

**[REMAINDER OF PAGE INTENTIONALLY BLANK]**

**[SIGNATURES FOLLOW ON FOLLOWING PAGE]**

IN WITNESS WHEREOF, the parties have duly executed this DISLA as of the day and year first above written above:

**Aqua Texas, Inc.,**  
A Texas corporation

By: \_\_\_\_\_  
Robert L. Laughman, President

**%DEVELOPER%**

By: \_\_\_\_\_

**JOINDER**

The Contractor, \_\_\_\_\_ executes this agreement to acknowledge and agree to the terms and obligations imposed on the Contractor by this agreement.

By: \_\_\_\_\_  
[Authorized Signature]

Attest: \_\_\_\_\_  
[Authorized Signature]

## **Exhibit 1**

### **Requirements for As Built Information**

The As-Built Information for the Interior Lines will accurately represent actual construction of the wastewater collection line and appurtenances, and contain the following legible information, documented in detail in a project construction log and noted on a copy of the drawings:

- (1) Variations from the final Plan (which is incorporated by reference in Attachment B to this Agreement).
- (2) Limits of any rock encountered in the excavation.
- (3) Locations of vertical and horizontal bends, valves, tees and crosses relative to fixed points (e.g., edge of curb, existing manholes, telephone poles, etc.).

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**Exhibit 2**

**Specifications For Collection Line Construction**

The Interior Lines must be designed to Aqua Texas, Inc. specifications.

**Exhibit 3**

**Certification Form for Final Project Cost**

**\*\*\* ACTUAL COSTS MUST BE SUBMITTED WITHIN ONE MONTH OF COMPLETION  
AND CONTRIBUTION OF INTERIOR LINES\*\*\***

**CERTIFICATION OF COSTS**

THE STATE OF TEXAS                   §  
   §  
COUNTY OF \_\_\_\_\_           §

THIS CERTIFICATION OF COSTS, dated this \_\_\_\_\_ day of \_\_\_\_\_, 2013,  
is for the final actual costs of the completed collection line and lift station(s) ("Collection System")  
assets located in \_\_\_\_\_ County, Texas, designed to serve a total of \_\_\_\_\_  
connections or \_\_\_\_\_ Living Unit Equivalents ("LUEs") in the  
\_\_\_\_\_ subdivision.

Attached in Exhibit "A" is a list of completed Collection System assets and their invoiced  
costs.

I hereby certify to Aqua Texas, Inc. ("Aqua Texas") that the attached list represents a  
complete and accurate listing of the facilities installed and the actual final costs of installation of the  
Collection System assets. Paid invoices for the assets are attached hereto as Exhibit "B".

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name

SWORN TO AND SUBSCRIBED before me by \_\_\_\_\_  
on the \_\_\_\_\_ day of \_\_\_\_\_, 2013.

\_\_\_\_\_  
Notary Public in and for the State of Texas

\_\_\_\_\_  
Printed name of Notary

My commission expires: \_\_\_\_\_

**Exhibit 4**

**Description of Property**

Exhibit 5

**BILL OF SALE  
FOR REAL AND PERSONAL PROPERTY**

**Date:** \_\_\_\_\_

**Sellers:**

**Seller's Mailing Address (including county):**

**Buyer:** Aqua Texas, Inc.

**Buyer's Mailing Address (including county):**

Aqua Texas, Inc.  
Attn: Robert Laughman, President  
1106 Clayton Lane, Suite 400W  
Austin, Texas 78723  
Travis County

**Consideration:**

Cash and other good and valuable consideration including the obligations and requirements contained in the \_\_\_\_\_ Water Line Extension Agreement and the \_\_\_\_\_ Waste Water Line Extension Agreement between Buyer and Seller.

**Transferred Properties:**

All of Sellers' interest in all of the real and personal property owned and/or controlled by Seller constructed pursuant to the \_\_\_\_\_ Water Line Extension Agreement and the \_\_\_\_\_ Waste Water Line Extension Agreement between Buyer and Seller or otherwise associated with the operation and/or ownership of such items, whether held in fee simple, by easement, lease or otherwise, including but not limited to the following:



The \_\_\_\_\_ inch wastewater main extension and all related improvements, including, but not limited to, all wastewater collection lines, valves, valve boxes, manholes and covers, and lift stations within the Development, as well as any restoration work as described on the attached Exhibit A (the "Waste Water Assets").

a \_\_\_\_\_ inch water main extension and all related improvements for the Project, including, but not limited to, the water main, gate valves, valve boxes, meter vault, meter loop, and meter house or pit, and any restoration work, as described on the Attached Exhibit B (the "Water Assets").

1. All the land, buildings, pipes, pipelines, water mains, wells, pumping stations, storage tanks, standpipes, fire hydrants, structures, improvements, fixtures, rights of way, rights, uses, licenses, and easements related to the Water Assets and the Waste Water Assets owned by Seller or in which Seller has an interest, and all hereditaments, tenements, and appurtenances belonging or appertaining thereto,;
2. All supplies and inventories related to Water Assets and the Waste Water Assets;
3. All rights of Sellers under any written or oral contract, easement, license, agreement, lease, plan, instrument, registration, permit, surface water right, surface water permit, groundwater right, groundwater permit, groundwater conservation district right, groundwater conservation district permit, certificate or other authorization or approval of any nature, or other document, commitment, arrangement, undertaking, practice or authorization, relating in any way to the Water Assets and the Waste Water Assets, including but not limited to all active and inactive water accounts and all agreements with third parties regarding the provision of retail or wholesale water;
4. All rights and choses in action of Sellers relating to the Water Assets and the Waste Water Assets arising out of occurrences before and/or after the date of this conveyance, including but not limited to those associated with adverse possession and ownership of the real and personal property of the Water Assets and the Waste Water Assets;
5. All information, files, records, data, plans, contracts, and recorded knowledge, including customer and supplier lists and property records in any way related to the Water Assets and the Waste Water Assets; and

**PROVIDED, HOWEVER,** that the Parties expressly agree that the transferred properties do not include the following:

- 1) Any and all customer water service lines that run from the curb line (or edge of road) to each individual residences, commercial or industrial structures served by the Assets;
- 2) All piping and fixtures internal to each of the individual customer's structure;

**Warranties and Representations:**

1. Seller expressly agrees and acknowledges that except as otherwise expressly stated in this Bill of Sale, all of the Representations and Warranties given and made by Seller as "Developer" in the \_\_\_\_\_ Water Line Extension Agreement and the \_\_\_\_\_ Waste Water Line Extension Agreement between the parties remain true and correct as of the effective date of this Bill of Sale.

2. Buyer expressly agrees and acknowledges that except as otherwise expressly stated in this Bill of Sale, all of the Representations and Warranties given and made by Grantee as "Aqua Texas" in the \_\_\_\_\_ Water Line Extension Agreement and the \_\_\_\_\_ Waste Water Line Extension Agreement between the parties remain true and correct as of the effective date of this Bill of Sale for a period of two calendar years.

3. Seller affirms that it has met and complied with all obligations, requirements, and covenants required by Developer and/or Contractor which are contained in the \_\_\_\_\_ Water Line Extension Agreement and the \_\_\_\_\_ Waste Water Line Extension Agreement between the parties and that the Transferred Properties were constructed in accordance with the specifications contained therein.

Sellers, for the Consideration recited above, hereby, sells, transfers, and delivers the Transferred Properties to Buyer, together with all and singular the rights and appurtenances thereto in any way belonging, to have and to hold the Transferred Properties to Buyer forever. Seller binds Seller and Seller's heirs and successors to warrant and forever defend all and singular the title to the Transferred Properties to Buyer and Buyer's agents, representatives, successors, and assigns against every person whomsoever lawfully claiming or to claim the same or any part thereof.

When the context requires, singular nouns and pronouns include the plural.

%DEVELOPER%

---

STATE OF TEXAS                   §

COUNTY OF                       §

Before me, \_\_\_\_\_, 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 is the \_\_\_\_\_ of %DEVELOPER% and that he executed the same as the act of %DEVELOPER%, for the purposes and consideration therein expressed.

Given under my hand and seal of office this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

\_\_\_\_\_  
Notary Public, State of Texas

My commission expires: \_\_\_\_\_

Aqua Texas, Inc.

\_\_\_\_\_  
Robert L. Laughman  
President

STATE OF TEXAS                   §

COUNTY OF                       §

Before me, \_\_\_\_\_, on this day personally appeared Robert L. Laughman known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same as the act of Aqua Texas, Inc., for the purposes and consideration therein expressed.

