

## **CALHOUN COUNTY CDBG-MIT COG MOD APPLICATION PACKAGES**

Calhoun County is giving notice of the County's intent to submit applications to the Texas General Land Office (GLO) for the Texas Community Development Block Grant – Mitigation (CDBG-MIT) Regional Council of Governments (COG) Method of Distribution (MOD) Program. The allocation is for the proposed projects listed below to utilize \$8,782,200 in funding allocated by the Golden Crescent Regional Planning Commission (GCRPC) for long-term recovery efforts.

1. Magnolia Beach Fire Station Reconstruction Project
2. Crestview Subdivision Drainage Project
3. Hackberry Subdivision Drainage Project
4. Port Alto Drainage Project
5. Seakist Lane Drainage Project
6. Schicke Point Drainage Project
7. Westside Subdivision Drainage Project

The Projects' details can be viewed at the County's website <https://www.calhouncotx.org/> or Calhoun County Commissioner's Court during regular business hours located at 211 S. Ann Street Suite 104. Port Lavaca, TX. 77979.

The County will receive public comments for fourteen (14) days from September 27, 2023, until October 11, 2023. The public is encouraged to submit comments to Candes Wakeman, KSBR LLC, Grants Administrator, via email at [candes@ksbr-ll.com](mailto:candes@ksbr-ll.com). All input must be received by 5:00pm on October 11, 2023. Comments will be incorporated into the draft application documents, as appropriate, that will mitigate the devastating effects of natural disasters as well ensure the project(s) are in line with environmental regulations, affirmatively further fair housing activities, and, if applicable, minimizing displacement of persons by project activities.

Upon the expiration of this comment period the County will review and address the public comments in the proposed application. For more information, contact Veronica Pauda, KSBR LLC, Grant Administrator at 817-856-9021 or [veronica@ksbr-ll.com](mailto:veronica@ksbr-ll.com).

\*Although the packages are substantially complete, the cost estimates and scopes of work provided are simply estimates and slight variations in the budget or scope may happen.

Attachments included are:

1. Project Descriptions
2. Project Locations
3. Project Budgets
4. Projects' Beneficiary Information

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5. Seakist Lane Drainage Project

I. Introduction to the Scope of Work

II. Engineer Memo

III. Project Location Exhibits with Coordinates

IV. Cost Estimate

V. Beneficiary Area Map

6. Schicke Point Drainage Project

I. Introduction to the Scope of Work

II. Engineer Memo

III. Project Location Exhibits with Coordinates

IV. Cost Estimate

V. Beneficiary Area Map

7. Westside Subdivision Drainage Project

I. Introduction to the Scope of Work

II. Engineer Memo

III. Project Location Exhibits with Coordinates

IV. Cost Estimate

V. Beneficiary Area Map

## **Calhoun County - Magnolia Beach Volunteer Fire Department**

Cost Estimate - \$2,861,660

This project is for the reconstruction of the Magnolia Beach Volunteer Fire Department (MBVFD) and provision of a generator. The reconstruction of the fire department and provision of a generator is essential for the Magnolia Beach Volunteer Fire Department as it is frequently affected by damaging coastal storms. The MBVFD is one of the few fire departments in the area and County that also provides EMS services. This project will mitigate future impacts and increase the facility's resiliency in providing critical services during times of need.



DRAFT 09/15/23

ENGINEERS, INC.

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205 W. Live Oak • Port Lavaca, TX 77979 • p: (361)552-4509 • f: (361)552-4987  
Texas Firm Registration No. F04188

## MEMO

To: Calhoun County

From: G&W Engineers, Inc.

Date: September 15, 2023

RE: **Engineering Justification Memo** for Calhoun County Magnolia Beach Volunteer Fire Department Project

The Magnolia Beach Volunteer Fire Department is located in Magnolia Beach, Texas along the bay by the Gulf of Mexico in Calhoun County. Since the Fire Station is located along the coast, the structures and drainage within the County are frequently damaged and strained by hurricanes and tropical storms. All of Calhoun County is a designated catastrophe area according to TDI and is certainly susceptible to potentially damaging coastal storm events. The Fire Department is frequently affected by these storm events, and this Project is vital to community and their ability to rapidly respond to emergencies during catastrophes. This project will mitigate future impacts and increase the resiliency facility providing critical services during times of need. The Magnolia Beach Fire Department is also one of few fire departments in the area and County that also provides EMS services.

### Past

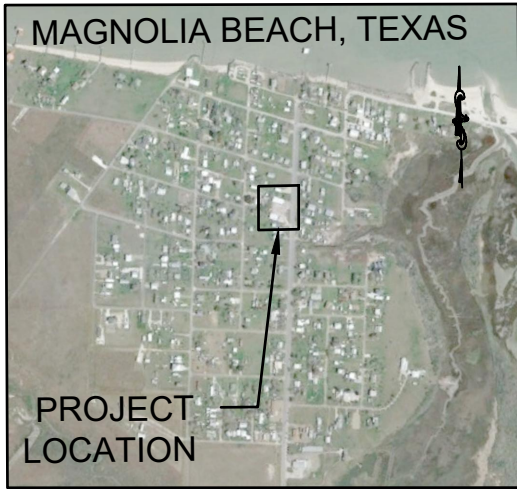
In the past the Fire Department has experienced flooding in the area, as well as, water near the building. The structure itself is susceptible to salt water environment and sea spray. The original building was built out of traditional materials that are not the best fit for the environment. This has led to extended maintenance throughout the years to extend the current facilities useful life. The building has withstood the past wind loads of previous storms to this point.

### Present

Currently the fire station building is at it useful life. Major repairs are needed in order to retain some of the structural integrity. The Fire Department has also grown in number of volunteers, equipment and needs. The current facility is smaller than the proposed facility. Upon inspection by G&W, the facility lacks storage, office space, garage space and a place to provide support to those in need if there is a prolonged power outage. During Hurricane Harvey, the fire station was the hub for all of the people of magnolia beach, alamo beach and Indianola to get supplies, food and gear while power was out and residences were damaged. Currently the facility, while operational, is one disaster away from not being able to provide to the area it serves. The building does not meet all of the codes and requirements that are set for presently for a critical facility. This includes flood codes, building codes, windstorm codes, etc.

**Future**

The proposed project is an improvement of the current facility. It will meet all of the requirements of a critical facility. The building will be designed for a 160 MPH wind event. It will meet all of the International Building Code (IBC) requirements for garages and ventilation. The facility will meet ADA requirements and be suited for those volunteers with disabilities. The building will not dependent on the power grid as a back-up generator will be installed permanently. The building will have enough space to house all of the space needs of the department. While the building will be bigger, the size is justifiable by inspections performed by G&W. The building size being requested is not to serve a future goal, all of the space of the new building will be utilized. The site limitations do not allow for a bigger building. The building will be an important hub for the coastal communities and is necessary for the future as the storms are predicted to be more powerful and frequent year to year.

