

Legend

- Project Extent
- Benefitted Area
- Cross Section
- Parcels
- Stream

N

0 1,000 2,000
Feet

CobbFendley
4424 W Sam Houston
Pkwy N., Suite 600
Houston, Texas 77041
Office: 713-462-3242
Fax: 713-462-3262

Chambers-Liberty
Regional Drainage Study
- TWDB #40018

Potential Project:
Cherry Point Gully
(CP100-00-00)
Improvements from
Cherry Point Drive to SH 146

July 2024

Upsize from quadruple 6'x4' culverts to triple 9' x 7' culverts. Begin Channel widening.

Upsize from triple 7'x7' culverts to triple 9' x 7' culverts.

End channel widening at concrete section

Cherry Point Dr

Eagle Dr

Eagle Dr

Legend

- Project Extent
- Benefitted Area
- Cross Section
- Parcels
- Stream

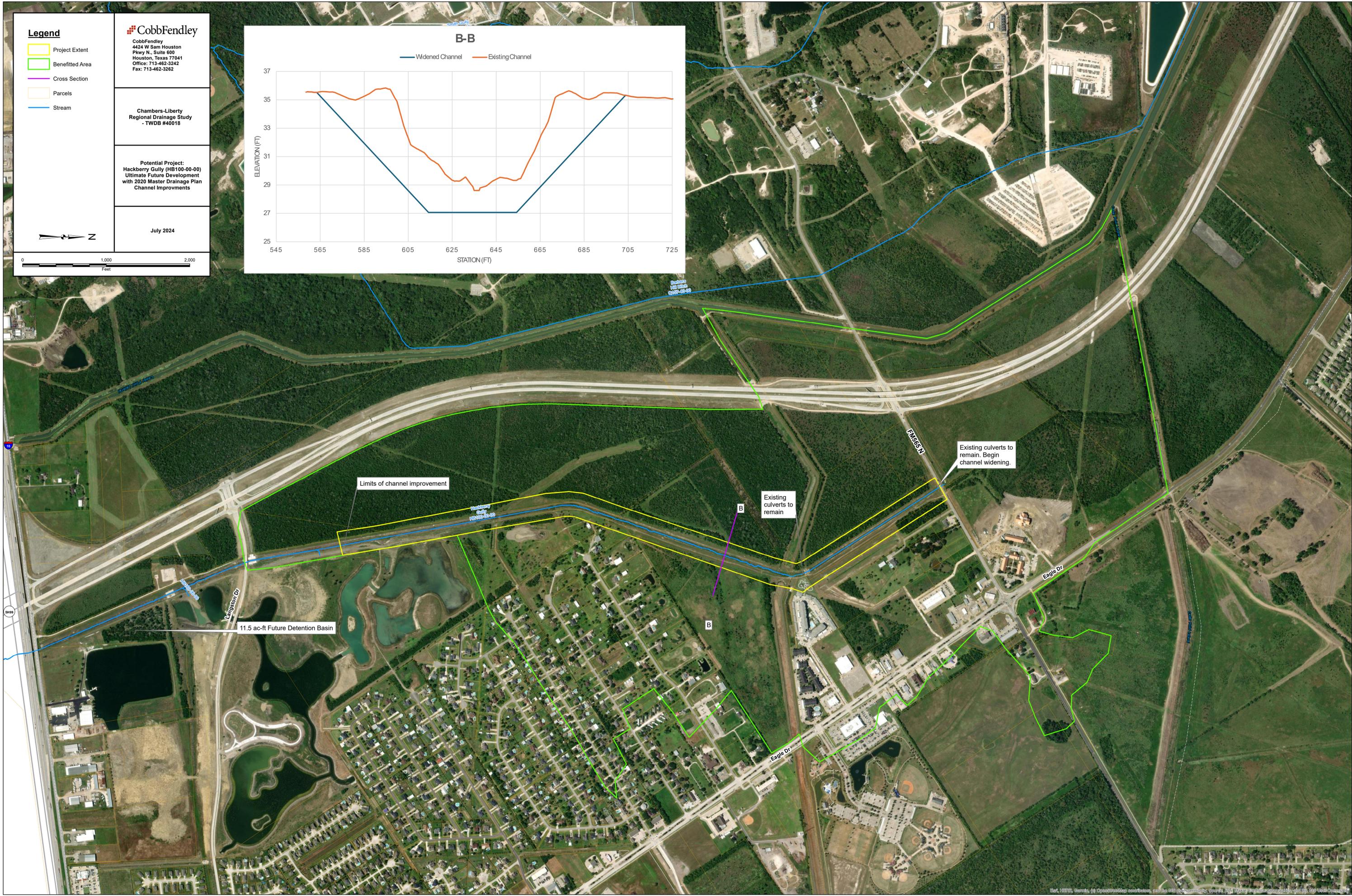
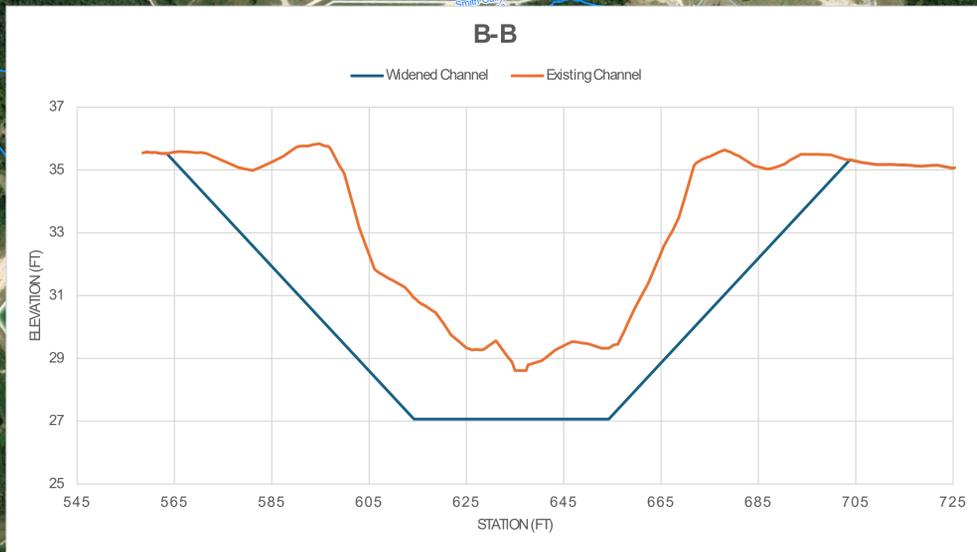
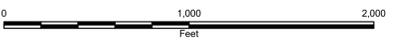


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Chambers-Liberty
Regional Drainage Study
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Potential Project:
Hackberry Gully (HB100-00-00)
Ultimate Future Development
with 2020 Master Drainage Plan
Channel Improvements

July 2024



Limits of channel improvement

11.5 ac-ft Future Detention Basin

Existing culverts to remain

Existing culverts to remain. Begin channel widening.

Eagle Dr

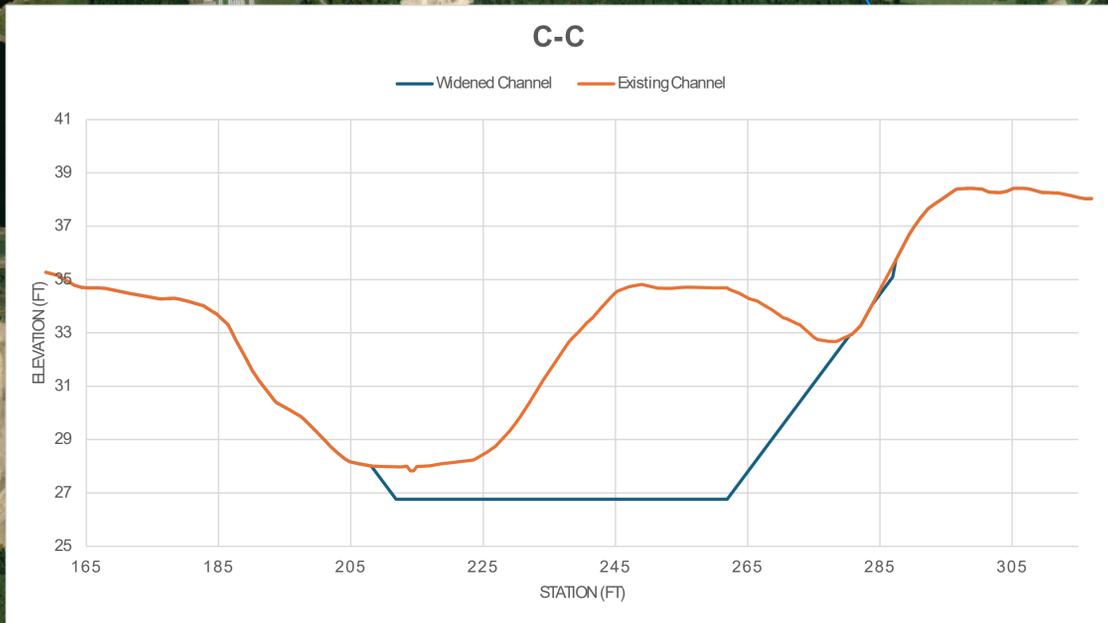
FM35 N

Langston Dr

Hackberry Gully
HB100-00-00

B

B



Cotton Bayou
 Channel widening to encompass the adjacent canal.
 Flood level reduction up to 5 inches in channel, less than 2 inches elsewhere.



Begin channel widening. Existing culvert to remain.

