

Hazard Mitigation Technical Assistance Program
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Task Order 336
Hurricane Ivan Rapid Response
Florida Coastal High Water Mark (CHWM) Collection
FEMA-1551-DR-FL

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Introduction

Hurricane Ivan was rated as the most powerful hurricane to hit the Caribbean in 10 years. On September 7 and 8, 2004, it damaged 90 percent of the homes in Grenada and caused catastrophic damage as it swept over Grenada, Barbados, and the other islands in the area. By Thursday morning on September 9, Ivan's sustained winds reached 160 mph, making it a rare Category 5 hurricane on the Saffir-Simpson scale. By Monday September 13, it skirted western Cuba with winds clocked at 156 mph.

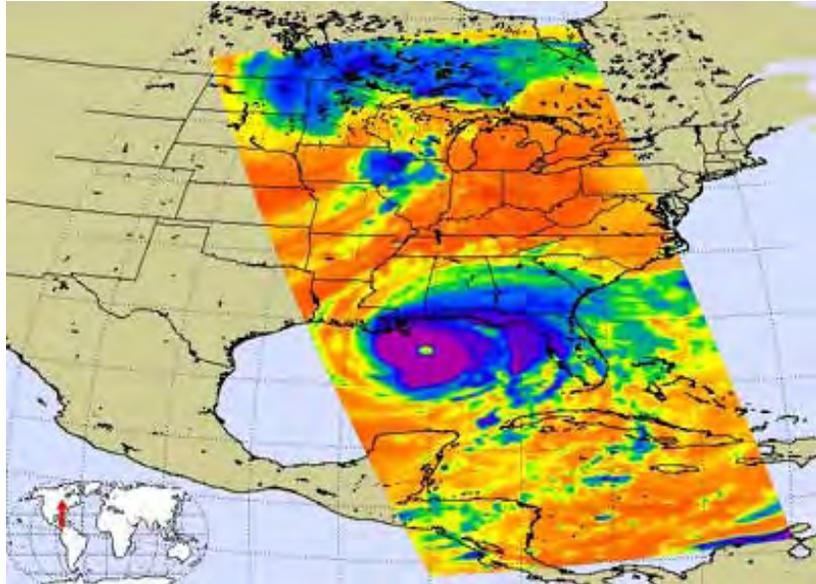


Figure 1. Hurricane Ivan Approaches

Hurricane Ivan was one of the strongest and most destructive hurricanes to hit Florida's Panhandle coast in recorded history and the most severe since Hurricane Opal in 1995. The image of Hurricane Ivan (Figure 1) was acquired by the Atmospheric Infrared Sounder (AIRS) infrared, microwave, and visible sensors on September 15 at 1:30 pm local time as the storm moved into Alabama (http://www-airs.jpl.nasa.gov/multimedia/image_releases/2004/hurricane_ivan.html). Ivan approached the Florida and Alabama area at Category 4 strength, moving north at 14 mph. Maximum sustained winds were reported to be 135 mph and extended 105 miles from the center, while tropical storm-force winds extended 290 miles from the center. Figure 1 shows how the storm looked through an AIRS Infrared window channel. It reveals a very large eye about 75 km (50 miles) across.

The storm path as it made landfall is shown in Figure 2. The hurricane began affecting the Panhandle on September 13, 2004 and made landfall on September 16, 2004 as a Category 3 Hurricane with maximum sustained winds near 130 mph and storm surges over 8 feet. Storm surge with associated wave action was reported at +15 to +20 feet above mean sea level. The hurricane's strongest winds were located east-northeast of the storm center. This aspect coupled with the higher, on-shore directed winds, associated storm surge, and accompanying breaking waves resulted in much of Ivan's destructive impact on the Florida Panhandle coast and Gulf Shores, Alabama. As the hurricane moved through Florida, wind and wave action disrupted utilities, caused damage, and created localized flooding. The State of Florida Department of Environmental Protection (DEP) issued an Emergency Final Order stating that the Hurricane caused widespread damage in the following areas: Bay, Escambia, Franklin, Gulf, Okaloosa, Santa Rosa, Washington, and Walton Counties. The hurricane continued to move toward the

north-northeast and brought devastating flooding to the Appalachians and southern New England.

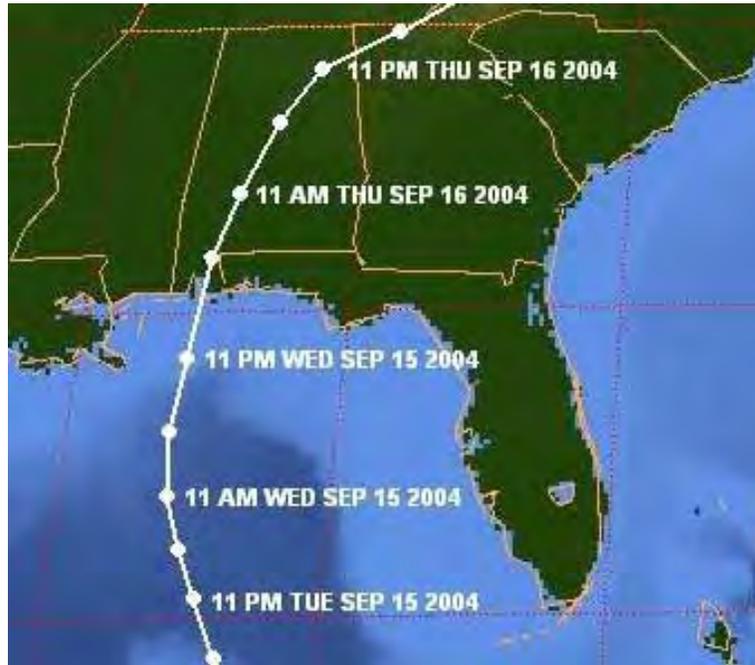


Figure 2: Hurricane Ivan Storm Path

Other notable wind data were measured by the Florida Coastal Monitoring Project (FCMP) and made available through PRNewswire-FirstCall. For the first time ever, homes instrumented as part of the FCMP captured wind pressure data on buildings subjected to the direct impact of hurricane force winds. From Hurricane Ivan:

- A house 3 miles east of Big Lagoon State Park in the Florida Panhandle was subjected to 91 mph gust winds in the eastern eyewall of Hurricane Ivan. These 3-second gusts were measured in a suburban area at a height of 21 feet. (The equivalent 33 feet 3-second gust speeds for a corresponding open exposure location, typical meteorological reference conditions, correspond to 117 mph. This equivalent 117 mph gust speed represents the highest wind speeds reported to date from any of the various meteorological stations deployed in the region.)
- A sonic anemometer operated by the University of Oklahoma reported a 109 mph gust at Gulf Shores Airport.
- An FCMP tower near Fairhope, Alabama reported a gust speed of 90 mph and clearly experienced the passage of the eye.
- An FCMP tower at the Pensacola Airport reported a peak gust of 106 mph in open terrain.

- A house toward the Eastern end of Gulf Breeze was subjected to 82 mph gust winds. These 3-second gusts were measured in a suburban area at a height of 19 feet. (The equivalent 33 feet 3-second gust speeds for a corresponding open-exposure location would be 109 mph.)

Ivan reformed into a tropical depression on September 22, 2004 in the Gulf of Mexico after having traveled in a circular motion through the southeastern United States causing tremendous flooding (see Figure 3). An interesting development occurred on September 20 as a small surface low, caused by the southern remnants of Ivan, moved across the Florida peninsula. As it continued west across the northern Gulf of Mexico, the system organized and took on tropical characteristics. On September 22, the National Weather Service determined that the low was in fact a result of the remnants of Ivan and named it accordingly.

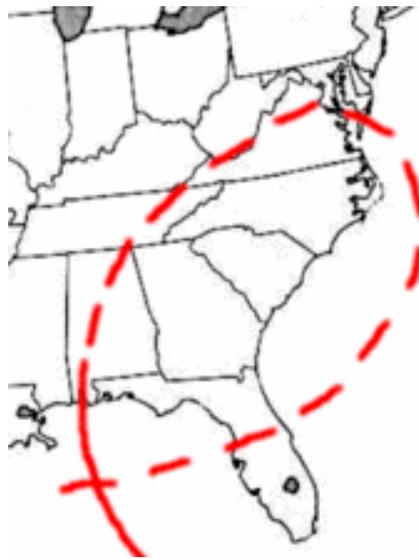


Figure 3: Hurricane Ivan Reforms and Returns

Notice was given in the Federal Register, in a letter dated September 16, 2004, that the President declared a major disaster under the authority of the Robert T. Stafford Disaster Relief and Emergency Assistance Act for damage in certain areas in Florida resulting from Hurricane Ivan (FEMA-1551-DR, Florida; <http://www.fema.gov/news/eventcounties.fema?id=3687>). The declaration provides the necessary Federal assistance to meet immediate needs and to help Florida recover as quickly as possible. Declared Florida counties under disaster declaration FEMA-1551-DR-FL are shown on Figure 4.

Individual Assistance was provided to: Bay, Calhoun, Escambia, Franklin, Gadsden, Gulf, Holmes, Jackson, Leon, Liberty, Okaloosa, Santa Rosa, Taylor, Wakulla, Walton, and Washington counties with the September 16, 2004 declaration. Okaloosa County was included with Amendment No. 1 to the Notice of a Major Disaster Declaration, September 17, 2004.



