

# **TAYLOR'S BAYOU WATERSHED PAST, PRESENT AND FUTURE**

Corps of Engineers Project (Design 25-yr Urban/2 inches Rural)

2001 Taylor's Bayou Projects (Design 100-yr / 13 inches in 24 hours)

Water Surface Profiles Existing and Proposed

Google Earth Watershed Features

Green Pond Detention Functionality

Imelda High Water Elevations

IH-10 Taylor's Bayou Bridge Project

Ditch 609 Project

Hwy-124 Bridge Project

Taylor's Bayou Tree and Debris Removal

Needmore Diversion Levee Removal

Green Pond Detention Enhancements

Future Detention Alternative Study

Taylor's Bayou South Fork Project

Rainfall Discussion

OFFICIAL COPY

DO NOT REMOVE FROM DDG

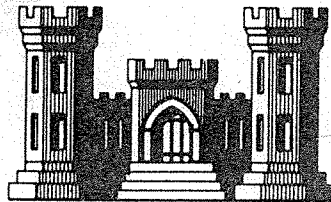
TAYLORS BAYOU, TEXAS

# DRAINAGE AND FLOOD CONTROL PROJECT

DESIGN MEMORANDUM NO. 1

GENERAL DESIGN MEMORANDUM  
AND  
FEATURE DESIGN MEMORANDUM  
FOR

G I W W, OUTFALL CANAL,  
0.95 MILE TAYLORS BAYOU, AND DIVERSION CHANNEL



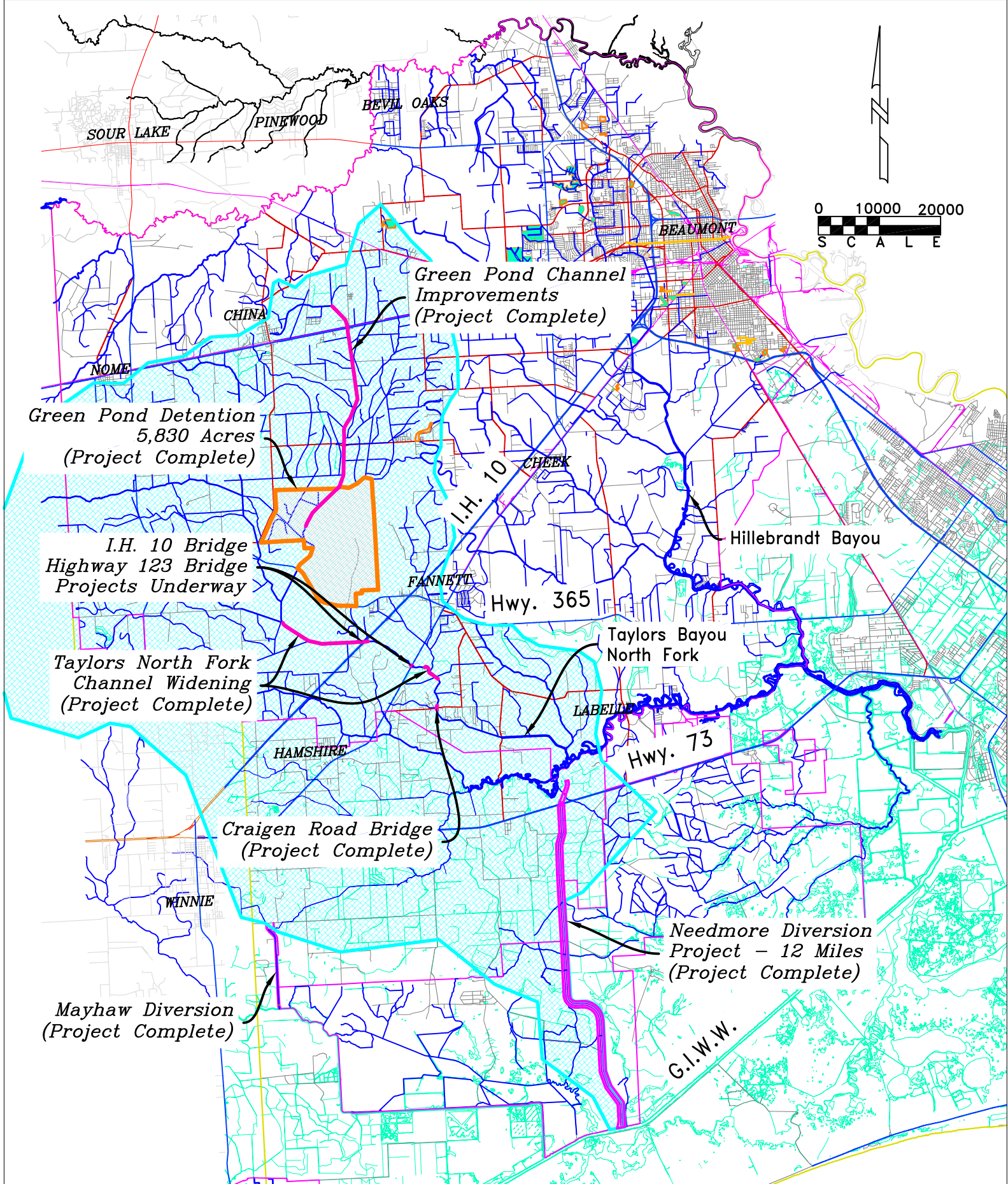
U. S. ARMY ENGINEER DISTRICT, GALVESTON

CORPS OF ENGINEERS

GALVESTON, TEXAS

APRIL 1969

SERIAL NO.



2001

Jefferson County  
 Drainage District No. 6  
 Taylor's Bayou Project

# LEGEND

- PROPOSED WATER SURFACE
- - - EXISTING WATER SURFACE
- - - PROPOSED FLOW LINE
- - - EXISTING FLOW LINE
- - - TOP OF BANK

## TAYLORS BAYOU (NORTH FORK)

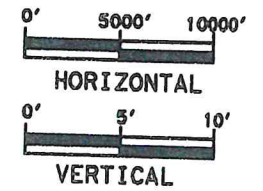
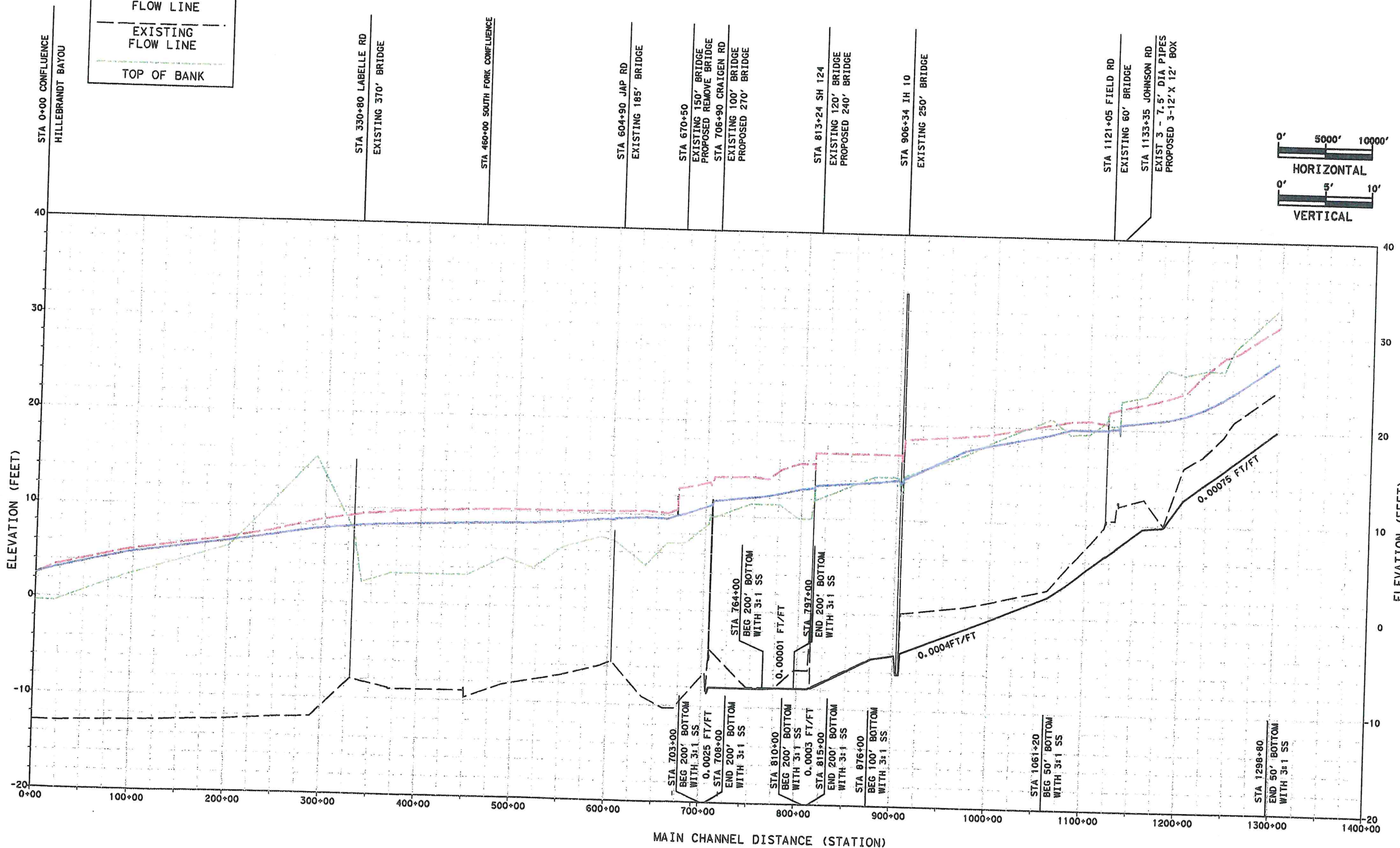
### 100 YR IMPROVED DITCHES WITH PROPOSED STRUCTURES, NEEDMORE DIVERSION, GREEN POND DETENTION AND WINNIE DIVERSION