Given under my hand and seal of office this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

\_\_\_\_\_  
Notary Public, State of Texas  
My commission expires: \_\_\_\_\_

LOCATION MAP

LAND TITLE SURVEY  
82.111 ACRES

A.B.J. WINFREE SURVEY, ABSTRACT 306  
CHAMBERS COUNTY, TEXAS



**PAPE-DAWSON  
ENGINEERS**

FILED: PHOENIX AZ | JUL 26 1964 | PAGE: 816070  
JUL 26 1964

U.S. DEPT. OF JUSTICE, PHOENIX, ARIZONA, DIVISION OF INVESTIGATION  
RECEIVED JUL 26 1964

# **ATTACHMENT**

**5**



July 6, 2016

Glen E. Lewis  
Aqua Texas, Inc.  
Director of Corporate Development  
1106 Clayton Lane, Suite 400W  
Austin, TX 78723

Re: LGI Homes - Texas, LLC  
Joseph's Cove Development - Preliminary Plan  
PD Job No. 40252-10

Ladies and Gentlemen:

We have attached the completed forms and are requesting water and sanitary service for the proposed Joseph's Cove development. The development will require approximately 358 total connections for water and approximately 358 total connections for sewer. The development will be divided into three sections. Sec 1 will require approximately 65 connections for water and sewer. Sec 2 will require approximately 105 connections for water and sewer. Finally, Sec 3 will require approximately 188 connections for water and sewer. Pape-Dawson anticipates that service will be required in December of 2016 for Sec 1, April of 2017 for Sec 2, and early 2018 for Sec 3.

Should you have any questions or require additional information, please do not hesitate to contact me via telephone at 713.428.2400, or email at [JKonesheck@pape-dawson.com](mailto:JKonesheck@pape-dawson.com).

Sincerely,  
Pape-Dawson Engineers, Inc.  
Texas Board of Professional Engineers, Firm Registration # 470

  
Jordan Konesheck, P.E.  
Project Manager



**INFORMATION FOR NON-STANDARD OR NON-RESIDENTIAL  
RETAIL WATER UTILITY SERVICE REQUEST**

This is a form to provide Aqua Texas (Aqua) information needed to evaluate a non-standard or non-residential retail water utility service request and is part of the application process for such requests. Aqua is not obligated to provide service until this information form is completed, evaluated, a final service extension contract is executed by all necessary parties, its terms fulfilled, and all required forms for such requests completed and received by Aqua. A completed standard application form/service agreement will also be required from each ultimate utility consumer prior to service connection activation. Non-residential customers may also be required to provide additional information or complete additional forms prior to service connection activation. Aqua reserves the right to request additional information in the event information provided in this form is not complete or Aqua needs additional information to analyze your service request. Your service request is not considered complete until Aqua receives all of the information it requires to analyze the request, including capacity and cost considerations, and provide a response.

**1. Identity of Person/Entity Requesting Service.**

Legal name: LGI Homes - Texas, LLC, a Texas Limited Liability Company	
Designated contact: Chuck Birt	
Physical address: 1450 Lake Robbins Drive, Suite 430 The Woodlands, TX 77380	
Mailing address: Same as above	
Telephone: 281-362-8998	Fax:
Email: cbirt@lgihomes.com	

**2. Landowner Information.**

Legal name: LGI Homes - Texas, LLC, a Texas Limited Liability Company	
Designated contact: Chuck Birt	
Physical address: 1450 Lake Robbins Drive, Suite 430 The Woodlands, TX 77380	
Mailing address: Same as above	
Telephone: 281-362-8998	Fax:
Email: cbirt@lgihomes.com	



**3. Area to be Served.**

Location: West of FM 3180 and North of 565, South of I-10
Is the area to be served located within Aqua's certificated service area? Pending approval by PUC
Is the service request being made for the entire property? Yes
Number of Acres: 95.585 acres

Attach the following information:

- A. Attach a map and description of the area to be served. The map must describe the general location, including verifiable landmarks, including a road, creek, or railroad line.
- B. Attach documentation proving that you: (1) own the property in question; or (2) have legal contractual rights to use the property or receive non-residential service at the property location. If you are not the landowner, provide written legal authority for you to request service and, if applicable, to bind the landowner to the terms of any resulting service contract.

**4. Quantity of Water Required**

Indicate the Aqua facility from which you request service: Gray utility service water system (PHS ID No. 0360006)
---

Provide the following water volume and pressure requirements:

Gallons: 150,780 GPD	Annual: 55 MG	Highest Day:	
Flow (g.p.m.): 104.7 GPM	Daily Average:	Coincident Peak:	
Pressures Required (p.s.i.):	Low:	Average: 45	High: 60
Meter Size: 3/8" Per connection			

**5. Fire Flow.**

Aqua's tariff, as approved by the Texas Commission on Environmental Quality, acknowledges that Aqua does not provide service for fire suppression or prevention and Aqua has no obligation to provide such service. Aqua assumes no responsibility for ensuring that water will be available in sufficient quantity, pressure or duration for fighting fires. By initiating service with Aqua you acknowledge and agree that the system does not support fire service and that Aqua is not responsible for any damages resulting from this limitation.

6. **Signature**

By signing and submitting this form, you certify that: (1) you understand and agree that retail water utility service will only be available under the terms and conditions of Aqua's applicable tariffed extension policies, the regulations of the Texas Commission on Environmental Quality ("TCEQ"), the Texas Water Code and the Texas Health & Safety Code; and (2) you have read and understand Aqua's tariff attached to this application. Additionally, you declare that you: (1) own the property in question; or (2) have legal contractual rights to develop the property or receive non-residential service at the location requested.

**COMPLETED BY:**

Paula Sewall

Printed Name: Paula Sewall

Title (if applicable): Director of Accounting

DATE OF SUBMISSION TO UTILITY. \_\_\_\_\_

Please submit all required information and documentation to Glen E. Lewis, Director of Corporate Development, Aqua Texas, Inc., 1106 Clayton Lane, Suite 400W, Austin, Texas 78723 or if in electronic form, to [gelewis@aquamerica.com](mailto:gelewis@aquamerica.com) for processing. Please call Mr. Lewis at (512) 990-4400 ext 56104 if you have any questions.



**INFORMATION FOR NON-STANDARD OR NON-RESIDENTIAL  
RETAIL SEWER UTILITY SERVICE REQUEST**

This is a form to provide Aqua Texas (Aqua) information needed to evaluate a non-standard or non-residential retail sewer utility service request and is part of the application process for such requests. Aqua is not obligated to provide service until this information form is completed, evaluated, a final service extension contract is executed by all necessary parties, its terms fulfilled, and all required forms for such requests completed and received by Aqua. A completed standard application form/service agreement will also be required from each ultimate utility consumer prior to service connection activation. Non-residential customers may also be required to provide additional information or complete additional forms prior to service connection activation. Aqua reserves the right to request additional information in the event information provided in this form is not complete or Aqua needs additional information to analyze your service request. Your service request is not considered complete until Aqua receives all of the information it requires to analyze whether service may be extended.

**1. Identity of Person/Entity Requesting Service.**

Legal name: LGI Homes - Texas, LLC, a Texas Limited Liability Company	
Designated contact: Chuck Birt	
Physical address: 1450 Lake Robbins Drive, Suite 430 The Woodlands, TX 77380	
Mailing address: Same as above	
Telephone: 281-362-8998	Fax:
Email: cbirt@lgihomes.com	

**2. Landowner Information.**

Legal name: LGI Homes - Texas, LLC, a Texas Limited Liability Company	
Designated contact: Chuck Birt	
Physical address: 1450 Lake Robbins Drive, Suite 430 The Woodlands, TX 77380	
Mailing address: Same as above	
Telephone: 281-362-8998	Fax:
Email: cbirt@lgihomes.com	

**4 Area to be Served.**

Location: West of FM 3180 and North of 565, South of I-10
Is the area to be served located within Aqua Texas' certificated service area? Pending approval by PUC
Is the service request being made for the entire property? Yes
Number of Acres, if applicable: 95.585 acres

**Attach the following information:**

- A** Attach a map and description of the area to be served. The map must describe the general location, including verifiable landmarks, including a road, creek, or railroad line.
- B** Attach documentation proving that you: (1) own the property in question; or (2) have legal contractual rights to use the property or receive non-residential service at the property location. If you are not the landowner, provide written legal authority to make this application and, if applicable, to bind the landowner to the terms of any resulting service contract.