Figure 4: Disaster Declaration Map – Florida

Source: http://www.gismaps.fema.gov/2004graphics/dr1551/dec_1551.pdf

Public Assistance was provided to: Bay, Calhoun, Citrus, Dixie, Escambia, Franklin, Gadsden, Gulf, Holmes, Jackson, Jefferson, Leon, Levy, Liberty, Okaloosa, Santa Rosa, Taylor, Wakulla, Walton, and Washington for assistance for debris removal and emergency protective measures, including direct Federal assistance, at 100 percent Federal funding of the total eligible costs of Categories A and B for a period of up to 72 hours. Consistent with the requirement that Federal assistance be supplemental, any Federal funds provided under the Stafford Act for Public Assistance will be limited to 75 percent of the total eligible costs.

Amendment No. 2 to the Notice of a Major Disaster Declaration, September 25, 2004 included: Charlotte, Collier, Lee, Monroe, and Sarasota Counties for emergency protective measures (Category B) under the Public Assistance program, Jefferson County for Public Assistance (Categories C through G), and Bay, Calhoun, Escambia, Franklin, Gadsden, Gulf, Holmes, Jackson, Leon, Liberty, Okaloosa, Santa Rosa, Wakulla, Walton, and Washington Counties for Public Assistance (Categories C through G).

Amendment No. 4, November 3, 2004 included: Citrus County for emergency protective measures (Category B) under the Public Assistance Program.

Hazard Mitigation Grant Program (HMGP): All counties in the State of Florida are eligible to apply for assistance under the HMGP.

URS Group, Inc. was contracted by the Federal Emergency Management Agency (FEMA) under the Hazard Mitigation Technical Assistance Program (HMTAP) to assist in the Hurricane Ivan disaster recovery. Assistance provided by this Task Order includes collection and survey of Coastal High Water Marks (CHWMs). This report summarizes the methodologies used to flag the CHWM locations and survey the elevations established during the hurricane. This is an important step in assisting communities in establishing flood hazard areas and to prevent future loss of life and property damage.

Hurricane Ivan caused both coastal and riverine flooding. The resulting high water marks were flagged and surveyed along coastal locations. The purpose of this report is to document the flagging and surveying of the CHWMs, estimate the storm surge at each location, and discriminate between storm surge and wave action.

The data collected is invaluable to Federal, state, and local recovery efforts. The data assists in identifying areas of significant damage in order to target resources needed for disaster recovery. It also helps to establish the magnitude and recurrence interval of the flood and erosion events caused by the hurricane along various areas of the coast. This data collection is also beneficial for future use in (a) accurately assessing the benefits to be expected from flood mitigation efforts, (b) prioritizing the flood mitigation efforts pursued following the hurricane, and (c) for use in making HMGP decisions.

Area of Study

The area FEMA identified to be covered by the Coastal High Water Study Team extends from the Alabama-Florida line eastward to the area of the coastal municipality of Destin, Florida, and northward into the Florida Panhandle to encompass Perdido, Escambia, Blackwater, and Choctawhatchee Bays. The observations were taken at discrete points distributed along the open Gulf coast, the seaward and landward sides of the barrier islands, within the Bays and on the shores of several small embayments including Santa Rosa Sound, Bayou Chico, Bayou Texar, and Grand Lagoon. The lower east side of Blackwater Bay proved to be inaccessible due to the presence of swampland. Other areas that were inaccessible include the eastern end of Perdido Key, and three areas on Santa Rosa Island, including the western end of Santa Rosa Island from Little Sabine Bay to Fort Pickens, a large area between Pensacola Beach and Navarre Beach, and the area east of Navarre Beach in Eglin Air Force Base.

The study area was set through discussions with Dr. Shabbar Saiffee of the FEMA Disaster Field Office after some of the National Oceanic and Atmospheric Agency (NOAA) SLOSH model output had been reviewed. URS also performed a half-day field reconnaissance where it was noted that the water levels were rising well above the normal high tide level as far east as St. Marks (Wakulla County) Florida. URS staff observed during the storm that the estimated surge was 4 to 5 feet above high tide at its peak in St. Marks. Discussions were held with Dr. Stephen Baig at the NOAA National Hurricane Center to determine whether the widespread effect of Hurricane Ivan was of interest to the NOAA modelers. They confirmed interest, and therefore a few widely spaced coastal high water marks were obtained east of the area of Hurricane Ivan's main impact. This approach was discussed with FEMA and approved. Generally the CHWMs were concentrated in the westernmost counties of Escambia and Santa Rosa. These relatively closely spaced data points were collected because of their significant impact and because the NOAA SLOSH model results indicated a complex pattern to the surge with significant differences in the surge level from one side of an island or bay to another. The relatively dense distribution of CHWMs extended to western Okaloosa County because major hurricane damage could be traced that far from the point of landfall.

Table 1: Number of CHWMs Surveyed by County

County	Number of CHWMs Surveyed
Escambia	57
Santa Rosa	39
Okaloosa	31
Walton	3
Bay	3
Franklin	2
Total =	135

There are a series of NOAA tide gages across the Panhandle area that provided direct measurements of the surge elevations. However, the gage at Pensacola failed before the main surge developed. Table 2 shows the gages from which useful data were obtained.

Table 2: NOAA NWS Gage Stations During Hurricane Ivan

Station ID	Name	Longitude (West)	Latitude (North)	Hurricane Ivan Peak Elevation (Ft) MLLW
8728690	Apalachicola, FL	84° 58.9' W	29° 43.6' N	5.19
8729108	Panama City, FL	85° 40.0' W	30° 12.8' N	4.70
8729210	Panama City Beach, FL	87° 12.7' W	27° 38.2' N	6.44

MLLW = mean lower low water

In addition to the NOAA tide gages, water levels were recorded on coastal gages maintained by the U.S. Army Corps of Engineers (USACE) Mobile District Office and the U.S. Coast Guard (USCG). Table 3 lists these data sources

Table 3: Peak Water Elevations During Hurricane Ivan Reported in USACE-Mobile September 2004 Report

Name	Longitude (West)	Latitude (North)	Hurricane Ivan Peak Elevation (Ft) NGVD29
Pensacola Bay at Fort McREE (USCG)	87.289722	30.34500	9.70
Escambia Bay West Bank at HWY 90	87.194167	30.546944	12.92
Escambia Bay West Bank 1.5 miles N of I-10	87.175278	30.520556	12.12
GIWW at Gulf Breeze, FL	87.156389	30.352222	10.30
Yellow River near Milton, FL	86.924444	30.571111	9.66
Fort Walton Brooks Bridge	86.600000	30.400000	6.12
GIWW at Choctawhatchee Bay (HWY 331)	86.168889	30.411944	5.51
Destin at Choctawhatchee Bay (USCG)	86.525833	30.391944	5.39
GIWW at West Bay, FL (HWY 79)	85.858611	30.293889	6.60
St Andrew Bay at Panama City, FL	85.666667	30.152778	4.94
Apalachicola River at Apalachicola, FL	84.995278	29.733056	5.10
GIWW at St. George Island, FL	84.876944	29.687222	3.55
Carrabelle River at Carabelle, FL	84.675833	29.851667	5.04

NGVD 29 = National Geodetic Vertical Datum of 1929

GIWW = Gulf Intracoastal Waterway

Additional information about the surges could also be estimated from the U.S. Geological Survey (USGS) river gages that are located in some of the downstream reaches. Normally these gages are located above the normal tide level oscillations. However, the coastal surge was so

much larger than the normal tide heights that it propagated up the river as an easily distinguishable wave. Data were collected from a few of these gages where this signal was clearly evident. However, their peak elevations are estimated because the pre-storm river level is not known. Table 4 lists the U.S. Geological Survey gages that were used to provide data.

Table 4: U.S. Geological Survey Gages

Name	Longitude (West)	Latitude (North)	Hurricane Ivan Peak Elevation (Ft) NGVD 29
Yellow River near Milton, FL	86.924444	30.571111	9.66
Escambia River near Gonzalez, FL	87.258860	30.611860	9.50
Yellow River near Milton, FL	87.923570	30.569640	7.0
Perdido River near Barrineau Park, FL	87.440250	30.690470	16.20
Elevenmile Creek near Pensacola, FL	87.335800	30.498250	14.30

Another source of data is from a report written for the City of Destin, Florida. The report titled “Hurricane Ivan Summary of Coastal Storm Surge, City of Destin, Okaloosa County, Florida” was prepared by the City of Destin in cooperation with the City Engineer and Jones Edmunds and Associates, Inc. It lists three benchmarks and 43 CHWMs that were identified and surveyed in the immediate Destin area. The elevations are referenced to the National Geodetic Vertical Datum of 1988 (NAVD 88) and are in feet. Table 5 shows the data in tabular form and Figure 7 (Appendix A) shows these data spatially.