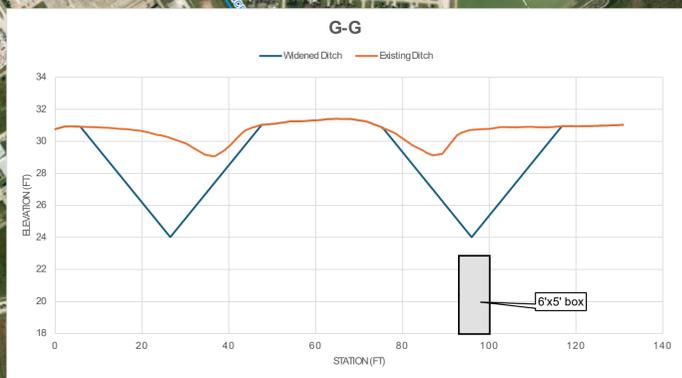
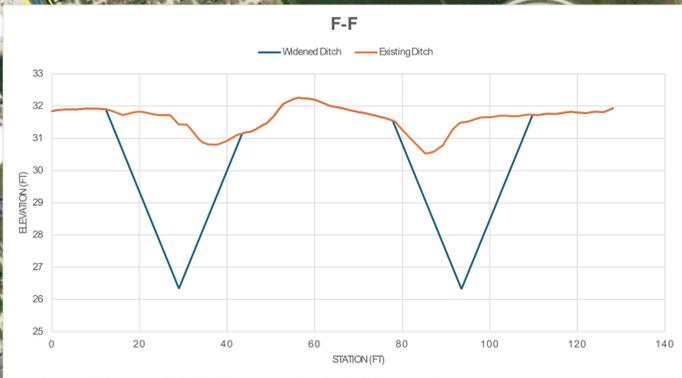
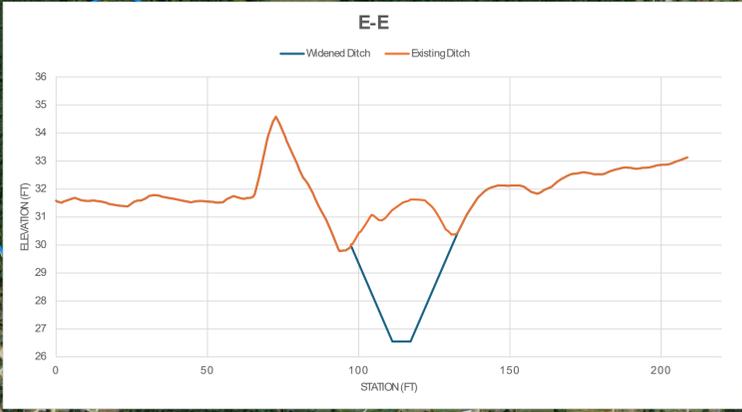
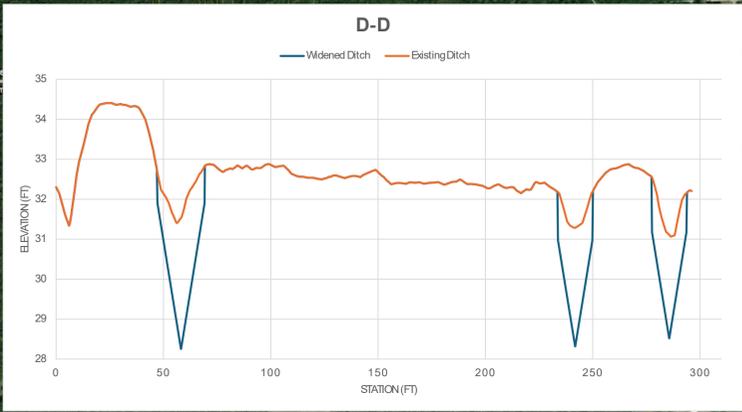
Existing dual 8'x5' culvert to be restricted to dual 8'x4'

End channel widening

Legend Project Extent Benefitted Area Cross Section Parcels Stream	 CobbFendley 4424 W Sam Houston Pkwy N., Suite 600 Houston, Texas 77041 Office: 713-462-3242 Fax: 713-462-3262
	Chambers-Liberty Regional Drainage Study - TWDB #40018
	Potential Project: Cotton Bayou (CB100-00-00) Improvements Upstream of May Drive
	July 2024

0 1,250 2,500 Feet

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



Legend

- Project Extents
- Cross Section
- Benefited Areas
- Proposed Ditches
- Parcels
- Stream

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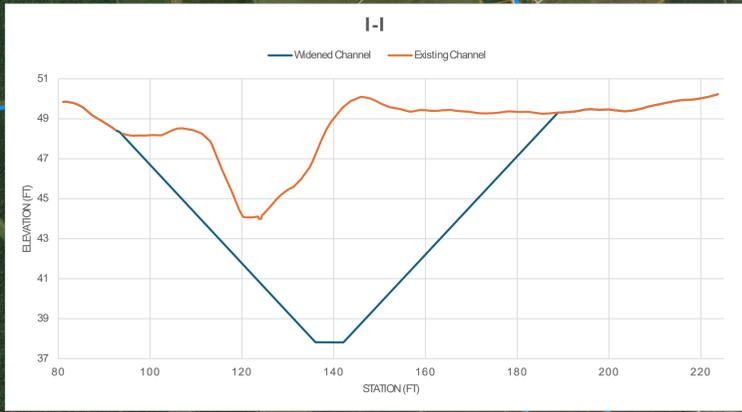
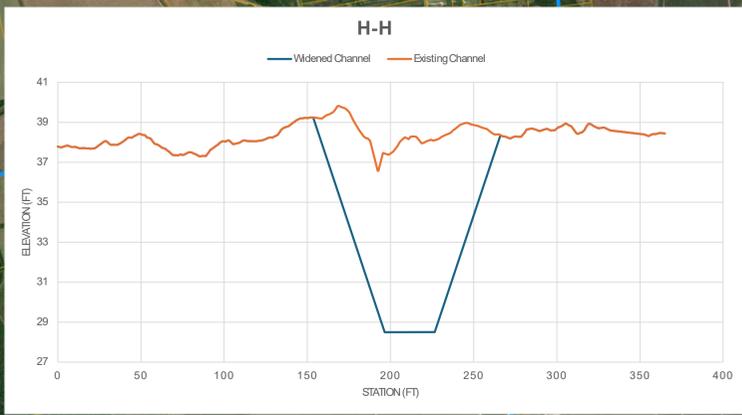
Chambers-Liberty Regional Drainage Study - TWDB #40018

Potential Project: Old River Tributary Culverts Crossings FM565 North of I-10

July 2024

0 1,500 3,000 Feet





Smith Gully

Channel widening and deepening.
Culvert replacement for entire system upstream of SH146.

Legend

- Project Extent
- Benefitted Area
- Proposed Culverts
- Parcels
- Stream

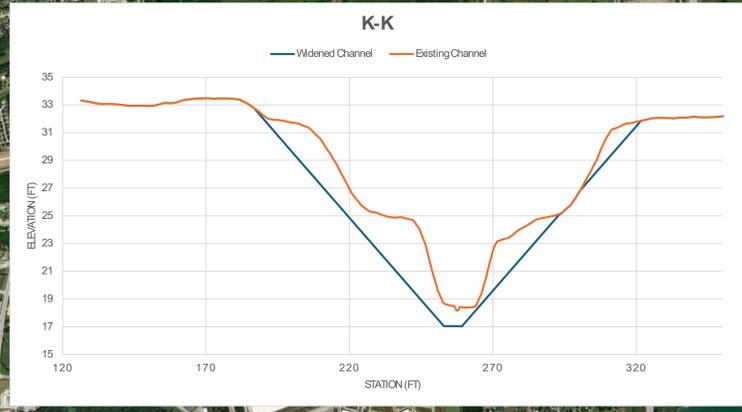
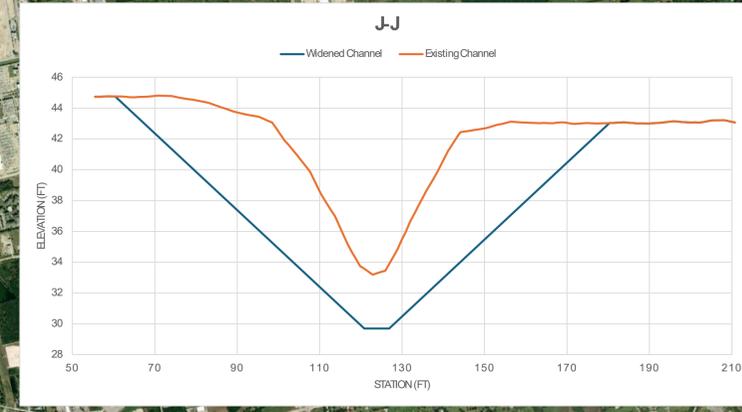
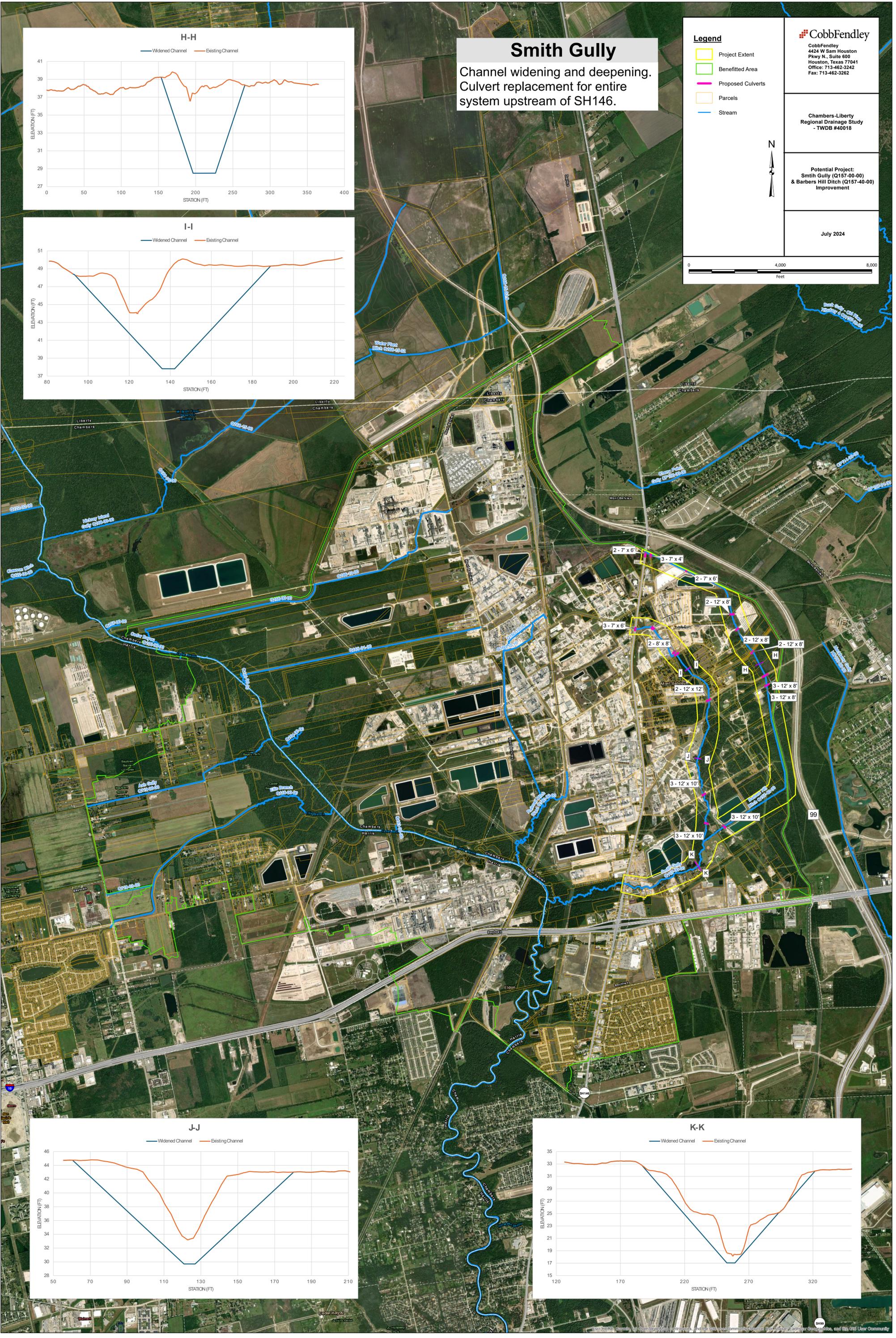
CobbFendley
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Chambers-Liberty
Regional Drainage Study
- TWDB #40018