**4 Quantity of Wastewater Treatment Required**

Veranda Wastewater Treatment Facility

Indicate the Aqua facility from which you request service: TPDES Permit No: WQ0011449001
Please explain in detail the requested level and manner of sewer service;

**5. Signature**

By signing and submitting this form, you certify that: (1) you understand and agree that retail sewer utility service will only be available under the terms and conditions of Aqua's applicable tariffed extension policies, the regulations of the Texas Commission on Environmental Quality ("TCEQ"), the Texas Water Code and the Texas Health & Safety Code; and (2) you have read and understand Aqua's tariff attached to this application. Additionally, you declare that you: (1) own the property in question; or (2) have legal contractual rights to develop the property or receive non-residential service at the location requested.

**COMPLETED BY:**

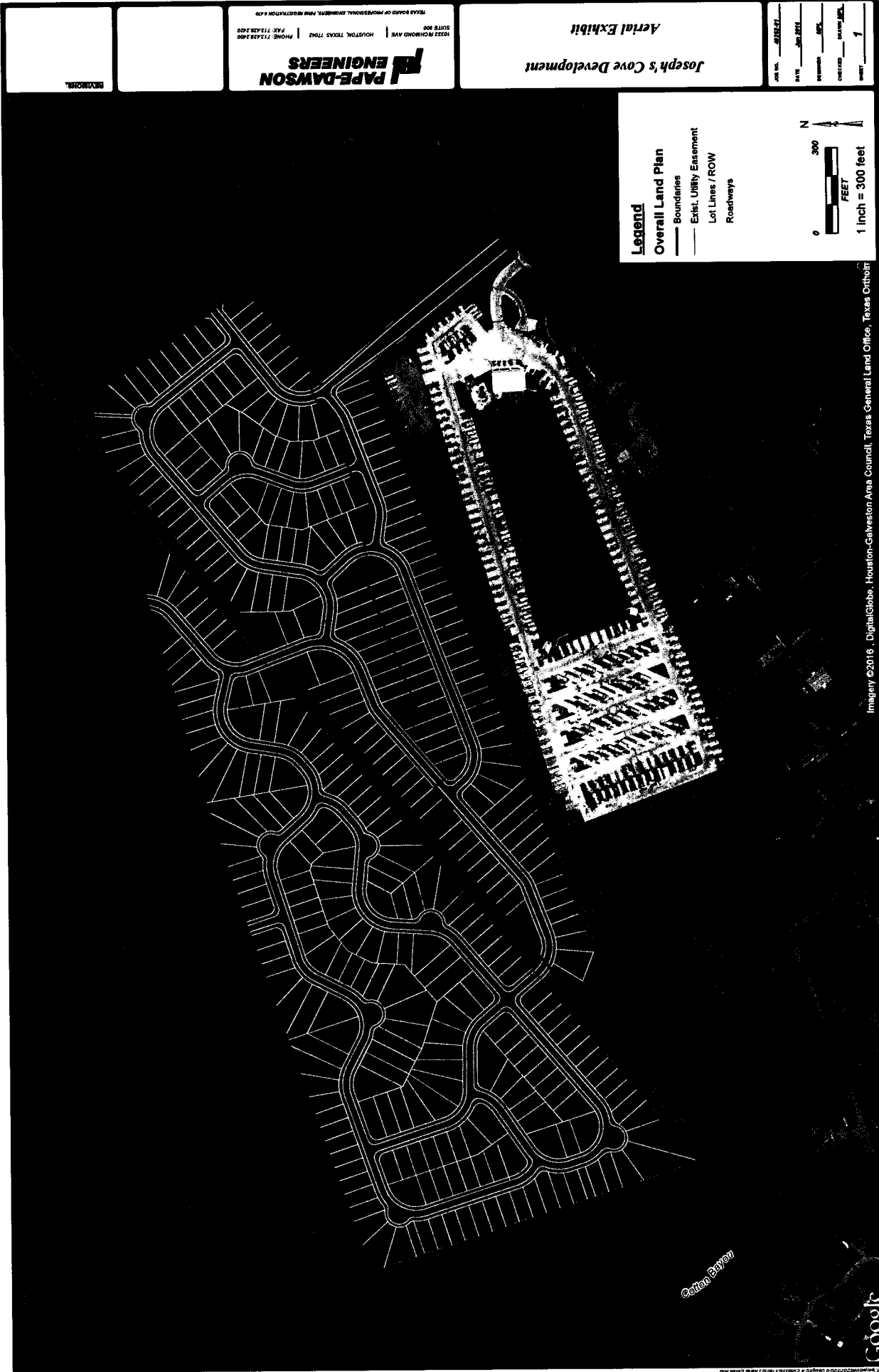
*Paula Sewall*

Printed Name: Paula Sewall

Title (if applicable): Director of Accounting

DATE OF SUBMISSION TO UTILITY: \_\_\_\_\_

Please submit all required information and documentation to Glen E. Lewis, Director of Corporate Development, Aqua Texas, Inc., 1106 Clayton Lane, Suite 400W, Austin, Texas 78723 or if in electronic form, to [gelewis@aquaamerica.com](mailto:gelewis@aquaamerica.com) for processing. Please call Mr. Lewis at (512) 990-4400 ext 56104 if you have any questions.



**Aerial Exhibit**

**Joseph's Cove Development**

**Pape-Dawson Engineers**  
10323 RICHMOND AVE. | HOUSTON, TEXAS 77042  
PHONE 773.828.2000 | FAX 773.828.2001  
TELEFAX 773.828.2002

DATE	01/15/17
BY	JPD
REVISION	1
DATE	01/15/17
BY	JPD
REVISION	1
DATE	01/15/17
BY	JPD
REVISION	1

**Legend**

**Overall Land Plan**

- Boundaries
- Easement
- Lot Lines / ROW
- Roadways



Imagery ©2016 DigitalGlobe, Houston-Galveston Area Council, Texas General Land Office, Texas Orthoair

©2016 Google

Google



## **Conditions for Non-Residential Sewer Service**

1. All sewer lines and other facilities for utility sewer collection or treatment must be designed and constructed in accordance with: (a) design criteria for any city with corporate limits or extra-territorial jurisdiction ("ETJ") area within which any portion of the requested service area will be located; and (b) Aqua Texas (Aqua) design criteria and specifications.
2. Aqua reserves the right to review and approve the design and construction of all interconnecting lines and equipment but accepts no responsibility thereof.
3. All lines servicing multiple customers must be in properly dedicated easements. All sewer lines and other facilities for utility sewer collection or treatment shall be dedicated to Aqua and located in easements dedicated to Aqua.
4. In flood prone areas, the sewage collection system may be subject to inflow. Aqua customers shall be responsible for proper design and construction of their system so as to meet this flooding contingency and mitigate any adverse affects on the wastewater collection system. Special design criteria may be required or service denied for those areas.
5. Retail service rates are approved by the Texas Commission on Environmental Quality ("TCEQ") and are subject to change from time to time. Copies of the current rates are available upon request.
6. The ability to continue to expand our system to property owners beyond each new customer is of utmost importance. Easements, oversizing of lines and depth of burial are of great importance to us. These items should be coordinated with Aqua early in your planning and engineering.
7. Reproducible approved copies of your plans and specifications must be filed with Aqua prior to beginning construction.
8. Sewage is to be normal domestic sewage as defined by the TCEQ and shall not exceed the attached Effluent Limitations and Monitoring Requirements Raw Liquid Waste.
9. You will be required to install and maintain, at your own expense, all interconnecting lines, grease traps, pretreatment equipment, sampling wells and any lift stations required to collect your sewage at connecting points per our approval.
10. It is agreed and understood that Aqua's facility is not a Publicly Owned Treatment Works (POTW), and that discharger is not entitled to, and may not claim or otherwise take

advantage of, any statutory or regulatory exemptions that may apply to discharges into the sewage collection system of a Publicly Owned Treatment Works (POTW).