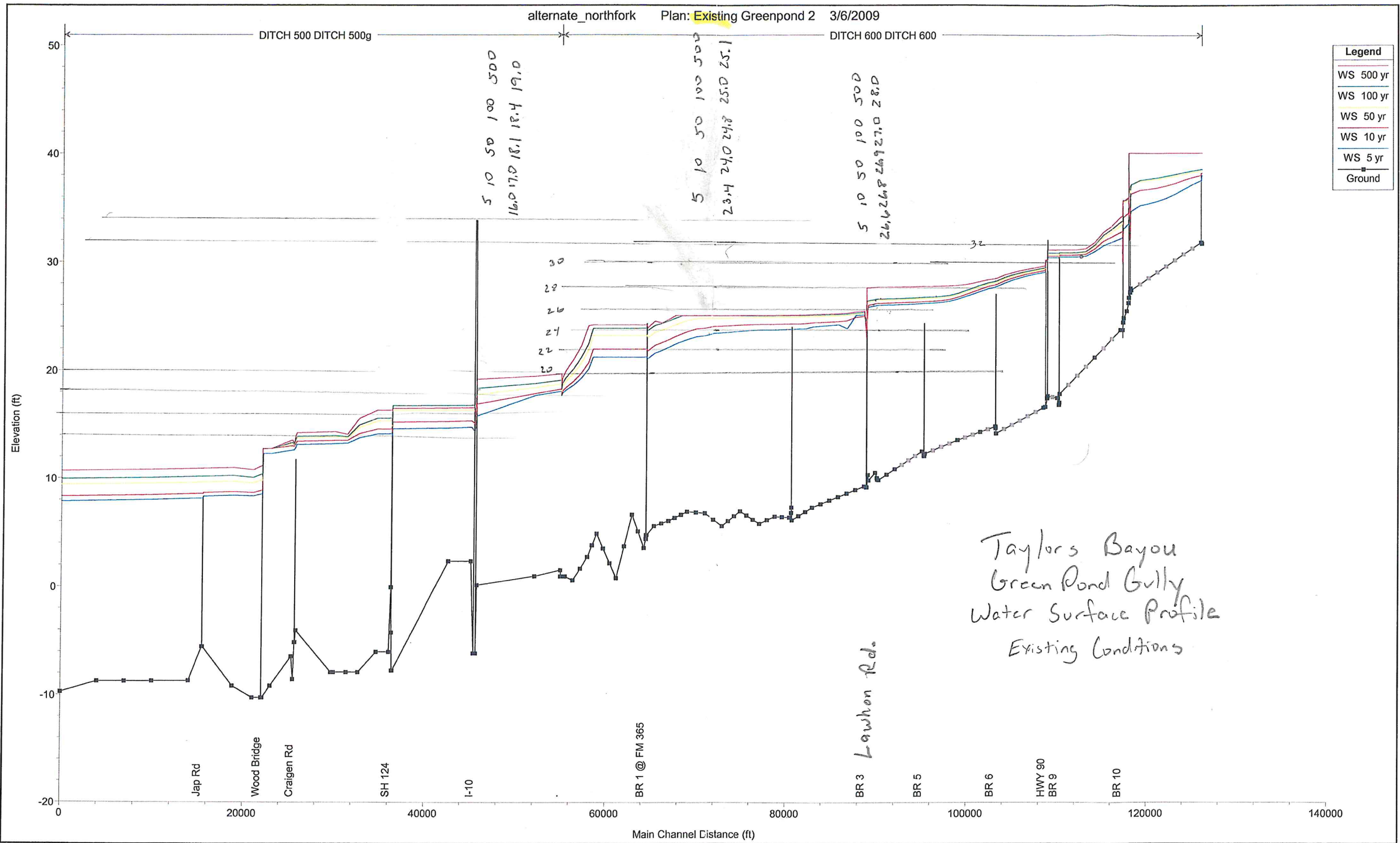


TAYLORS BAYOU  
DRAINAGE STUDY

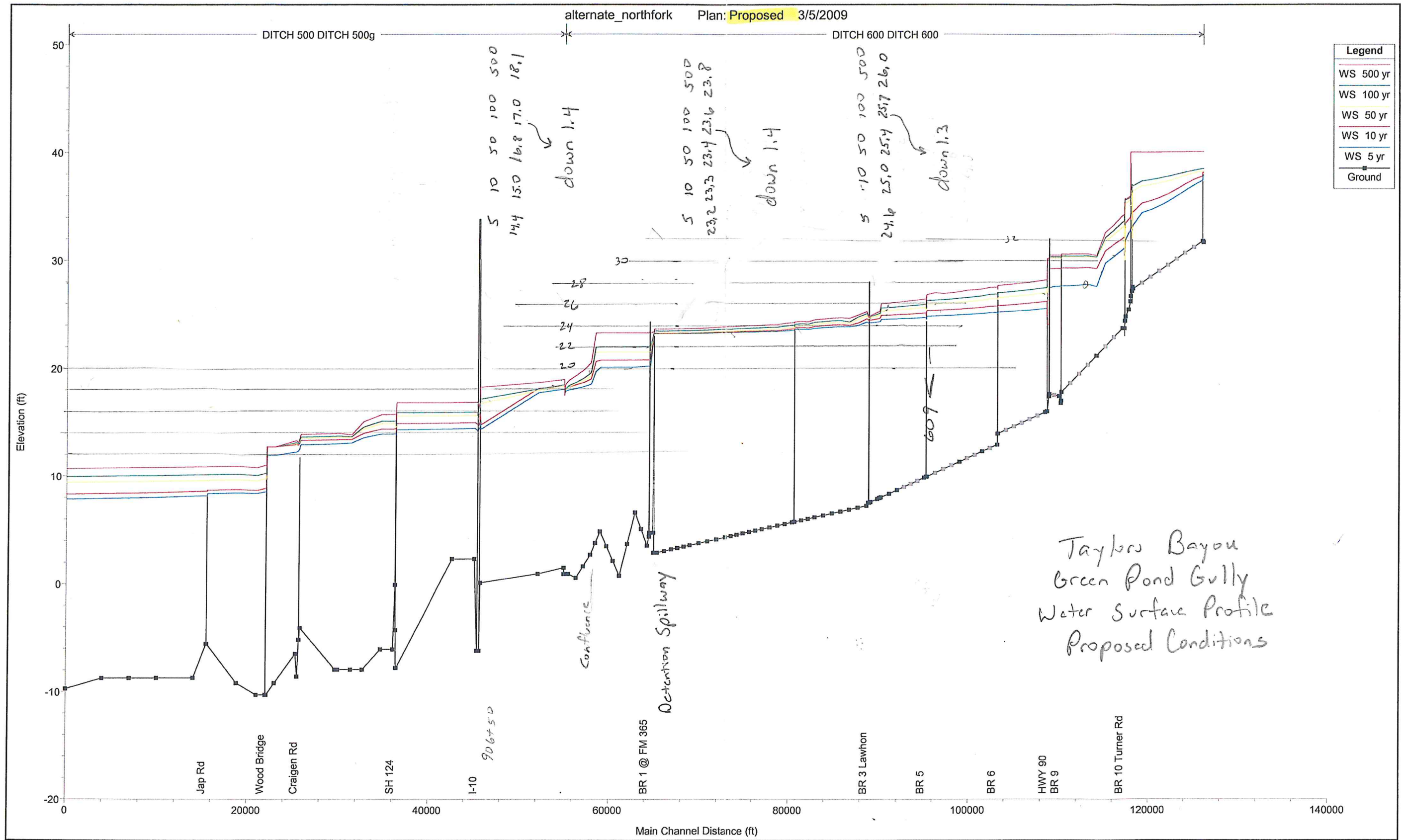
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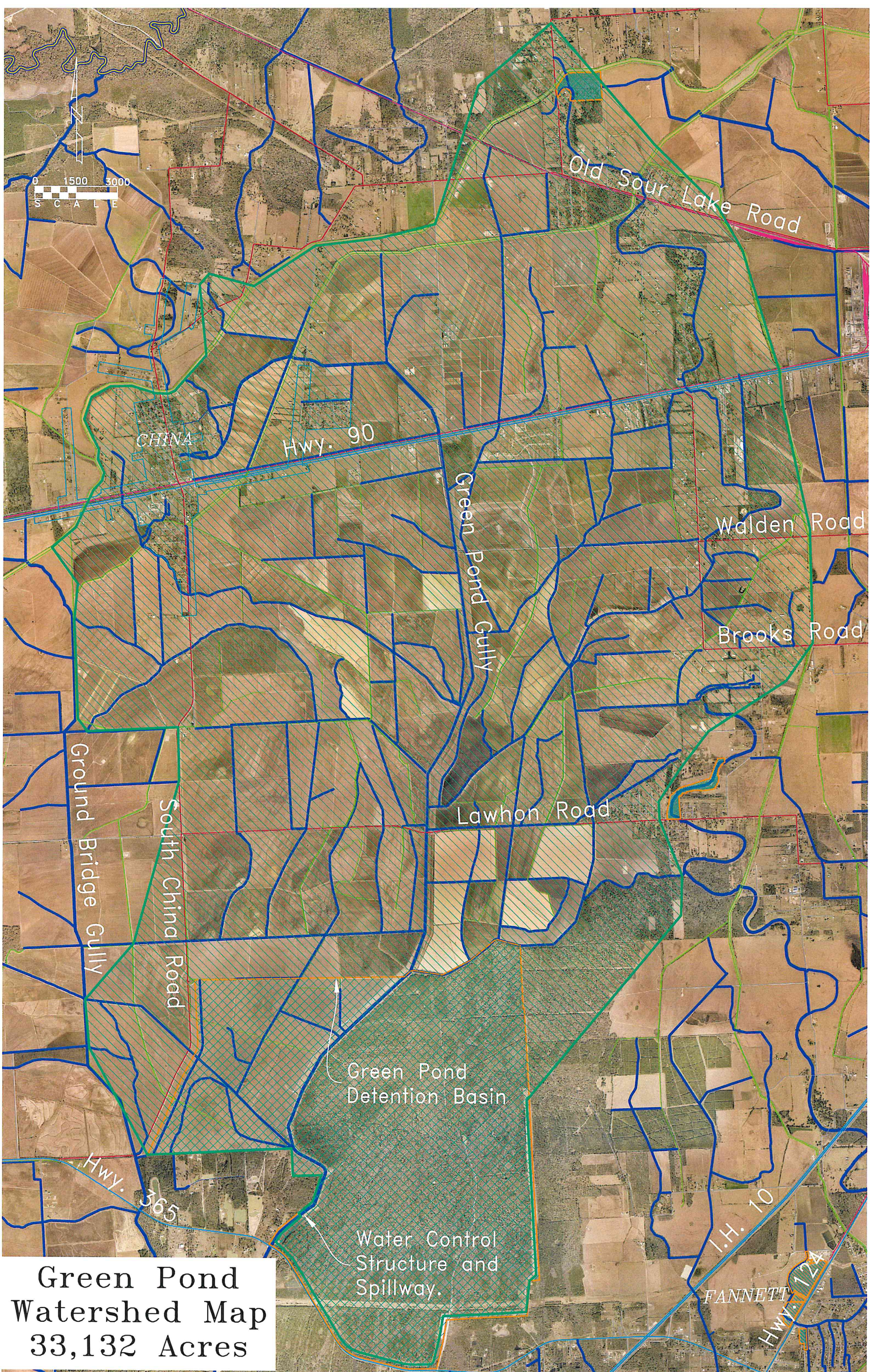
SHEET NO: P16



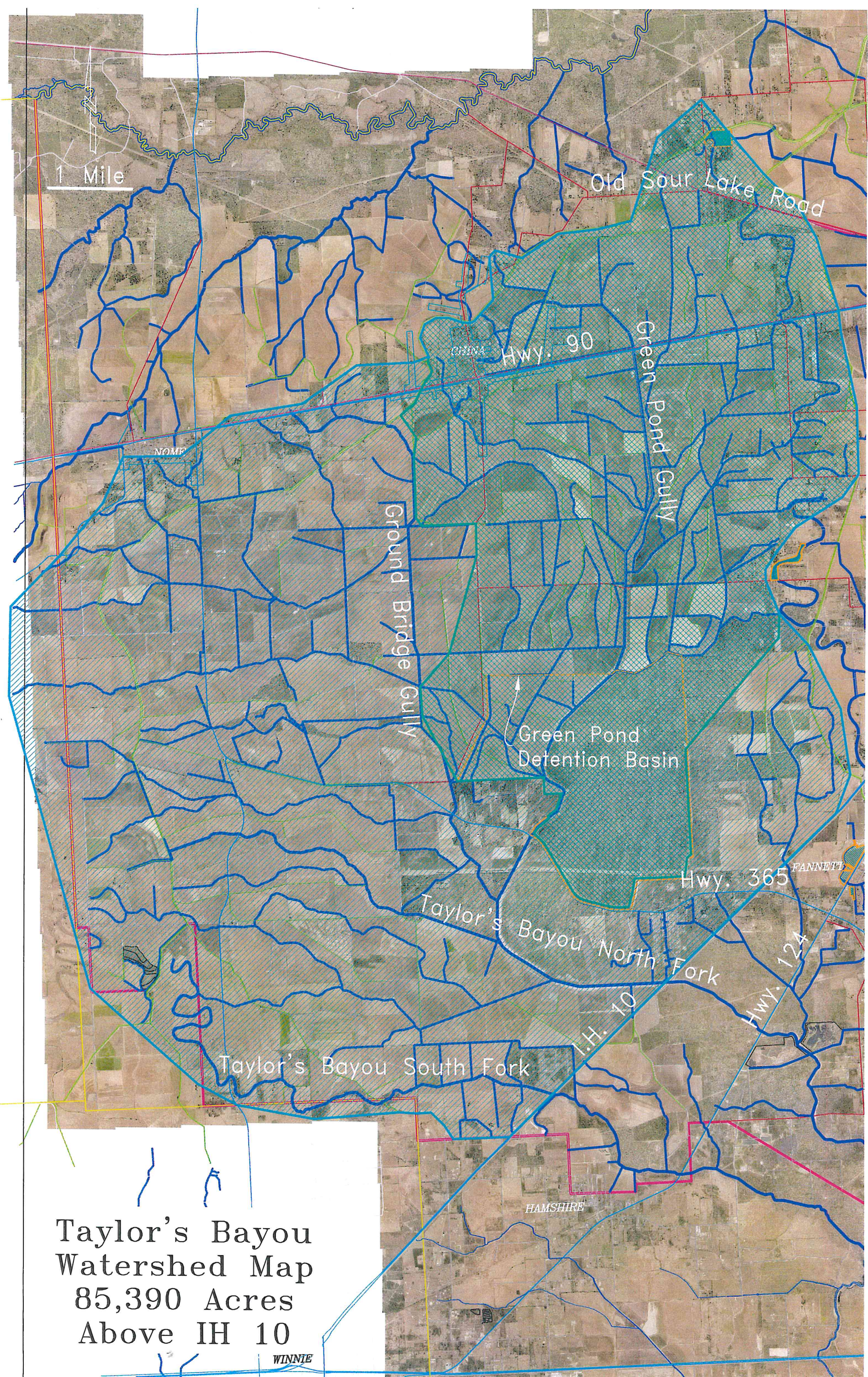


Greenpond Detention  
 + Greenpond Gully Improved





**Green Pond  
Watershed Map  
33,132 Acres**



Taylor's Bayou  
Watershed Map  
85,390 Acres  
Above IH 10

WINNIE



24 hour rain 12.73"\*

48 hour rain 17.93"\*

Greenpond Detention  
Spillway  
South End

\*(avg. over watershed)