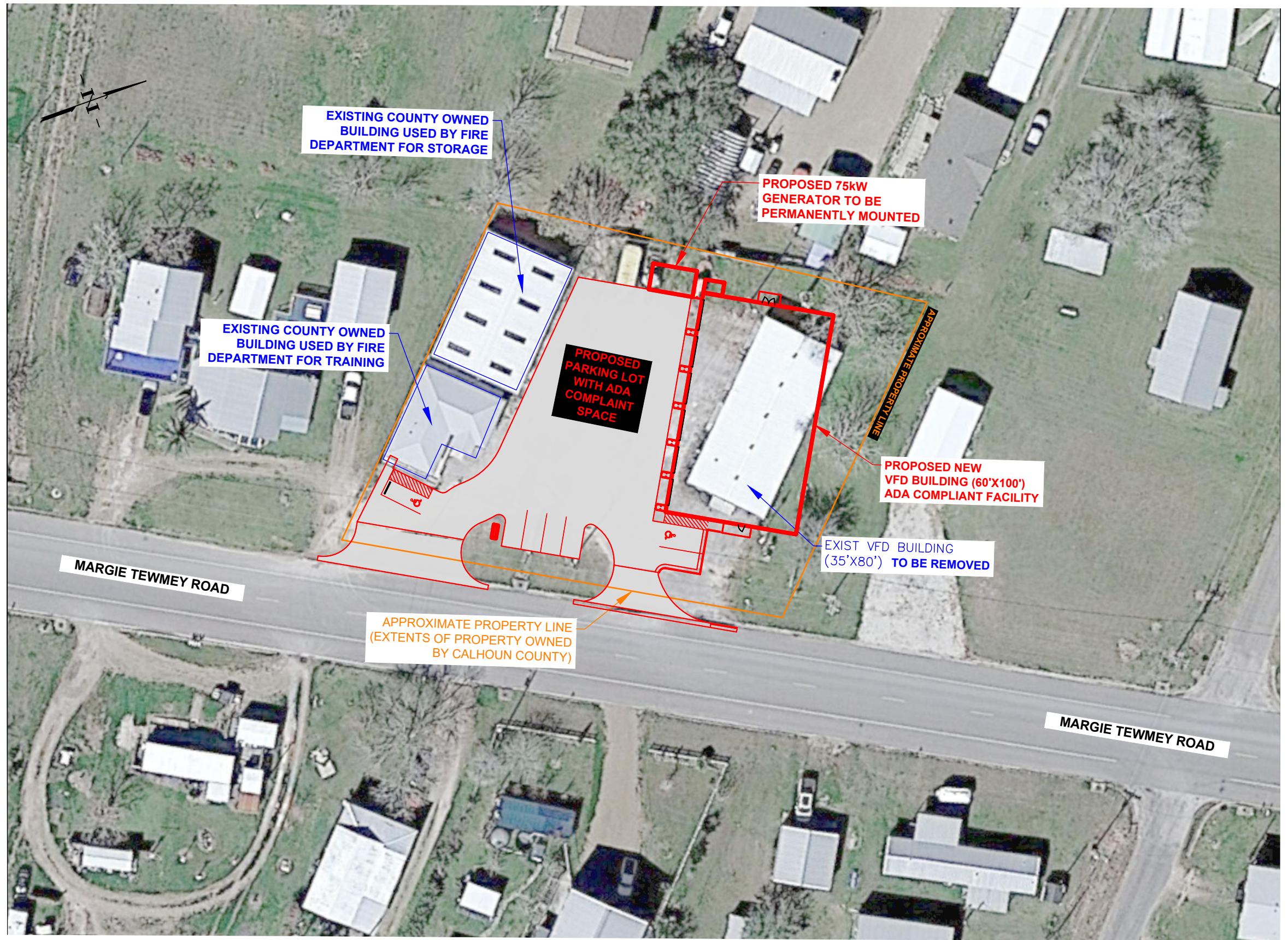


**LEGEND:**

- EXISTING BUILDING
- PROPOSED
- PROPERTY BOUNDARY

PROJECT LAT LONG  
 LAT: 28.55982  
 LONG: -96.54321

**DRAFT 09/15/23**



**CALHOUN COUNTY – MAGNOLIA BEACH VOLUNTEER FIRE DEPARTMENT**

CALHOUN COUNTY, TEXAS  
 GLO-CDBG-MIT-MOD APPLICATION

PRELIMINARY FOR PLANNING PURPOSES ONLY

**G & W ENGINEERS, INC.**

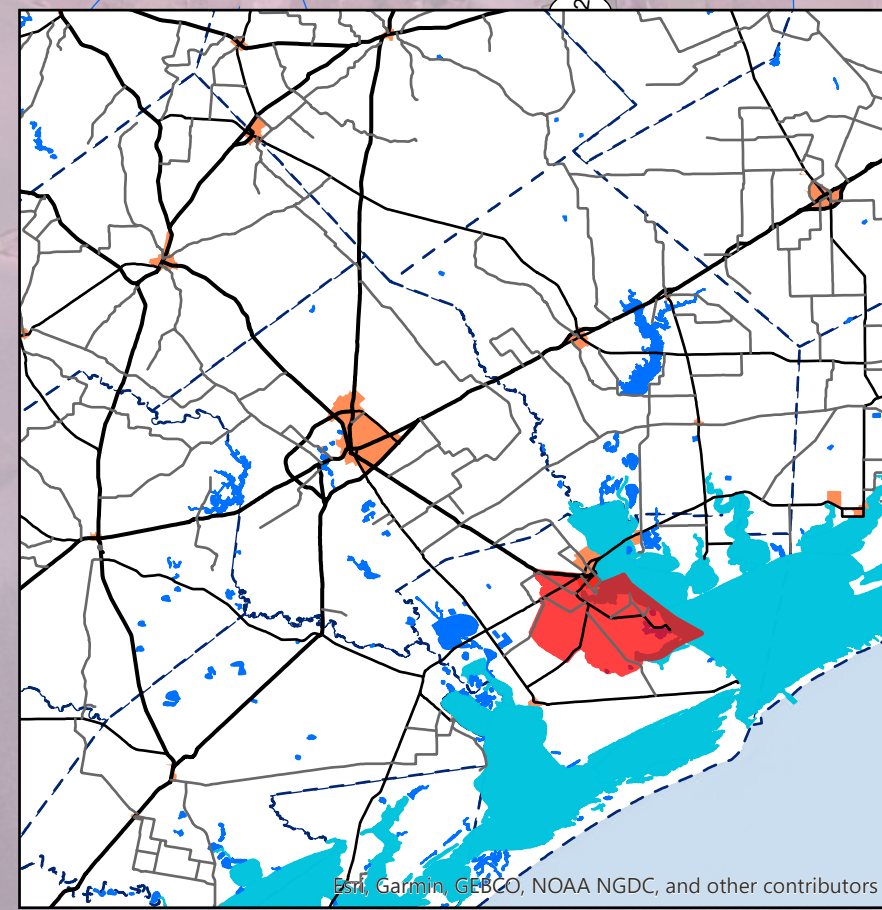
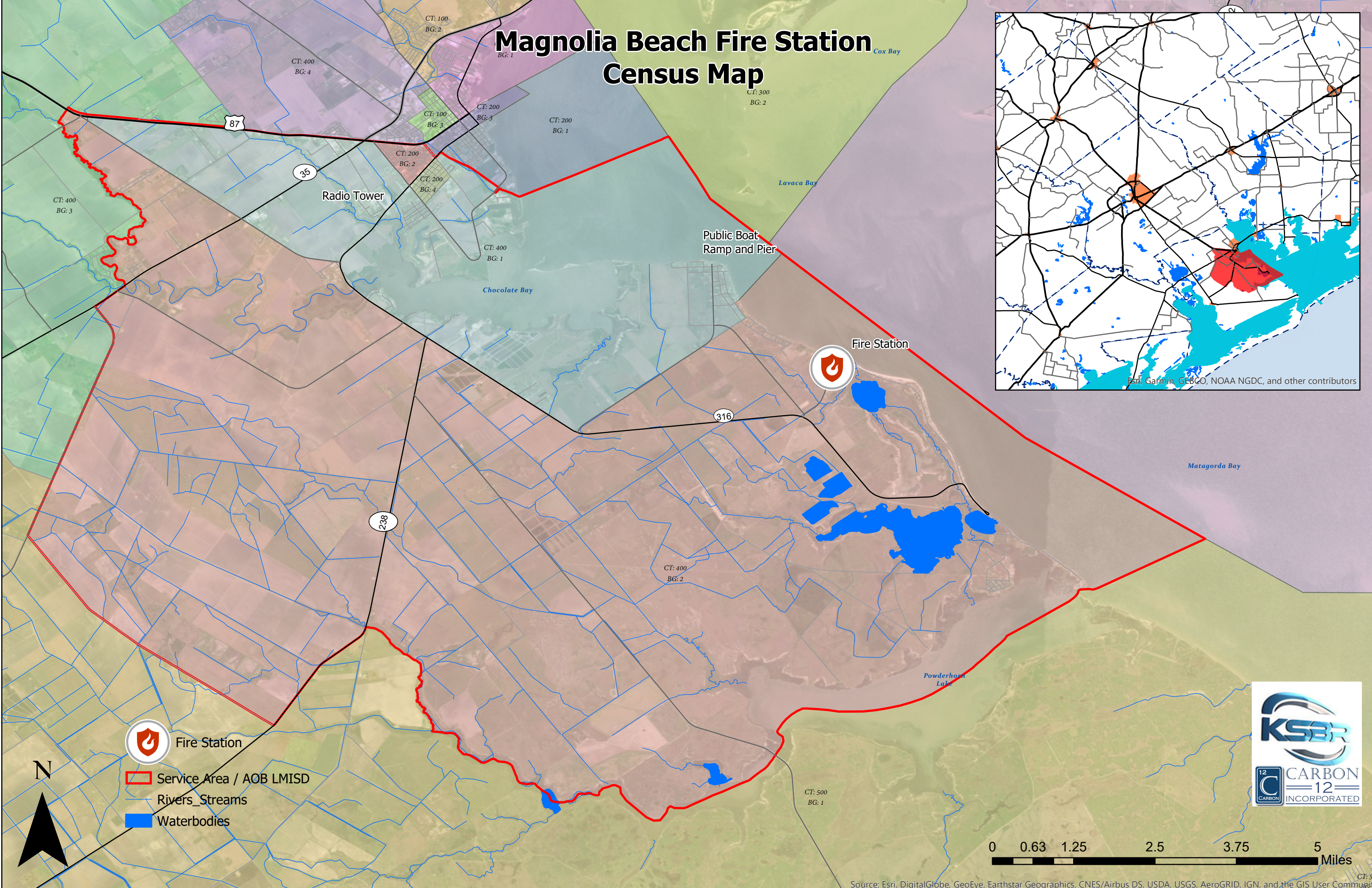
● ENGINEERING ● SURVEYING ● PLANNING ●

205 W. LIVE OAK STREET, PORT LAVACA, TEXAS 77979  
 TBPE FIRM NO.: F04188  
 (361) 552-4509: PORT LAVACA (979) 323-7100: BAY CITY

DRAWN BY: Z.L.R.  
 CHECKED BY: S.P.M.  
 DATE: SEP. 14, 2023

SCALE: 1" = 50'  
 JOB NO.: 5310.011C  
 SHEET NO.: 1

# Magnolia Beach Fire Station Census Map



Esri, Garmin, GEBCO, NOAA NGDC, and other contributors



Fire Station



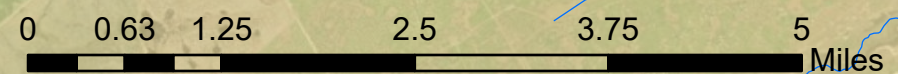
Service Area / AOB LMISD



Rivers/Streams



Waterbodies



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



## **Calhoun County - Crestview Subdivision Drainage Project**

Cost Estimate - \$928,506

This project's initiative is to improve the drainage and ditch along the Crestview Subdivision. The Crestview Subdivision has agricultural lots to the northwest and northeast, a stream bordering the southwest side and additional residential lots along the southeast. The stream to the southwest is also the location of the existing outfall from the system. To prevent flooding in these areas, it is necessary to have a functional drainage and ditch system.

## MEMO

To: Calhoun County

From: G&W Engineers, Inc.

Date: September 25, 2023

RE: Engineering Justification Memo for Calhoun County Crestview Subdivision Drainage Project

Crestview Subdivision is located within Calhoun County and is outside of the City of Port Lavaca. The subdivision has approximately 98 residential lots. The subdivision has agricultural lots to the northwest and northeast, a stream bordering the southwest side and additional residential lots along the southeast. The stream to the southwest is also the location of the existing outfall from the system.

### Past

The subdivision has experienced flooding in the recent past, due to the large rainstorm events. The design of the existing drainage design followed a more relaxed set of drainage regulations that cause the area to easily flood and inundate the residential lots of the subdivision. One of the most concerning parts of the system is the outfall and the total capacity of it. The system, due to design limitations, has a limited capacity to carry the runoff to the current outfall and is the second area of concern of the drainage system. The county has maintained the drainage over the years by cleaning ditches and replacing culverts when necessary.