Table 5: City of Destin, Florida Coastal Storm Surge Data

Desc.	Elevation	Remarks
HWM 1	7.11	Sandpiper Cove Condominiums, address: 8108, south side of bldg., north side of Gulf Shore Drive
HWM 2	7.06	Sandpiper Cove Condominiums, address: 8108/8208, midpoint on south side of bldg., north of Gulf Shore Drive
HWM 3	7.13	Sandpiper Cove Condominiums, address: 8208, south side of bldg., north side of Gulf Shore Drive
HWM 4	10.56	Sandpiper Cove Condominiums, address: 1137, at north side of stairs entry, south side of Gulf Shore Drive
HWM 5	10.46	Sandpiper Cove Condominiums, at snack bar, east side of bldg., south side of Gulf Shore Drive
HWM 6	5.25	Address: 508 Vera Cruz Drive at driveway (east side) mark on landscape timber, south side of road
HWM 7	5.01	Address: 508 Vera Cruz Drive at garage, east side of bldg., south side of road
HWM 8	5.09	Address: 530 Norriego Road, south side of garage, east side of bldg., south side of road
HWM 9	5.07	Address: 522 Norriego Road, mark on wood post at carport, south side of road
HWM 10	4.94	Address: 520 Norriego Road, debris line west of driveway, south side of road
HWM 11	5.01	Address: 514 Norriego Road, mark on post, south side of road
HWM 12	12.60	Address: 520 Gulf Shore Drive, Aegean Condominium, mark on bldg., south side of road
HWM 13	8.95	Destin Pointe Complex, mark on boardwalk, north of Lands End Drive

Desc.	Elevation	Remarks
HWM 14	8.32	Destin Pointe Complex, northeast corner of Pool Cabanna, south side of road
HWM 15	9.20	Destin Pointe Complex, mark on bldg. # 65, south side of road
HWM 16	9.95	Destin Pointe Complex, mark on bldg. # 69, south side of road
HWM 17	9.32	Destin Pointe Complex, mark on bldg. # 65, south side of road
HWM 18	7.76	Destin Pointe Complex, mark on bldg. # 62, south side of road
HWM 19	9.49	Destin Pointe Complex, mark on bldg. # 59, south side of road
HWM 20	6.97	Destin Pointe Complex, mark on southeast corner of bldg. # 56, north side of road
HWM 21	7.08	Destin Pointe Complex, mark on stake, northeast corner of bldg. # 56, North side of road
HWM 22	11.33	Destin Pointe Complex, mark on stake in dunes, behind bldg. # 49
HWM 23	11.90	Destin Pointe Complex, mark on stake in dunes, behind bldg. # 49
HWM 24	6.69	Destin Pointe Complex, mark on stake behind bldg. # 24 & 22, east side of Gulf Breeze Drive
HWM 25	6.75	Destin Pointe Complex, mark on porch at bldg. # 13, west side of Gulf Breeze Drive
HWM 26	6.45	Destin Pointe Complex, mark on stake in front of bldg. # 17, west side of Gulf Breeze Drive
HWM 27	5.88	Destin Pointe Complex, mark on concrete, southwest corner of bldg. # 32 east side of Gulf Breeze Drive
HWM 28	8.65	Destin Pointe Complex, mark on stake, south side of bldg. # 25, east side of Gulf Breeze Drive
HWM 29	8.72	Destin Pointe Complex, mark on stake, south side of bldg. # 25, east side of Gulf Breeze Drive
HWM 30	8.55	Destin Pointe Complex, mark on stake, south side of bldg. # 25, east side of Gulf Breeze Drive
HWM 31	21.45	Stake at foam line, south of Scenic Hwy. 98, west of address # 2942.D in vacant lot
HWM 32	13.04	Address: 2942-D, mark on door, west side of bldg., south of Scenic Hwy. 98
HWM 33	12.29	Address: 4942-D, mark on south side of bldg., south of Scenic Hwy. 98
HWM 34	11.56	Address: 3500 (The Crab Trap), mark on walkway, south side of Scenic Hwy. 98
HWM 35	11.69	Address: 3500 (The Crab Trap), mark on inside of main landing to main entry, south side of Scenic Hwy. 98
Benchmark	11.12	Set 5/8" iron rod with cap # Ref. Pt. LB 2108, located 7 feet south of the south edge of pavement of Scenic Hwy. 98, at centerline of pavilion projected north for the Crab Trap
HWM 36	6.09	Clement E. Taylor Park, debris line on fence at west end, southwest corner of park
HWM 37	5.52	Clement E. Taylor Park, debris line on fence at west end, southwest corner of park
HWM 38	5.20	Clement E. Taylor Park, saltwater line along south side of park
HWM 39	5.57	Clement E. Taylor Park, saltwater line along southwest side of park
HWM 40	6.30	Clement E. Taylor Park, saltwater line along west side of park
Benchmark	7.81	Set cross-sections in southwest corner of pavilion, Northeast area of park
Benchmark	5.99	Set 16-P nail in power pole, 30 feet west of Joe's Bayou Boat Ramp
HWM-41	5.70	Joe's Bayou Park and Boat Ramp, mark on lath at debris line, northwest corner of park
HWM-42	5.73	Joe's Bayou Park and Boat Ramp, mark on lath at debris line, northwest corner of park
HWM-43	5.78	Joe's Bayou Park and Boat Ramp, mark on lath at debris line, northwest corner of park

Marking and Survey Methodology

Field and survey crews from URS and URS Team subconsultants, Dewberry and PBS&J, were deployed to interview residents, find evidence of coastal high water levels, take digital photographs, and survey CHWMs from Hurricane Ivan. Figures 5 and 6 show an example of both the flaggers' form and the surveyors' form used to record field information. During the flagging, field crews entered estimates of surge heights in the comments field on the flagger forms. These were visual estimates and were referenced to the normal range of the tides as best estimated by the observers. The purpose of these observations was to initially estimate water levels well before the surveyors' work was completed. The CHWM flagging crews were deployed on Tuesday September 28, 2004, shortly followed by the survey crews.

The survey crews followed the field crews and used static global positioning system (GPS) methods to determine an accurate elevation for each CHWM. Since static GPS requires an area with no tree cover to return an accurate result, in some cases it was necessary perform a short level loop survey from the GPS point to the CHWM. Wherever possible, the finished floor elevation of structures adjacent to the CHWM was collected. This information may be used at a later date for possible damage assessments or HMGP applications. CHWM locations were surveyed horizontally in North American Datum of 1983 (NAD 83), State Plane feet, and vertically in North American Vertical Datum of 1988 (NAVD 88) US survey feet. CHWM locations have been surveyed to within accuracies of 0.25 foot vertically and 10 feet horizontally with a 95% confidence level.

Figure 5: Sample CHWM Flagger Form

HIGH WATER MARK (HWM) REPORT - FLAGGERS

HWM ID	
HWM Address	
Date of Flagging/ Interview	
Date of Flood Event	
Name of Storm Event	
Stream Name/Flood Source	
Closest Municipality	
County	
State	

HWM Type	
HWM Object	
Location of HWM Object	
HWM Quality	
Type of Mark	
Directions to Flagger's Mark	
Vertical Dist from set point & description of set point	
Survey Needed	
Flagger HWM Latitude	
Flagger HWM Longitude	
Flooding Type	
Photo ID	
Photo Location/ Orientation	
Photo Description/Subject	
Comments	
Name of Flagger/Interviewer	
Unit Number	
Flagger Company	
Resident/Eyewitness Information	
Name	
Address	
Phone	
How Long Lived There	
Obtained Permission to Survey	

Figure 6: Sample CHWM Surveyor Form

HWM ID	
HWM Address	
HWM/Flood Elevation	
Survey Crew	
Survey Company	
Survey Date	
Survey Latitude	
Survey Longitude	
Northing	
Easting	
Vertical Datum	NAVD 88
Horizontal Datum	NAD 83
Survey Project	
Approx. First Floor Elevation	
Survey Comments	

Field crews noted CHWMs with characteristics such as surge, wave runup, and wave height. These designations on the survey sheets in the appendices represent the flagger's estimate of this characteristic based on a combination of physical flood evidence and interviews with witnesses at the time of collection. Surge represents the rise in the normal water level, wave runup indicates the height of water rise above the stillwater level due to water rush-up from a breaking wave, and wave height indicates CHWM elevation due to more direct wave action. Typically, surge CHWMs are associated with a slow rising flood that causes more water damage than structural damage. Wave height usually results in a higher elevation. All attempts were made to flag storm surge elevations, but in areas where surge characteristics were not obvious, wave runup or wave height were flagged. In some cases, witnesses might claim the flooding was associated with a storm surge when in fact the flooding was from wave runup or riverine flooding.

Elevation Conversion from NAVD 88 to NGVD 29 Using VERTCON

The elevations shown in the 1929 NGVD were derived from the VERTCON program and the existing 1988 NAVD elevation. The VERTCON software was developed by the National Geodetic Survey (NGS) Office to allow the conversion of data between different vertical data scales. VERTCON is available as an element of the NGS Geodetic Toolkit and can be downloaded from the NGS website: <http://www.ngs.noaa.gov/TOOLS/Vertcon/vertcon.html>.

VERTCON allows the user to compute the modeled difference in orthometric height for a given location specified by its latitude and longitude. Applying the VERTCON datum difference value to a specific elevation allows you to convert from one datum to another.

For example, a NAVD 88 elevation is 5.33 feet. Using the latitude and longitude, VERTCON computes a datum shift of (-)1.171 feet; to convert to the NGVD 29 elevation, SUBTRACT the datum shift from the NAVD 88 height. NAVD EL=5.33' minus (-)1.171 feet equals NGVD 29 elevation of 6.50 feet.

Findings and Observations

The results of this survey are presented as a series of 13 maps that are shown on Figures 7 – 19 (Appendix A). The individual points are coded to differentiate between surge data (taken in places protected from the effects of waves), wave runup data (where the water line resulted from waves rushing up a slope) and wave height data (where wave crests caused the water mark). The relative quality of each data point is also represented. Further information about each point is given on data sheets in Appendices B-G.

As mentioned earlier, some outputs from the NOAA National Hurricane Center SLOSH model were used to plan the locations of the CHWMs. Damage was so extensive over the area that it was possible to designate general locations where data points would be most useful. Figure 8 shows an overview of locations where CHWMs were collected. Almost without exception, places with distinct water marks could be found within these general locations. One result is that the great majority of the data points represent watermarks from protected locations such as interior walls. On the other hand, the storm damage was so extensive that coastal roads were washed out or entirely buried with sand. These areas are shown as being inaccessible on the figures. Many of the Gulf beaches in this area are within parks or National Seashores. These natural areas contained scant record of the coastal storm surge compared to the built-up areas.