8/28/17

10:00 AM

Water elevation

upstream 23.88

downstream 22.03

Lawhon 25.97

Hwy 124 14.23

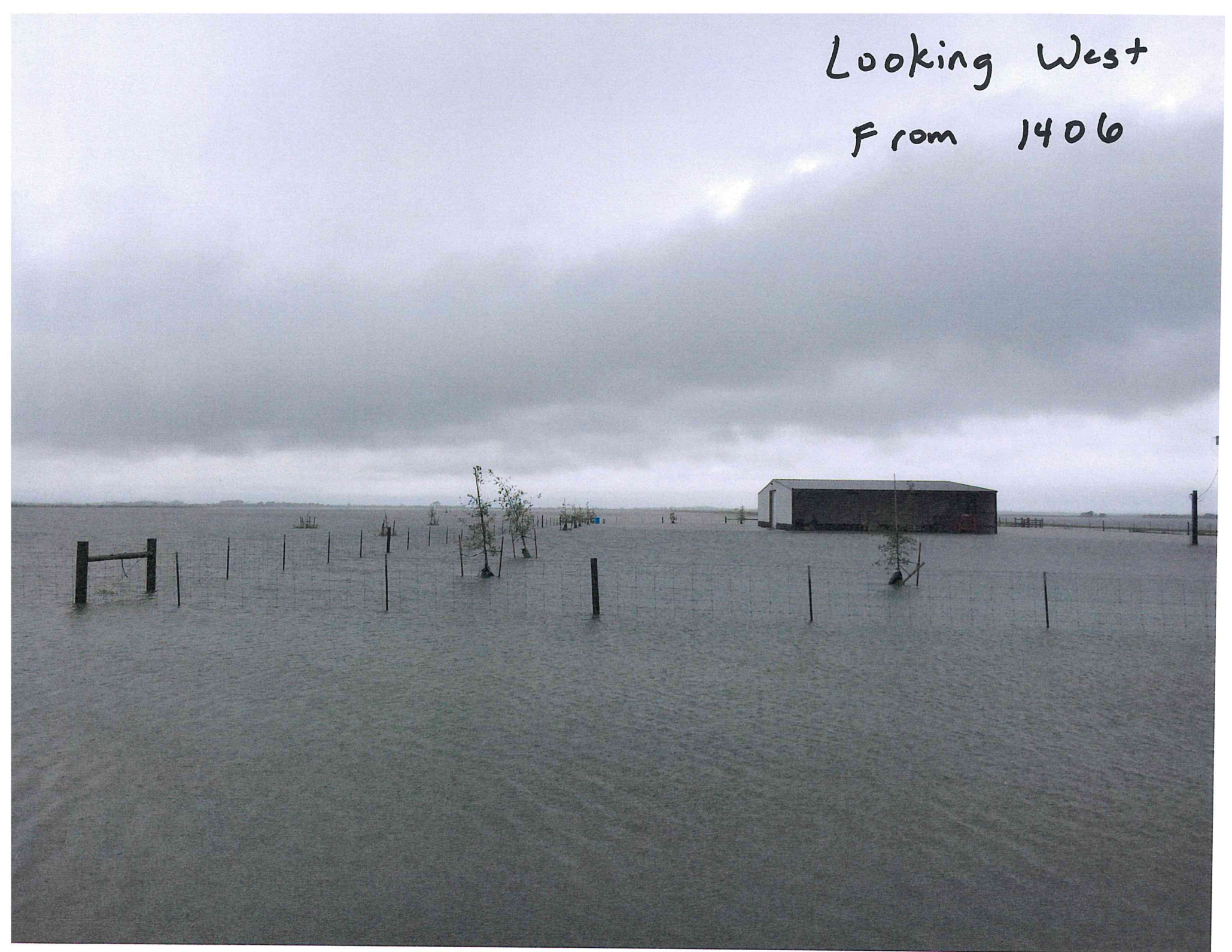


8/28/17  
10:11 AM

Greenpond Detention  
Spillway  
North End



Looking West  
From 1406







Green Pond Detention  
Weir overtopping

9/19/19

3

Emergency repair made 9/19/19  
photo 9/20/19





# Greenpond Detention Basin Enhancements

Picnic Island

Check area  
outfall  
improvement

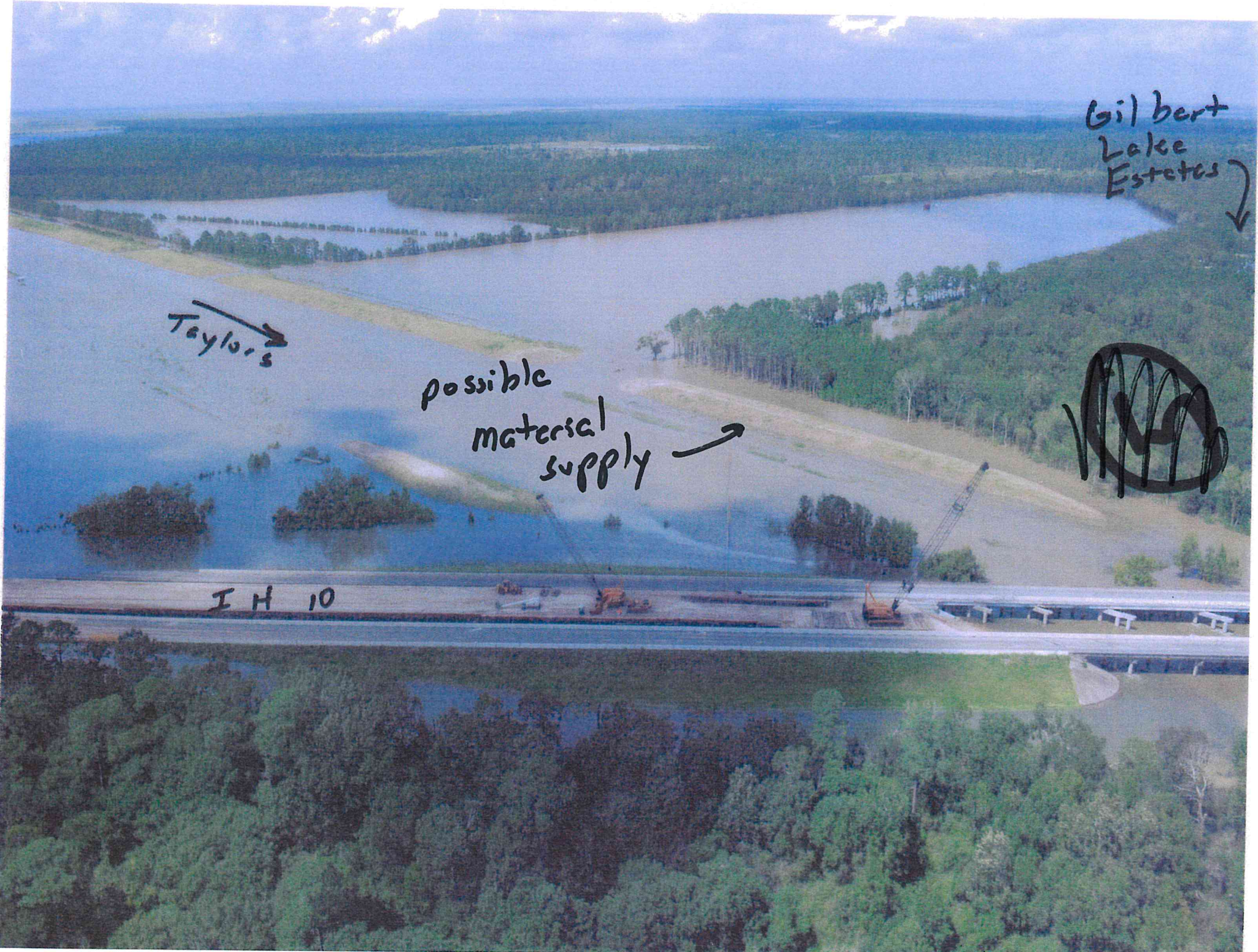
Raise &  
Armor  
levee

emergency  
spillway

Hwy 365 365

East Fwy 10

Fannett

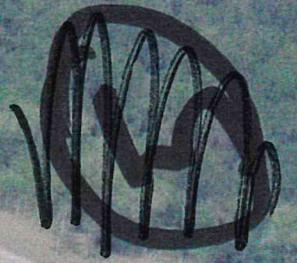


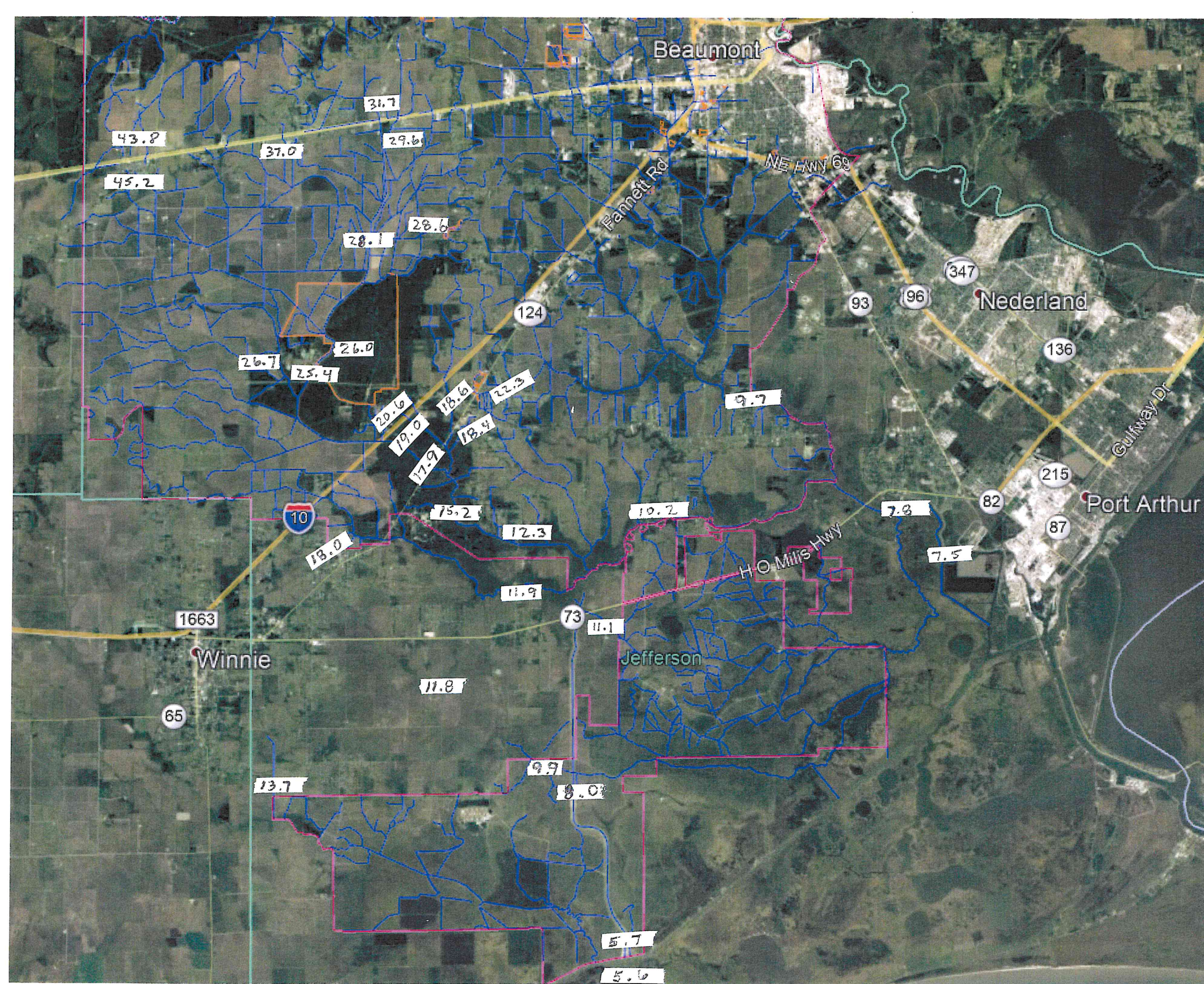
Gilbert  
Lake  
Estates