### Present

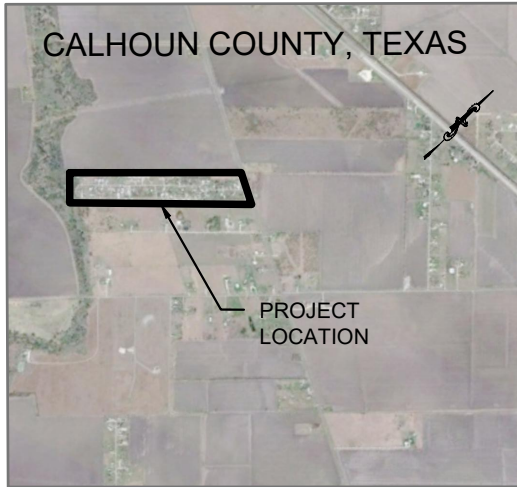
The current drainage system needs improvements at the outfall structure, as well as, the roadside ditches and culverts that convey the runoff to the outfall. This is needed to expedite the runoff of the subdivision and help reduce the max water height of the system before the additional rainfall from the surrounding areas flows towards the current outfall of the system. The culvert and ditches along the route will need to be redone in order to maximize the potential outflow from the subdivision and reduce any potential flooding issues of the subdivision. The loop of the road leads to having a “bowl” effect and the only way out is at the outfall. The water stacks up due to undersized culverts and outfall. In cases like this, engineers now commonly design an emergency outfall spill way at the outfall so that the water is released rather than flooding houses. This is for events larger than standard which in County rules would be a 5-year storm.

### Future

The purpose of this project is an improvement of the current drainage outfall and conveyance system of the subdivision. The outfalls ditches and culvert will be modeled with modern storm water modeling

software in order to best serve the subdivision and reduce the amount of inundation to the residential lots. This will ensure that the proposed outfalls and roadside ditches can handle the appropriate amount of flow through the system. These changes to the drainage system will alleviate flooding of the lots and will allow for the citizens to remain safe and their property to not suffer damage or loss in value from being subject to home flooding. The emergency spillway will protect the homes in very large events, like those recently experienced since Hurricane Harvey.





**LEGEND:**

- - - PROP DITCH IMPROV.
- PROP CULVERT IMPROV.
- PROP IMPROV. OUTFALL
- PROPERTY BOUNDARY

PROJECT LAT LONG  
 LAT: 28.36162  
 LONG: -96.41348



**CALHOUN COUNTY – CRESTVIEW  
 SUBDIVISION DRAINAGE  
 IMPROVEMENTS**

CALHOUN COUNTY, TEXAS  
 GLO-CDBG-MIT APPLICATION

PRELIMINARY FOR  
 PLANNING PURPOSES  
 ONLY

**G & W ENGINEERS, INC.**

● ENGINEERING ● SURVEYING ● PLANNING ●

205 W. LIVE OAK STREET, PORT LAVACA, TEXAS 77979  
 TBPE FIRM NO.: F04188  
 (361) 552-4509: PORT LAVACA (979) 323-7100: BAY CITY


DRAWN BY:  
 L.M.M  
 CHECKED BY:  
 S.P.M.  
 DATE:  
 SEP. 21, 2023

SCALE:  
 1" = 300'  
 JOB NO.:  
 5310.022  
 SHEET NO.:  
 1

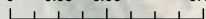


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 Crestview

0 0.03 0.06 0.13 Miles



# Crestview Area of Benefit Map



## **Calhoun County - Hackberry Drainage**

Cost Estimate - \$392,800

This project is for the drainage and outfalls improvements needed along the Hackberry Subdivision. During a recent storm in May of 2021, house-flooding instances led to the rescue of numerous elderly residents. This project is designed to relieve flooding issues, such as this.

## MEMO

To: Calhoun County

From: G&W Engineers, Inc.

Date: September 20, 2023

RE: Engineering Justification Memo for Calhoun County Hackberry Subdivision Drainage Project

Hackberry Subdivision is located within Calhoun County and right outside of the City of Port Lavaca. The subdivision has approximately 50 residential lots. The subdivision is surrounded by farm lands and pastures in many directions. To its eastern most border is a very large drainage district channel which conveys storm water run off from thousands of acres upstream. The subdivision is protected by a small berm to the northern and western most border. And the southern most border is an active rail road. The subdivision is divided into seven (7) drainage areas which flow to seven (7) outfalls. The subdivision has been subject to several large rain storm events, one being a 50-year storm in May of 2021. During this event house flooding occurred and rescues of elderly residents were required. This project is designed to relieve the flooding issues.

### Past

In the past the County has done regular maintenance of the drainage within the subdivision. One of the most concerning issues is that at the time this subdivision was constructed, drainage standards were much more relaxed. It was also common to design storm sewers to handle only small storms and be composed of small drainage pipes. This has led to inadequate drainage for larger events. The subdivision as previously mentioned, has suffered from several significant flood events in which rescues were required and homes were damaged.

### Present

Currently the drainage is in need of major upgrades at the outfalls. G&W has personally observed the flooding within the subdivision and has determined without a doubt that the outfalls are the main contributing factor and bottleneck for the drainage. The drainage district is requiring that the pipes not be just replaced in kind or as cheap as possible. It is advised that these outfalls be “hardened”. This means that rip rap/erosion protection be used from one side of the channel to the other to prevent scour. Also, that emergency overflows be designed so that the houses will no longer be flooded. G&W recommends that the berms be raised slightly as it was observed that there were a couple of over topping areas which then contributed to additional flooding. This exacerbated the problem of the inadequate storm sewer pipes at the outfalls of the subdivision. Outfall 1 does not currently have a pipe. Outfalls 2

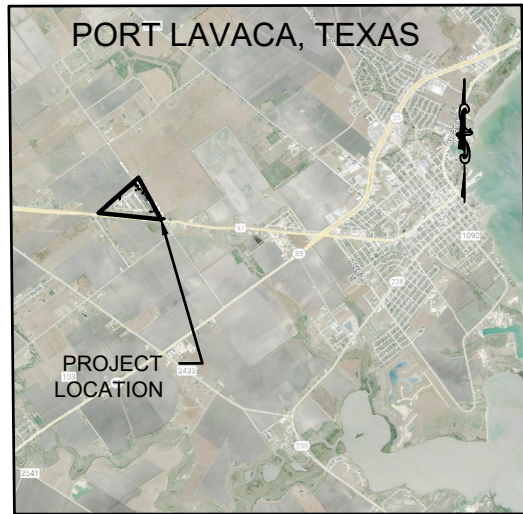


through 7 have a small culvert pipe outfall. There is no provisions for emergency relief in any outfalls. There is also an outfall just outside of the subdivision that is inadequate in size.

**Future**

The proposed project is an improvement of the current drainage outfalls of the subdivision. It will also include a raised berm to protect the subdivision. The outfalls will be sized appropriately to handle the increases in run-off and rainfall the past decade. It will be designed utilizing modern storm water modeling software to ensure that the new outfalls can handle the flow. This will alleviate flooding of the lots and will allow for the citizens to remain safe and their property to not suffer damage or loss in value. The project will implement an emergency spillway. This will relieve the flooding in the case a pipe is clogged or blocked or the storm event is larger than the design. This will include an erosion mat lined spillway to protect from erosion. The culvert right outside of the subdivision will be upgraded so that adequate flow can pass through from the surrounding farmed fields. This will further decrease the ability of the berm to be over-topped in an emergency situation.





**LEGEND:**

- EXISTING DITCH
- EXISTING OUTFALL
- PROPOSED SPILLWAY LOCATION

PROJECT LAT LONG  
 LAT: 28.61603  
 LONG: -96.67715



PRELIMINARY FOR  
 PLANNING PURPOSES  
 ONLY

**CALHOUN COUNTY – HACKBERRY  
 SUBDIVISION DRAINAGE  
 IMPROVEMENTS PROJECT**

CALHOUN COUNTY, TEXAS  
 GLO-CDBG-MIT APPLICATION

**G & W ENGINEERS, INC.**


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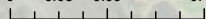
DRAWN BY:  
 Z.L.R.  
 CHECKED BY:  
 S.P.M.  
 DATE:  
 SEP. 21, 2023

SCALE:  
 1" = 400'  
 JOB NO.:  
 5310.022  
 SHEET NO.:  
 1



 Hackberry

0 0.05 0.09 0.19 Miles



# Hackberry Area of Benefit



## **Calhoun County - Port Alto Drainage Project**

Cost Estimate - \$864,690

The Port Alto Drainage Project will improve drainage along County Road 307 as well as South Marshall Johnson Avenue. Port Alto (north) is located along County Road 307 is an area that has unimproved pastureland to the west and the waterfront to the east. The site has three current outfalls that lead out from the roadside ditches to the waterfront. Improving the current drainage outfall and conveyance system will ensure that the proposed outfalls and roadside ditches can handle the appropriate amount of flow through the system. This project will increase the protection of the outfall and decrease the amount of erosion that occurs at these locations. Port Alto (south) is along South Marshall Avenue and has unimproved pastureland to the west and the waterfront to the east. This site has three current outfalls that lead from the roadside ditches to the waterfront of the Carancahua Bay. With the improvement of the current drainage outfall and conveyance system this will reduce the amount of inundation to the residential lots. An increase in the protection of the outfalls and a decrease in the amount of erosion that occurs at these locations is expected as well.

## MEMO

To: Calhoun County

From: G&W Engineers, Inc.

Date: September 27, 2023

RE: Engineering Justification Memo for Calhoun County Port Alto Drainage Project

Port Alto is located within Calhoun County along Carancahua bay. The proposed drainage improvement area has approximately 258 residential lots. The area has unimproved pasture land to the west and the waterfront to the east. The site has seven current outfalls that lead out from the roadside ditches to the water front.

### Past

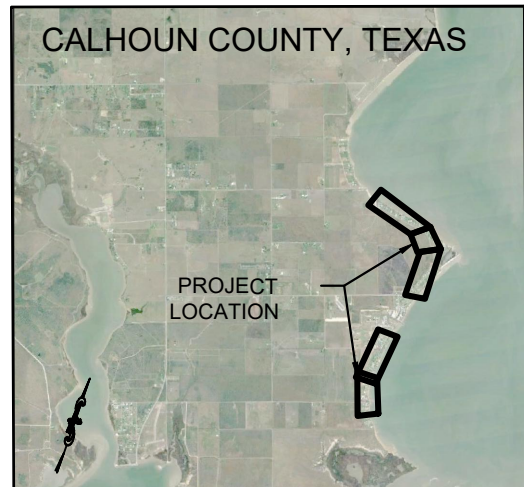
The area has experienced flooding in the recent past due to the large rainstorm events. The existing culverts were installed piecemeal as each lot was developed with the flowline of the culverts being what the current elevation of the ditch was at the time of install. The culvert size was not planned out before the development of each lot so there is inconsistency with pipe size along the drainage ditch. One of the most concerning parts of the system is the outfalls with the total capacity and lack of protection from erosion and sedimentation build up. The system, due to lack of an overall design, has a limited capacity to carry the runoff to the current outfalls.