The NOAA SLOSH model prediction run output shows that the maximum surge conditions moved across the area as the storm tracked across the coast. The first major surge was along the open coast, appearing in Florida along Perdido Key. The highest CHWM elevations occur in this area (see Figure 9). Much of this barrier island was overtopped. Such overtopping of the barrier island would allow a huge volume of water to enter Big Lagoon, and this could explain the very high CHWM elevations along the mainland coast (Figure 9).

Figure 9 also shows that there was a noticeable difference in the CHWM elevation over the length of Perdido Bay. Both Ono Island and Innerarity Point have high ground well above the flood elevation. The tidal pass winds through the lower portion of the bay. It appears that bay water was displaced towards the upper bay faster than it could be refilled from the Gulf. This results in a differential in the CHWM elevations of about 3 feet over the 12-mile length of the open bay

Figure 10 shows the area between the entrance to Pensacola Bay and Garcon Point in the northwest corner. Much of the barrier island was subject to extensive damage by the surge. This includes overtopping and overwashing at many locations. The road was buried in many places, and access to the island was restricted for weeks. The surge along the Pensacola Beach Barrier Island may have been limited by the low height of the land. With nothing to back up against, the surge passed over the island into Santa Rosa Sound and lower Pensacola Bay. The differences in the CHWM elevations between the Gulf and Sound sides support this inferred surge behavior.

The Santa Rosa Peninsula, which lies behind the barrier island, has ground that is much higher than the maximum surge elevation. Figure 10 shows that the surge set-up along the southern

peninsula shoreline had elevations on the order of 11 and 12 feet. This is in contrast with values of 6 to 8 feet only 2 miles away across Santa Rosa Sound. These CHWM values also demonstrate that the volume of water within the Sound increased dramatically during the surge.

Figure 10 shows also that wind-driven water piled up along the south-facing shores of the Naval Air Station, the western suburb of Warrington, and the Port of Pensacola. This also brought high surge levels into Bayou Grande, Bayou Chico, and Bayou Texar. Maximum surge elevations throughout Pensacola Bay and the lower portions of Escambia and Blackwater Bays appear to have been on the order of 9-1/2 to 11 feet.

Figures 11 and 12 are centered on the Escambia and Blackwater arms of the estuary. In both cases there is a clear pattern of surge amplification towards the heads of these bays. The highest observed elevation in Escambia Bay was 16 feet in Floridatown at the north end of Escambia Bay. The Ward Basin is near the north end of Blackwater Bay just south of the I-10 highway. Here, the surge elevation reached close to 13 feet. In general, the CHWM elevations are a few feet higher along the shores of the arms of the estuary than in the main portion of Pensacola.

Figure 13 shows the eastern portion of Santa Rosa Sound near Navarre and the East Bay arm of the Pensacola Estuary. The CHWM elevations along the open Gulf shore are consistent with the values further west. Considerable portions of this part of the island were overtopped or overwashed. Much of the barrier island was inaccessible due to road damage and burial.

The mainland shore of Santa Rosa experienced a high surge that may have decreased slightly going east. However, this trend may be more apparent than real. Figure 14 continues to show high CHWM elevations along this shore. It was noted that there appeared to be a correlation between the surge levels along the north shore of Santa Rosa Sound and the amount of shielding provided by the barrier island. Much of this island is part of Eglin Air Force Base and is undeveloped. The height of the dunes varies along the island and there are patches of wooded areas. It was the regions between the dunes and wooded areas where overtopping and overwashing occurred.

Figures 14 and 15 show data taken at the eastern end of Santa Rosa Sound and near Fort Walton Beach. Only one point was found along the open Gulf shore of Barrier Island, and it is about 13 feet. Figure 14 shows data from east of East Pass, which is the inlet into Choctawhatchee Bay. Open Gulf CHWMs approaching this same 13-foot value have been located there as well. This suggests that a coastal surge was generally at 12 feet or higher along more than 90 miles of the Gulf shoreline between eastern Alabama and Destin, Florida. This open coast surge remained high much further to the east, but the land along the shore is high with varying relief so that the surge did not penetrate significantly behind the beach systems except at a few locations.

Figure 16 shows the CHWMs in the northern portion of Choctawhatchee Bay near Niceville. Again, the pattern of high values at the heads of the bays is seen. However, these values are not as high as those in Escambia and Blackwater bays, which are much closer to the storm track. Furthermore, the shoreline of northern Choctawhatchee Bay tends to be steep, so there was little inundation from the surge.

Figure 17 shows CHWMs taken on the eastern shore of Choctawhatchee Bay and along the open coast east of Destin. The coastal points show a marked decrease in elevations. This pattern continues eastward with a maximum elevation of 5 feet recorded at Apalachicola. CHWMs collected within Choctawhatchee and St. Andrews Bays also show decreasing values moving east.

Recommendations

The following recommendations discuss how FEMA can use the CHWM information to assist in the recovery effort from Hurricane Ivan:

- Compare the Hurricane Ivan CHWMs to the flood elevation data on the effective or preliminary Flood Insurance Rate Maps. These comparisons can help FEMA determine where the updated flood hazard data was supported by the flooding that occurred or where new detailed studies should be performed to update the maps, and can help illustrate deficiencies on the existing maps.
- An evaluation is needed of the recurrence intervals of the surge conditions across the area. This will vary from place to place owing to distance from the storm track and local geographic effects. Preliminary evidence suggests that much of the area that experienced the most severe surge conditions were exposed to more than 100-year conditions.
- Compare the Ivan CHWMs to CHWMs from other significant flood events. This will identify areas of repetitive flooding that can assist FEMA in determining locations that would make good flood mitigation projects.
- Complete detail-engineering analyses to determine flood elevations in the areas where deficiencies have been identified on the existing FEMA maps, or in areas where property loss occurred where no previous studies have been prepared.
- The locations and severity of the Ivan CHWMs can help FEMA identify areas of concern for future mitigation projects when funding for such projects becomes available.
- Use these CHWMs to evaluate the success of completed mitigation projects. The flood depths that occurred during Ivan can be used to estimate potential damage that could have occurred to structures that have been bought out and removed as part of mitigation projects already completed. Documentation of the “damages avoided” can be used as success stories to further support the mitigation efforts.
- The CHWMs can be used to create flood recovery inundation mapping for Hurricane Ivan. The inundation maps would provide a plan-view of the extent of flooding from Hurricane Ivan and can assist in determining the accuracy of existing FEMA flood maps. The inundation mapping would be a spatially correct Geographical Information System (GIS) coverage that could be provided to community officials to assist in disaster recovery. Note that under HTMAP Task Order 351, the CHWMs for Escambia, Santa Rosa, and Okaloosa Counties are being used for flood inundation maps.
- Provide this report on the Internet to aid public officials and the community in general in the recovery effort.