Taylors

possible  
material  
supply

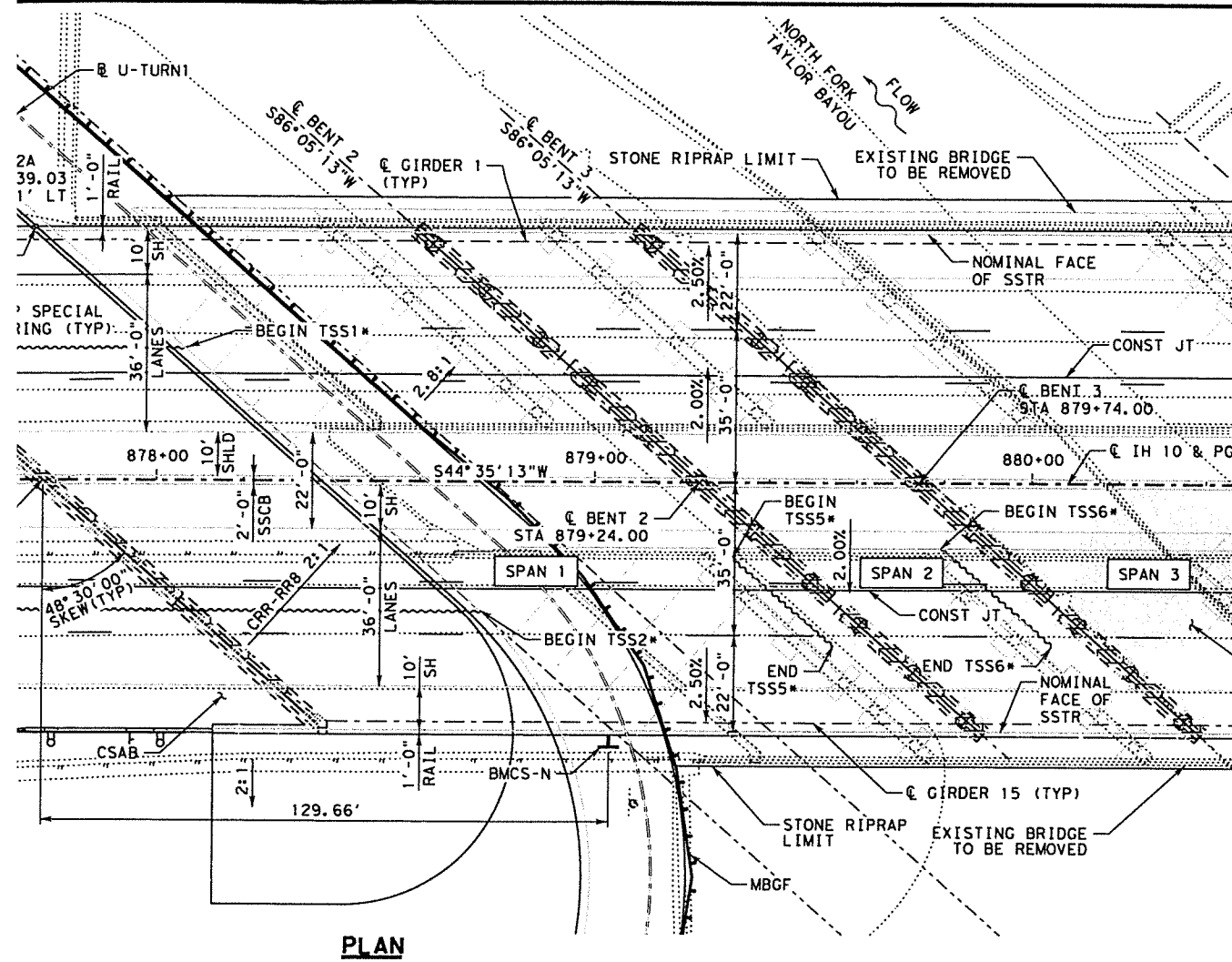
I H 10



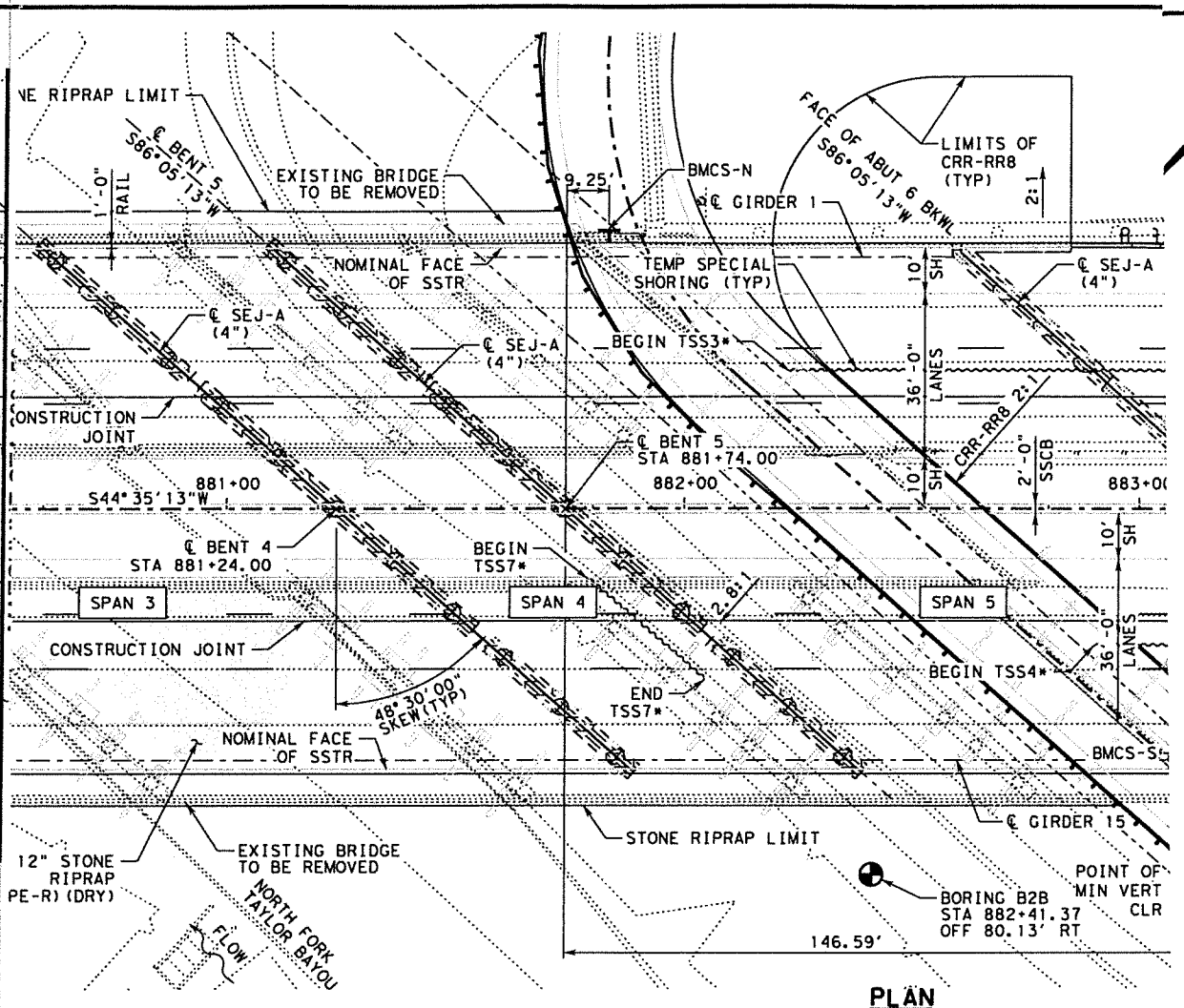


Imelda  
 High Water  
 Map  
 Taylor's  
 Bayou

NGVD 1929

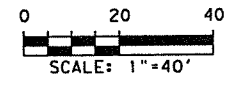


PLAN

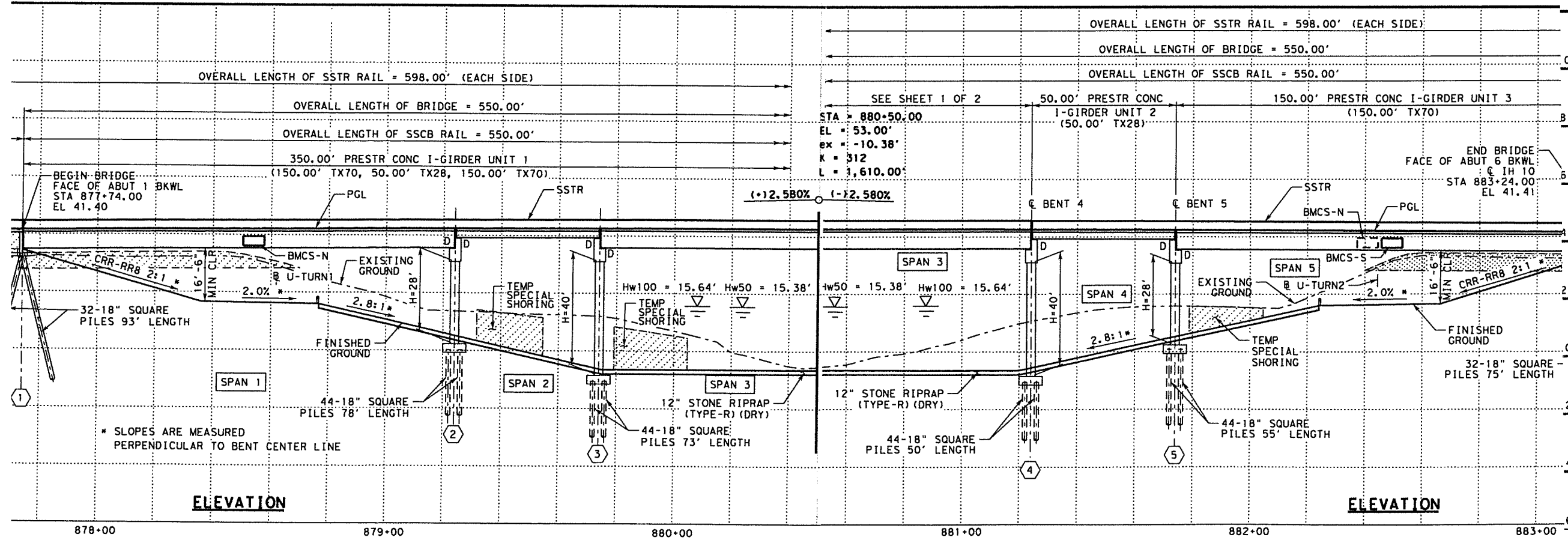


PLAN

**GENERAL NOTES:**  
 1. FOR NOTES SEE SHEET 1 OF 2.

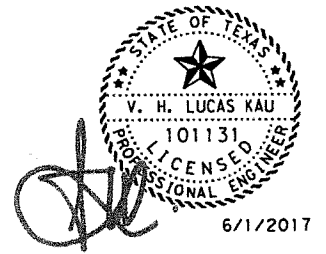


HL 93 LOADING



ELEVATION

ELEVATION



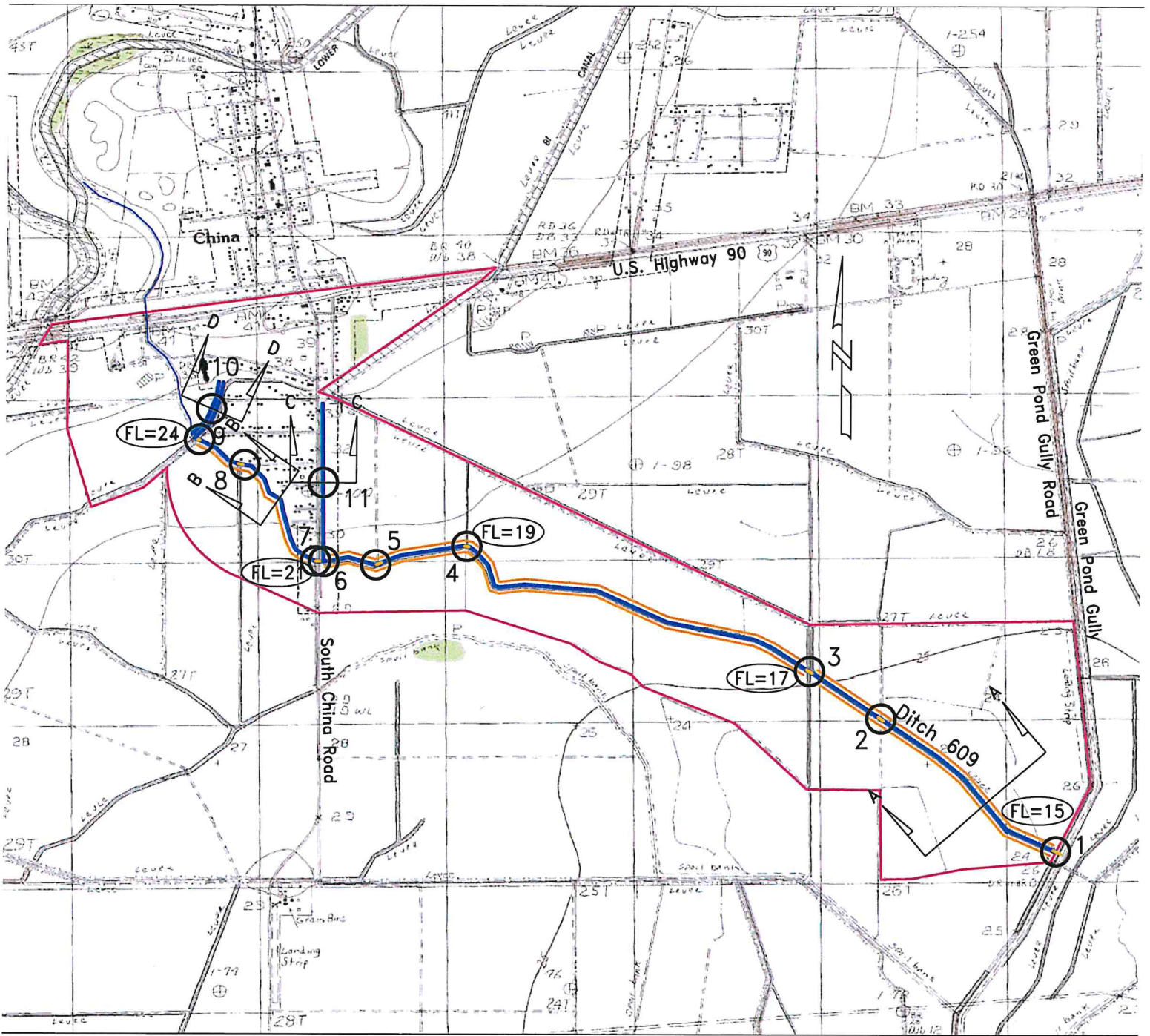
**Stantec**  
 Engineered by Stantec Consulting Services Inc.  
 Texas Registered Engineering Firm F-6324



**IH 10**  
 BRIDGE LAYOUT  
 IH 10 OVERPASS AT  
 NORTH FORK TAYLOR BAYOU

SHEET 2 OF 2