11. It is agreed and understood that waste discharged into the sewage collection system shall not include any hazardous waste as defined in the Resource Conservation and Recovery Act, 42 U.S.C. 6901 et seq., as amended, and the regulations thereunto, or in those sections of the Texas Administrative Code governing solid and hazardous waste. Aqua may, from time to time, adopt wastewater pre-treatment rules and regulations designed to prevent such discharges.
12. It is agreed and understood that customer may not dispose of or permit disposal of waste generated offsite by the customer, or any other party, by discharge through the customer's sewer system connection.
13. It is agreed and understood that discharger shall install and maintain a waste interceptor, grease trap or pre-treatment unit of sufficient design to prevent the discharge or introduction of trash, debris, grease, oil or any other solid material having maximum dimensions equal to or greater than one and one-half inches (1½") into the sewage collection system, and that the design of such interceptor or pre-treatment unit shall be subject to approval by Aqua prior to commencement of discharge into the sewage collection system or wastewater treatment plant.
14. Discharger shall provide proof of liability insurance in an amount deemed by Aqua to be sufficient to indemnify Aqua from any injury or damage occurring to Aqua facilities or its employees or agents as a result of the customer's violation of this agreement or negligent misuse of the service.
15. Should flow quantity or quality vary from that contracted for, the customer shall be responsible for any resulting damage to Aqua's systems, pollution effects, and permit violations, and in no case should flow quality exceed standards set forth in the Effluent Limitations And Monitoring Requirements Raw Liquid Waste list included herein.
16. Aqua shall not be liable to the customer for a failure to provide sewage collection services. It is understood and agreed that service interruptions may, from time to time, occur. Aqua agrees to use its best efforts to provide continuous service.
17. You agree to cooperate with Aqua in its efforts to implement its Wastewater Pre-treatment Program, including any monitoring, reporting and treatment that Aqua may deem necessary to ensure that discharges into its system are compatible with the capability of its wastewater treatment and collection system.



# **EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS RAW LIQUID WASTE**

Maximum Allowable Limits (Grab Sample)		Maximum Allowable Limits (Composite Sample)	
BOD <sub>5</sub> (mg/l) .....	200	.....	200
TSS (mg/l).....	200	.....	200
Oil & Grease (mg/l).....	50	.....	50
COD (mg/l).....	500	.....	500
Ammonia.....	50	.....	50
pH.....	6-10	.....	N/A
Temperature (F).....	113	.....	N/A
Arsenic (mg/l).....	0.3	.....	0.2
Barium (mg/l).....	2.0	.....	1.0
Boron (mg/l).....	4.0	.....	2.0
Cadmium (mg/l).....	0.2	.....	0.1
Chromium (mg/l).....	3.0	.....	1.0
Copper (mg/l).....	2.0	.....	1.0
Lead (mg/l).....	1.5	.....	1.0
Manganese (mg/l).....	3.0	.....	2.0
Mercury (mg/l).....	0.01	.....	0.005
Nickel (mg/l).....	2.0	.....	2.0
Selenium (mg/l).....	0.2	.....	0.1
Silver (mg/l).....	0.2	.....	0.1
Zinc (mg/l).....	2.0	.....	2.0

### Acceptance of Conditions

I hereby certify I am authorized to act on behalf of LGI Homes - Texas, LLC, a Texas Limited Liability Company I have read the Conditions for Non-Residential Sewer Service, a copy of which has been provided to me, and will abide by their terms. I further agree that failure to abide by these conditions may result in immediate termination of service.

Executed this 15 day of June, 2016



Signature

Paula Sewall

Printed Name

Director of Accounting

Title

# **ATTACHMENT**

**6**



**CCN 13203**  
**93.49 ACRES - CHAMBERS COUNTY, TEXAS**  
**Preliminary Engineering Report**

**MAY 2016**



May 27, 2016

Plan and Technical Review Section  
Water Supply Division  
Texas Commission on Environmental Quality ("TCEQ")  
PO Box 13087 MC 159  
Austin, Texas 78711-3087

Re: Preliminary Engineering Report  
93.49 Acres, Chambers County, Texas - CCN 13203

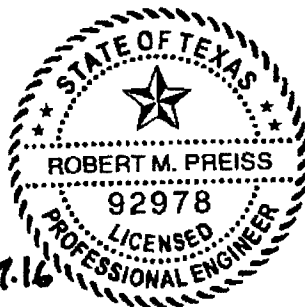
Ladies and Gentlemen:

We are pleased to submit this Preliminary Engineering Report ("PER") for TCEQ review in support of a planned public drinking water system extension and amendment to the Aqua Texas, Inc. ("Aqua") Certificate of Convenience and Necessity No. 13203 ("CCN 13203") water service area in Chambers County, Texas. The goal of this project is to extend retail water service by Aqua to a proposed 93.49 acre single-family residential development in Chambers County, Texas, owned by LGI Homes-Texas, LLC (the "LGI Development"). This extension will require the addition of infrastructure to Aqua's existing water supply and water distribution system located adjacent to the LGI Development.

This PER presents our preliminary design analysis and cost estimates necessary for Aqua to provide water for the LGI Development. Final design plans for extension of facilities are being developed. We have determined that the public drinking water system extension project described in this PER is capable of providing drinking water for the LGI Development utilizing an adequate supply of water and facilities that are compliant with Texas Health and Safety Code, Chapter 341 and TCEQ rules. Respectfully, we request that the TCEQ staff review the preliminary planning information contained in this report and provide a written response with comments sufficient to demonstrate to the Public Utility Commission of Texas ("PUC") that TCEQ concurs with our determination and, if possible, an approval of our PER.

Sincerely,  
Pape-Dawson Engineers, Inc.

Robert "Michael" Preiss, P.E.  
Vice President Houston



Enclosures

cc: Texas Commission on Environmental Quality - Houston

K: projects 402 52 02 1-0 Correspondence 1-1 Agency TCEQ 4025202-Prelim Eng Report- 93 .49 Ac-LGI.doc

TBPE Firm Registration #470 | TBPLS Firm Registration #10193974

Houston | San Antonio | Austin | Fort Worth | Dallas

Transportation | Water Resources | Land Development | Surveying | Environmental

10333 Richmond Ave., Suite 900, Houston TX 77042 T: 713.428.2400 www.Pape-Dawson.com

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### APPENDIX A - FIGURES

FIGURE 1	PROJECT BOUNDARY MAP
FIGURE 2	SERVICE AREA MAPS
FIGURE 3	LAND USE PLAN
FIGURE 4	GWU WATER PLANT LOCATION
FIGURE 5	WATER DISTRIBUTION SYSTEM

## 1. INTRODUCTION – PROJECT GOALS

The project area proposed to be added to the CCN 13203 service area will include a single, contiguous tract of 93.49 acres of land owned by LGI Homes-Texas, LLC, a Texas limited liability company (“LGI Homes”), located in the City of Cove Extra Territorial Jurisdiction (“ETJ”) in unincorporated Chambers County, Texas, along the north side of S FM 565 Road and approximately 0.5 miles east of FM 3180 Road (the “LGI Development”) (See Figure 1 – Project Boundary Map).

LGI Homes proposes to develop a single-family residential development consisting of approximately 358 single-family residential lots on the 93.49 acre tract (“Joseph’s Cove Subdivision”). Water supply and water distribution for the proposed LGI Development will be provided by a separate, private entity, Aqua Texas Inc, operating under Certificate of Convenience and Necessity No. 13203 (“CCN 13203”) and doing business as Aqua Texas (“Aqua”).<sup>1</sup> We have determined that Aqua is capable of providing drinking water for the LGI Development utilizing an adequate supply of water and in a manner that is compliant with Texas Health and Safety Code, Chapter 341 and TCEQ rules by construction of an extension from Aqua’s Gray Utility Service water system (PWS ID No. 0360005) to the LGI Development.

## 2. PRESENT AND FUTURE AREAS TO BE SERVED

### 2.1 Location

The proposed LGI Development consists of 93.49 acres of land (See Figure 1 – Project Boundary Map) located within the City of Cove ETJ in northwest Chambers County. The proposed LGI Development lies approximately 0.8 miles northeast of the intersection of FM 3180 Road and S FM 565 Road, and is bordered on the west by Cotton Bayou, the south by S M 565 Road along which the Mont Belvieu RV Park, Paradise Cove RV Park, Cove Volunteer Emergency

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<sup>1</sup> The PUC has approved for Aqua Utilities, Inc., an Aqua affiliate, to transfer its water system and its CCN No. 11157 area that will be expanded to serve the LGI Development in Chambers County to Aqua Texas, Inc. CCN No. 13203. That process is expected to be complete very soon.