### Present

The current drainage needs to be updated and the outfalls need robust protection, as well as, the roadside ditches and culverts that convey the runoff to the outfall. This is needed to prevent the degradation of the outfall from the erosion from the site's ultimate outfall of the Carancahua Bay. The culvert and ditches along the route will need to be redone in order to uniformly carry the runoff from the site and reduce any potential flooding issues in the area.

### Future

The purpose of this project is an improvement of the current drainage outfall and conveyance system of the site. The outfalls ditches and culvert will be modeled with modern storm water modeling software in order to best serve the subdivision and reduce the amount of inundation to the residential lots. This will ensure that the proposed outfalls and roadside ditches can handle the appropriate amount of flow through the system. The project will increase the protection of the outfall and decrease the amount of erosion that occurs at these locations. These changes to the drainage system will alleviate flooding of the lots and will allow for the citizens to remain safe and their property to not suffer damage or loss in value.

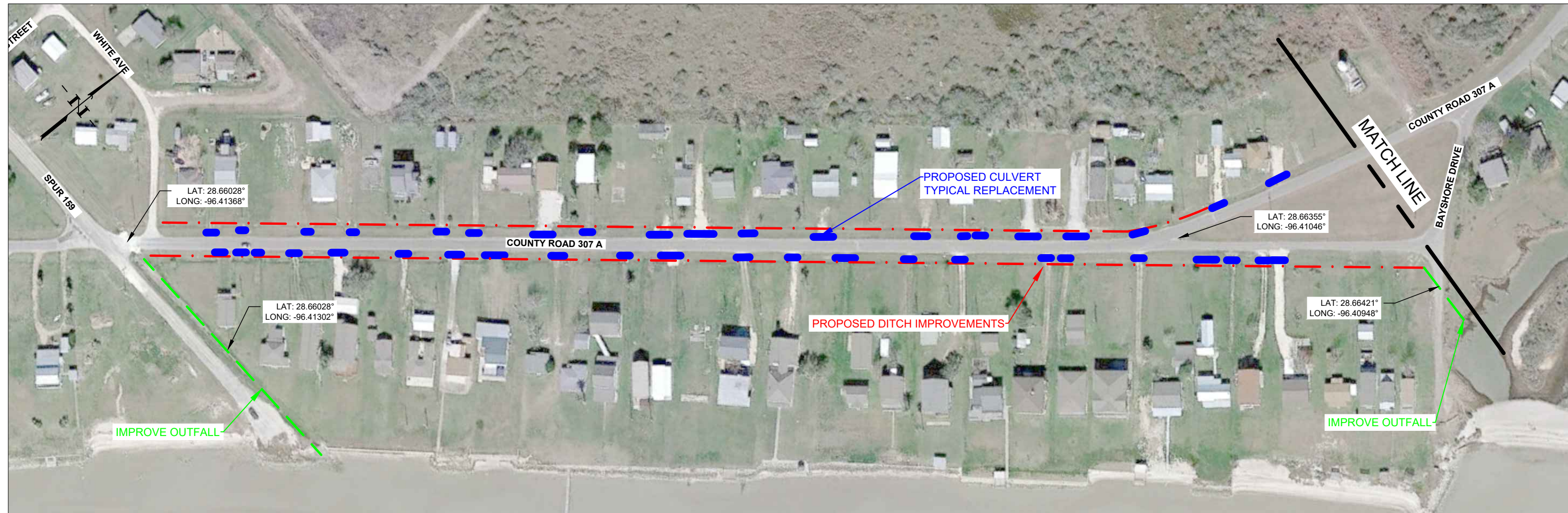


**LEGEND:**

- PROP DITCH IMPROVEMENT
- PROP CULVERT IMPROVEMENT
- PROP IMPROVE OUTFALL

MAJOR QUANTITIES THIS SHEET

DITCH IMPROVEMENT: 2525 FT  
 CULVERT IMPROVEMENT: 1050 FT  
 OUTFALL IMPROVEMENT: 400 FT



PRELIMINARY FOR  
PLANNING PURPOSES  
ONLY

**CALHOUN COUNTY – PORT ALTO  
DRAINAGE IMPROVEMENTS**

CALHOUN COUNTY, TEXAS  
GLO-CDBG-MIT-MOD APPLICATION

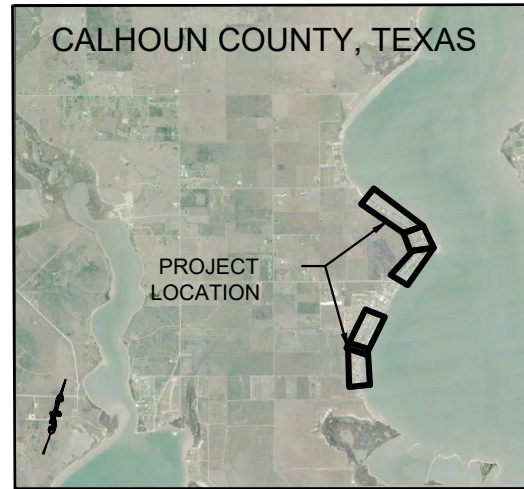
**G & W ENGINEERS, INC.**

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205 W. LIVE OAK STREET, PORT LAVACA, TEXAS 77979  
 TBPE FIRM NO.: F04188  
 (361) 552-4509: PORT LAVACA (979) 323-7100: BAY CITY

DRAWN BY:  
L.M.M.  
 CHECKED BY:  
S.P.M.  
 DATE:  
SEP. 26, 2023

SCALE:  
1" = 150'  
 JOB NO.:  
5310.022  
 SHEET NO.:  
1

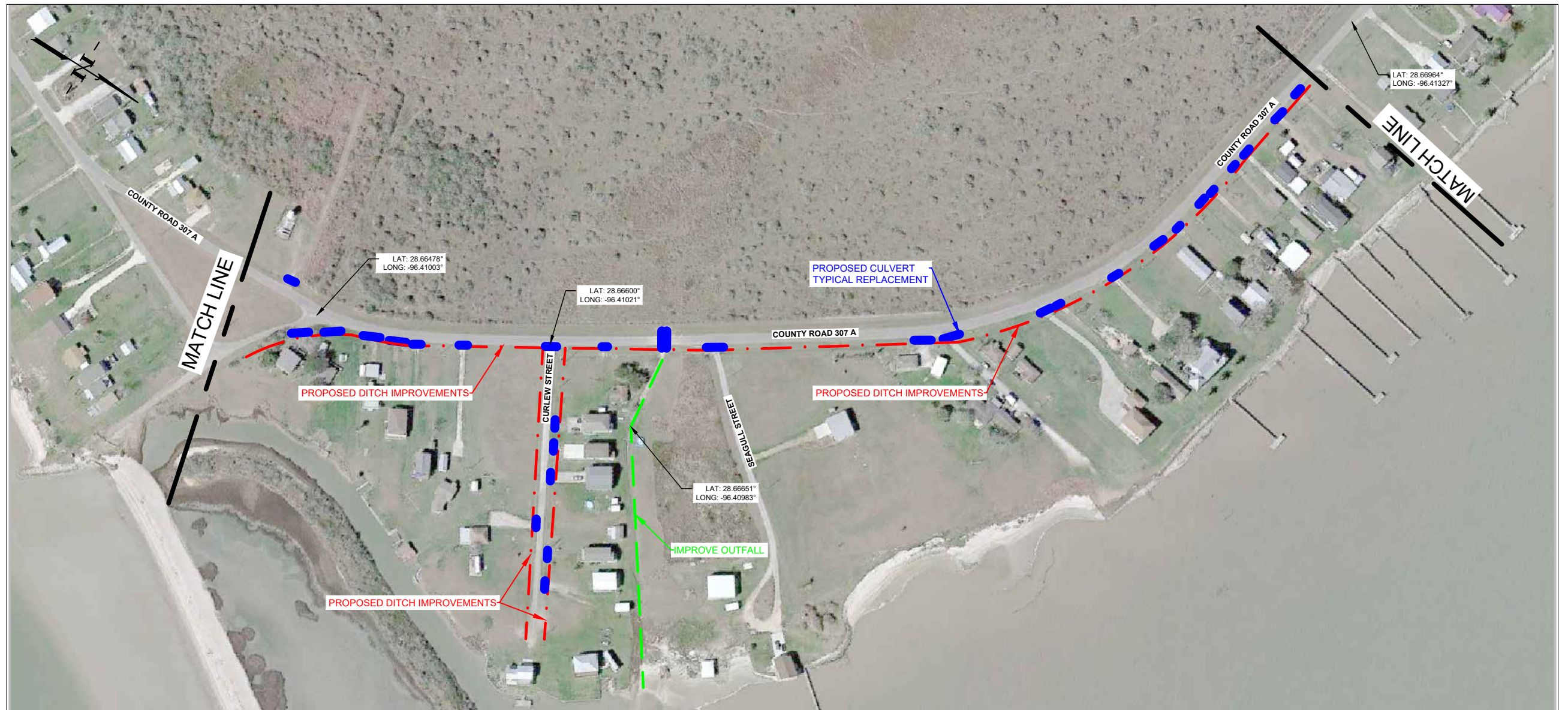


**LEGEND:**

- PROP DITCH IMPROVEMENT
- PROP CULVERT IMPROVEMENT
- PROP IMPROVE OUTFALL

MAJOR QUANTITIES THIS SHEET

DITCH IMPROVEMENT: 2320 FT  
 CULVERT IMPROVEMENT: 775 FT  
 OUTFALL IMPROVEMENT: 580 FT



PRELIMINARY FOR  
 PLANNING PURPOSES  
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**CALHOUN COUNTY – PORT ALTO  
 DRAINAGE IMPROVEMENTS**