FED RD DIV NO	STATE	FEDERAL AID PROJECT NO	HIGHWAY		
6	TEXAS	SEE TITLE SHEET	IH 10		
STATE DIST	COUNTY	CONT	SECT	JOB	SHEET NO
BMT	JEFFERSON	0739	02	161	0998



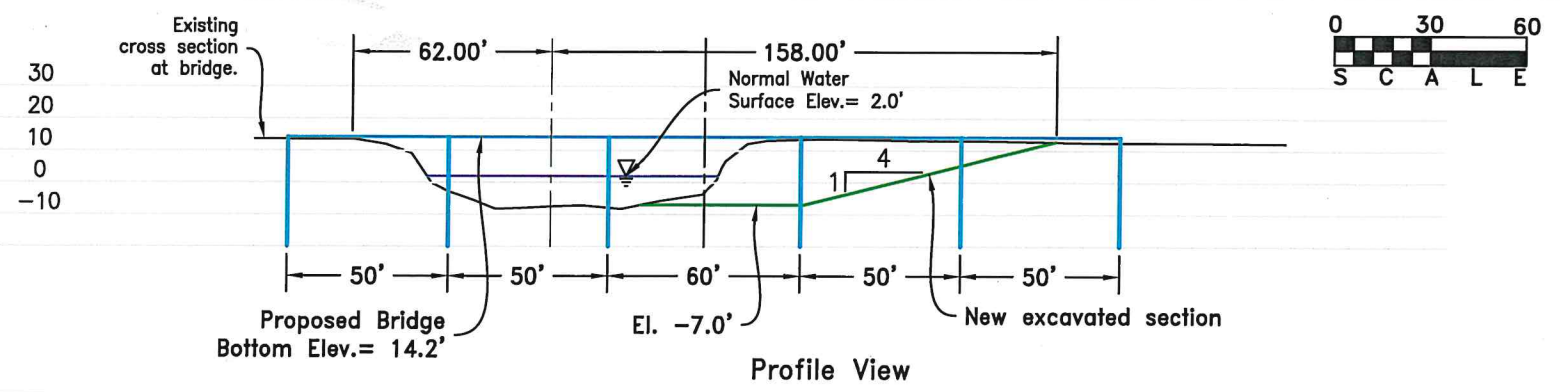
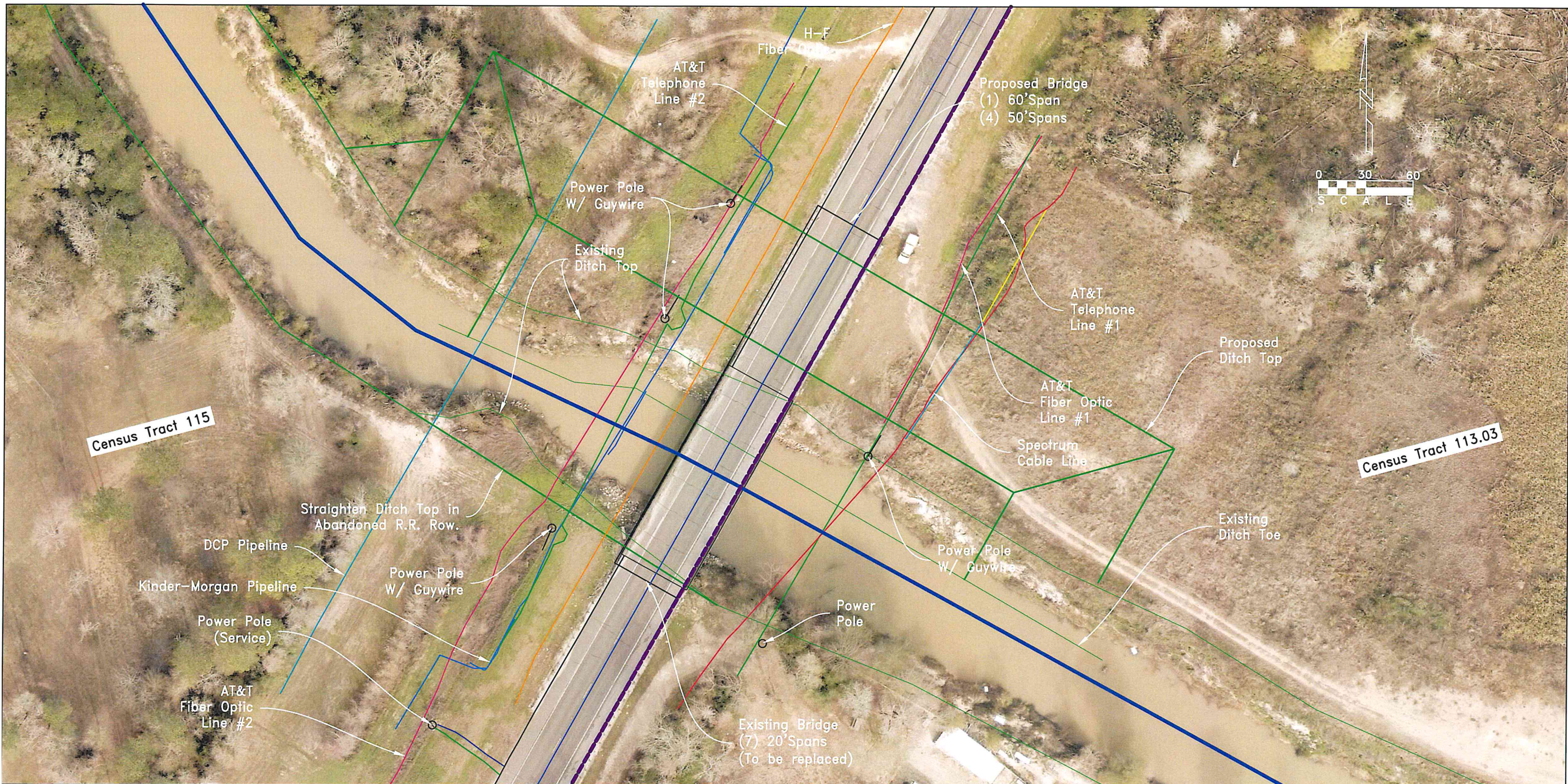
**Legend:**

- Proposed Drainage Channel (18,614 L.F.)
- Proposed Box Culvert Crossings (8 Total)
- Proposed Fill Sites

**(FL=XX)** Proposed Design Flowline Elevations



**Jefferson County**  
**Drainage District No. 6**  
**Ditch 609**  
**South China Relief**  
**Plan Schematic**



Jefferson County  
 Taylor's Bayou Drainage Project  
 Channel Widening, Utility Location &  
 Bridge Replacement with Census Tracts  
 Plan Schematic