Services, Cove Country Store, and single family residences are located, and the north by agricultural cropland. An unrecorded, 50'-wide pipeline easement trends southwest-northeast across the subject site. Although the online Railroad Commission of Texas Pipeline Public GIS Viewer indicates that a natural gas transmission pipeline currently exists within this easement, pipeline markers observed on the subject property indicate that a petroleum pipeline also exists within this easement. A 110' wide proposed drainage easement is adjacent to the northern property boundary. Right-of-way dedicated for proposed FM 1409 (varying width) is adjacent to the eastern boundary of the LGI Development. Design of proposed FM 1409 is in progress. The proposed LGI Development lies entirely within the City of Cove ETJ, Chambers County, and is zoned to the Barbers Hill Independent School District. Residents will gain access to the proposed LGI Development from S FM 565 Road south of the development. Once FM 1409 has been constructed, residents will gain access to the east side of the proposed LGI Development from FM 1409.

The proposed LGI Development is located approximately 1.5 miles southeast of the City of Mont Belvieu, within Chambers County and Liberty County, Texas. The proposed LGI Development lies within the City of Cove ETJ. The City of Mont Belvieu has a population of approximately 3,835 and is located approximately 32 miles east-northeast of the Central Business District of the City of Houston, Texas. The approximate travel time from downtown Mont Belvieu to the proposed LGI Development is 11 minutes. The main route from the proposed LGI Development to downtown Mont Belvieu is to travel southwest on S FM 565 to FM 3180, then northeast on FM 3180 to N FM 565, then west on N FM 565 to Main Street.



Growth in the immediate area has steadily increase in the last few years, and is projected to continue its strong trend due to the next phase of construction on State Highway 99 (the Grand Parkway) as well as continued development such as the new ExxonMobile multi-billion dollar expansion to their existing plant and the Enterprise Product new plant.

The proposed LGI Development is located approximately 35 miles east of the Central Business District ("CBD") of the City of Houston. Houston has a population of approximately 2,099,451. The approximate travel time from the CBD of Houston to the proposed LGI Development is 33 minutes. The main route from the proposed LGI Development to the CBD of Houston is to travel southwest on S FM 565, then north on FM 3180, then west on US Interstate Highway 45 to the Main Street exit to the CBD.

## 2.2 Adjacent Areas

The proposed LGI Development is surrounded on the north and east by undeveloped agricultural cropland, is bordered by the Mont Belvieu RV Park, Paradise Cove RV Park, Cove Volunteer Emergency Services, Cove Country Store, and single family residences, and a wastewater treatment facility and water plant along the site's southern boundary, and is adjacent to Cotton Bayou and single-family residential developments, including The Veranda, Cotton Creek, Legends Bay, The Cove at Cotton Creek, Creekside at Cotton Creek, and The Cove at Cotton Creek Estates, along its western property boundary. The Mont Belvieu Compressor Station is located further east of the subject site. A one hundred ten (110) foot wide drainage easement borders the northern property boundary. Areas north and west of the proposed LGI Development and south of S FM 565 are currently approved to be served by Aqua under CCN 13203<sup>2</sup> (water supply and distribution). See attached Figure 2 – Service Area Maps.

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<sup>2</sup> Currently certificated to Aqua Utilities, Inc. under CCN No. 11157.

Approximately 662 acres in the vicinity of the proposed LGI Development are approved to be served by CCN 13203.<sup>3</sup> The CCN service areas includes six single family residential subdivisions and the Crystal Lakes RV Resort, with three of the subdivisions and RV resort located adjacent to the western and southern boundaries of proposed LGI Development and the remaining three subdivisions approximately 0.35 miles southwest, 0.30 miles southeast, and 0.35 miles west of the proposed LGI Development.

### 2.3 Description

The land within the proposed LGI Development currently consists of agricultural cropland used to grow rice. Vacant, undeveloped land is situated along the northern border of the proposed LGI Development, rice fields and the Mont Belvieu Compressor Station are located east of the proposed LGI Development, the Mont Belvieu RV Park, Paradise Cove RV Park, Cove Volunteer Emergency Services, Cove Country Store, and single family residences, and a wastewater treatment facility and water plant are located along the southern boundary of the subject site, and Cotton Bayou and single-family residential developments, including The Veranda, Cotton Creek, Legends Bay, The Cove at Cotton Creek, Creekside at Cotton Creek, and The Cove at Cotton Creek Estates, are located west of the proposed LGI Development (Figure 2 – Service Area Maps). Existing terrain within the proposed LGI Development gradually slopes toward Cotton Bayou along the western property boundary. Existing elevations along the northern boundary of the LGI Development range from 28.2 to 25.6 feet (NAVD88, 2001 adj., and elevations along the southern boundary of the LGI Development range from 27.6 to 24.9 feet (NAVD88, 2001 adj.).

All 93.49 acres of the proposed LGI Development are located within the Lower Trinity Watershed. Runoff from the proposed LGI Development ultimately discharges to Cotton Bayou.

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<sup>3</sup> Currently certificated to Aqua Utilities, Inc. under CCN No. 11157.

Property within the proposed LGI Development is currently undeveloped, unimproved agricultural cropland.

## 2.4 Proposed Land Use

A single-family residential development is planned for the LGI Development, as shown in the Land Use Plan (Figure 3 – Land Use Plan). LGI Homes-Texas, LLC proposes a well-planned, single family home development, Joseph's Cove Subdivision, totaling approximately 358 homes on approximately 80.87 acres of the 93.49 acre LGI Development. Approximately 8.30 acres on the west side of the LGI Development will be reserved for a dry-bottom detention basin, including a thirty (30) foot maintenance berm. Approximately thirty-six one-hundredths (0.36) acres will be reserved for parks and recreation area and approximately four-tenths (0.40) acres will be reserved for open space. The proposed LGI Development requires approximately 16.49 acres of right-of-way internal to the proposed single-family development. Of the 80.87 acres to be developed, an approximately 3.31 acres are utilized as an existing a 50' pipeline easement, which bisects the property from the southwest corner to northeast corner. Approximately 3.71 acres of the western portion of the LGI Development, which includes Cotton Bayou floodway and the surrounding 100-yr floodplain, will remain undisturbed. Approximately 0.76 acres will be utilized for a future water well site and 0.26 acres are utilized for a lift station site.

Joseph's Cove Subdivision will be developed over three phases. Phase I of the development will include 65 lots, Phase II will include 105 lots, and Phase III will include the remaining 188 lots. LGI Homes-Texas, LLC expects to sell approximately 9 homes per month for the duration of the project (Figure 3-Land Use Plan). Design of Phase I of the development is in progress.

## 2.5 Proposed Water System Improvements & Utilization of Existing Infrastructure

Water supply for the proposed LGI Development will be provided by a separate, private entity, Aqua Texas, Inc., operating under CCN 13203 and doing business as Aqua Texas ("Aqua").<sup>4</sup> The LGI Development is not currently served by any water CCN.<sup>5</sup> LGI Homes will construct the proposed water distribution facilities for the LGI Development and connect into the existing Aqua water distribution facilities. Aqua will then own, operate, and maintain the facilities. The Gray Utility Service water system (PWS ID No. 0360005) water plant is located approximately 700 feet south of the southern boundary of the subject property, and has sufficient capacity to serve its 1,026 active and inactive equivalent single family water connections. Aqua represented that this water plant has capacity for approximately 250 additional connections and that Aqua will build the additional capacity needed to serve the proposed LGI Development at full development at Aqua's expense. LGI Homes has agreed to provide a fee simple interest to Aqua in a mutually agreed upon tract land for later use for an additional Aqua water well. Therefore, Aqua has or will have adequate water capacity to serve the proposed LGI Development both in its initial phase (Phase I) and at full build out. Aqua plans to apply to the PUC for an amendment to its water CCN 13203 to include the LGI Development. Design and construction of the proposed water utilities within the LGI Development and trunk lines and connections into the existing Aqua water facilities will be financed by LGI Homes.

Pursuant to Texas regulatory requirements at 30 TAC §290.39, prior to construction the Texas Commission on Environmental Quality ("TCEQ") will be provided notice of each the proposed water facilities for each phase of the development and will determine whether the change is significant under 30 TAC §290.39(j). TCEQ may request submission of plans and specifications following

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<sup>4</sup> The PUC has approved for Aqua Utilities, Inc., an Aqua affiliate, to transfer its water system and its CCN No. 11157 area that will be expanded to serve the LGI Development in Chambers County to Aqua Texas, Inc. CCN No. 13203. That process is expected to be complete very soon.