CALHOUN COUNTY, TEXAS  
 GLO-CDBG-MIT-MOD APPLICATION

**G & W ENGINEERS, INC.**

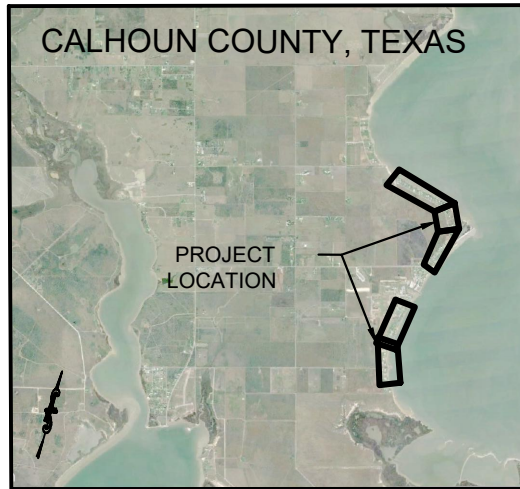
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 L.M.M.  
 CHECKED BY:  
 S.P.M.  
 DATE:  
 SEP. 26, 2023

SCALE:  
 1" = 200'  
 JOB NO.:  
 5310.022  
 SHEET NO.:  
 1





**LEGEND:**

- PROP DITCH IMPROVEMENT
- PROP CULVERT IMPROVEMENT
- PROP IMPROVE OUTFALL

MAJOR QUANTITIES THIS SHEET

DITCH IMPROVEMENT: 1700 FT  
 CULVERT IMPROVEMENT: 725 FT  
 OUTFALL IMPROVEMENT: 250 FT



PRELIMINARY FOR  
PLANNING PURPOSES  
ONLY

**CALHOUN COUNTY – PORT ALTO  
DRAINAGE IMPROVEMENTS**

CALHOUN COUNTY, TEXAS  
GLO-CDBG-MIT-MOD APPLICATION

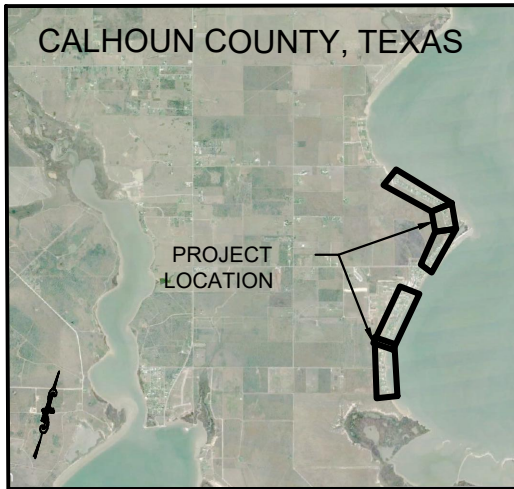
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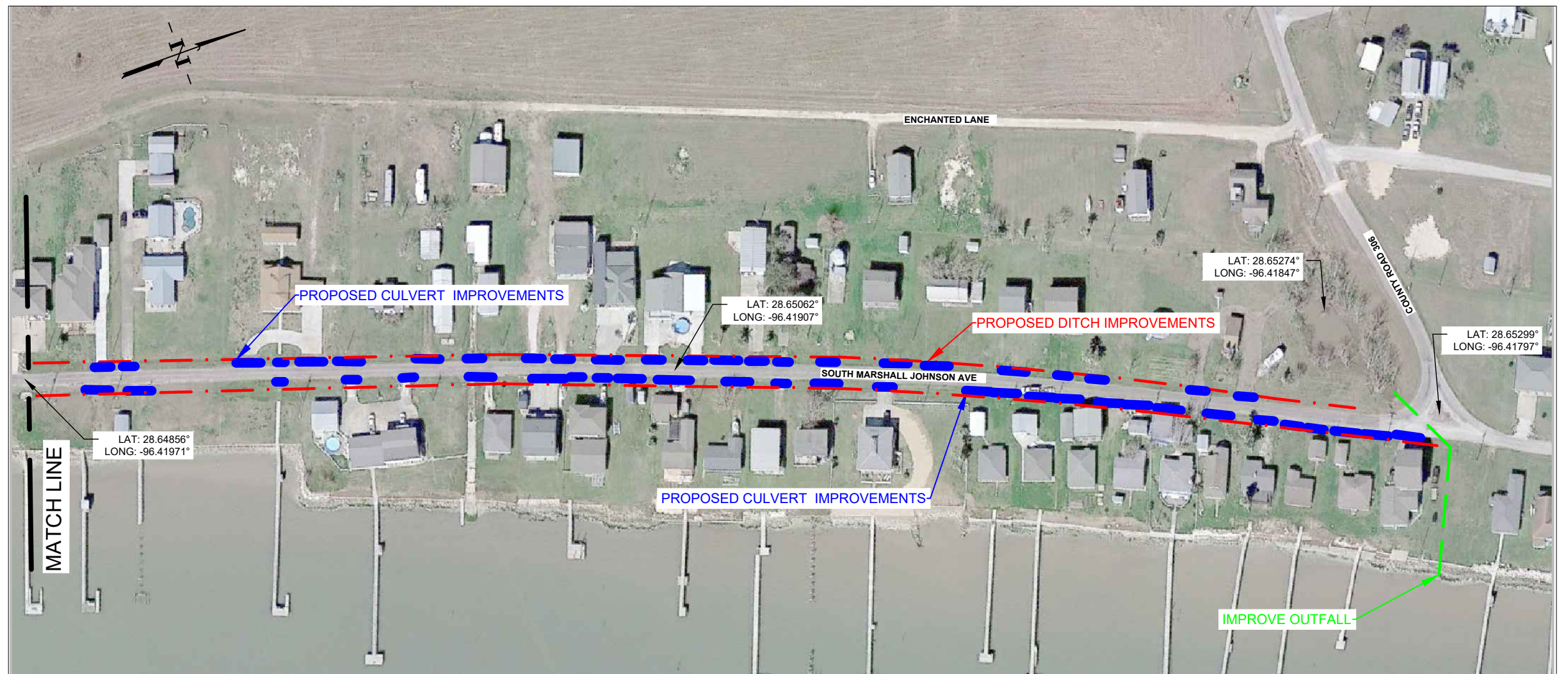


MAJOR QUANTITIES THIS SHEET

DITCH IMPROVEMENT: 2025 FT  
 CULVERT IMPROVEMENT: 1325 FT  
 OUTFALL IMPROVEMENT: 250 FT

**LEGEND:**

- PROP DITCH IMPROVEMENT
- PROP CULVERT IMPROVEMENT
- PROP IMPROVE OUTFALL



PRELIMINARY FOR  
 PLANNING PURPOSES  
 ONLY

**CALHOUN COUNTY – PORT ALTO  
 DRAINAGE IMPROVEMENTS**

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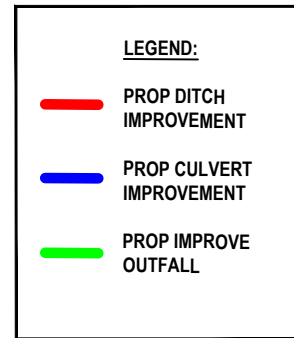
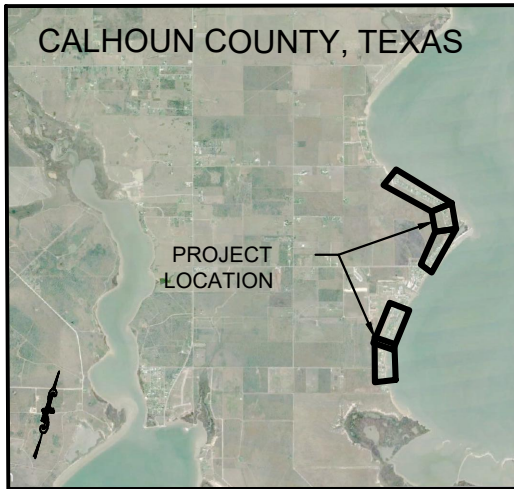
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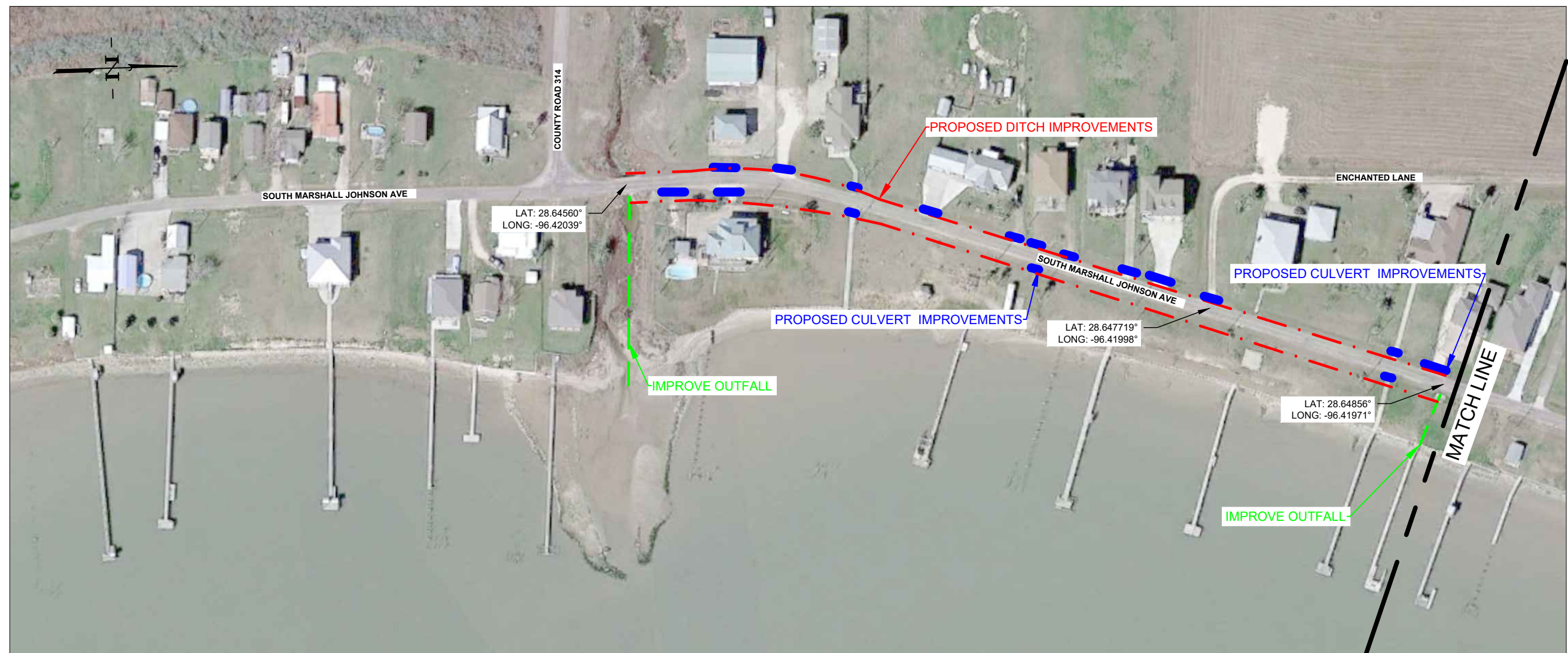
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 L.M.M.  
 CHECKED BY:  
 S.P.M.  
 DATE:  
 SEP. 26, 2023