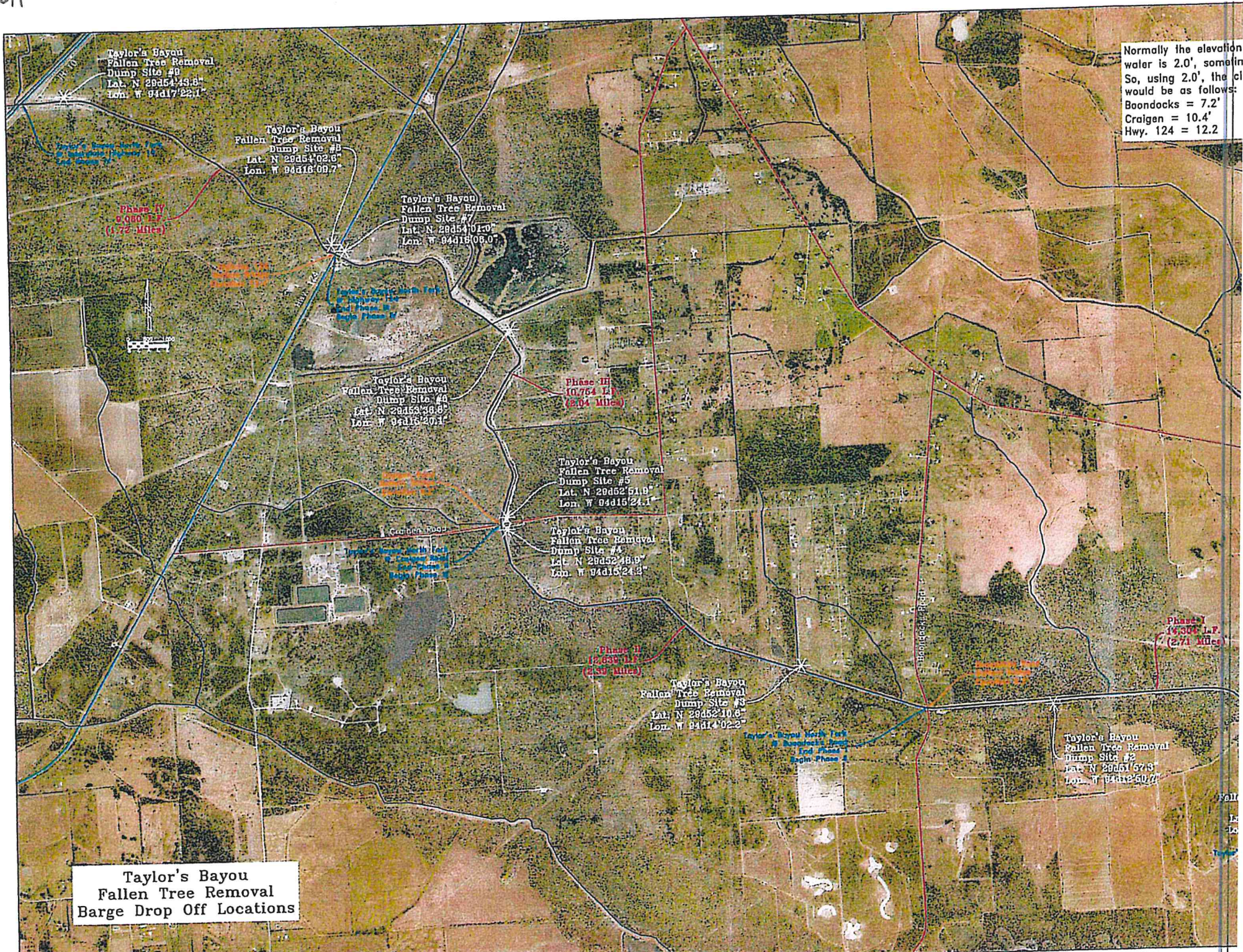


**Ditch 500  
Taylor's Bayou  
Tree Debris Removal**



**Ditch 500  
Taylor's Bayou  
Tree Debris Removal**





Willow Slough Spillway

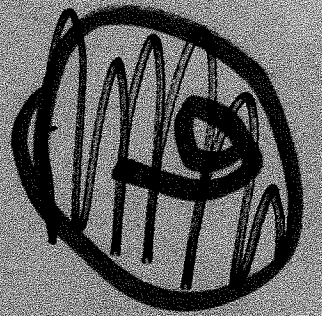
Sabine 9/20/19



Pipkin

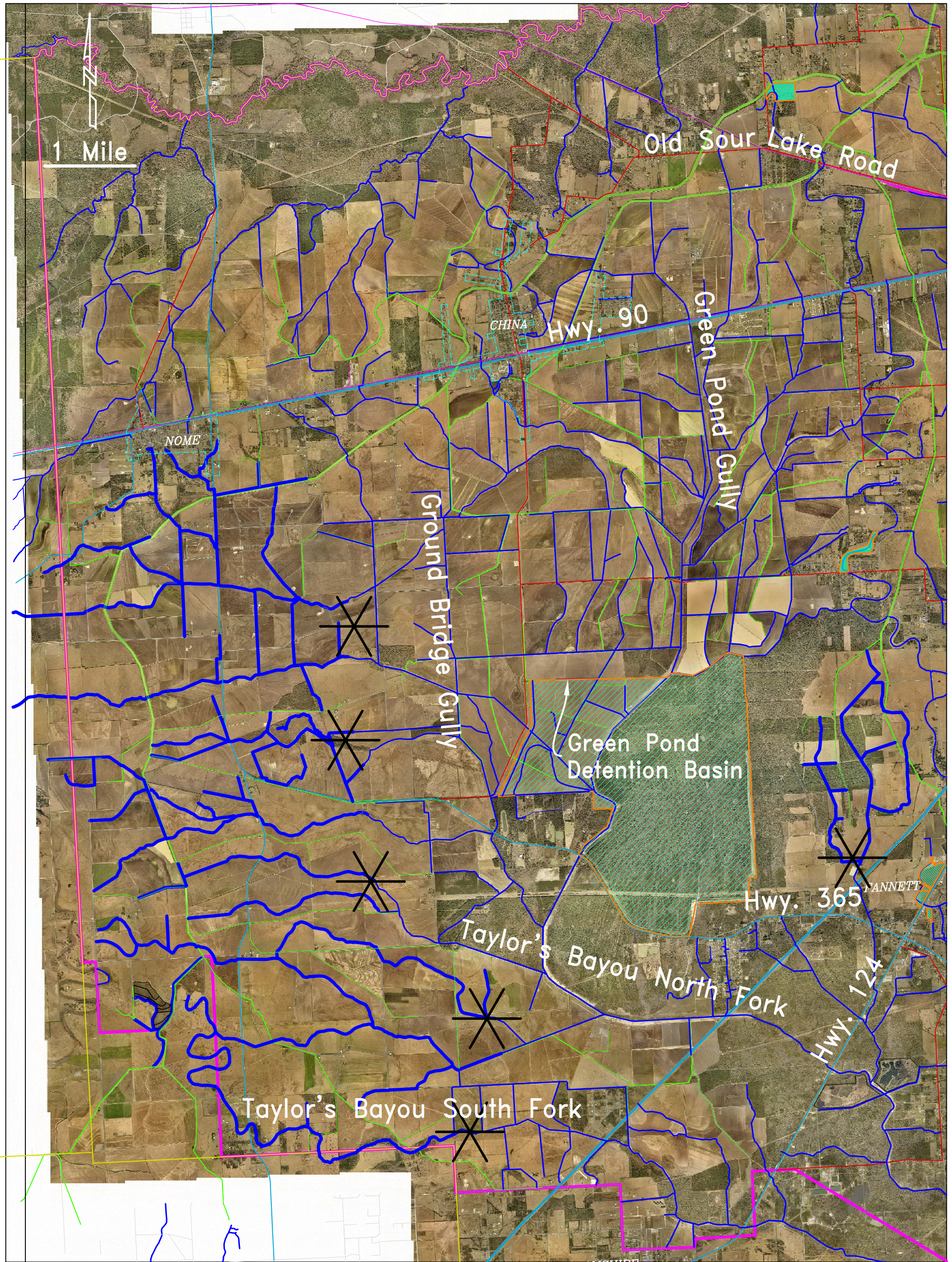
Need more structure  
flowing full

9/20/19

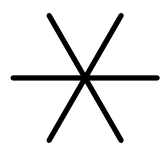


Needmore Structure Flowing  
Full

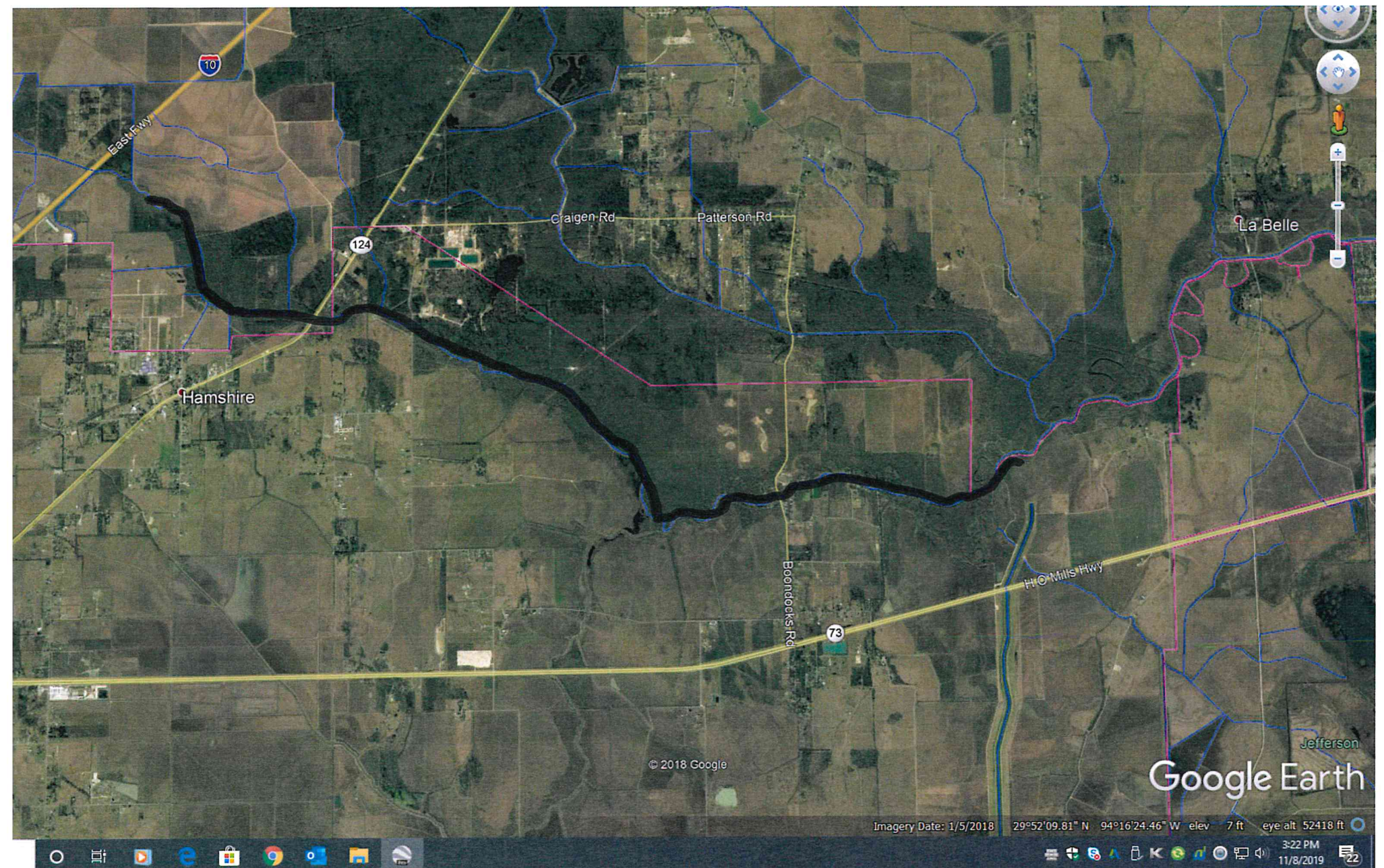




Taylor's Bayou  
Watershed Map  
85,390 Acres  
Above IH 10



Indicates Future Detention  
Alternative Study



DD6 / DD3

South Fork  
study : Project

# Technical Paper 40 (TP 40)

## Weather service rainfall statistics 1960's

Tropical Storm Imelda Depth-Duration-Frequency Tables by Watershed

<b>Hillebrandt Bayou Watershed Statistics</b>										
	<u>15</u> min.	<u>30</u> min.	<u>1</u> hour	<u>3</u> hours	<u>6</u> hours	<u>12</u> hours	<u>1</u> day	<u>2</u> day	<u>3</u> day	<u>4</u> day
Max	1.18	2.44	3.50	9.53	17.52	28.78	33.50	38.19	39.25	39.49
Avg	0.86	1.61	2.25	6.73	11.85	19.94	24.15	27.95	29.64	30.05
Min	0.63	1.02	1.30	4.02	6.06	11.97	15.94	18.94	20.71	20.98

<b>Upper Taylors Bayou (Above Craigen Rd.) Statistics</b>										
	<u>15</u> min.	<u>30</u> min.	<u>1</u> hour	<u>3</u> hours	<u>6</u> hours	<u>12</u> hours	<u>1</u> day	<u>2</u> day	<u>3</u> day	<u>4</u> day
Max	1.22	2.09	5.12	10.71	17.36	30.12	35.39	41.54	43.35	44.29
Avg	0.96	1.70	3.47	8.00	13.59	22.75	27.33	32.84	34.41	34.92
Min	0.59	1.22	2.80	5.04	8.35	16.65	20.79	25.12	26.30	26.54