<sup>5</sup> Wastewater collection and treatment services for the LGI Development will also be provided by Aqua.

each notice. Design of water and facilities in Phase I of the development is in progress and subject to city and county plan review and approval. Phase I will have approximately 65 single-family residential connections and does not cause significant change to the existing distribution system by adding more than 10% of the existing 985 connections (10% is equal to approx. 98 connections). Proposed water facilities in Phase I include approximately 40 linear feet of 6-inch water line, approximately 3,510 linear feet of 8-inch water line, and approximately 2,380 feet of 12-inch water line. Only preliminary design of Phase II and Phase III have been completed. Based on the preliminary one-line drawings, it is anticipated that Phase II will include 3,500 linear feet of 8-inch water line and Phase III will include 4,950 linear feet of 8-inch water line. Design and construction of these facilities will be in conformance with criteria published by the Chambers County Engineer Offices, including the Chamber County Road & Bridge Department, and the Texas Commission on Environmental Quality ("TCEQ").

The working project schedule for Phase I anticipates that CCN Operator, local, and state agency reviews of construction plans for Phase I water facilities will continue through late June or July 2016. Final approval of plans is anticipated by mid to late July 2016. Bidding of these construction projects will begin prior to final approval of each of the plans, and construction will commence soon thereafter. Permits for construction of homes in LGI Development Phase I are anticipated by mid-December 2016.

The working project schedule for Phase II anticipates that CCN Operator, local and state agency reviews of construction plans for water facilities will commence in late July and continue through late August or September 2016. Final approval of plans is anticipated by September 2016. Bidding of construction will begin prior to final approval of the plans, and construction will commence soon

thereafter. Permits for construction of homes in LGI Development Phase II are anticipated by mid- to later April 2017.

A project schedule has not been established for Phase III at this time.

#### 2.5.1 Water Supply

The existing Aqua water plant that will be used to serve the LGI Development is the Gray Utility Service water system (PWS ID No. 0360005) water plant (the “GUS Water Plant”). The GUS Water Plant is located approximately 700 feet south of the proposed LGI Development, as shown in Figure 4 – GUS Water Plant Location), and has the following components:

The GUS Water Plant has two water wells with a total capacity of approximately 775-gallon-per-minute (gpm) with 368,000 gallons of ground storage, 25,000 gallons of hydro pneumatic tank storage, and 1,600 gpm booster pump capacity.

At full development of the proposed LGI Development, the area served by the GUS Water Plant will require approximately 300,000 gallons-per-day (gpd) at average daily flow. The GUS Water Plant currently serves 985 connections. Aqua represented that based on current usage the GUS Water Plant has adequate capacity to provide for an additional 250 connections. An additional water well, hydro-tank, and booster pump will be required to provide the capacity required to serve the estimated 358 connections in the proposed LGI Development. Aqua has represented to LGI Homes in the LGI Project Reimbursement Agreement effective as of October 7, 2015 by and between Aqua Texas, Inc., and LGI-Homes Texas, LLC (the “Reimbursement Agreement”) that “it has sufficient capacity or

will build sufficient capacity in its regional wastewater and water systems to provide continuous and adequate retail water and wastewater utility services to” the LGI Development.” The permit number issued by the TCEQ for Gray Utility Service water plant is PWS I.D. No. 360005. Aqua has also indicated that the chlorine gas disinfection system utilized at the water plant will not require modifications or upgrades. Additional future water connections will not adversely affect water quality in the system.

#### 2.5.2 Water Distribution System

A properly sized water main loop system to ensure that all service connections are provided with an ample supply of water at adequate pressure is proposed on the LGI Development (See Figure 5 - Water Distribution System). The pipe, valves and fittings will be of TCEQ accepted materials and design, and the proposed construction methods should provide a reliable system with little maintenance.

The water distribution system for the LGI Development will connect into an existing 12-inch water main currently located in a 20’ utility easement parallel to, and east of, Cotton Bayou. This water main will be relocated to a proposed water easement adjacent to lots on the west of the LGI Development and extending along the southern border of the southwest corner of the LGI Development. Aqua has indicated it is amenable to a second water line easement, if necessary, extending south from the LGI Development along the eastern boundary of the tract where the GUS Water Plant is located. Design, construction, and installation of the proposed water utilities within the LGI Development and trunk lines and connections into the existing Aqua water facilities will range in size from 6-inch to 12-inch polyvinyl chloride (PVC) pipe.

## 2.6 Existing and Projected Populations and Water Demand

The existing acreage has been and is currently used for rice farming and has no inhabitants. Phase I of the development will serve approximately 65 single-family residential units with an average of 3.5 people per unit resulting in a population of approximately 195 people. At full development, the 80.87 acre single-family residential portion of the LGI Development property ("Residential Property") is proposed to serve approximately 358 single-family residential units with an average of 3.5 people per unit resulting in a population of approximately 1,253 people.

### Residential Property Projected Water Demands

- Residential tract containing approximately 80.87 acres with an estimated water demand of 120 gal/person/day results in 420 gal/connection/day. The total water demand projected for the residential tract equals to 150,360 gal/day ( $420 \times 358 = 150,360$ ).
- The total result is 358 ESFC.



### 3. ESTIMATED CONSTRUCTION COST

A summary of estimated construction cost is provided on the following page.

#### LGI DEVELOPMENT

(93.49 ACRE TRACT)

#### OPINION OF PROBABLE CONSTRUCTION COST

##### WATER DISTRIBUTION SYSTEM

ITEM NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE	AMOUNT
WATER DISTRIBUTION SYSTEM – PHASE I					
1.	6" Waterline	LF	40	\$16.00	\$640.00
2.	8" Waterline	LF	2,800	\$20.00	\$56,000.00
3.	8" Waterline w/Restraint Joints	LF	710	\$40.00	\$28,400.00
4.	12" Waterline	LF	1,900	\$35.00	\$66,500.00
5.	12" Waterline w/Restraint Joints	LF	480	\$65.00	\$30,550.00
6.	6" Gate Valve w/Valve Box	EA	5	\$825.00	\$4,050.00
7.	8" Gate Valve w/Valve Box	EA	5	\$1,200.00	\$6,540.00
8.	12" Gate Valve w/Valve Box	EA	3	\$2,300.00	\$6,900.00
9.	12" Wet Connection	EA	1	\$1,100.00	\$1,100.00
10.	Flushing Valve	EA	5	\$3,500.00	\$7,160.00
11.	Trench Safety System	LF	5,920	\$1.00	\$5,920.00
12.	Design of Trench Safety and Shoring	LS	1	\$1,500.00	\$300.00
13.	Contingency (15%)	LS	1	\$33,610.00	\$33,610.00
14.	Materials Testing (3%)	LS	1	\$6,730.00	\$6,730.00
15.	Miscellaneous Expense	LS	1	\$3,700.00	\$3,700.00
<b>SUBTOTAL PHASE I</b>					<b>\$258,100.00</b>

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**WATER DISTRIBUTION SYSTEM – PHASE II**

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1.	6" Waterline	LF	60	\$16.00	\$960.00
2.	8" Waterline	LF	2,790	\$20.00	\$55,800.00
3.	8" Waterline w/Restraint Joints	LF	710	\$40.00	\$28,400.00
4.	6" Gate Valve w/Valve Box	EA	8	\$825.00	\$6,540.00
5.	8" Gate Valve w/Valve Box	EA	9	\$1,200.00	\$10,560.00
6.	Flushing Valve	EA	8	\$27,720.00	\$27,720.00
7.	Trench Safety System	LF	3,560	\$1.00	\$3,560.00
8.	Design of Trench Safety and Shoring	LS	1	\$1,500.00	\$500.00
9.	Contingency (15%)	LS	1	\$20,110.00	\$20,110.00
10.	Materials Testing (3%)	LS	1	\$4,030.00	\$4,030.00
11	Miscellaneous Expense	LS	1	\$5,900.00	\$5,900.00
<b><i>SUBTOTAL PHASE II</i></b>					<b>\$164,080.00</b>

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**WATER DISTRIBUTION SYSTEM – PHASE III**

1.	6" Waterline	LF	110	\$16.00	\$1,760.00
2.	8" Waterline	LF	3,950	\$20.00	\$79,000.00
3.	8" Waterline w/Restraint Joints	LF	1,000	\$40.00	\$40,000.00
4.	6" Gate Valve w/Valve Box	EA	14	\$825.00	\$11,700.00
5.	8" Gate Valve w/Valve Box	EA	16	\$1,200.00	\$18,910.00
6.	12" Gate Valve w/Valve Box	EA	1	\$2,300.00	\$2,300.00
7.	12" Wet Connection	EA	1	\$1,100.00	\$1,100.00
8.	Flushing Valve	EA	14	\$3,500.00	\$49,630.00
9.	Trench Safety System	LF	5,060	\$1.00	\$5,060.00
10.	Design of Trench Safety and Shoring	LS	1	\$1,500.00	\$800.00
11.	Contingency (15%)	LS	1	\$31,540.00	\$31,540.00
12.	Materials Testing (3%)	LS	1	\$6,310.00	\$6,310.00
13.	Miscellaneous Expense	LS	1	\$10,600.00	\$10,600.00
<b><i>SUBTOTAL PHASE III</i></b>					<b>\$258,710.00</b>
<b><i>TOTAL WATER DISTRIBUTION SYSTEM ITEMS</i></b>					<b>\$680,890.00</b>

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#### 4. SPECIAL CONDITIONS

##### 4.1 Availability of Utility Services

The water supply, water distribution, wastewater collection, and wastewater treatment will be provided by Aqua.