Appendices

Appendix A: Figures

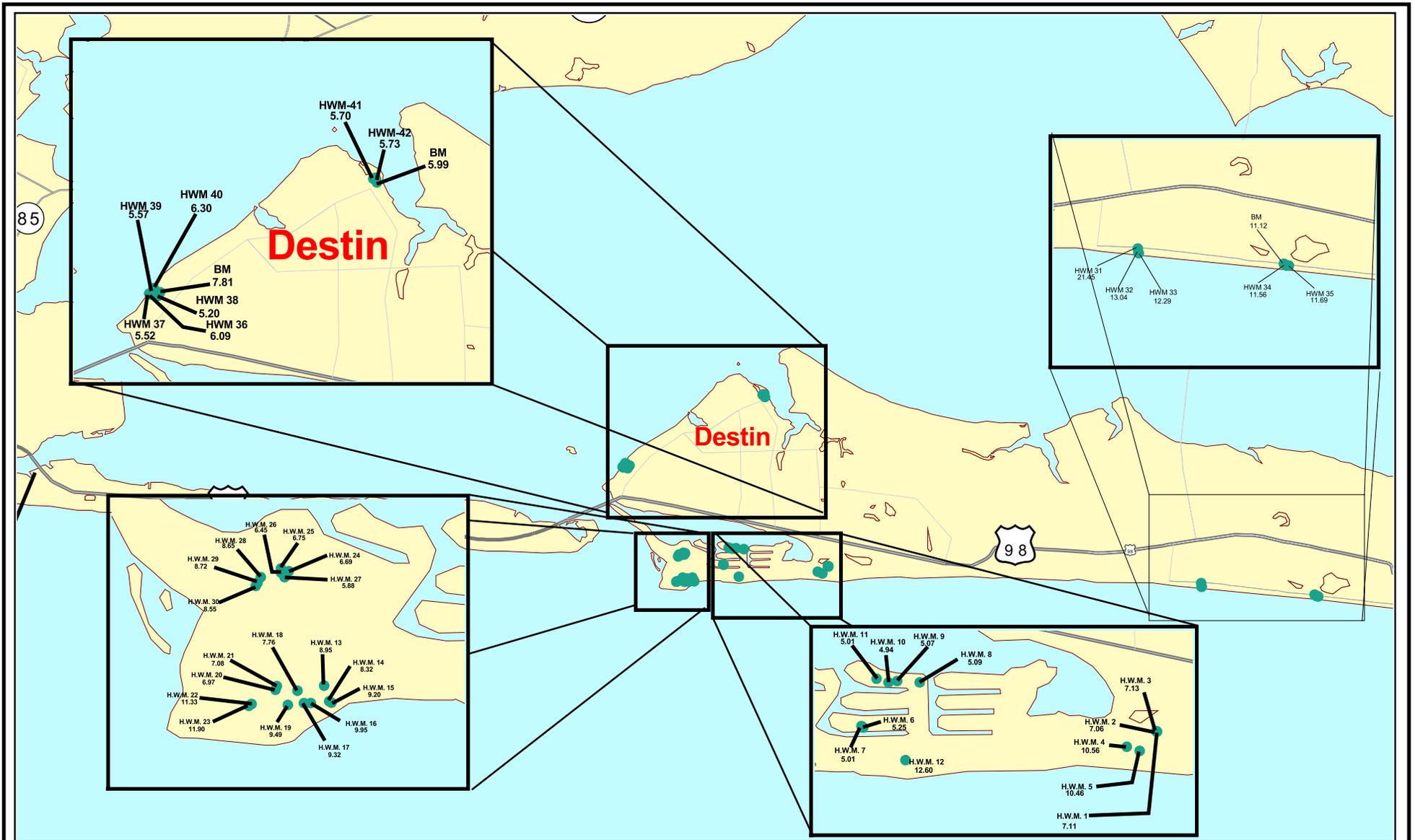


Figure 7
Hurricane Ivan
Surveyed HWMs Collected
by the City of Destin, Florida

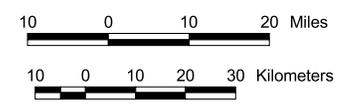
- City of Destin, Florida Surveyed HWMs
- Primary road with limited access
- Primary road
- Secondary and connecting road
- Florida Counties

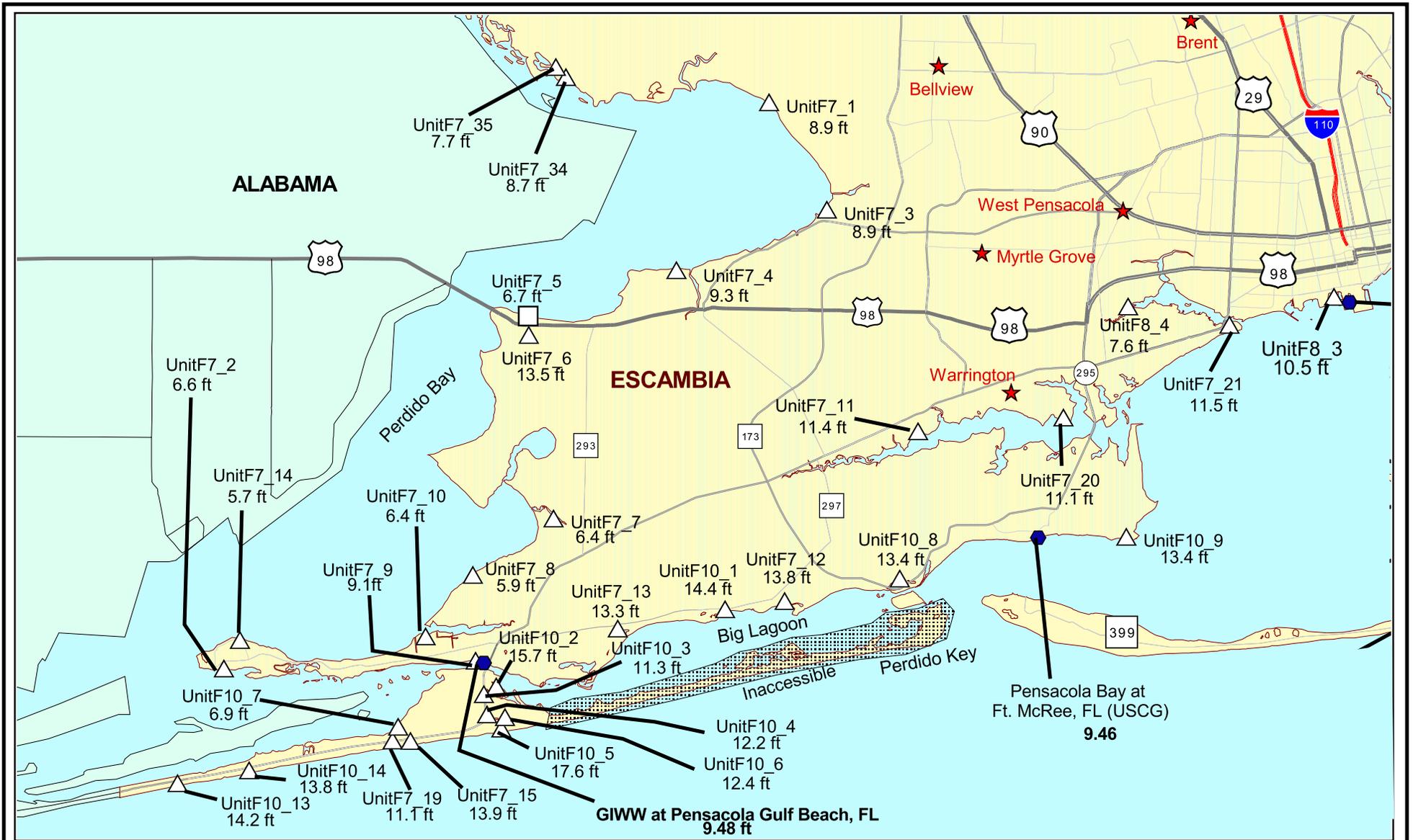




Figure 8
Hurricane Ivan
General Location Map

- City of Destin, Florida Surveyed HWMs
- USACOE, USGS, USCG Gage Stations
- Florida Counties
- Locations of FEMA CHWMs
- fair surge
- good run-up
- △ good surge



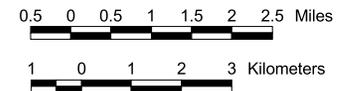


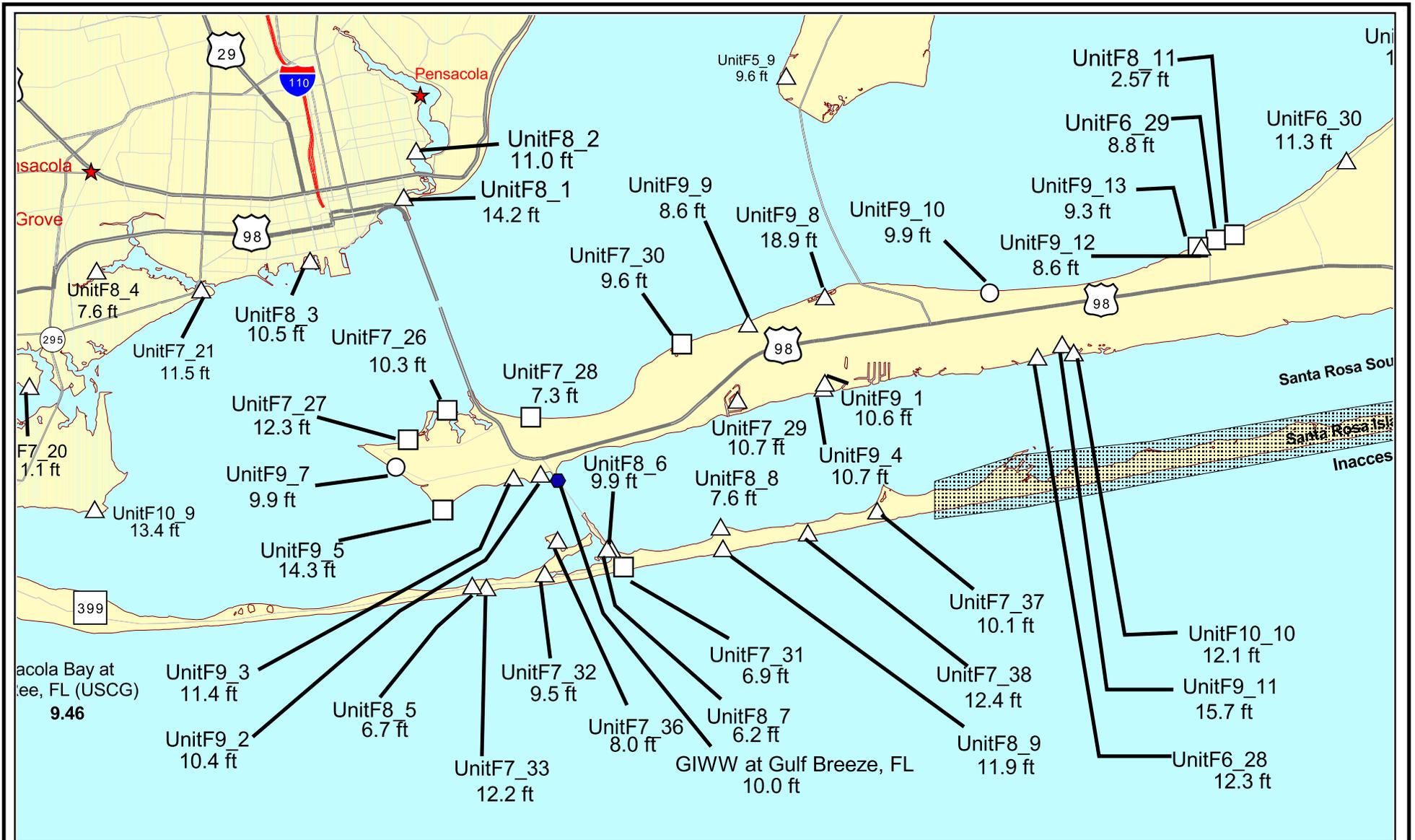
- △ Flood Type Surge - Quality Good
- Flood Type Surge - Quality Fair
- Flood Type Run Up - Quality Good
- NOAA, USGS, USCOE Gage

