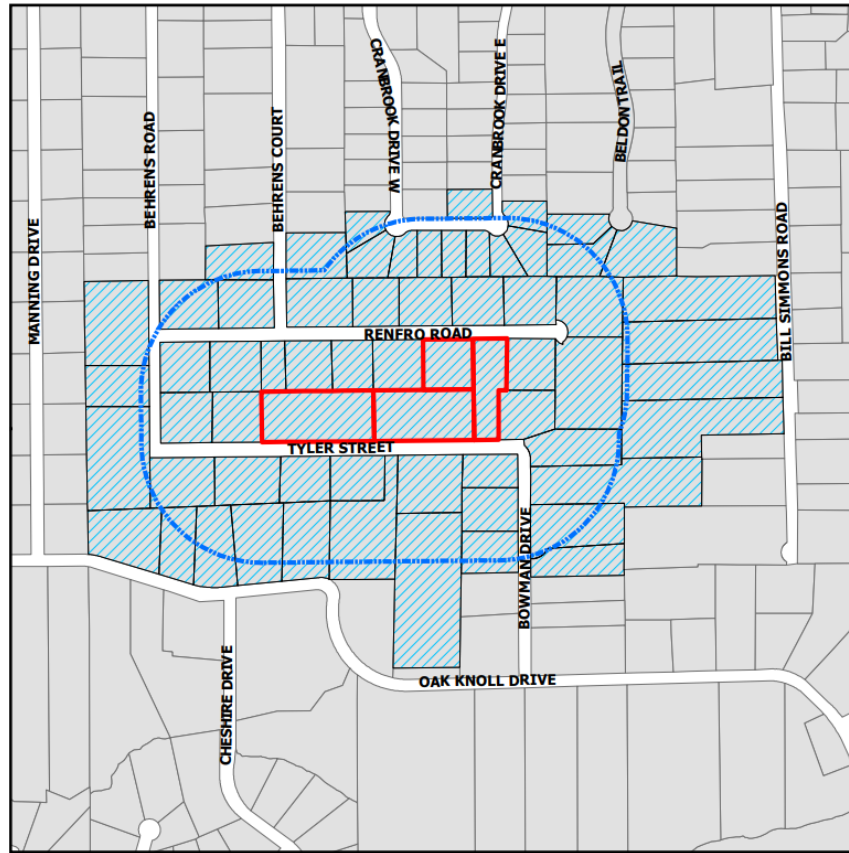
This notice has been sent to all owners of real property within 500 feet of the request as such ownership appears on the last approved tax roll and all homeowners associations within 1000 feet. Approval by the Planning and Zoning Commission serves as a recommendation to the City Council and is not a final action on the request. Denial of the proposal by the Commission is final, unless the applicant submits a written notice of appeal within 10 days from the date of action by the Commission. If appealed, the request will be placed on the next available City Council agenda as listed above. Rezoning requests, zoning amendments and conditions recommended by the Commission for approval by the City Council may be more restrictive than those described in this notice.

All interested persons are encouraged to attend the public hearing and express their opinions on the zoning change request. If you are unable to attend, but wish to have your opinions made a part of the public record, please submit written comments prior to the public hearing, to the address below:

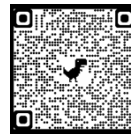
**Community Development Department
City of Colleyville
100 Main Street
Colleyville, TX 76034**

NOTICE OF PUBLIC HEARING

If the property owners of 20% or more of the land within the 200 foot notification area file a written protest prior to the public hearing, State law provides that the approval of the zoning change request shall require the approval of a super majority vote by City Council.



The application is on file for public examination in the Community Development Department at 100 Main Street, Colleyville, Texas 76034. A brief project description can be found online on the Agenda Packet and Active Development Case map (please use your phone's camera to scan QR code below):



For additional information, please contact the Community Development Department at 817.503.1056. Please reference the zoning case number when requesting information.

A handwritten signature in black ink that reads "Jacquelyn Reyff".