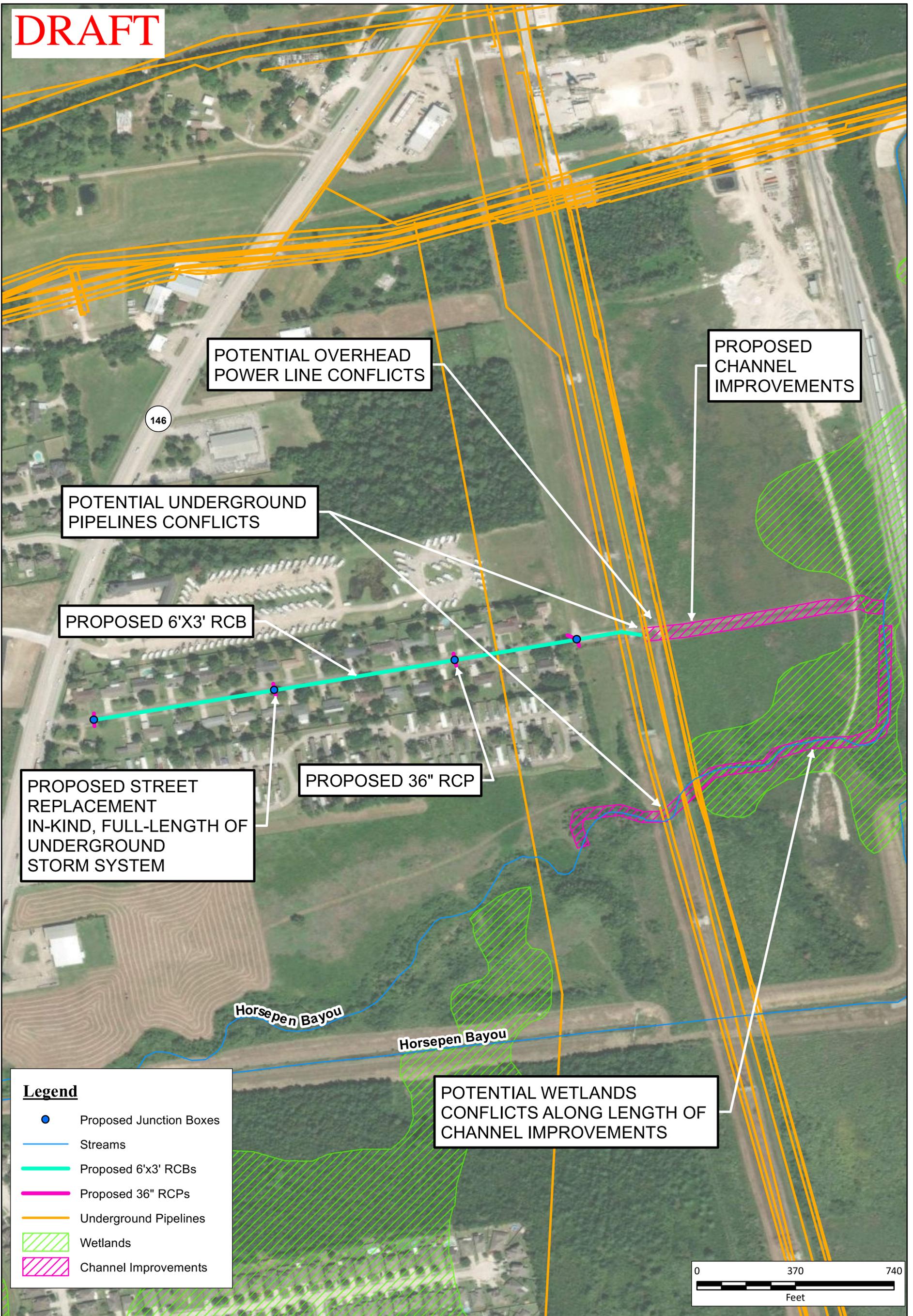
Potential Project:
Smith Gully (Q157-00-00)
& Barbers Hill Ditch (Q157-40-00)
Improvement

July 2024

0 4,000 8,000
Feet



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FN PROJECT NO.	CUY21236
DATE CREATED	Date: 7/19/2024
DATUM & COORDINATE SYSTEM	NAD83 State Plane (feet) Texas South Central
FILE NAME	Name: CB_03_Layout
PREPARED BY	LSA

FREESSE AND NICHOLS, INC.
 10497 TOWN AND COUNTRY WAY, SUITE 500
 HOUSTON, TEXAS 77024
 OFFICE: 713-600-6800
 FAX: 713-600-6801

Chambers-Liberty Regional Drainage Study - TWDB #40018

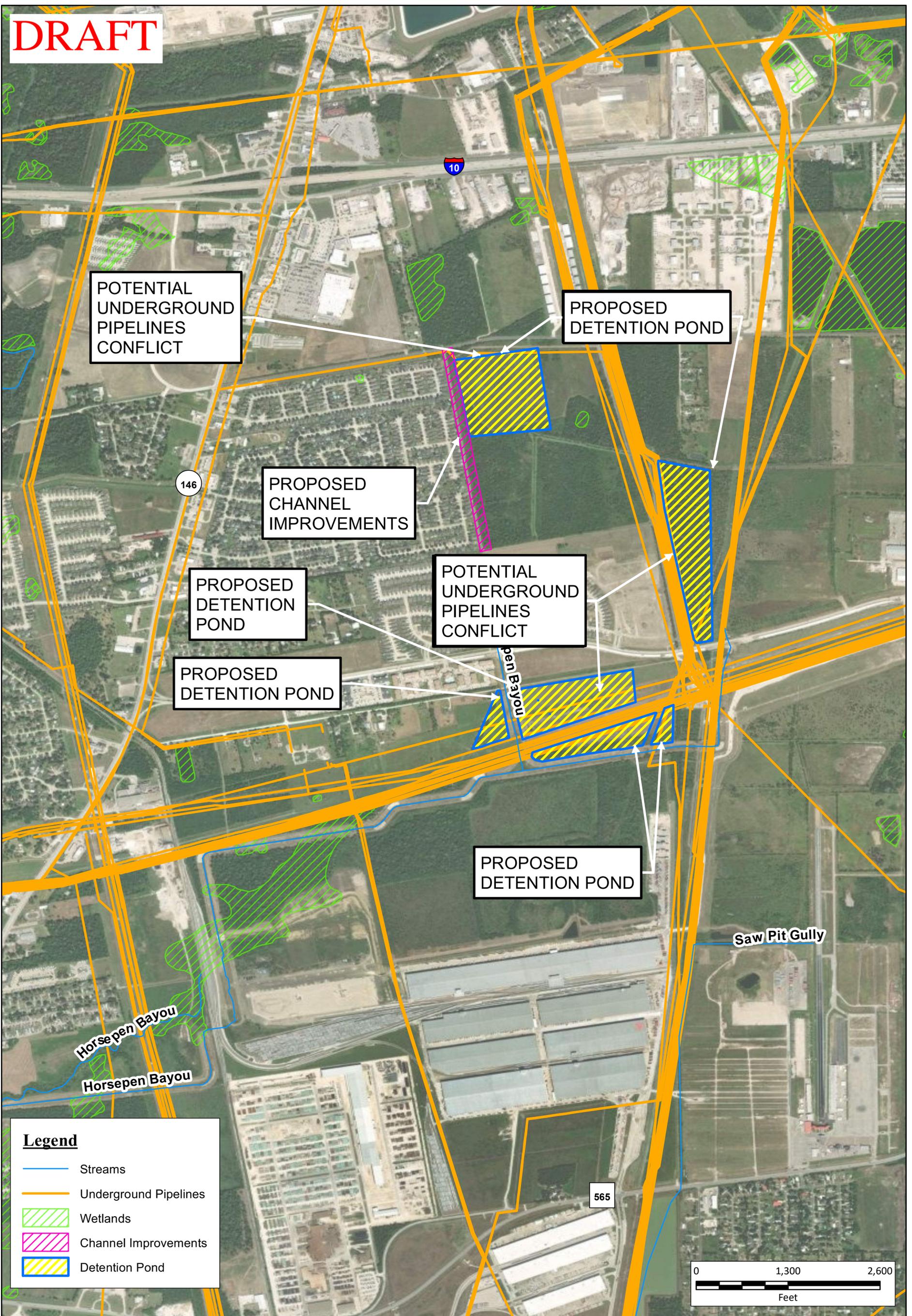
Staples Dr. Improvements - Conceptual Project Layout



EXHIBIT

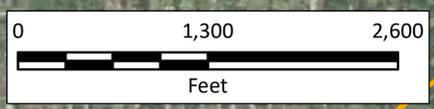
1

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Legend

- Streams
- Underground Pipelines
- ▨ Wetlands
- ▨ Channel Improvements
- ▨ Detention Pond

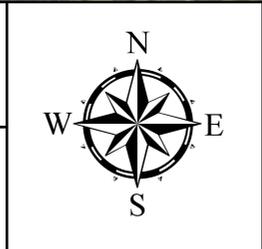


FN PROJECT NO.	CUY21236
DATE CREATED	Date: 7/19/2024
DATUM & COORDINATE SYSTEM	NAD83 State Plane (feet) Texas South Central
FILE NAME	Name: CB_01_Layout
PREPARED BY	LSA

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 HOUSTON, TEXAS 77024
 OFFICE: 713-600-6800
 FAX: 713-600-6801

Chambers-Liberty Regional Drainage Study - TWDB #40018

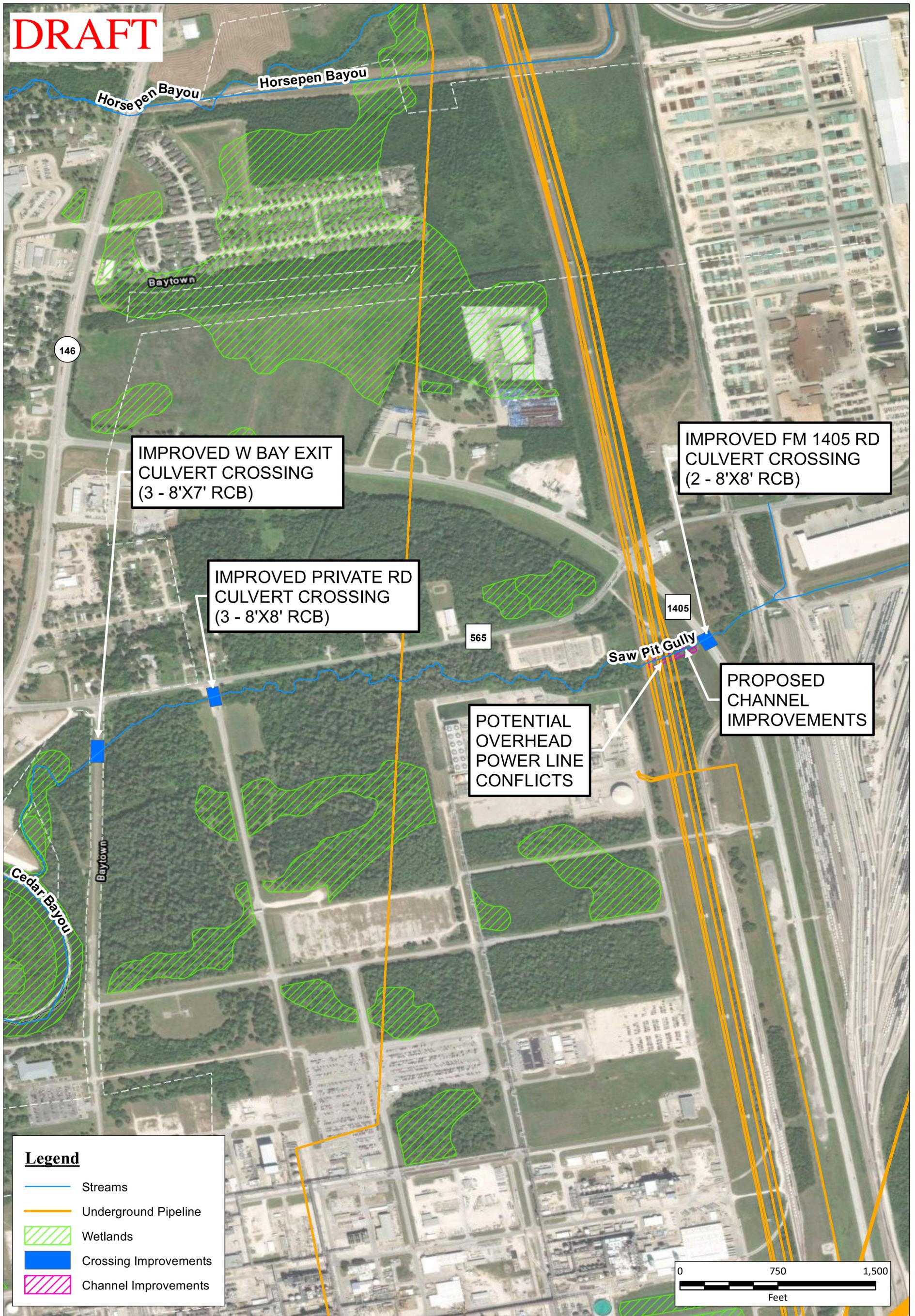
Kilgore Regional Detention Atlas 14 Upgrade - Conceptual Project Layout