<b>Taylor Bayou Watershed Statistics</b>										
	<u>15</u> min.	<u>30</u> min.	<u>1</u> hour	<u>3</u> hours	<u>6</u> hours	<u>12</u> hours	<u>1</u> day	<u>2</u> day	<u>3</u> day	<u>4</u> day
Max	1.34	3.19	6.50	12.60	20.20	30.12	35.39	41.54	43.35	44.29
Avg	0.72	1.32	2.47	6.57	10.20	15.54	19.77	24.73	26.54	27.24
Min	0.20	0.28	0.47	2.91	4.17	5.87	9.25	12.72	15.08	16.81

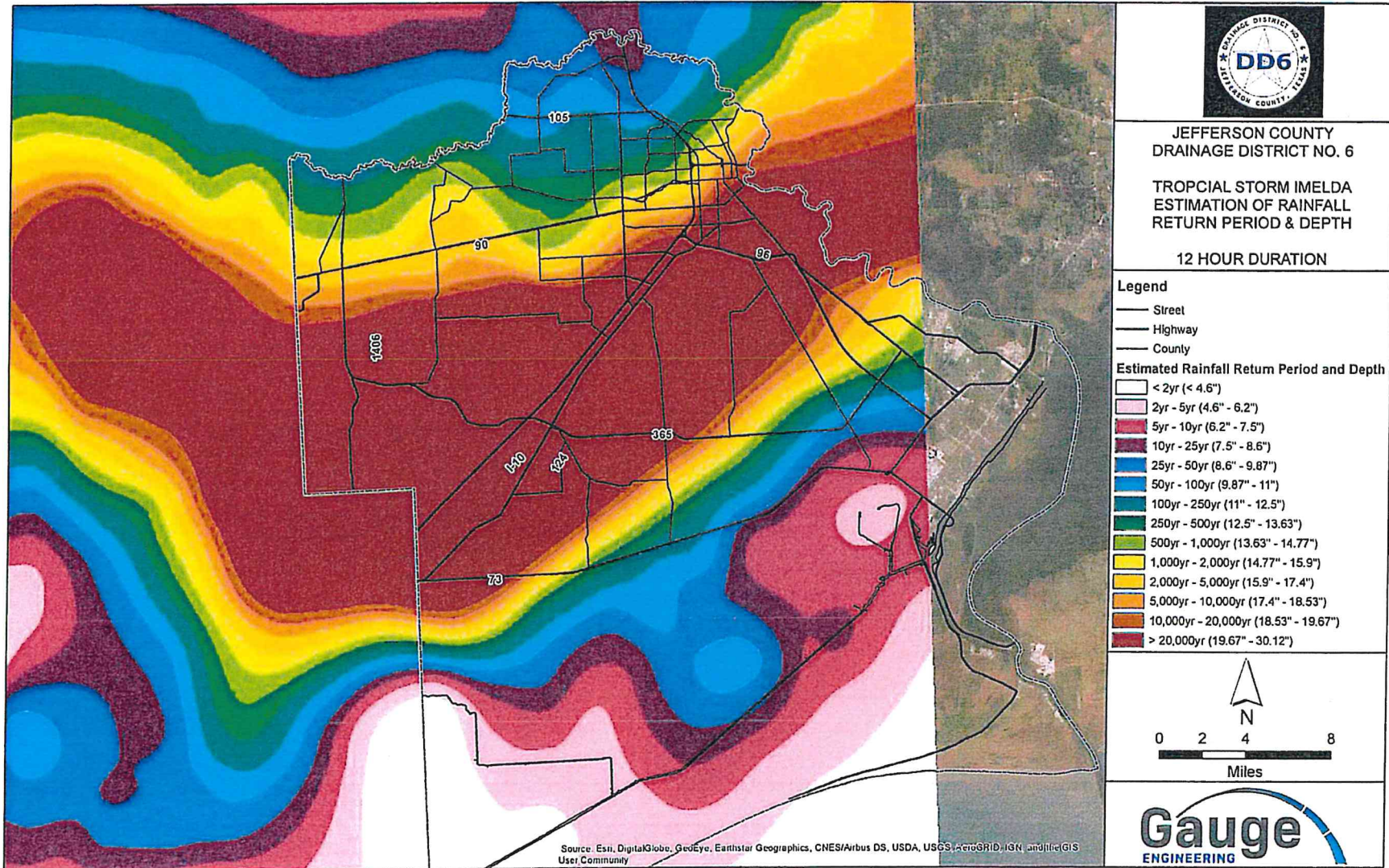
<b>Depth-Duration-Frequency</b>										
Period	15- min	30- min	1-hour	3-hour	6-hour	12- hour	1-day	2-day	3-day	4-day
2	1.37	1.94	2.5	3.4	4	4.6	5.5	6	6.79	7
5	1.73	2.42	3.1	4.25	5.1	6.2	7.5	8	8.79	9
10	1.95	2.69	3.42	4.8	6.1	7.5	8.8	10	10.79	11
25	2.23	3.03	3.82	5.65	7	8.6	10.2	12	12.79	13
50	2.43	3.37	4.31	6.36	7.95	9.87	11.67	14	14.79	15
100	2.66	3.68	4.7	7	8.8	11	13	15.5	16.69	17
250	2.96	4.09	5.22	7.84	9.92	12.5	14.76	17.73	19.01	19.34
500	3.19	4.4	5.61	8.48	10.77	13.63	16.09	19.41	20.76	21.11
1000	3.42	4.71	5.99	9.12	11.63	14.77	17.41	21.09	22.52	22.89
2000	3.65	5.02	6.38	9.76	12.48	15.9	18.74	22.77	24.27	24.66
5000	3.95	5.43	6.9	10.6	13.6	17.4	20.5	25	26.58	27
10000	4.18	5.74	7.29	11.24	14.45	18.53	21.83	26.68	28.34	28.77
20000	4.41	6.05	7.68	11.88	15.3	19.67	23.16	28.37	30.09	30.54

Tropical Storm Imelda Depth-Duration-Frequency Tables by Watershed

Taylor Bayou Watershed														
		Max	1.34	3.19	6.50	12.60	20.20	30.12	35.39	41.54	43.35	44.29		
		Avg	0.72	1.32	2.47	6.57	10.20	15.54	19.77	24.73	26.54	27.24		
Sensor ID	Site name	15 min.	30 min.	1 hour	3 hours	6 hours	12 hours	1 day	2 day	3 day	4 day	This month	This season	
5100	Turner Rd. @ Ditch 600	0.98	1.57	2.91	5.04	8.35	16.69	21.38	28.35	29.69	30.35	30.35	70.31	
5200	South China Rd. Ditch 608	1.10	1.46	3.27	6.85	10.43	18.03	22.17	28.39	29.76	30.47	30.59	74.09	
5300	South Pine Island Rd. @ Ditch 607	1.06	1.69	3.07	5.39	8.94	16.65	20.79	25.12	26.30	26.54	26.54	64.41	
5400	State Highway 365 @ Green Pond Gully	1.34	3.19	6.50	12.60	20.20	28.19	33.66	38.66	40.87	41.65	41.81	84.57	
5500	F.M.1406 @ North Fork Taylors Bayou	0.83	1.22	2.80	8.98	15.79	24.41	28.62	32.64	34.21	34.33	34.37	73.9	
5600	State Hwy 124 @ North Fork Taylors Bayou	1.22	2.09	3.11	8.27	16.26	30.12	35.39	41.54	43.35	44.29	44.29	92.4	
5620	Craigden Road at Taylors Bayou D-500	1.06	1.89	3.07	9.53	17.24	28.27	33.46	39.72	41.57	42.17	42.32	91.5	
5700	Labelle Rd. @ Taylors Bayou	0.83	1.57	2.01	4.69	9.13	15.04	19.76	25.35	27.28	27.87	27.95	67.87	
5800	Moore Rd. Detention Pond	0.67	1.38	2.56	4.49	6.50	12.40	16.61	21.10	22.17	22.40	22.4	60.79	
5820	Port Acres Sportsman Marsh Ditch 551-C	0.51	0.67	0.87	3.50	4.84	7.09	11.26	15.20	16.93	18.39	18.54	57.64	
5900	Taylors Bayou Saltwater Barrier 8 Gate	0.35	0.63	0.63	2.91	4.21	5.91	9.25	12.72	15.08	16.81	17.01	62.95	
5920	Taylors Bayou Saltwater Barrier 11 Gate	0.39	0.59	0.75	3.23	4.17	5.87	9.61	13.76	15.71	16.93	17.09	63.5	
6000	South China Road at Ditch 800	0.59	1.81	5.12	10.71	17.36	24.49	28.78	33.66	35.79	36.10	36.1	70.04	
6100	Lawhon Road at Ditch 600	0.83	1.89	4.41	9.21	14.33	23.35	28.07	33.27	34.61	35.12	35.24	78.5	
6200	Pine Tree Ditch 601 South China Road	0.47	1.93	5.23	11.65	18.82	26.57	31.22	36.81	39.25	40.08	40.35	83.98	
6300	Texas Parks and Wildlife Boat Ramp @ J.D. Murphy	0.51	0.55	0.75	3.62	5.31	7.24	10.10	14.92	17.24	17.68	17.91	62.52	
6320	Hebert Heirs Marsh Ditch 551-G	0.63	0.83	0.98	3.66	5.31	7.40	12.09	15.75	16.93	17.80	18.03	61.34	
6400	Boondocks Road @ Taylors Bayou @ South Fork ( bridge )	0.51	1.06	2.01	6.57	11.57	16.57	20.83	26.69	28.74	28.82	28.94	65.39	
6500	Sabine Ranch @ Ditch 550	0.67	1.26	2.32	6.57	7.60	8.94	12.80	17.64	19.33	20.04	20.12	65.75	
6600	Labelle Ranch Property @ Ditch 552-A	0.71	0.87	1.06	5.98	6.81	8.35	12.36	16.65	18.23	19.41	19.72	61.54	
6700	Cattle Walk @ Ditch 550	0.71	1.02	1.38	7.52	8.54	10.20	13.82	18.78	20.59	21.14	21.26	72.13	
6720	Pipkin Ranch @ Willow Slough Ditch 550	0.43	0.87	1.54	5.47	6.54	7.83	11.42	17.56	19.72	20.00	20.04	69.76	
6900	Blind Lake Outfall Ditch 8006	0.20	0.28	0.47	4.76	6.34	7.72	10.22	14.84	17.01	18.03	18.07	71.93	