Jacquelyn Reyff
Principal Planner
jreyff@colleyville.com

Owner Name	Owner Address	Owner City
MAITLAND, DANIEL	1907 CRANBROOK DR S	COLLEYVILLE, TX
STEELE JOE & HELEN IRREVOCABLE	1900 RENFRO RD	COLLEYVILLE, TX
CHAMY, WINSTON	1608 OAK KNOLL DR	COLLEYVILLE, TX
ORAVETZ, CLELL	1818 RENFRO RD	COLLEYVILLE, TX
LYONS, TERRY	1907 RENFRO RD	COLLEYVILLE, TX
TOMPKINS, GARY V	4412 BOWMAN DR	COLLEYVILLE, TX
MIRACLE, GARY R	1805 CRANBROOK DR S	COLLEYVILLE, TX
LYONS, TERRY	PO BOX 1821	COLLEYVILLE, TX
CAHMBERS, REED	1705 RENFRO RD	COLLEYVILLE, TX
BRANDT, STEVEN L	4701 BEHRENS RD	COLLEYVILLE, TX
GLADE ROAD CAPITAL LLC	PO BOX 1821	COLLEYVILLE, TX
VINSON, RUSSELL L	1804 OAK KNOLL DR	COLLEYVILLE, TX
ABITZ FAMILY TRUST	1711 TYLER ST	COLLEYVILLE, TX
LYONS, TERRY L	PO BOX 1821	COLLEYVILLE, TX
BLUME, ROBERT M	4500 BOWMAN DR	COLLEYVILLE, TX
CLARKE, DON H	1708 OAK KNOLL DR	COLLEYVILLE, TX
SHEPHERD, DAVID	1800 RENFRO RD	COLLEYVILLE, TX
PUCKETT, ROBERT E	1717 RENFRO RD	COLLEYVILLE, TX
JORDAN, DEVERICK	2000 RENFRO RD	COLLEYVILLE, TX
LAL, VINIT R	4704 BILL SIMMONS RD	COLLEYVILLE, TX
SKAGGS, L A	4612 BEHRENS RD	COLLEYVILLE, TX
ARFI, TANVIR	4800 BELDON TR	COLLEYVILLE, TX
JOBSON, DEMETRI	1916 RENFRO RD	COLLEYVILLE, TX
STITES, KELYE	4501 BOWMAN DR	COLLEYVILLE, TX
NOORANI, REEMA	4604 BILL SIMMONS RD	COLLEYVILLE, TX
PREWITT, JACKIE	4804 BELDON TRL	COLLEYVILLE, TX
FORSLUND, BRADLEY E	4709 BEHRENS CT	COLLEYVILLE, TX
VIELE, KENDALL C	1704 TYLER ST	COLLEYVILLE, TX
MCGUIRK FAMILY TRUST	1903 S CRANBROOK DR	COLLEYVILLE, TX
POOLE, DONALD W	4609 BEHRENS RD	COLLEYVILLE, TX
SNYDER, ALANA DANIELLE	1801 CRANBROOK DR S	COLLEYVILLE, TX
HOANG, HA	4504 BOWMAN DR	COLLEYVILLE, TX
SMITH, MICHAEL R	1700 TYLER ST	COLLEYVILLE, TX
SLONE, THOMAS R	4801 BELDON TR	COLLEYVILLE, TX
R CORNELIUS WEST LLC	1608 N STATE HIGHWAY 161	GRAND PRAIRIE, TX
GLIDEWELL, MARK W	1908 RENFRO RD	COLLEYVILLE, TX
PETRAS, DONALD	1901 CRANBROOK DR S	COLLEYVILLE, TX
VINSON, RUSSELL L	1804 OAK KNOLL DR	COLLEYVILLE, TX
ABITZ FAMILY TRUST	1711 TYLER ST	COLLEYVILLE, TX
SAKOVICH, STEPHEN	4712 CRANBROOK DR E	COLLEYVILLE, TX
PATEL, MANISH	4512 BILL SIMMONS RD	COLLEYVILLE, TX
HARGROVE, MICHAEL G	1701 TYLER ST	COLLEYVILLE, TX
COWLEY, THOMAS C	4604 BEHRENS RD	COLLEYVILLE, TX
BOSSINAKIS, NICHOLAS	1712 OAK KNOLL DR	COLLEYVILLE, TX
BULLOCH, NANCY A	1704 RENFRO RD	COLLEYVILLE, TX
COWLEY, CHAD	4606 BEHRENS RD	COLLEYVILLE, TX
ANDERSON, PETER	2001 RENFRO RD	COLLEYVILLE, TX
RAJ, PRAVIN	4708 BEHRENS CT	COLLEYVILLE, TX
DIGGIKAR, SHRINIVAS	4509 BOWMAN DR	COLLEYVILLE, TX
VINSON RUSSELL L ETUX WILLIE	1804 OAK KNOLL DR	COLLEYVILLE, TX
VINSON, RUSSELL L	1804 OAK KNOLL DR	COLLEYVILLE, TX
LYONS, TERRY	PO BOX 1821	COLLEYVILLE, TX
TOUSSAINT, RITA L	1809 RENFRO RD	COLLEYVILLE, TX

RESOLUTION R-22-XXXX

**A RESOLUTION APPROVING A PRELIMINARY/FINAL PLAT FOR LOTS
2AR-1, 2AR-2, 3, 4, 5, & 6, BLOCK 1, SHIRLEY ALLGOOD ADDITION**

WHEREAS, the Planning and Zoning Commission recommended approval of the Preliminary/Final Plat for Lots 2AR-1, 2AR-2, 3, 4, 5, 6, Block 1, Shirley Allgood Addition on May 9, 2022.

**NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE
CITY OF COLLEYVILLE, TEXAS:**

Sec. 1. THAT the Preliminary/Final Plat Lots 2AR-1, 2AR-2, 3, 4, 5, 6, Block 1, Shirley Allgood Addition on approximately 6.359 acres, attached as Exhibit "A" - Plat Exhibit, is hereby approved.

AND IT IS SO RESOLVED.

APPROVED BY A VOTE OF ____ AYES, ____ NAYS, AND ____ ABSTENTIONS ON THIS
THE 7TH DAY OF JUNE 2022.

Mayor Bobby Lindamood
Place 1, Brandi Elder
Place 2, George Bond
Place 4, George Dodson

Mayor Pro Tem Kathy Wheat
Place 5, Chuck Kelley
Place 6, Callie Rigney

ATTEST:

CITY OF COLLEYVILLE

Christine Loven, TRMC
Assistant City Secretary

Bobby Lindamood
Mayor

[illegible]