EXHIBIT

2

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FN PROJECT NO.	CUY21236
DATE CREATED	Date: 7/19/2024
DATUM & COORDINATE SYSTEM	NAD83 State Plane (feet) Texas South Central
FILE NAME	Name: CB_10_Layout
PREPARED BY	LSA

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Chambers-Liberty Regional Drainage Study - TWDB #40018

Saw Pit Gully Crossing Improvements - Conceptual Project Layout



EXHIBIT

3

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IMPROVED FM 2354
CULVERT CROSSING
(6 - 5'X5' RCB)

PROPOSED
CHANNEL
IMPROVEMENTS

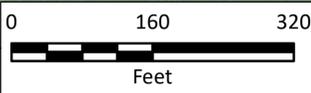
POTENTIAL UNDERGROUND
PIPELINES CONFLICT

Frazier Gully

2354

Legend

-  Streams
-  Underground Pipelines
-  Wetlands
-  Crossing Improvement
-  Channel Improvement



FN PROJECT NO.	CUY21236
DATE CREATED	Date: 7/22/2024
DATUM & COORDINATE SYSTEM	NAD83 State Plane (feet) Texas South Central
FILE NAME	Name: BC_04_Revisit
PREPARED BY	M.S

FRESE AND NICHOLS, INC.
 10497 TOWN AND COUNTRY WAY, SUITE 500
 HOUSTON, TEXAS 77024
 OFFICE: 713-600-6800
 FAX: 713-600-6801

Chambers-Liberty Regional Drainage Study - TWDB #40018

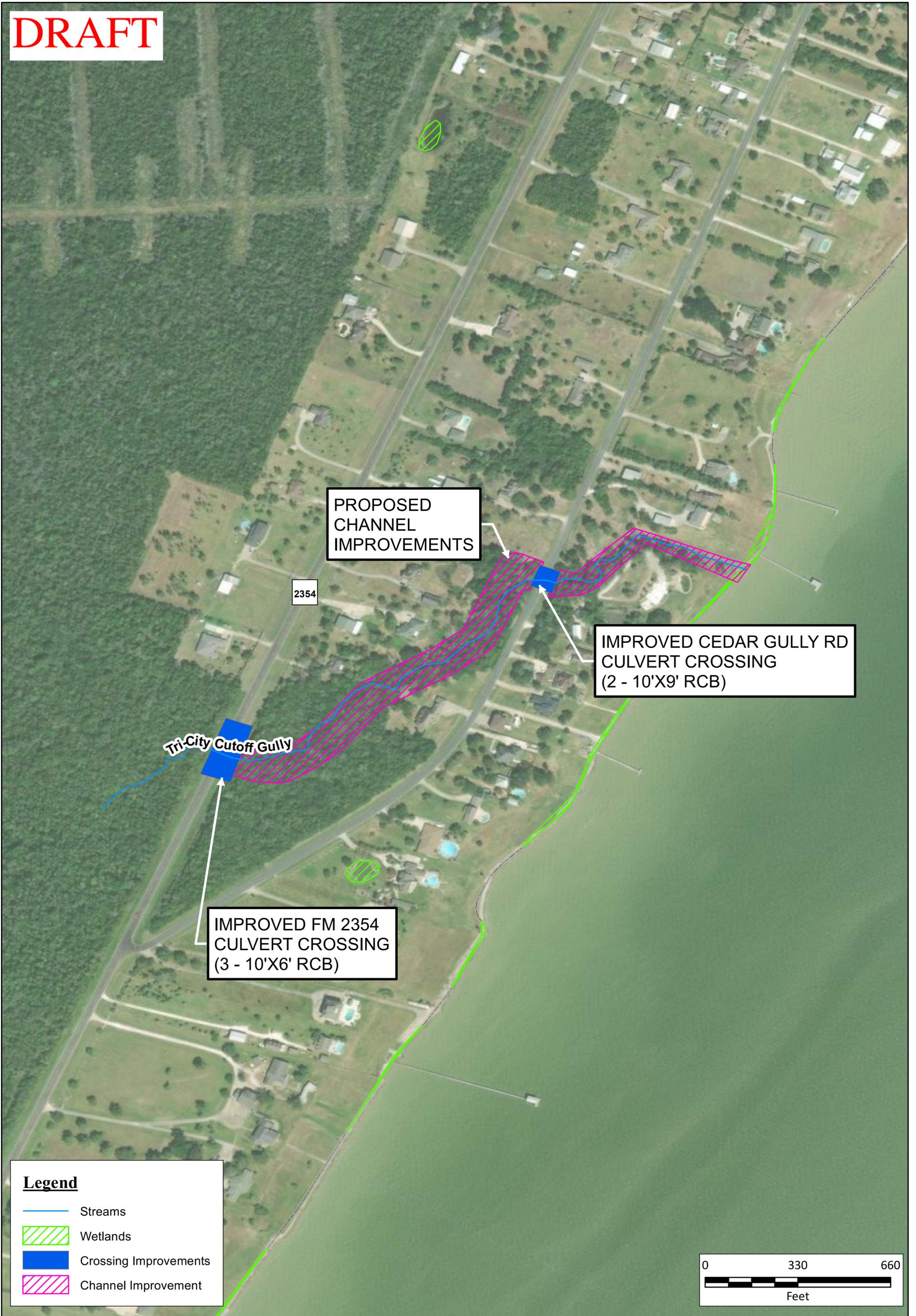
**Frazier Gully Culvert Improvements -
Conceptual Project Layout**



EXHIBIT

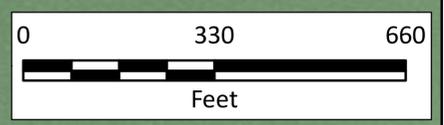
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Legend

-  Streams
-  Wetlands
-  Crossing Improvements
-  Channel Improvement

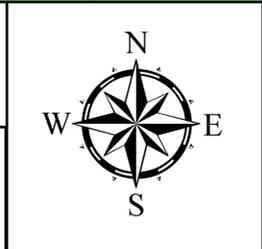


FN PROJECT NO.	CUY21236
DATE CREATED	Date: 7/22/2024
DATUM & COORDINATE SYSTEM	NAD83 State Plane (feet) Texas South Central
FILE NAME	Name: BC_03_Revisit_LSA_July
PREPARED BY	M.S

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 HOUSTON, TEXAS 77024
 OFFICE: 713-600-6800
 FAX: 713-600-6801

Chambers-Liberty Regional Drainage Study - TWDB #40018

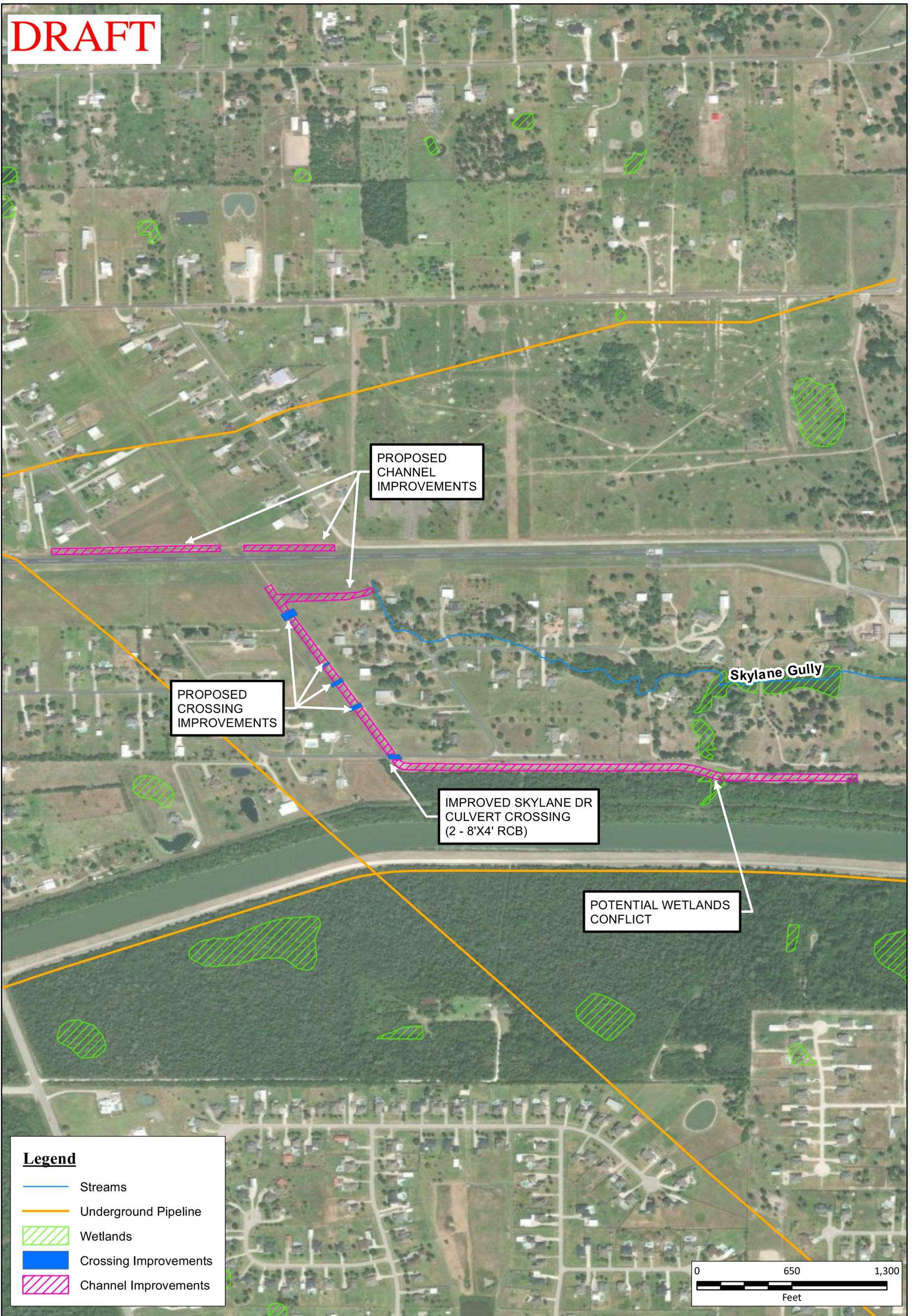
Tri-City Cutoff Gully Culvert - Improvements Conceptual Project Layout