SCALE:  
 1" = 150'  
 JOB NO.:  
 5310.022  
 SHEET NO.:  
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MAJOR QUANTITIES THIS SHEET

DITCH IMPROVEMENT: 1775 FT  
 CULVERT IMPROVEMENT: 425 FT  
 OUTFALL IMPROVEMENT: 320 FT



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**CALHOUN COUNTY – PORT ALTO  
 DRAINAGE IMPROVEMENTS**

CALHOUN COUNTY, TEXAS  
 GLO-CDBG-MIT-MOD APPLICATION

**G & W ENGINEERS, INC.**

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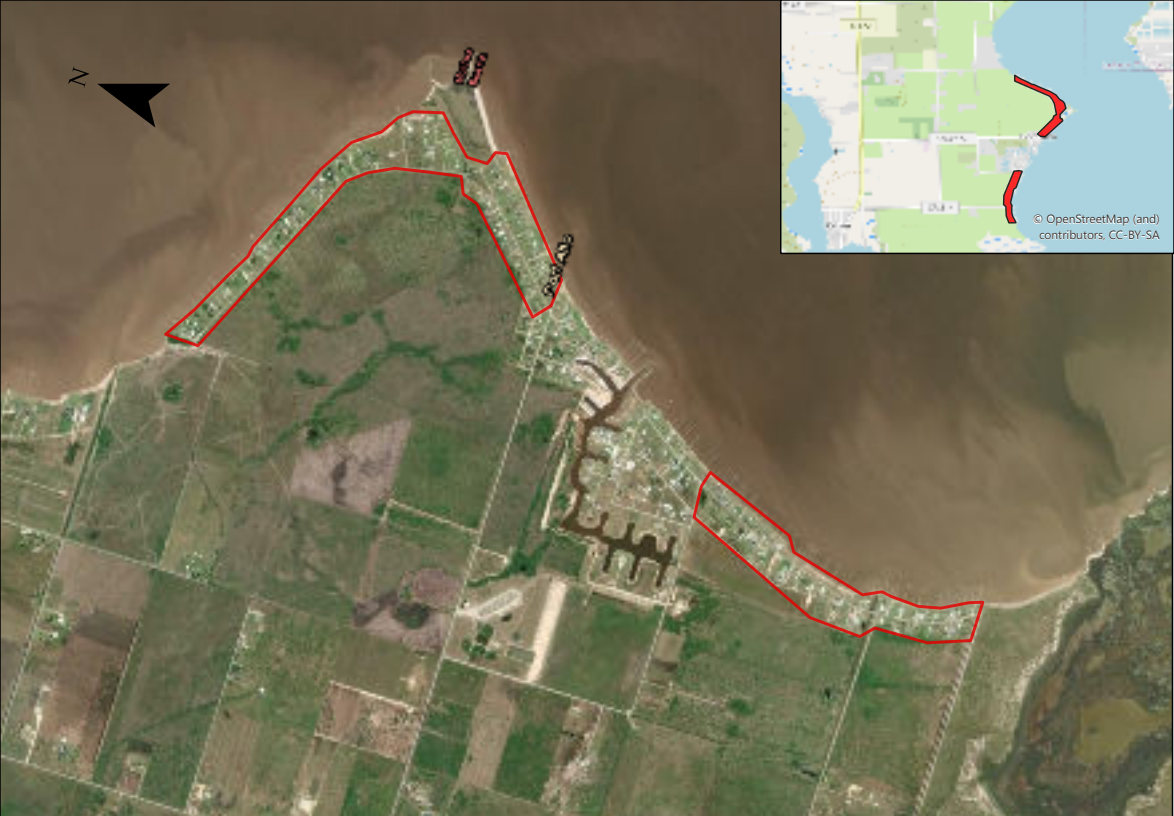
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 TBPE FIRM NO.: F04188  
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
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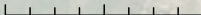


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 Port Alto Area of Benefit

0 0.13 0.25 0.5 Miles



# Port Alto Area of Benefit Map



## **Calhoun County - Seakist Lane Drainage Project**

Cost Estimate - \$713,775

Seakist Lane is one of the many drainage outfalls of Calhoun County. This drainage outfall affects four residential lots as the channel passes through them. Subsequently, over 100 residential lots are also affected as this is the end segment to the existing drainage channel. The Seakist Lane drainage and ditch improvements project begins at Seakist Lane and runs NE into Lavaca Bay. The improvements will affect the amount of runoff that the system can handle and in turn reduce the number of residents being trapped, as well as reduce the inundation of residential lots that contribute to the runoff.

## MEMO

To: Calhoun County

From: G&W Engineers, Inc.

Date: September 25, 2023

RE: Engineering Justification Memo for Calhoun County Seakist Lane Drainage Project

Seakist Lane is one of the many Drainage outfalls of Calhoun County. This drainage outfall immediately and significantly effects four residential lots as the channel currently passes through these lots and subsequently effect over 100 residential lots as this is the end segment to the existing drainage channel. The channel is natural channel and so is the drainage basin. It has been in place for as long as recent history knows. This means that the existing topography is all graded to this channel where it then exits the bay.

### Past

In the past regular maintenance has been left to the individual land owners as there are no current drainage easements for the county to work in on the four immediately effected lots. The existing system follows what most likely was and still is the natural drainage of the area with its wide and shallow ditches with no clearly defined outfall. This has led to the residential lot owners to be trapped with no access to and off of their property in the event or the recent larger rainstorm events. The lack of a clearly defined outfall has caused the water to runoff over the nearby bluff and severely erode it causing a substantial burden of cost to the land owners to correct the bluff to its original condition. In the past there was not as much development in the area.

### Present

The current drainage is in need of major upgrades including a regrade and reshaping of the existing channel, upgraded road crossing structures near the outfall of the channel, and an improved and clearly defined outfall structure with an emergency lined spillway to alleviate excess runoff for severely large storm events. As more and more residential lots are developed in the immediate surrounding area of the basin, the same storm events of the past are causing more and more damage and flooding. The channel is only capable of handling the original flows of grazed pasture lands and farmed fields of the past. Presently the addition of housing in the area and increased flows and rain events have cause severe damage and put the home owners in the area vulnerable to flood inundation of property and homes.

### Future

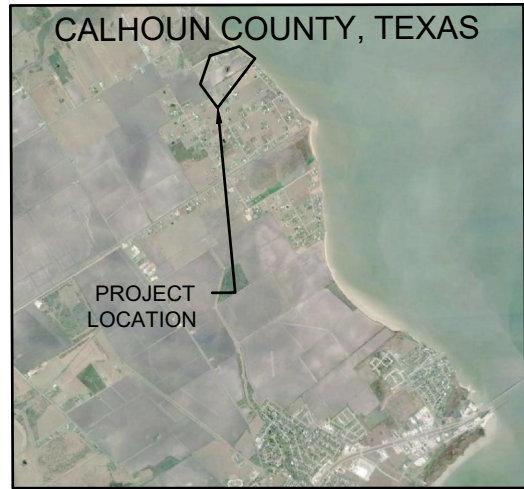
With these changes the drainage will improve and the amount of runoff that the system can handle before going out of bank should increase. This will lead to the reduced number of trapped residents and

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the reduced inundation of residential lots that contribute to the runoff. The upgrades to the existing channel crossings will additionally help in reinforcing the accessibility of the residential properties in the surrounding areas. The project will include the addition of an emergency spillway on top of an improved outfall. With the addition of a lined spillway the existing bluff and surrounding property are protected against future erosion from runoff. This project will bring the channel and outfall up to modern standards. It will also allow for the County to maintain the channel and outfall as the residents are ready and willing to give easements necessary in order to protect their property.