##### 4.2 Effects on Land Elevation

This development is proposed to be in compliance with rules and regulations pertinent to acceptance of the subdivision for home mortgage insurance by the Department of Housing and Urban Development under Section 203(b) of Title II of the National Housing Act of 1934, and in that regard, no major land elevation changes of any type are planned.

##### 4.3 Effects on Land Subsidence

According to the "Changes in Water Levels in Texas, 1995 to 2005" (July 2011) available on the Texas Water Development Board (TWDB) website, the Gulf Coast Aquifer in which the LGI Development is located experienced a median water level rise of 0.9 feet from 1995 to 2005. The rise in groundwater levels was attributed to changes in pumping, including the location of certain pumping centers. Also, the 39<sup>th</sup> Annual Groundwater Report (Year Ending December 31, 2014) prepared by the United States Geological Survey (USGS) indicates a water level increase of 1 to 10 feet in the Chicot Aquifer near the LGI Development for the 2014 - 2015 period, illustrating a decrease in groundwater dependence. However, according to Scientific Investigations Report 2005-5024 by the USGS and Harris-Galveston Subsidence District, small areas of about 1 feet of subsidence in Chambers County that do not appear in 2000 are indicated for 2010. Based on simulations, this area of subsidence is projected to increase through 2050. It is not anticipated that the domestic water usage by the LGI Development will contribute significantly to the rate of subsidence; however, since the LGI Development will not be the water purveyor for the proposed development, it will

not be LGI Homes or the LGI Development's obligation to adhere to any water conservation requirements that could be imposed by regulatory agencies related to subsidence. No specific water conservation requirements related to subsidence currently exist, as Chambers County is not in a delineated subsidence district.

#### 4.4 Effects on Groundwater Level

Water usage in the LGI Development is estimated to be 150,000 gpd average daily flow at build-out. The LGI Development is located over the Gulf Coast Aquifer, and groundwater within the LGI Development is predominantly withdrawn from the Chicot and Evangeline Aquifers. The 39<sup>th</sup> Annual Groundwater Report (Year Ending December 31, 2014) prepared by the United States Geological Survey (USGS) indicates a water level increase of 1 to 10 feet in the Chicot Aquifer near the LGI Development for the 2014 - 2015 period, illustrating a decrease in groundwater dependence. There was no data available for the Evangeline Aquifer in Chambers County. Aqua will be responsible for managing water usage for the development.

#### 4.5 Groundwater Recharge Capability

According to the "Estimation of Groundwater Recharge to the Gulf Coast Aquifer in Texas, USA" prepared for the TWDB, a recharge rate is estimated to be 0.1 to 0.25 inches per year for the average annual recharge in outcrops of the Chicot and Evangeline Aquifers. The report states that "recharge estimates based on different techniques vary in the reliability of their estimates" and "potential recharge rates can be derived from surface-water and unsaturated-zone techniques, whereas actual recharge rates are based on groundwater data."

The Evangeline and Chicot Aquifers are recharged from natural resources. Based on the above-referenced groundwater reports, this proposed development does not appear to be a danger to the recharge capability of the Aquifers. The Chicot and

Evangeline Aquifers are made up of numerous discontinuous sand strata, which are very tight with slow transmissivity. A groundwater recharge system for a project the size of this development would not be feasible.

#### 4.6 Subsidence District

The LGI Development is not located in a delineated Subsidence District. The Texas Water Development Board indicates that the LGI Development is located with Groundwater Management Area 14.

#### 4.7 Natural Run-Off/Drainage

Development generally increases the runoff in an area compared to natural conditions. Drainage improvements within the proposed LGI Development and construction of the proposed drainage and detention facilities should prevent any adverse impact from any increased runoff rate or volume.

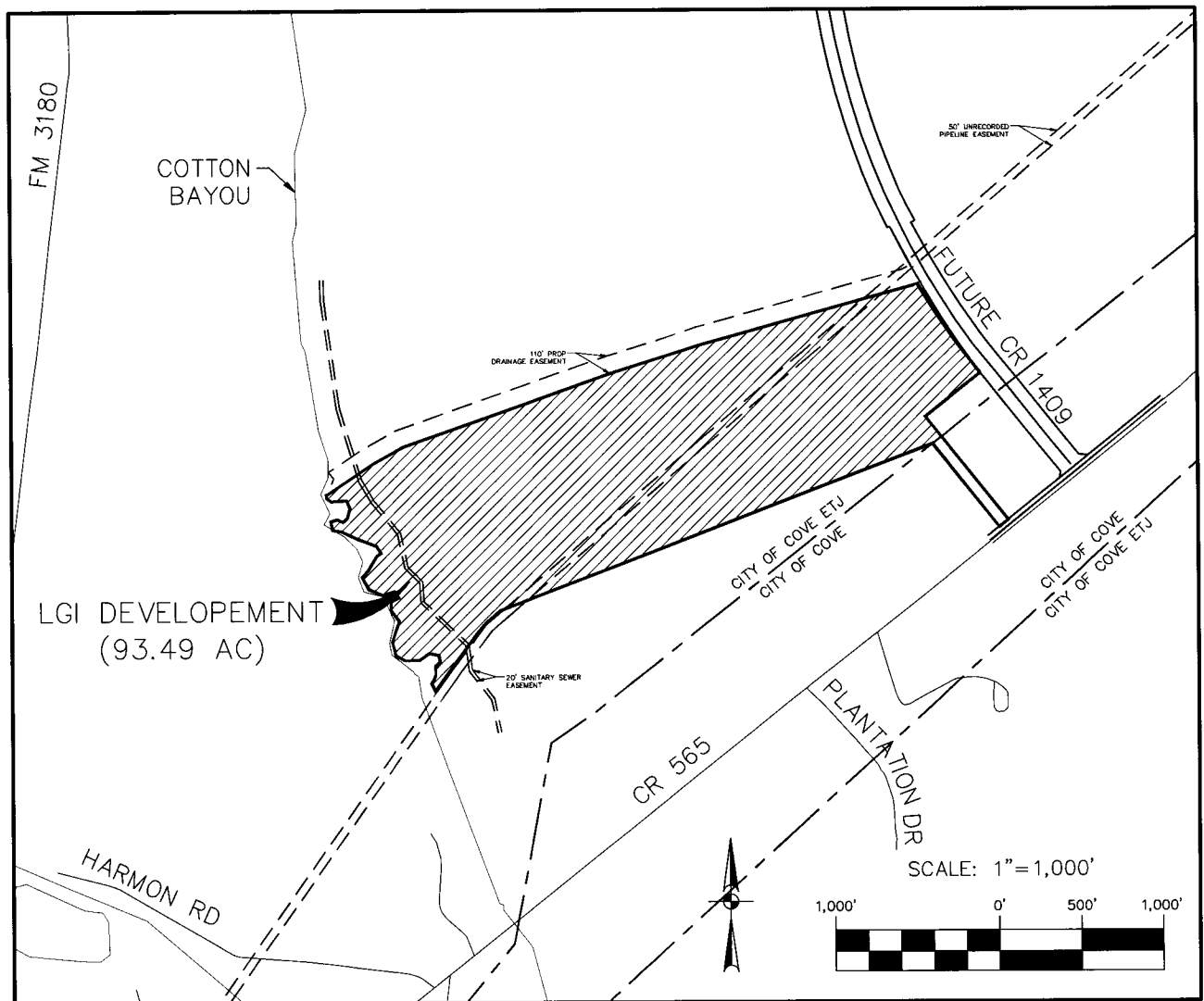
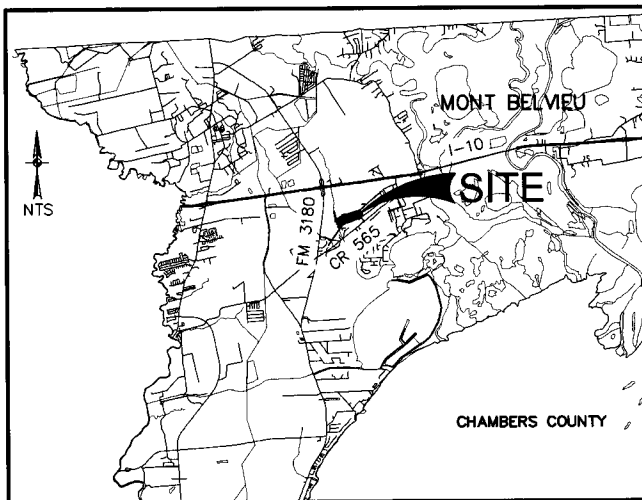
#### 4.8 Water Quality