EXHIBIT

5

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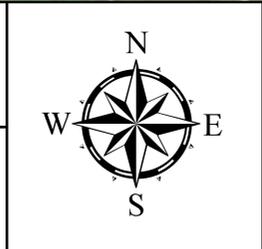
Legend	
	Streams
	Underground Pipeline
	Wetlands
	Crossing Improvements
	Channel Improvements

FN PROJECT NO.	CUY21236
DATE CREATED	Date: 7/22/2024
DATUM & COORDINATE SYSTEM	NAD83 State Plane (feet) Texas South Central
FILE NAME	Name: HC_04_Layout
PREPARED BY	LSA

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HOUSTON, TEXAS 77024
OFFICE: 713-600-6800
FAX: 713-600-6801

Chambers-Liberty Regional Drainage Study - TWDB #40018

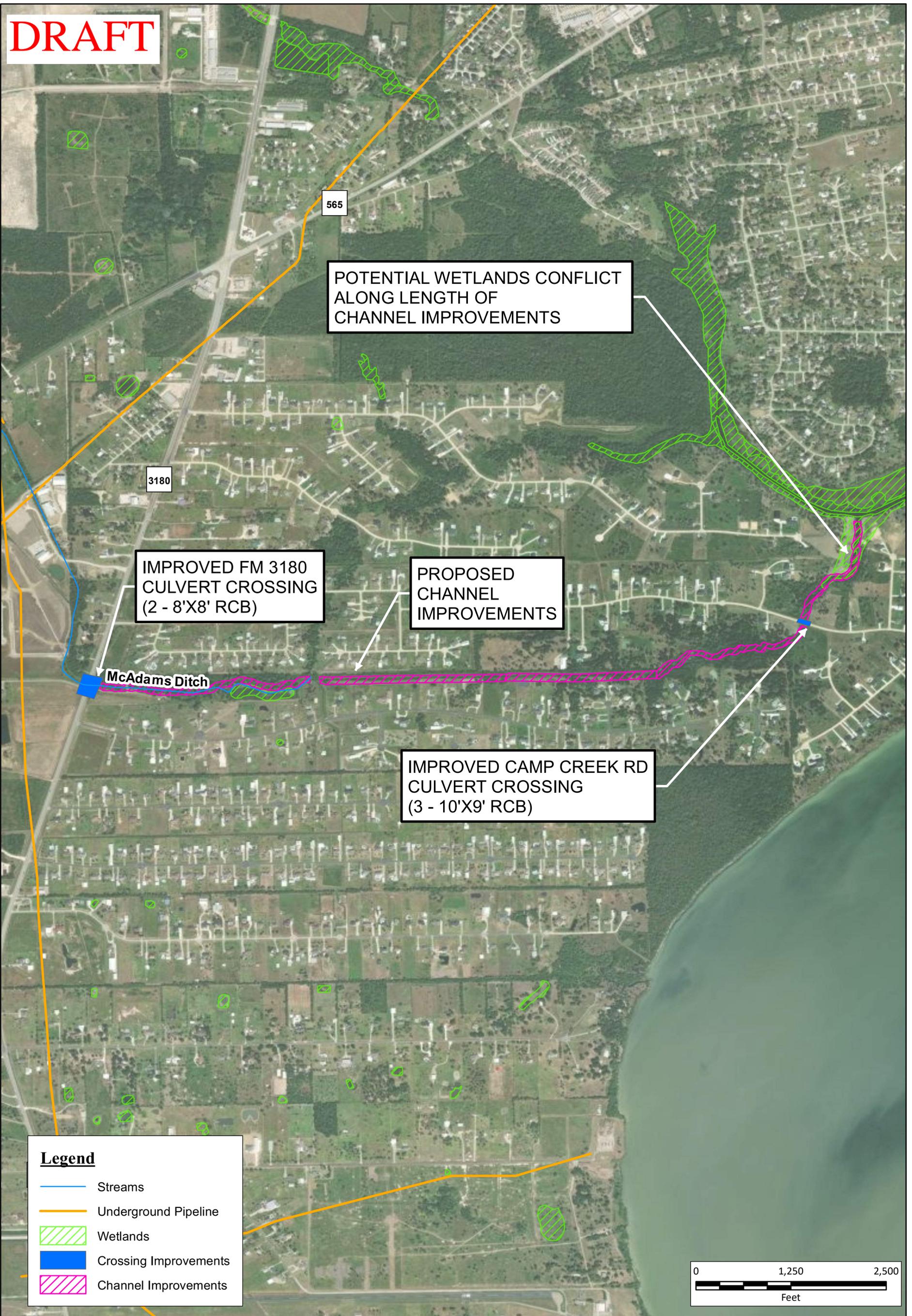
**Skylane Gully Improvements -
Conceptual Project Layout**



EXHIBIT

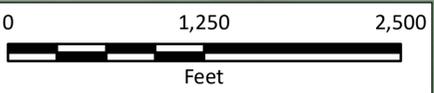
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Legend

-  Streams
-  Underground Pipeline
-  Wetlands
-  Crossing Improvements
-  Channel Improvements



FN PROJECT NO.	CUY21236
DATE CREATED	Date: 7/19/2024
DATUM & COORDINATE SYSTEM	NAD83 State Plane (feet) Texas South Central
FILE NAME	Name: HC_03_Layout
PREPARED BY	LSA

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 HOUSTON, TEXAS 77024
 OFFICE: 713-600-6800
 FAX: 713-600-6801

Chambers-Liberty Regional Drainage Study - TWDB #40018

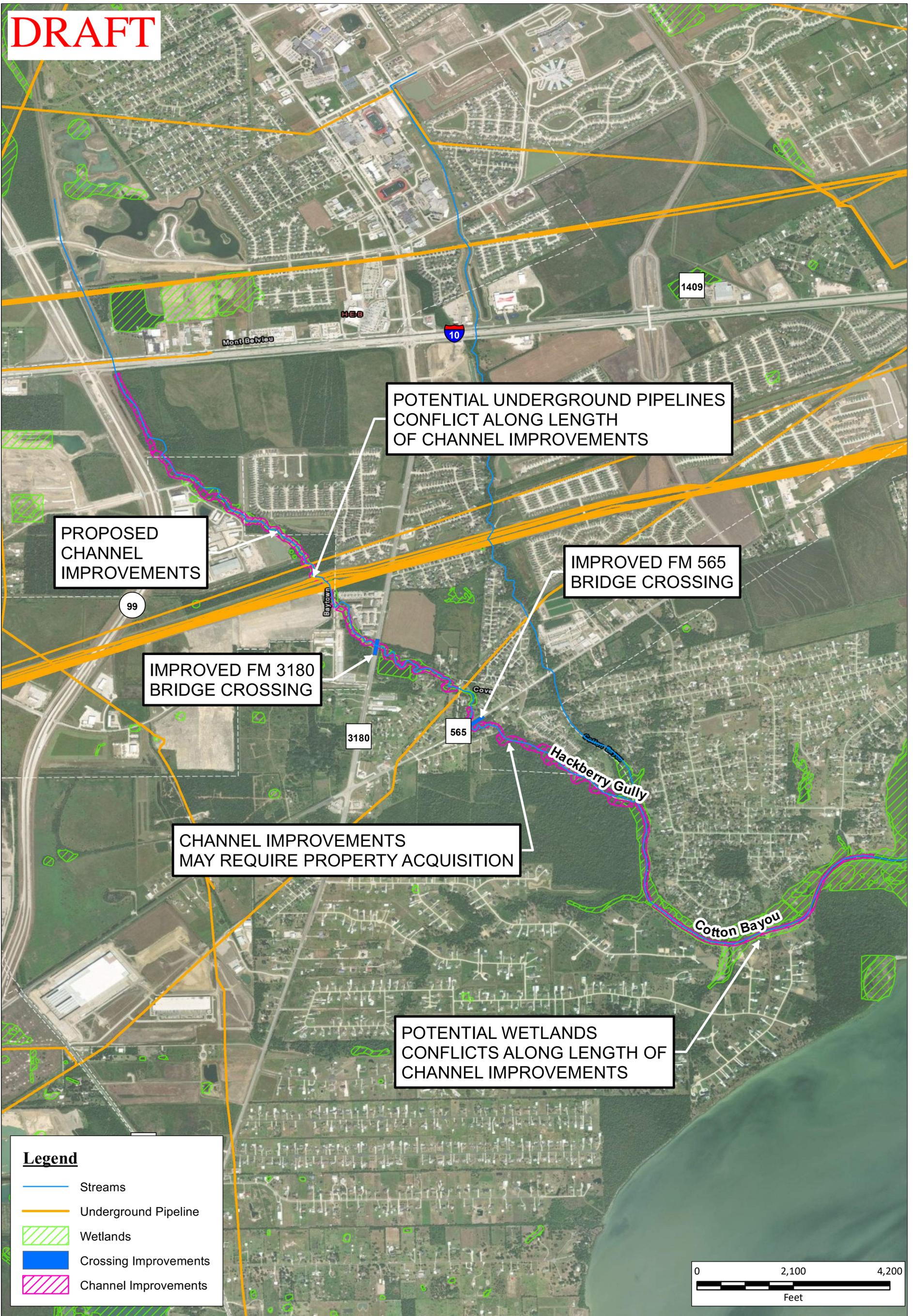
FM 3180 Improvements - Conceptual Project Layout



EXHIBIT

7

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Legend

-  Streams
-  Underground Pipeline
-  Wetlands
-  Crossing Improvements
-  Channel Improvements



FN PROJECT NO.	CUY21236
DATE CREATED	Date: 7/19/2024
DATUM & COORDINATE SYSTEM	NAD83 State Plane (feet) Texas South Central
FILE NAME	Name: HC_02_Layout
PREPARED BY	LSA

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 HOUSTON, TEXAS 77024
 OFFICE: 713-600-6800
 FAX: 713-600-6801

Chambers-Liberty Regional Drainage Study - TWDB #40018

Hackberry-Gully - Channel Improvements Conceptual Layout

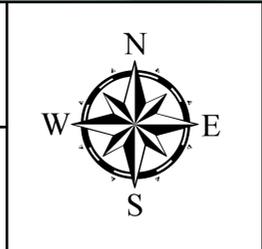


EXHIBIT
8

DRAFT

NOTE: DETENTION POND
REQUIRES PROPERTY ACQUISITION

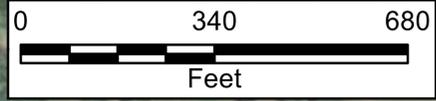
PROPOSED
DETENTION POND

POTENTIAL UNDERGROUND PIPELINES
CONFLICT ALONG LENGTH
OF CHANNEL IMPROVEMENTS

PROPOSED
CHANNEL
IMPROVEMENTS

Legend

-  Streams
-  Underground Pipelines
-  Wetlands
-  Channel Improvements
-  Detention Pond