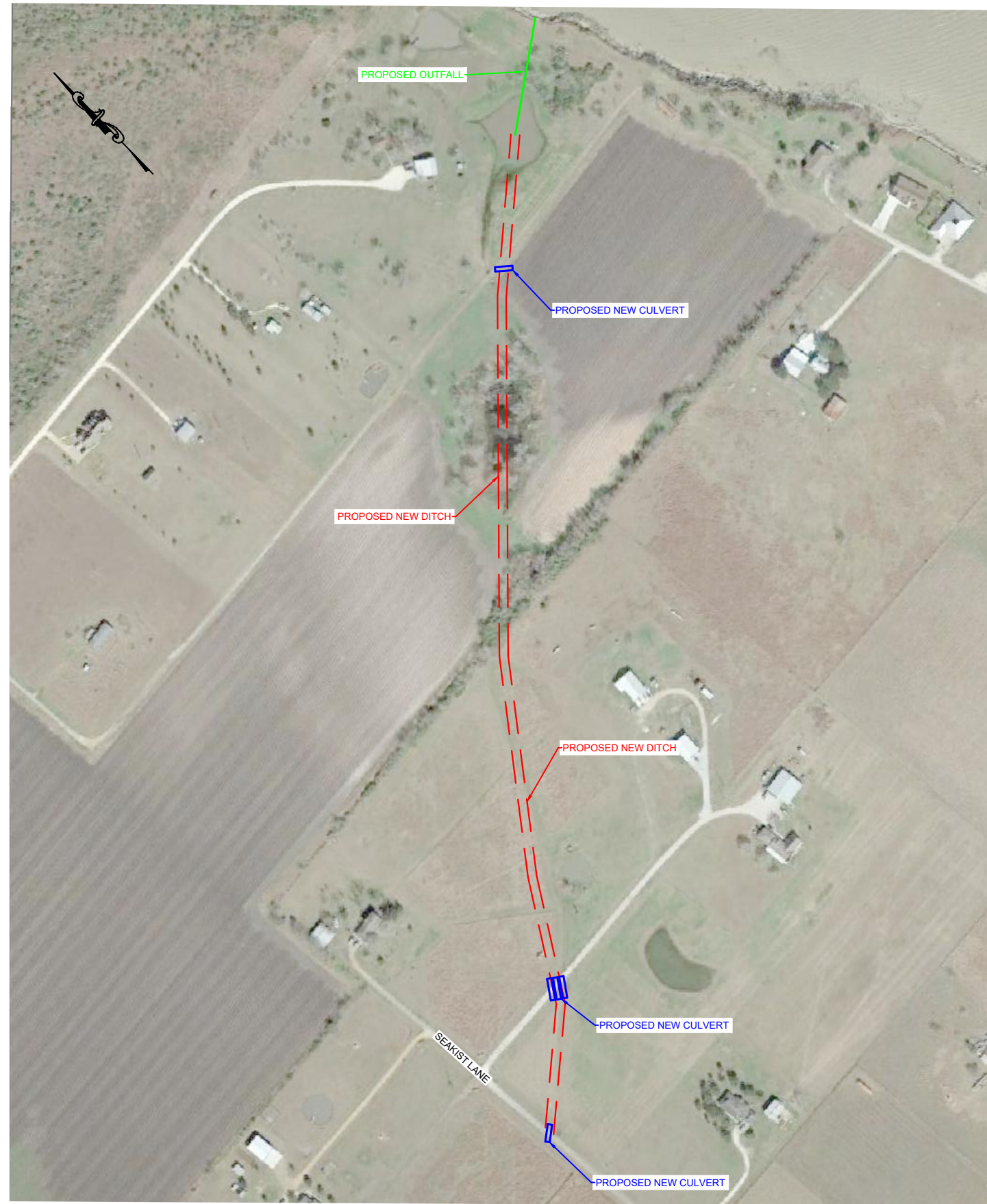




**LEGEND:**

- PROP DITCH IMPROV.
- PROP CULVERT IMPROV.
- PROP OUTFALL IMPROVEMENT

PROJECT LAT LONG  
 LAT: 28.67487  
 LONG: -96.64958



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**CALHOUN COUNTY – SEAKIST  
 LANE DRAINAGE IMPROVEMENTS**

CALHOUN COUNTY, TEXAS  
 GLO-CDBG-MIT APPLICATION

**G & W ENGINEERS, INC.**

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
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 S.P.M.  
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 SEP. 21, 2023

SCALE:  
 1" = 150'  
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 Seakist Lane Drainage

0 0.07 0.15 0.3 Miles

# Seakist Lane Area of Benefit Map



## **Calhoun County - Schicke Point Drainage Project**

Cost Estimate - \$1,175,769

The Schicke Point community currently suffers from poor drainage even though there are outfalls to the bay. Currently there are mis-matched culvert sizes and shallow ditches that lack slope and grade. With improvements, the ditches will be able to convey the storm water appropriately as well as allow water to move to the bay without stacking up and flooding the area. This will reduce the flooding occurrences and ensure that localized property flooding does not occur.

## MEMO

To: Calhoun County

From: G&W Engineers, Inc.

Date: September 25, 2023

RE: Engineering Justification Memo for Calhoun County Schike Point Drainage Project

Schike Point is located within Calhoun County and is at the far east of the County line. The proposed drainage improvement area has many residential lots. The area was established with lots many decades ago. The lots have been developed slowly over the decades and suffer from poor drainage. There are outfalls to the bay, however, they are in need of improvements.

### Past

The area has experienced inadequate drainage problems throughout the years and decades. The existing culverts were installed as each lot was developed with an inconsistent flowline and culvert size. The culvert size was not planned out before the development of each lot so there is inconsistency with pipe size and elevation along the shallow inadequate drainage ditches. The county has made improvements as budget can afford throughout the years, however due to the size of the area and total number of culverts in need of replacement, the county has not been able to perform substantial improvements necessary.

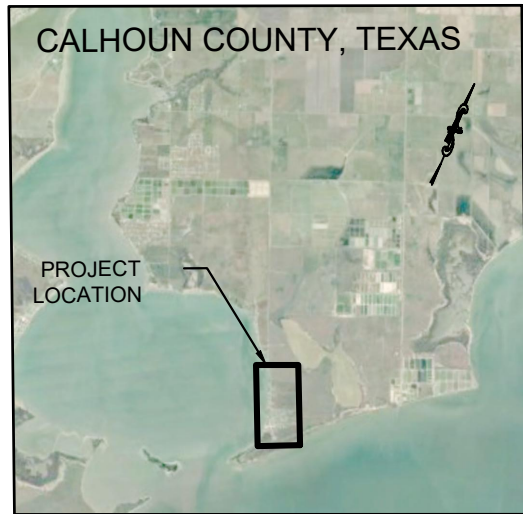
### Present

The present drainage suffers from mis-matched culvert sizes, very shallow ditches with not a lot of slope or grade and outfalls not substantial enough or deep enough to allow for proper ditch slope. This is important as the water take a long time to drain. Also, currently there are several houses that are subject to flooding. The county has made improvements in the area to try and relieve these flooding issues, however major drainage improvements are required to properly fix the issues.

### Future

With improved ditch slopes, the ditches will be able to convey the storm water appropriately. Improved outfalls will allow for more depth of the ditches. The improved outfalls will also allow the water to move to the bay without stacking up and flooding of the area. Lastly, culvert improvements will allow for water to be conveyed properly similar to the ditch improvements. Well graded ditches and culverts will reduce the flooding occurrences and correctly sizing the culverts will ensure that localized property flooding does not occur.





**LEGEND:**

- PROPOSED DITCH IMPROVEMENTS
- PROPOSED CULVERT IMPROVEMENTS
- PROPOSED OUTFALL

PROJECT LAT LONG  
 LAT: 28.63987  
 LONG: -96.35456



PRELIMINARY FOR  
 PLANNING PURPOSES  
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**CALHOUN COUNTY – SCHIKE POINT  
 DRAINAGE IMPROVEMENTS**

CALHOUN COUNTY, TEXAS  
 GLO-CDBG-MIT-MOD APPLICATION

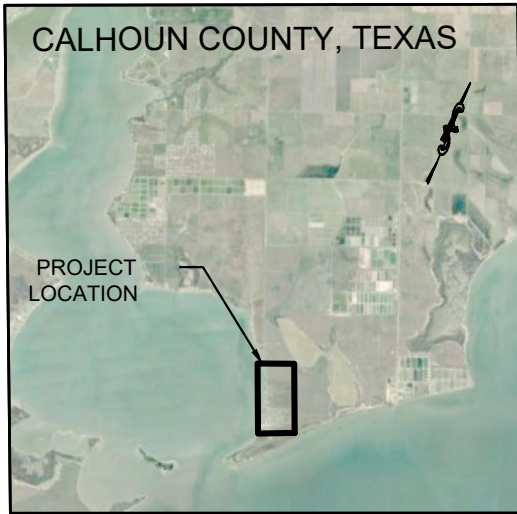
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 S.P.M.  
 DATE:  
 SEP. 21, 2023

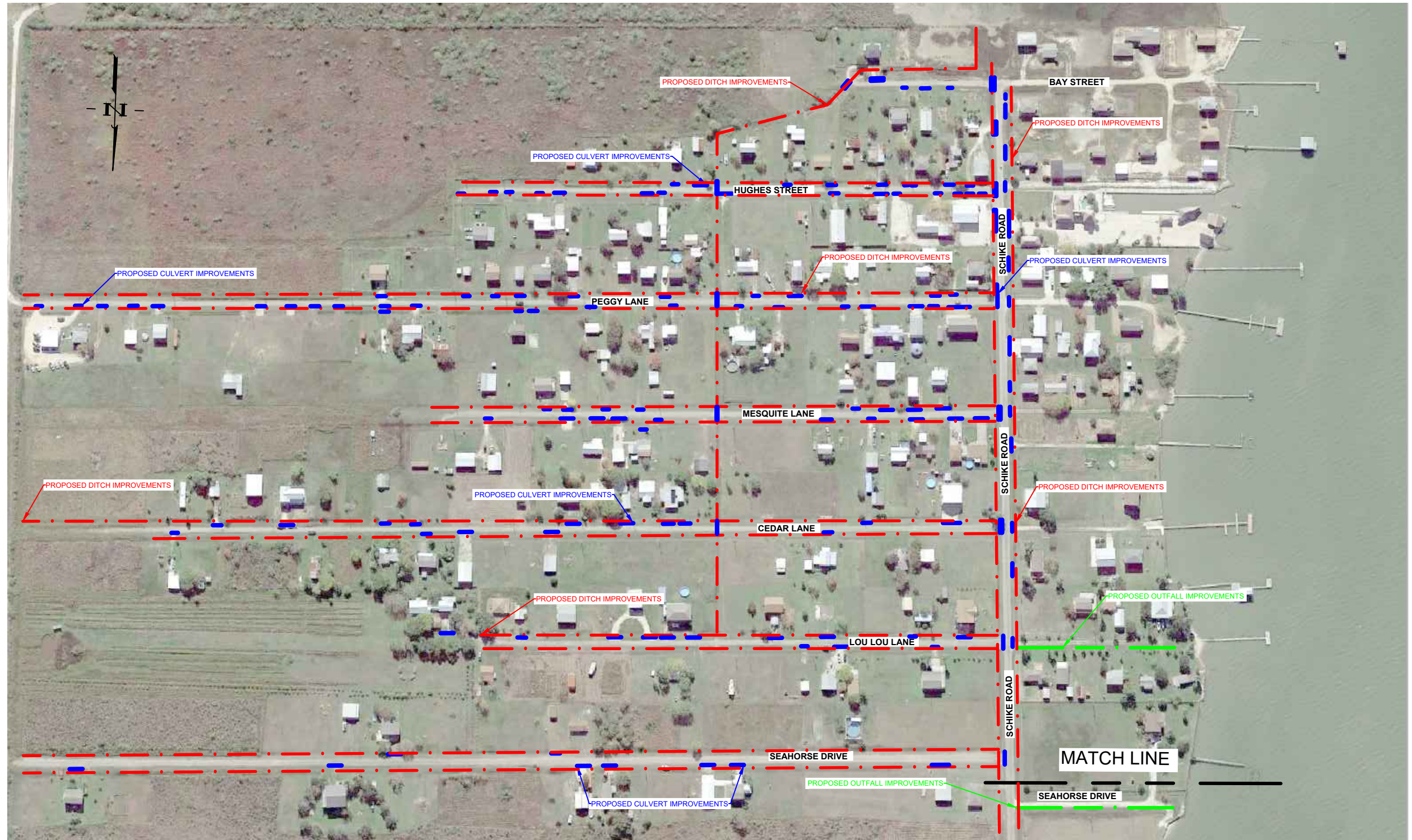
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**LEGEND:**