- ★ City / Municipality
- Florida Counties
- Alabama Counties
- 10.5 Surveyed CHWM Elevation (NAVD88)

- Primary road
- Secondary Road
- Ferry crossing

Figure 9
Hurricane Ivan
CHWM Surveyed Elevations
Innerarity Point and Perdido Key Areas



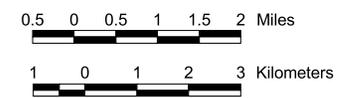


- △ Flood Type Surge - Quality Good
- Flood Type Surge - Quality Fair
- Flood Type Run Up - Quality Good
- NOAA, USGS, USCOE Gage

- ★ City / Municipality
- Florida Counties
- Alabama Counties
- 20.5 Surveyed CHWM Elevation (NAVD88)

- Primary road
- Secondary Road
- Ferry crossing

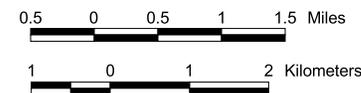
Figure 10
Hurricane Ivan
CHWM Surveyed Elevations
Pensacola / Gulf Breeze Area

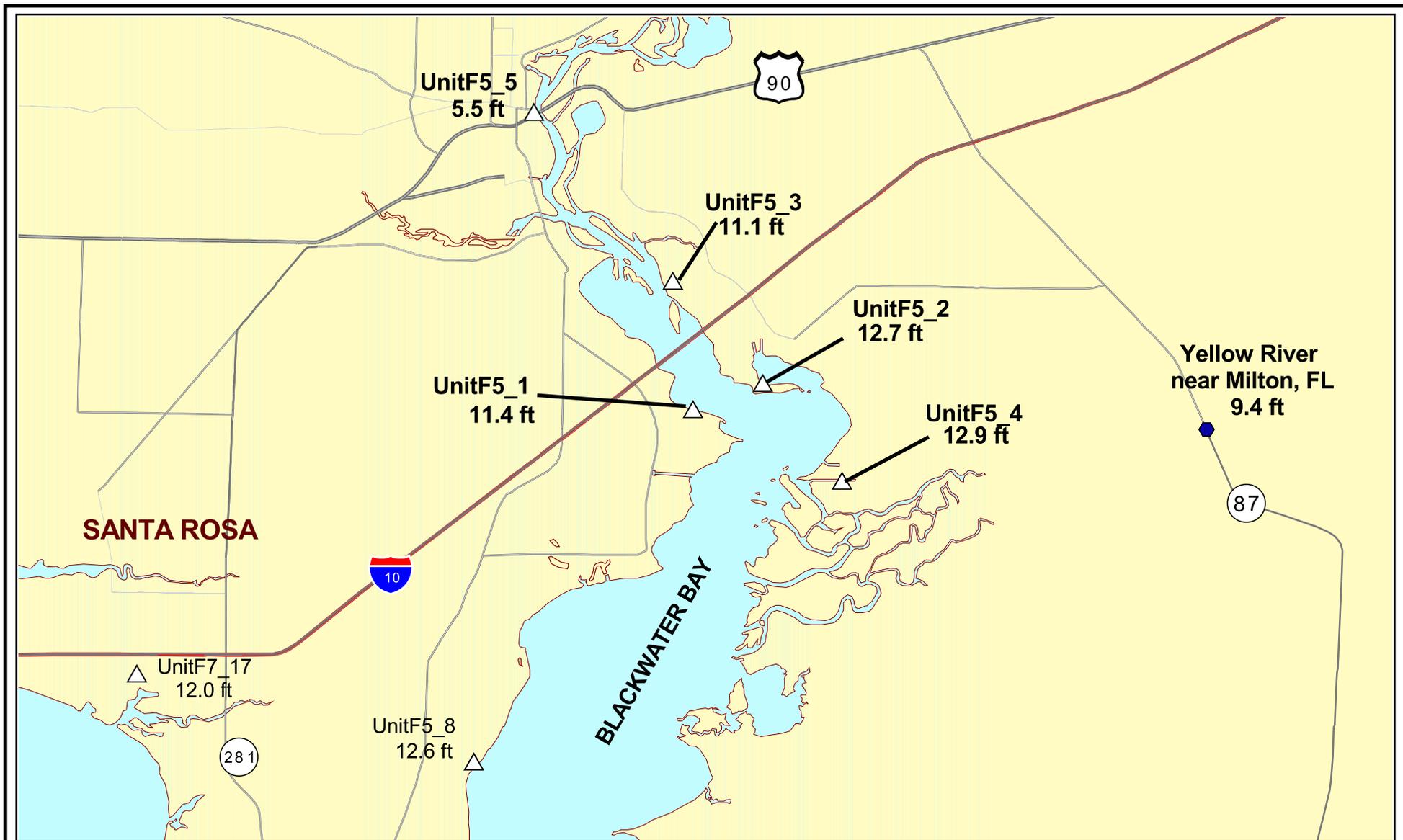




- △ Flood Type Surge - Quality Good
- Flood Type Surge - Quality Fair
- Flood Type Run Up - Quality Good
- NOAA, USGS, USCOE Gage
- ★ City / Municipality
- Florida Counties
- Alabama Counties
- 10.5 Surveyed CHWM Elevation (NAVD88)
- Primary road
- Secondary Road
- Ferry crossing

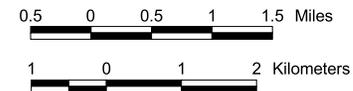
Figure 11
Hurricane Ivan
CHWM Surveyed Elevations
Upper Escambia Bay Area

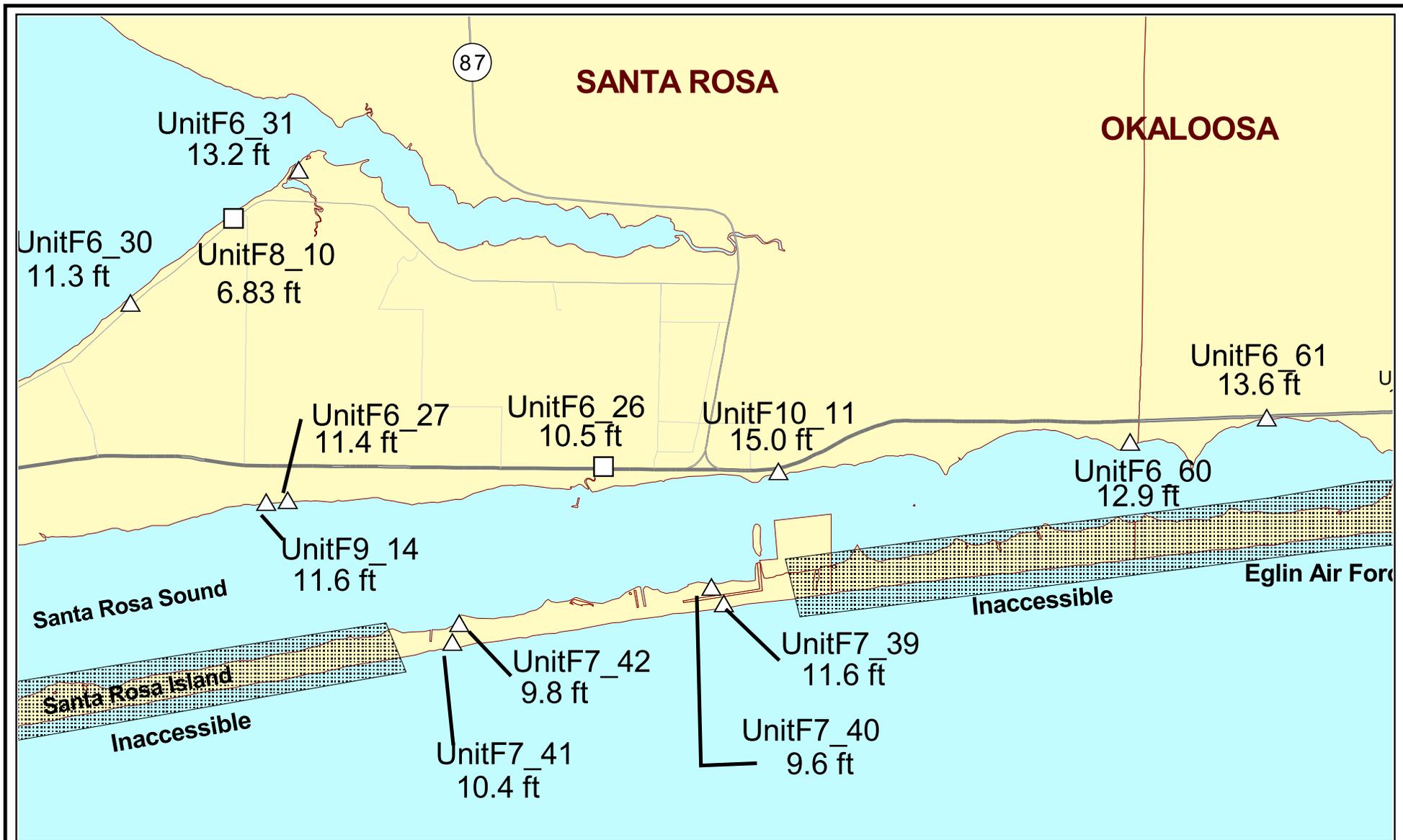




- △ Flood Type Surge - Quality Good
- Flood Type Surge - Quality Fair
- Flood Type Run Up - Quality Good
- NOAA, USGS, USCOE Gage
- ★ City / Municipality
- Florida Counties
- Alabama Counties
- 10.5 Surveyed CHWM Elevation (NAVD88)
- Primary road
- Secondary Road
- Ferry crossing