FN PROJECT NO.	CUY21236
DATE CREATED	Date: 7/19/2024
DATUM & COORDINATE SYSTEM	NAD83 State Plane (feet) Texas South Central
FILE NAME	Name: OldRiver_Layout_Final
PREPARED BY	M.S

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 OFFICE: 713-600-6800
 FAX: 713-600-6801

Chambers-Liberty Regional Drainage Study - TWDB #40018

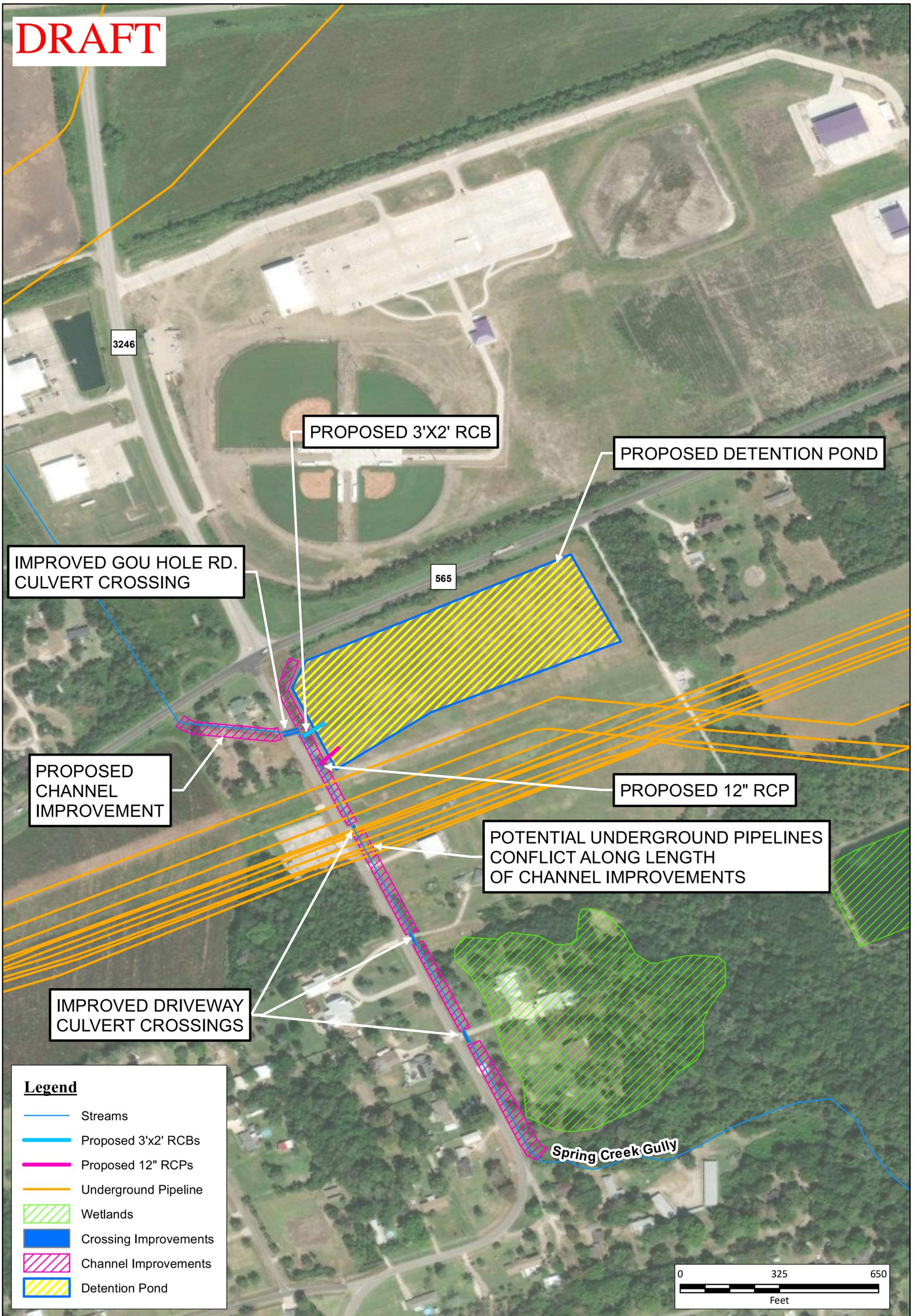
Old River/Cove Channel Improvements - Conceptual Project Layout



EXHIBIT

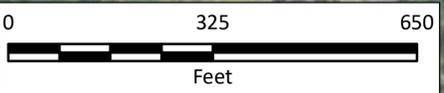
9

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Legend

- Streams
- Proposed 3'x2' RCBs
- Proposed 12" RCPs
- Underground Pipeline
- Wetlands
- Crossing Improvements
- Channel Improvements
- Detention Pond

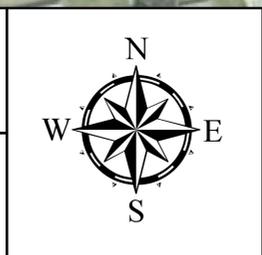


FN PROJECT NO.	CUY21236
DATE CREATED	Date: 7/22/2024
DATUM & COORDINATE SYSTEM	NAD83 State Plane (feet) Texas South Central
FILE NAME	Name: HC_01_Layout
PREPARED BY	LSA

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Chambers-Liberty Regional Drainage Study - TWDB #40018

**Spring Creek Gully Detention -
 Conceptual Project Layout**

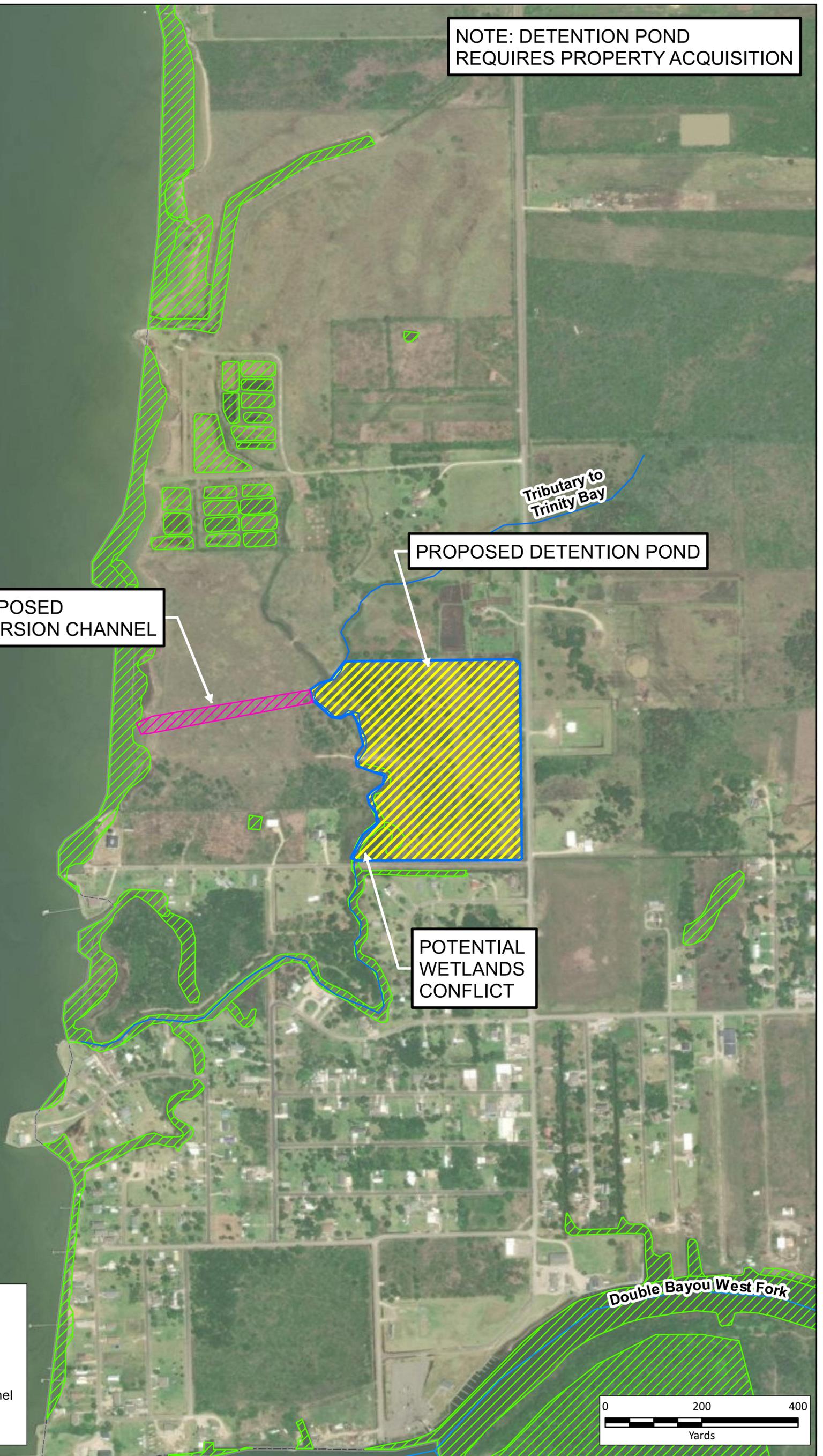


EXHIBIT

10

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NOTE: DETENTION POND
REQUIRES PROPERTY ACQUISITION



Legend

-  Streams
-  Wetlands
-  Diversion Channel
-  Detention Pond

FN PROJECT NO.	CUY21236
DATE CREATED	Date: 7/19/2024
DATUM & COORDINATE SYSTEM	NAD83 State Plane (feet) Texas South Central
FILE NAME	Name: DB_03_Layout
PREPARED BY	GA

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 HOUSTON, TEXAS 77024
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 FAX: 713-600-6801

Chambers-Liberty Regional Drainage Study - TWDB #40018

**Oak Island Drainage Improvements -
 Conceptual Project Layout**

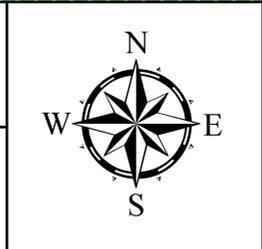


EXHIBIT
 11

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61

PROPOSED 4'X4' RCB

PROPOSED 4'X4' RCB

PROPOSED STREET REPLACEMENT
IN-KIND FULL LENGTH OF
UNDERGROUND STORM SYSTEM

IMPROVED BELTON LN
CULVERT CROSSING
(2 - 6'X3' RCB)

PROPOSED 6'X3' RCB

PROPOSED 8'X8' RCB

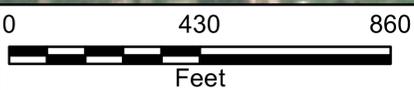
Belton Ln

563

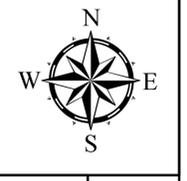
Tributary to
Double Bayou

Legend

- Proposed Junction Boxes
- Proposed 8'x8' RCBs
- Proposed 6'x3' RCBs
- Proposed 4'x4' RCBs
- Proposed 36" RCPs
- Streams
- Wetlands
- Crossing Improvement



PROJECT NO.	CU21236
DATE CREATED	Date: 7/22/2024
DATUM & COORDINATE SYSTEM	NAD83 State Plane (feet) Texas South Central
FILE NAME	Name: DB_02 L_V2
PREPARED BY	GA