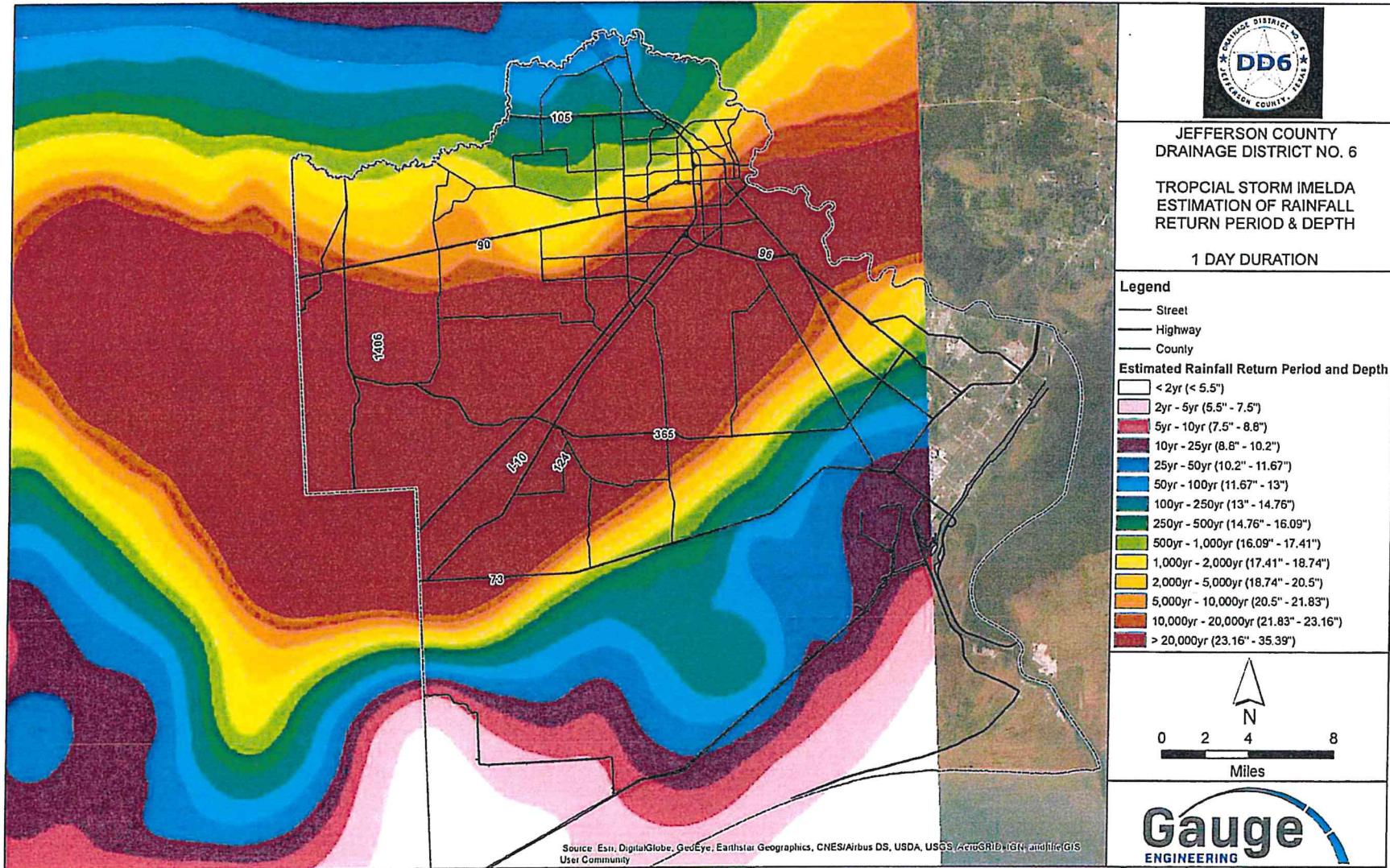


# Imelda 12 hour total rainfall

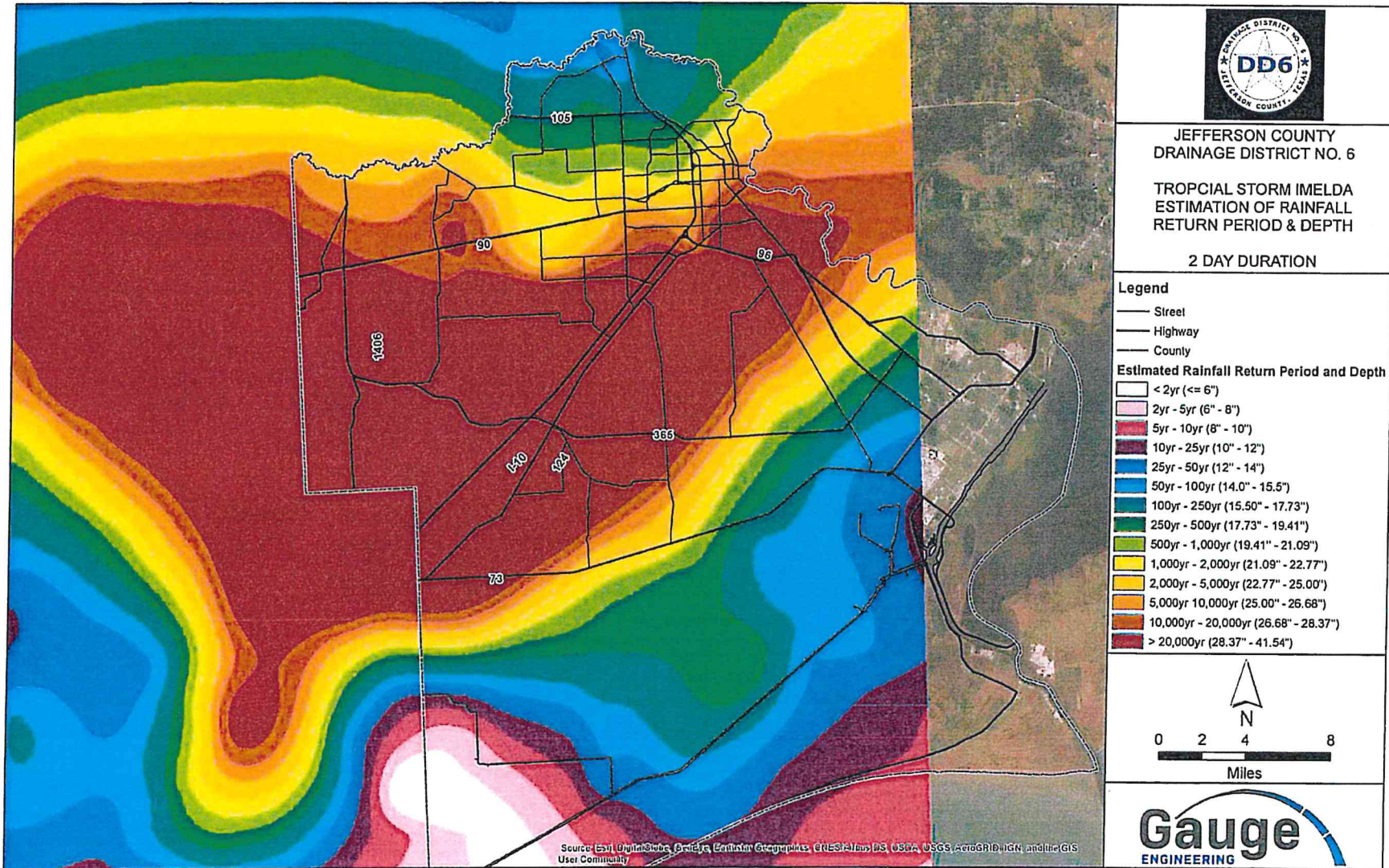


# Imelda

## 24 hour total rainfall



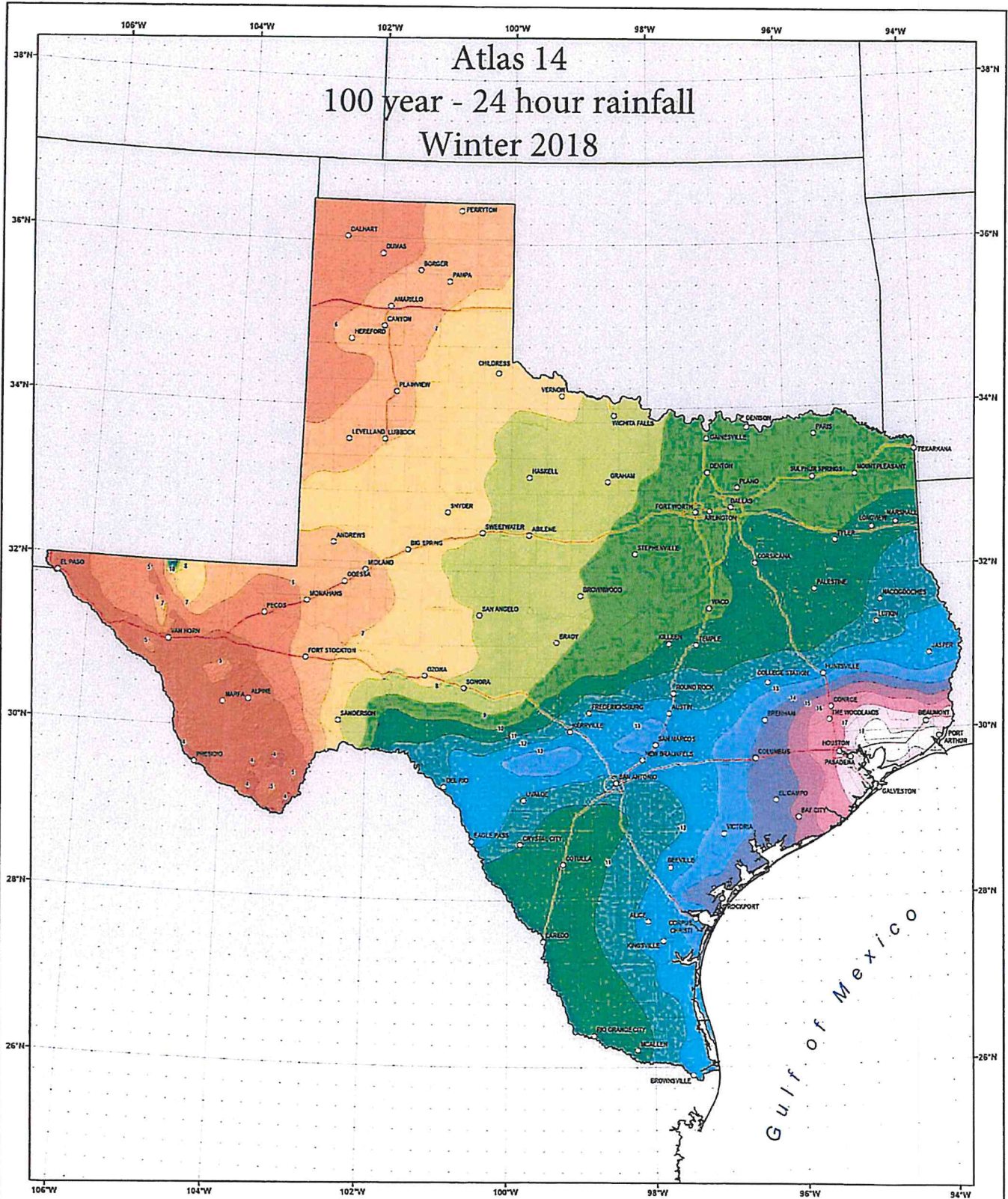
# Imelda 2 day rainfall



# Atlas 14

## 100 year - 24 hour rainfall

### Winter 2018



NOAA Atlas 14, Volume 11, Version 2  
Texas

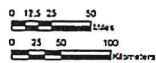
## TEXAS

Isopluvials of 100-year 24-hour precipitation in inches

SCALE 1:3,250,000



Prepared by U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL WEATHER SERVICE  
OFFICE OF WATER PRODUCTION  
HYDROMETEOROLOGICAL DESIGN STUDIES CENTER  
September 22-24



3.75 - 4.00	7.01 - 8.00	11.01 - 12.00	15.01 - 16.00
4.01 - 5.00	8.01 - 9.00	12.01 - 13.00	16.01 - 17.00
5.01 - 6.00	9.01 - 10.00	13.01 - 14.00	17.01 - 18.00
6.01 - 7.00	10.01 - 11.00	14.01 - 15.00	18.01 - 18.41

Projection: Lambert Conformal Conic, Datum: NAD83, Standard Parallels: 36°N and 31°N, Central Meridian: 103°W

# Atlas 14

## Weather service rainfall statistics

### 2018

Depth-Duration-Frequency - Atlas 14										
Period	15-min	30-min	1-hour	3-hour	6-hour	12-hour	1-day	2-day	3-day	4-day
2	1.13	1.62	2.15	2.97	3.51	4.1	4.74	5.42	5.89	6.26
5	1.45	2.07	2.78	4.15	5.1	6.05	7.06	8.15	8.85	9.37
10	1.7	2.41	3.26	5.09	6.38	7.67	9.03	10.5	11.4	12.1
25	2.02	2.85	3.88	6.39	8.22	10	12	14.1	15.3	16.1
50	2.25	3.17	4.34	7.42	9.73	12	14.5	17.2	18.7	19.7
100	2.49	3.5	4.82	8.55	11.4	14.4	17.5	20.8	22.7	24
250	2.76	3.88	5.37	9.84	13.4	17.1	21	25.1	27.3	28.7
500	3.15	4.44	6.2	11.7	16.2	21.2	26.4	31.6	34.3	35.9
1000	3.46	4.9	6.89	13.3	18.7	24.7	31	37.2	40.2	41.9
2000										
5000										
10000										
20000										