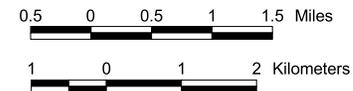
Figure 12
Hurricane Ivan
CHWM Surveyed Elevations
Blackwater Bay Area



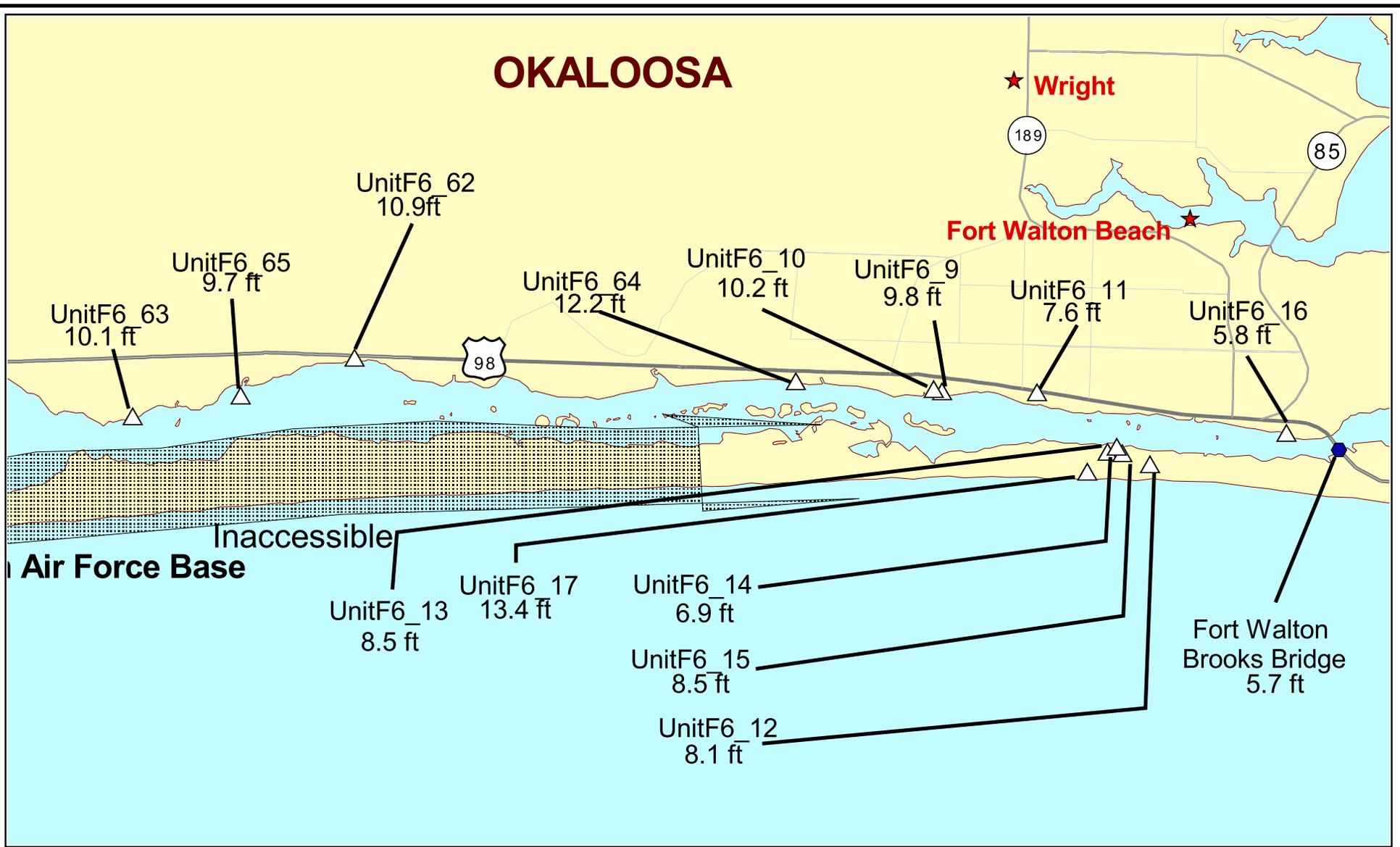


- △ Flood Type Surge - Quality Good
- Flood Type Surge - Quality Fair
- Flood Type Run Up - Quality Good
- NOAA, USGS, USCOE Gage
- ★ City / Municipality
- Florida Counties
- Alabama Counties
- 10.5 Surveyed CHWM Elevation (NAVD88)
- Primary road
- Secondary Road
- Ferry crossing

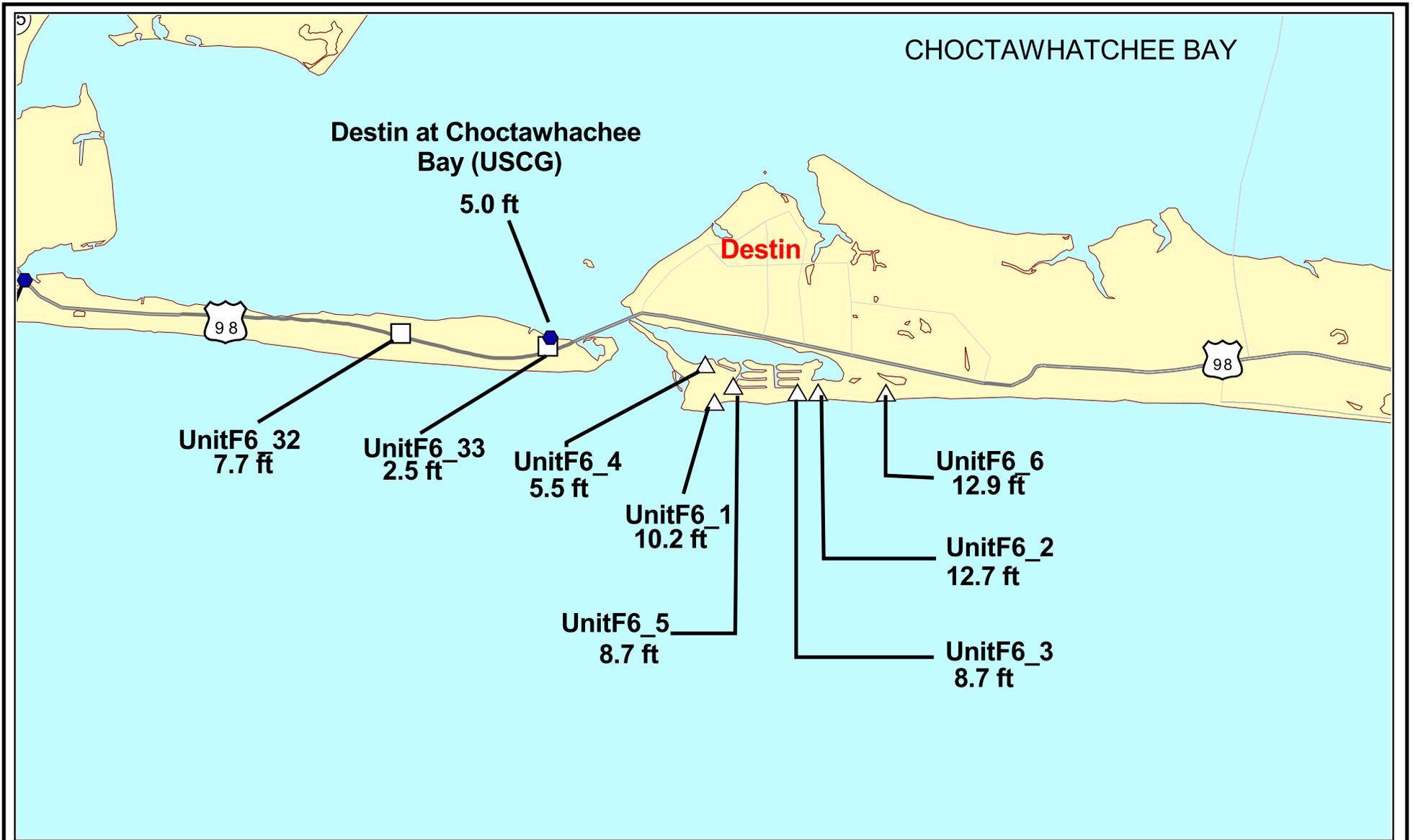
Figure 13
Hurricane Ivan
CHWM Surveyed Elevations
Holley Navarre Area



OKALOOSA

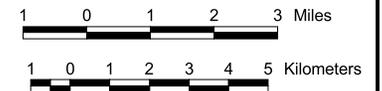


<ul style="list-style-type: none"> △ Flood Type Surge - Quality Good □ Flood Type Surge - Quality Fair ○ Flood Type Run Up - Quality Good ● NOAA, USGS, USCOE Gage 	<ul style="list-style-type: none"> ★ City / Municipality Florida Counties Alabama Counties 10.5 Surveyed CHWM Elevation (NAVD88) 	<ul style="list-style-type: none"> Primary road Secondary Road Ferry crossing 	<p>Figure 14 Hurricane Ivan CHWM Surveyed Elevations Fort Walton Area</p>	<p>0.5 0 0.5 1 Miles 0.5 0 0.5 1 1.5 Kilometers</p>
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- | | | |
|------------------------------------|---------------------------------------|------------------|
| △ Flood Type Surge - Quality Good | ★ City / Municipality | ▬ Primary road |
| □ Flood Type Surge - Quality Fair | ▭ Florida Counties | ▬ Secondary Road |
| ○ Flood Type Run Up - Quality Good | ▭ Alabama Counties | ▬ Ferry crossing |
| ● NOAA, USGS, USCOE Gage | 10.5 Surveyed CHWM Elevation (NAVD88) | |