Chambers-Liberty Regional Drainage Study - TWDB #40018

**Double Bayou Trunkline Improvements -
Conceptual Project Layout**

FRESE AND NICHOLS, INC.
10497 TOWN AND
COUNTRY WAY, SUITE 600
HOUSTON, TEXAS 77024
P: 713.600.6865
F: 713.600.6801

EXHIBIT

12

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NOTE: CHANNEL IMPROVEMENTS REQUIRE EASEMENT

PROJECT NO: CU21236
DATE CREATED: 7/19/2024
DATUM & COORDINATE SYSTEM: NAD83 State Plane (feet) Texas South Central
FILE NAME: TW_06_v2
PREPARED BY: TW_06_v2
INITIALS:



Chambers-Liberty Regional Drainage Study - TWDB #40018
Anahuac Drainage Improvements
- Conceptual Project Layout

FRESE AND NICHOLS, INC.
10497 TOWN AND COUNTRY WAY, SUITE 600
HOUSTON, TEXAS 77024
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EXHIBIT
13

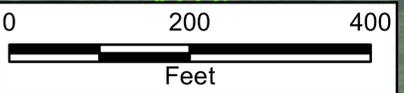
Tributary to Lake Anahuac

PROPOSED CHANNEL IMPROVEMENTS

IMPROVED FM 563 CULVERT CROSSING (2 - 48" RCP)

Legend

- Streams
- Underground Pipeline
- Wetlands
- Crossing Improvements
- Channel Improvements



DRAFT

NOTE: PROPOSED DETENTION POND
REQUIRES PROPERTY AQUISITION

Spring Branch

IMPROVED
CULVERT CROSSING
(2 - 10'X6' RCB)

PROPOSED DETENTION POND

IMPROVED SPEIGHTS RD
CULVERT CROSSING
(2 - 12'X6' RCB)

PROPOSED 24" RCP

Legend

-  Streams
-  Proposed 24" RCPs
-  Wetlands
-  Crossing Improvements
-  Detention Pond

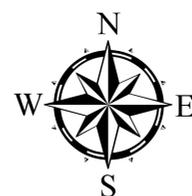


FN PROJECT NO.	CUY21236
DATE CREATED	Date: 7/19/2024
DATUM & COORDINATE SYSTEM	NAD83 State Plane (feet) Texas South Central
FILE NAME	Name: TW_05
PREPARED BY	GA

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 10497 TOWN AND COUNTRY WAY, SUITE 500
 HOUSTON, TEXAS 77024
 OFFICE: 713-600-6800
 FAX: 713-600-6801

Chambers-Liberty Regional Drainage Study - TWDB #40018

**Spring Branch Drainage Improvements -
Conceptual Project Layout**

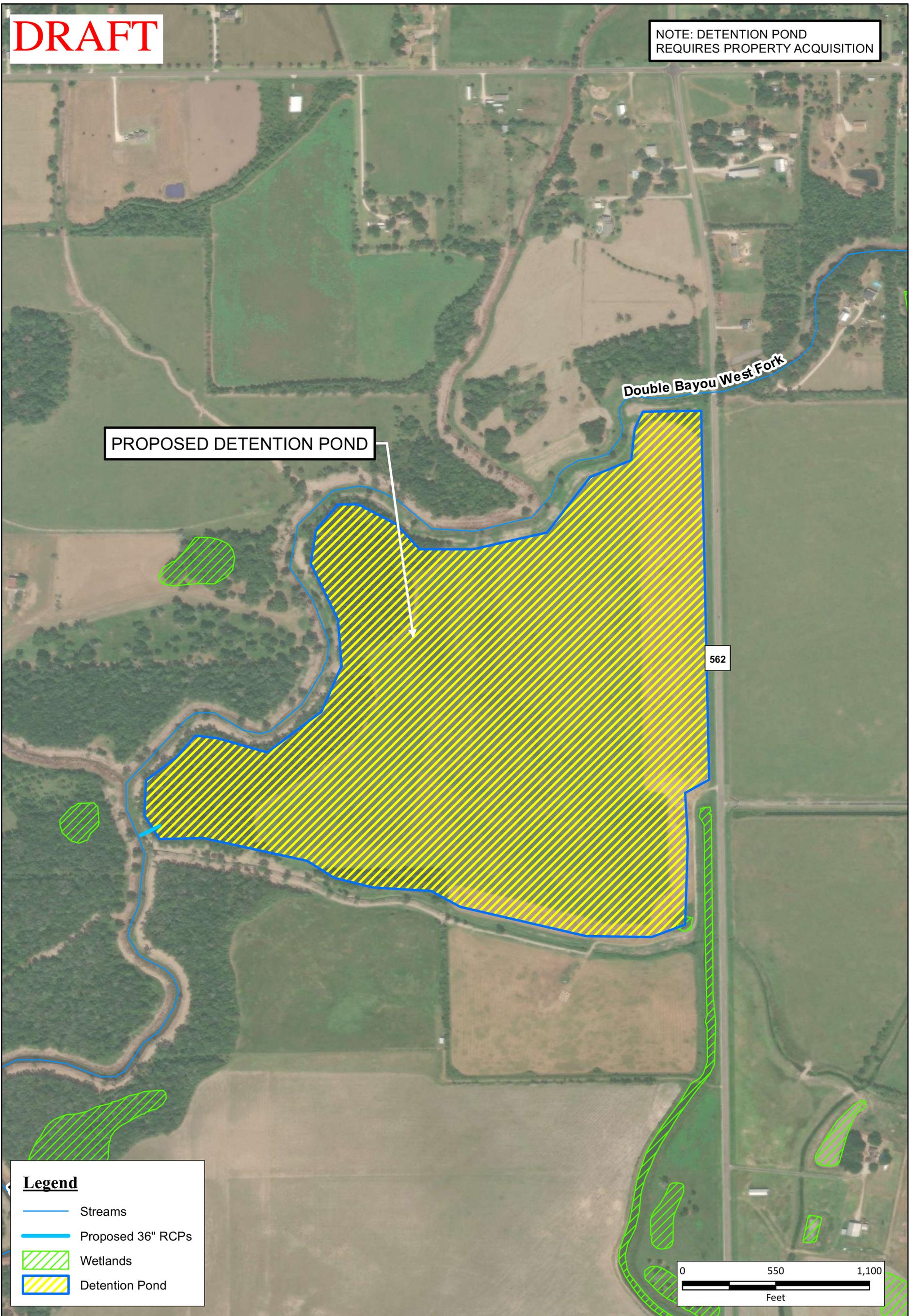


EXHIBIT

14

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NOTE: DETENTION POND
REQUIRES PROPERTY ACQUISITION



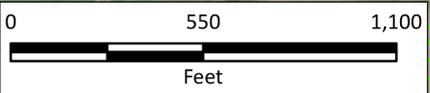
PROPOSED DETENTION POND

Double Bayou West Fork

562

Legend

-  Streams
-  Proposed 36" RCPs
-  Wetlands
-  Detention Pond

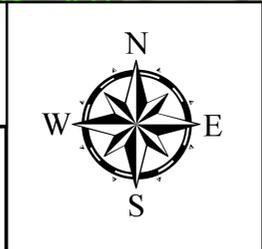


FN PROJECT NO.	CUY21236
DATE CREATED	Date: 7/22/2024
DATUM & COORDINATE SYSTEM	NAD83 State Plane (feet) Texas South Central
FILE NAME	Name: DB_11_Layout
PREPARED BY	GA

FRESE AND NICHOLS, INC.
 10497 TOWN AND COUNTRY WAY, SUITE 500
 HOUSTON, TEXAS 77024
 OFFICE: 713-600-6800
 FAX: 713-600-6801

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**Belton Rd Drainage Improvements -
 Conceptual Project Layout**



EXHIBIT

15

DRAFT



Legend

- Streams
- Underground Pipelines
- Crossing Improvements
- Channel Improvements

FN PROJECT NO.	CUY21236
DATE CREATED	Date: 7/19/2024
DATUM & COORDINATE SYSTEM	NAD83 State Plane (feet) Texas South Central
FILE NAME	Name: ST_03
PREPARED BY	M.S

FRESE AND NICHOLS, INC.
 10497 TOWN AND COUNTRY WAY, SUITE 500
 HOUSTON, TEXAS 77024
 OFFICE: 713-600-6800
 FAX: 713-600-6801

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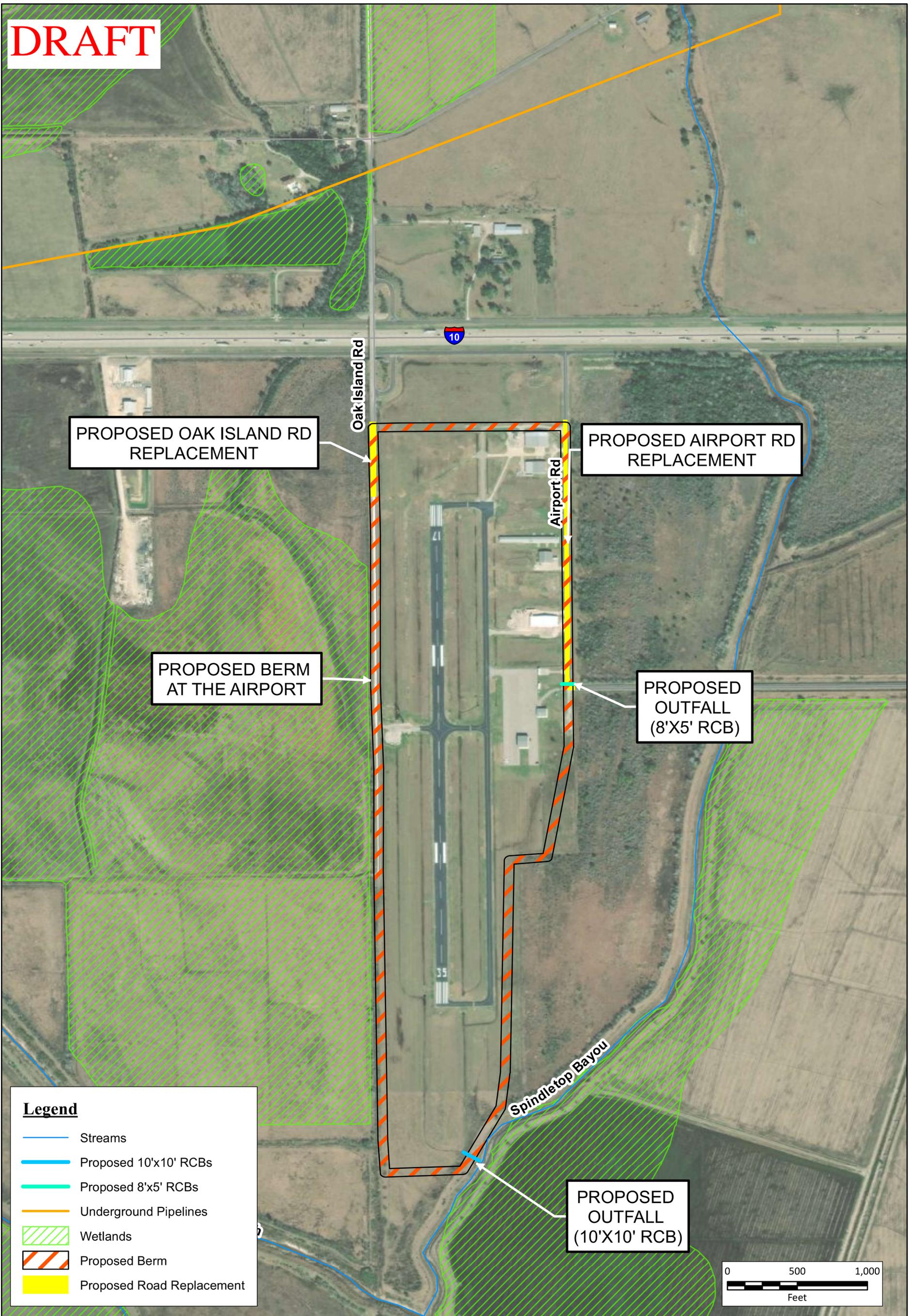
I-10 Crossing Improvements - Conceptual Project Layout