The proposed LGI Development will utilize water supplied from the GUS Water Plant operated by Aqua. One well located on the GUS Water Plant site will withdraw water mainly from the Chicot Aquifer, and possibly the Evangeline Aquifer. According to Aquifers of Texas Report 380 published in July 2011 and available on the Texas Water Development Board website, water quality in the northeastern part of the Gulf Coast Aquifer where the LGI development is located is generally good (less than 1,000 milligrams per liter total dissolved solids) and in many cases, requires only disinfection before use. However, brackish groundwater (1,000-10,000 milligrams per liter total dissolved solids) is more common in the southern Gulf Coast area. Aqua will be responsible for the quality of the water provided.

#### 4.9 Conclusion

Based on our preliminary engineering study, combining the improvements described with Aqua's nearby infrastructure will enable Aqua to provide a continuous and adequate water supply to the proposed LGI Development using water system facilities that are in compliance with Texas Health and Safety Code, Chapter 341 and TCEQ rules. This project will be beneficial to all the land within the proposed LGI Development's boundary.

# FIGURES



JOB NO. 40252-02  
 DATE MAY 2016  
 DESIGNER  
 CHECKED SH DRAWN ZP  
 FIGURE 1

# **LGI DEVELOPMENT** **PROJECT BOUNDARY MAP** CITY OF COVE ETJ, CHAMBERS COUNTY, TX

**PAPE-DAWSON**  
**ENGINEERS**

10333 RICHMOND AVE | SUITE 900 | HOUSTON, TEXAS 77042 | PHONE: 713.428.2400  
 FAX: 713.428.2420  
 TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470  
 TEXAS BOARD OF PROFESSIONAL LAND SURVEYING, FIRM REGISTRATION # 10193674

Date: May 26, 2016, 1:28pm, User ID: jpherry  
 File: K:\Projects\40252\02\LO Correspondence\1-1 Agency\TCEQ\Exhibits to PER\01 - Josephis Cove - Project Boundary Map.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.





JOB NO. 40252-02  
 DATE MAY 2016  
 DESIGNER ---  
 CHECKED SH DRAWN ZP  
 FIGURE 2

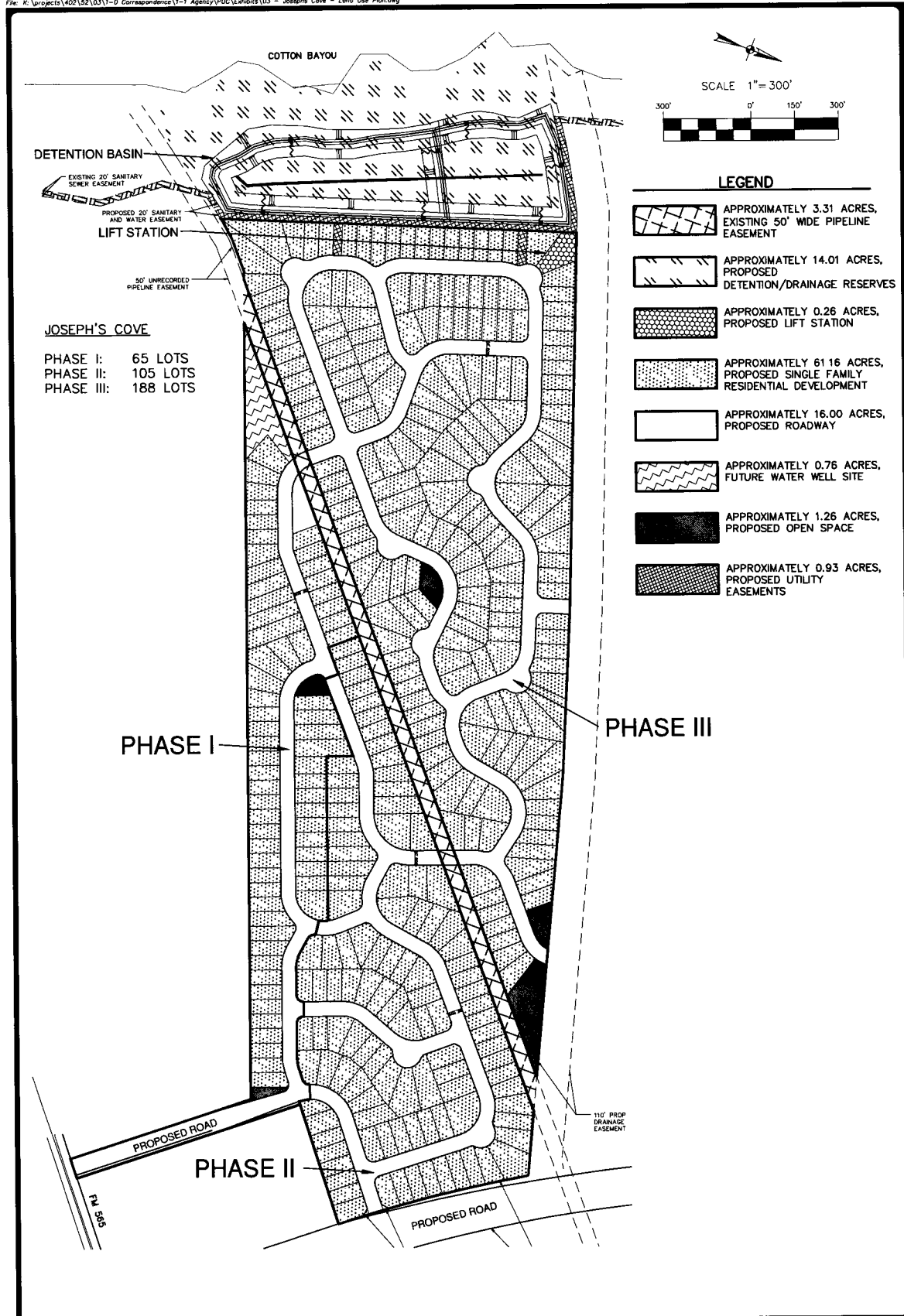
# LGI DEVELOPMENT

CITY OF COVE ETJ, CHAMBERS COUNTY, TEXAS

## SERVICE AREA MAP

**PAPE-DAWSON**  
**ENGINEERS**

10333 RICHMOND AVE | HOUSTON, TEXAS 77042 | PHONE: 713.428.2400  
 SUITE 900 | FAX: 713.428.2420  
 TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470  
 TEXAS BOARD OF PROFESSIONAL LAND SURVEYING, FIRM REGISTRATION # 10183074



JOB NO. 40252-03  
 DATE MAY 2016  
 DESIGNER ---  
 CHECKED SH DRAWN ZP  
 FIGURE 3

**JOSEPH'S COVE SUBDIVISION**  
**LAND USE PLAN (358 HOMES)**  
**CITY OF COVE ETJ, CHAMBERS COUNTY, TX**

**PAPE-DAWSON ENGINEERS**

10333 RICHMOND AVE. HOUSTON, TEXAS 77042 PHONE: 713.458.2400  
 SUITE 100 FAX: 713.458.2400  
 TEXAS BOARD OF PROFESSIONAL ENGINEERS, PRM REGISTRATION # 470  
 TEXAS BOARD OF PROFESSIONAL LAND SURVEYING, PRM REGISTRATION # 10942414