- PROPOSED DITCH IMPROVEMENTS
- PROPOSED CULVERT IMPROVEMENTS
- PROPOSED OUTFALL

PROJECT LAT LONG  
 LAT: 28.63987  
 LONG: -96.35456



PRELIMINARY FOR  
 PLANNING PURPOSES  
 ONLY

## CALHOUN COUNTY – SCHIKE POINT DRAINAGE IMPROVEMENTS

CALHOUN COUNTY, TEXAS  
 GLO-CDBG-MIT-MOD APPLICATION

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 Schicke

0 0.09 0.17 0.34 Miles

# Schicke Area of Benefit Map

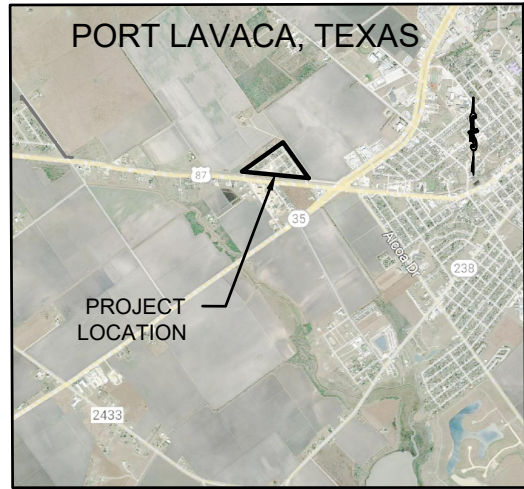




## **Calhoun County - Westside Subdivision Drainage**

Cost Estimate - \$1,845,000

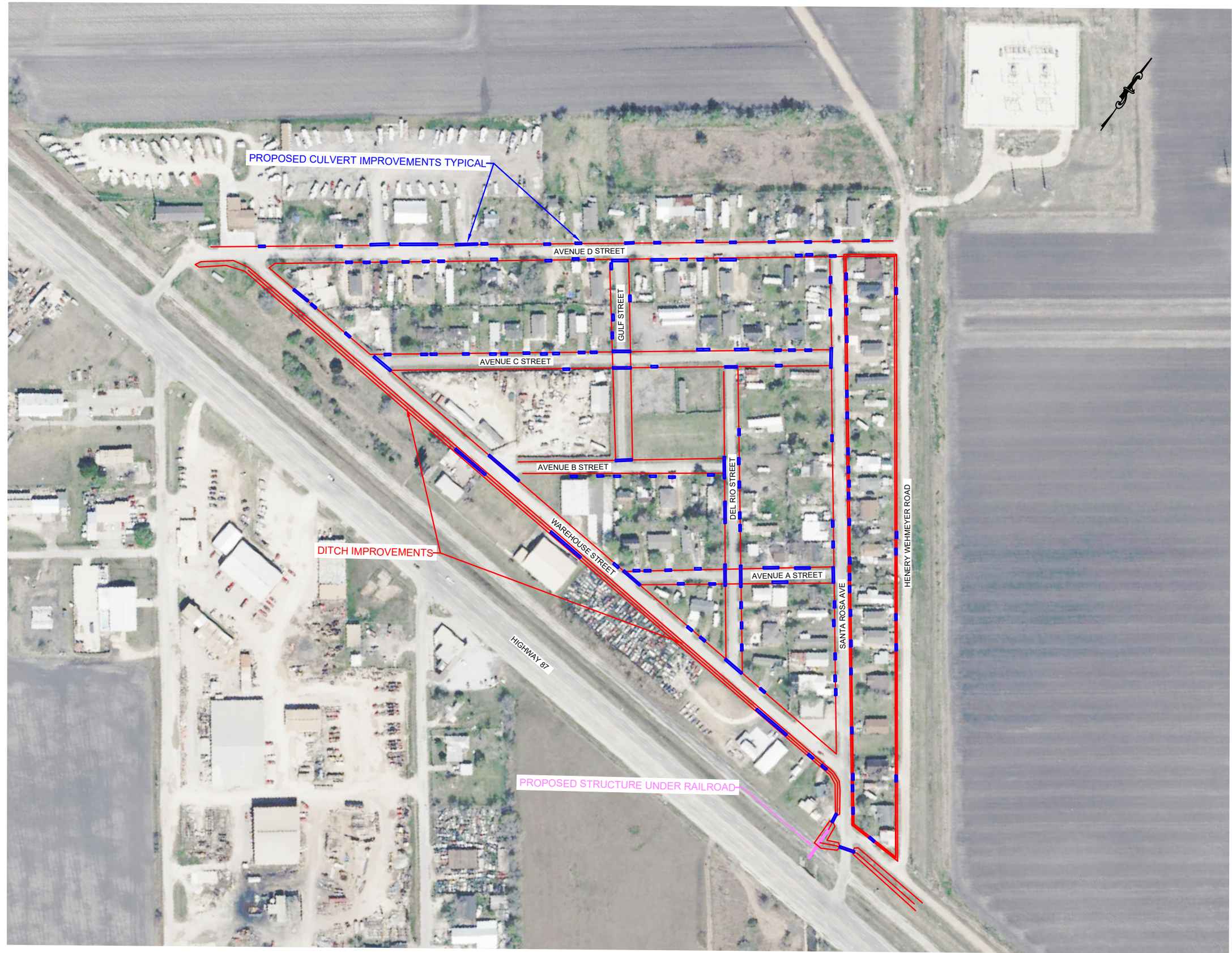
The Westside Subdivision has three main outfalls that converge into one drainage structure that travels under the barding railroad tracks. In recent years the subdivision has been subjected to several large rainstorm events. Currently there are multiple drainage system components that need to be consolidated as well as a need to improve the current railroad crossing to help alleviate the restriction point in the drainage flow path. This drainage improvement in the Westside Subdivision is designed to relieve the flooding issue that occurs with the exiting drainage structure. Improvements may also help to reduce the possible flow amount that drains away from the subdivision.



**LEGEND:**

- PROPOSED CULVERT IMPROVEMENT
- PROPOSED DITCH IMPROVEMENT
- PROP STRUCTURE UNDER RAILROAD

PROJECT LAT LONG  
 LAT: 28.61603  
 LONG: -96.67715



**CALHOUN COUNTY – WESTSIDE  
 SUBDIVISION DRAINAGE  
 IMPROVEMENTS**  
 CALHOUN COUNTY, TEXAS  
 GLO-CDBG-MIT APPLICATION

PRELIMINARY FOR  
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 Z.L.R.  
 CHECKED BY:  
 S.P.M.  
 DATE:  
 SEP. 21, 2023

SCALE:  
 1" = 3000'  
 JOB NO.:  
 5310.022  
 SHEET NO.:  
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## MEMO

To: Calhoun County

From: G&W Engineers, Inc.

Date: September 25, 2023

RE: Engineering Justification Memo for Calhoun County Westside Subdivision Drainage Project

Westside subdivision is located within Calhoun County and right outside the City of Port Lavaca. The subdivision has approximately 154 residential lots in the immediate vicinity of the subdivision. The subdivision has three main outfalls that converge into one drainage structure that travels under the boarding railroad tracks. The north and east sides of the subdivision is surrounded by farmland that drains to a major drainage channel that travels along the east edge of the subdivision. The channel then flows to the south of the subdivision underneath the railroad tracks following the existing drainage channel. In recent years the subdivision has been subjected to several large rain storm events. This project is designed to relieve the flooding issue that occurs with the exiting drainage structure.

### Past

In the past regular maintenance has been performed to the drainage structures. One of the reasons for the existing drainage problems of the subdivision is the complex design of the existing drainage system that has been designed piecemeal when older, more lax county standards were in place. The current drainage system has both above ground roadside ditches and an underground storm sewer system. The subdivision as previously mentioned suffers from drainage problems due to the existing drainage system and the restriction point going under and crossing the railroad tracks. The subdivision has been in the county for a long time and therefore at the time of construction of it, the drainage is inadequate.

### Present

The current drainage is in need to consolidate the multiple drainage system components and well as improve the current railroad crossing to help alleviate the restriction point in the drainage flow path. The county is wanting to merge the drainage capabilities of the overlapping drainage systems with correctly sized culverts and roadside ditches. The railroad crossing drainage structure needs to be widened and re sized to be able to sufficiently handle the from the outfalls from the subdivision as well as the runoff from the surrounding agricultural sites. This project also includes the improvement of the main drainage channel where the subdivision outfalls into as to help alleviate any potential dynamic flow concerns that may reduce the possible flow amount that drains away from the subdivision.


**Future**

The purpose of this project is to improve the current drainage of the subdivision. The outfalls, collection system, connection to the main drainage channel, and structure that crosses the tracks will need to be modeled and designed using modern storm water modeling software to ensure that the proposed designs will have the proper capabilities needed to alleviate the drainage problems of the current subdivision.






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 Westside

0 0.06 0.13 0.25 Miles



# Westside Area of Benefit Map