EXHIBIT

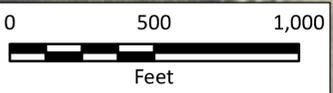
16

DRAFT



Legend

- Streams
- Proposed 10'x10' RCBs
- Proposed 8'x5' RCBs
- Underground Pipelines
- Wetlands
- Proposed Berm
- Proposed Road Replacement



FN PROJECT NO.	CUY21236
DATE CREATED	Date: 7/22/2024
DATUM & COORDINATE SYSTEM	NAD83 State Plane (feet) Texas South Central
FILE NAME	Name: ST_04
PREPARED BY	M.S

FREESE AND NICHOLS, INC.
 10497 TOWN AND COUNTRY WAY, SUITE 500
 HOUSTON, TEXAS 77024
 OFFICE: 713-600-6800
 FAX: 713-600-6801

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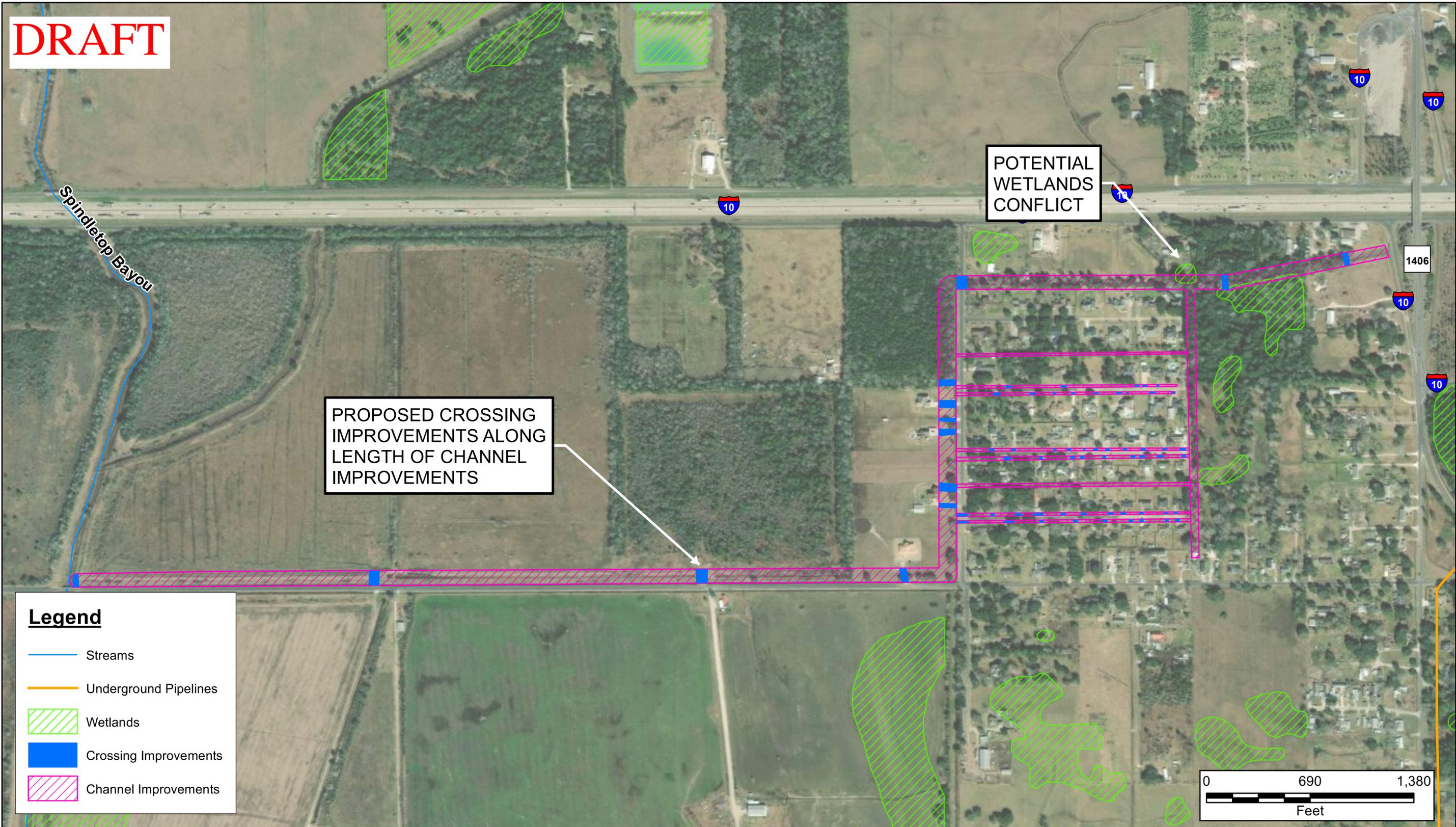
**Winnie Stowell Airport Improvements -
 Conceptual Project Layout**



EXHIBIT

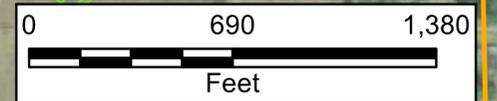
17

DRAFT



Legend

-  Streams
-  Underground Pipelines
-  Wetlands
-  Crossing Improvements
-  Channel Improvements

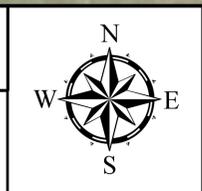


FN PROJECT NO.	CUY21236
DATE CREATED	Date: 7/19/2024
DATUM & COORDINATE SYSTEM	NAD83 State Plane (feet) Texas South Central
FILE NAME	Name: ST_09_Layout_Final
PREPARED BY	TH

FRESE AND NICHOLS, INC.
 10497 TOWN AND COUNTRY WAY, SUITE 500
 HOUSTON, TEXAS 77024
 OFFICE: 713-600-6800
 FAX: 713-600-6801

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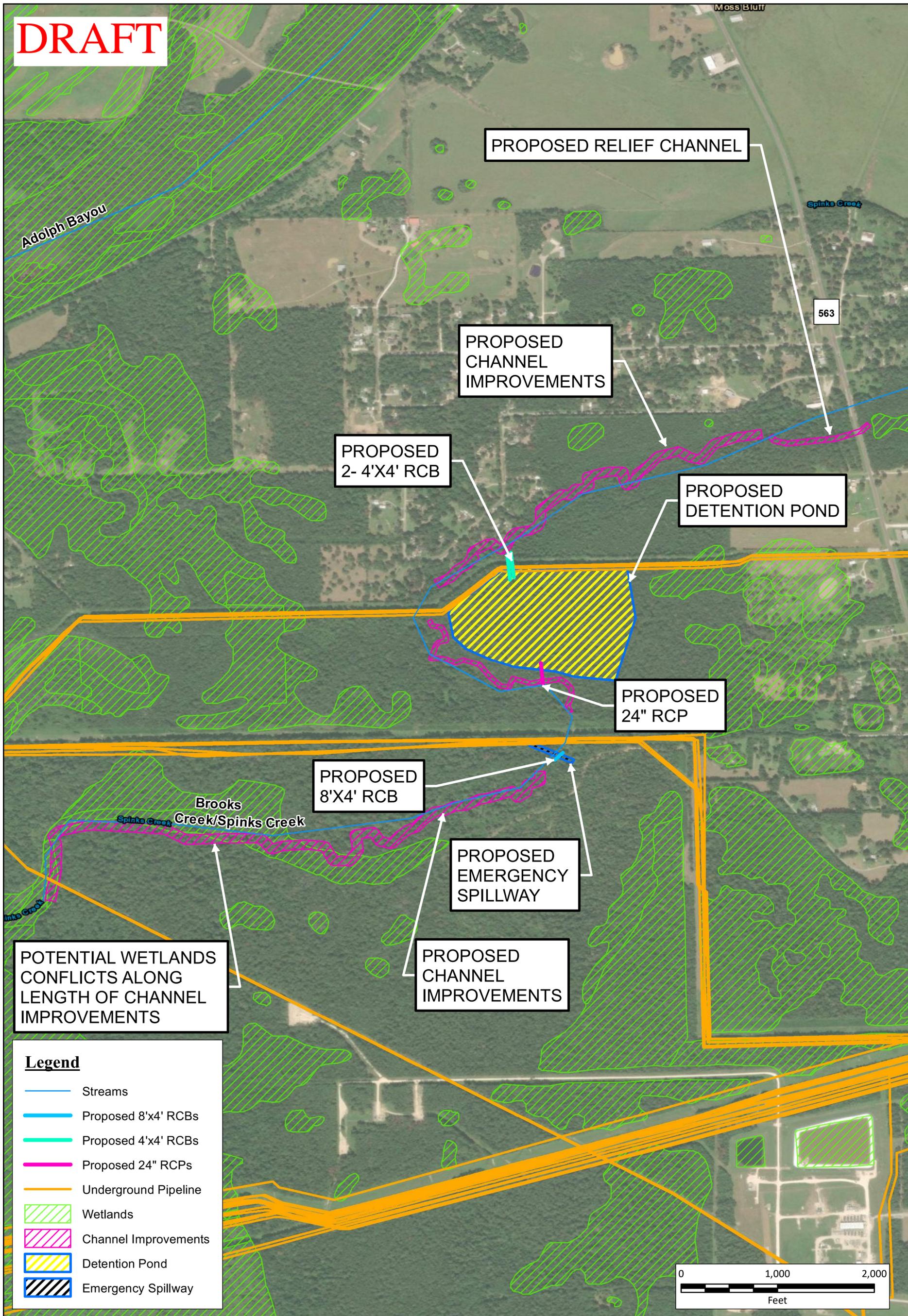
Teacherville Channel Improvements - Conceptual Project Layout



EXHIBIT

18

DRAFT

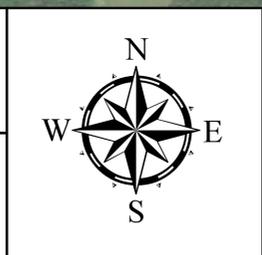


FN PROJECT NO.	CUY21236
DATE CREATED	Date: 7/22/2024
DATUM & COORDINATE SYSTEM	NAD83 State Plane (feet) Texas South Central
FILE NAME	Name: TR_03_Layout
PREPARED BY	LSA

FREES AND NICHOLS, INC.
 10497 TOWN AND COUNTRY WAY, SUITE 500
 HOUSTON, TEXAS 77024
 OFFICE: 713-600-6800
 FAX: 713-600-6801

Chambers-Liberty Regional Drainage Study - TWDB #40018

Brooks/Spinks Creek Detention - Conceptual Project Layout



EXHIBIT

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