Figure 15
Hurricane Ivan
CHWM Surveyed Elevations
Destin Area



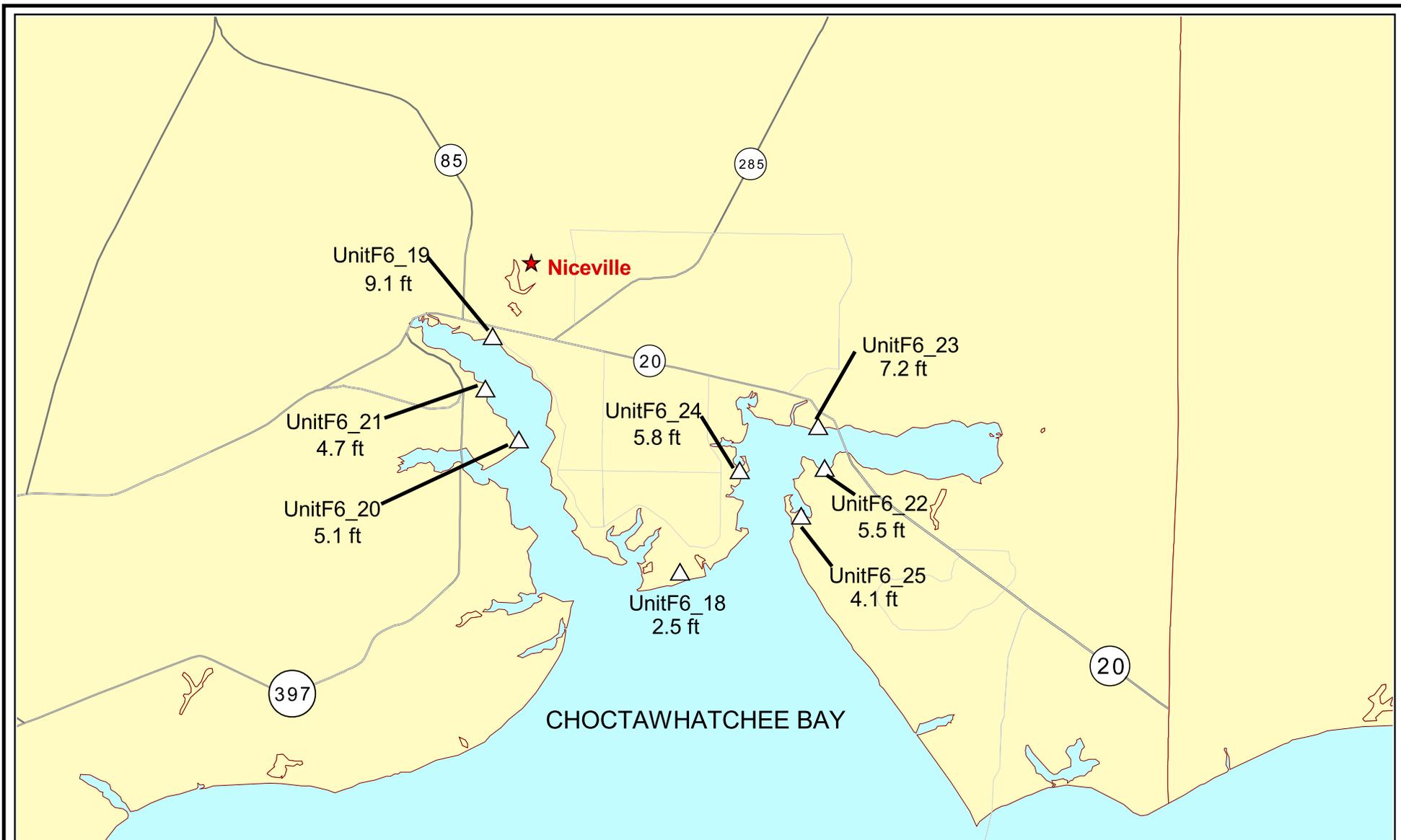
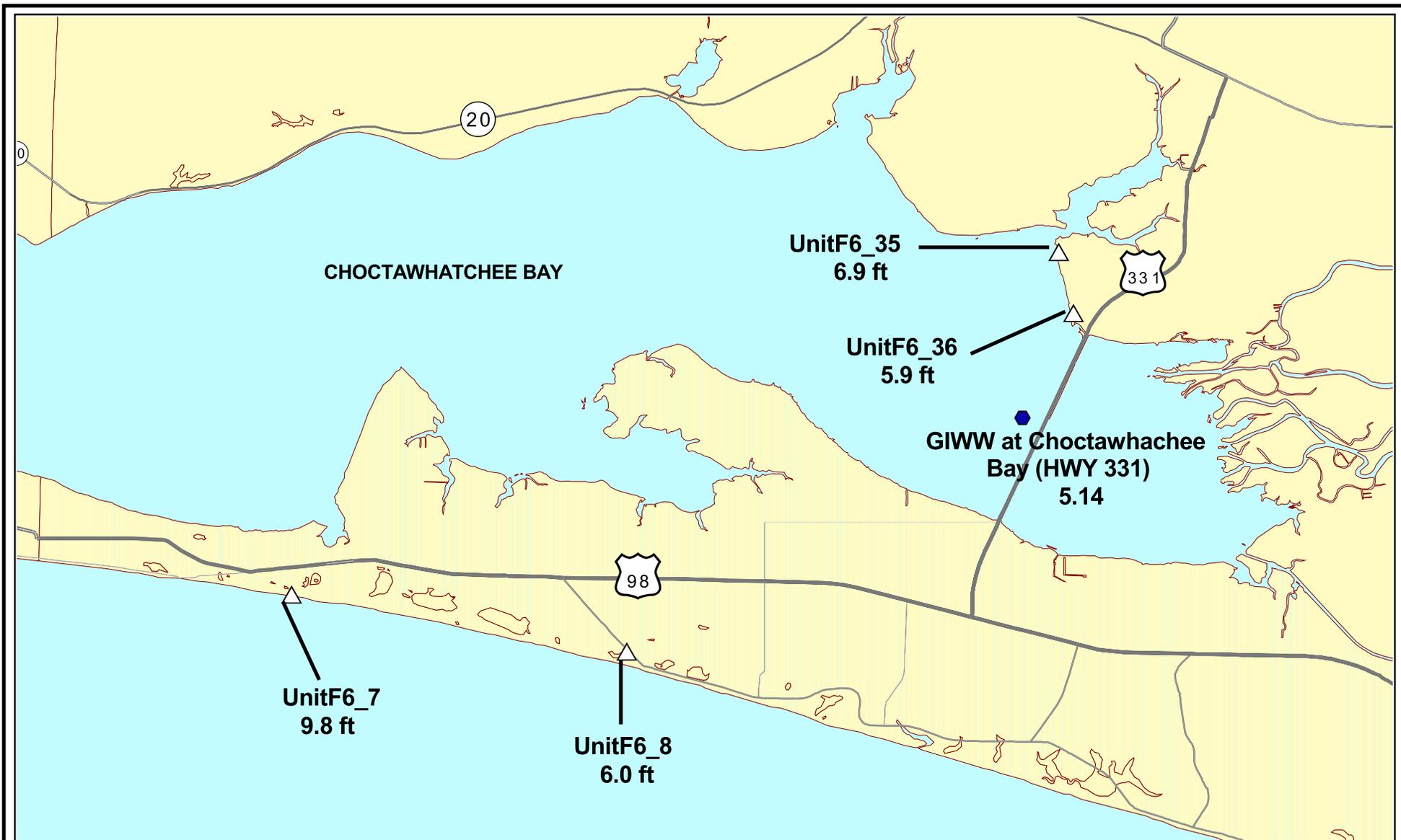


Figure 16
Hurricane Ivan
CHWM Surveyed Elevations
Niceville Area

- △ Flood Type Surge - Quality Good
- Flood Type Surge - Quality Fair
- Flood Type Run Up - Quality Good
- NOAA, USGS, USCOE Gage
- ★ City / Municipality
- Yellow box Florida Counties
- Light blue box Alabama Counties
- 10.5 Surveyed CHWM Elevation (NAVD88)
- Red line Primary road
- Grey line Secondary Road
- Blue line Ferry crossing



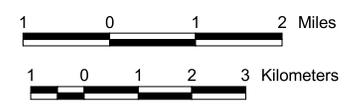


- △ Flood Type Surge - Quality Good
- Flood Type Surge - Quality Fair
- Flood Type Run Up - Quality Good
- NOAA, USGS, USCOE Gage

- ★ City / Municipality
- Florida Counties
- Alabama Counties
- 10.5 Surveyed CHWM Elevation (NAVD88)

- ▬ Primary road
- ▬ Secondary Road
- ▬ Ferry crossing

Figure 17
Hurricane Ivan
CHWM Surveyed Elevations
Choctawhatchee Bay Area



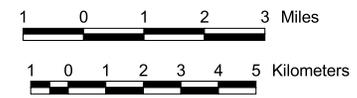


- △ Flood Type Surge - Quality Good
- Flood Type Surge - Quality Fair
- Flood Type Run Up - Quality Good
- NOAA, USGS, USCOE Gage

- ★ City / Municipality
- Florida Counties
- Alabama Counties
- 10.5 Surveyed CHWM Elevation (NAVD88)

- ▬ Primary road
- ▬ Secondary Road
- ▬ Ferry crossing

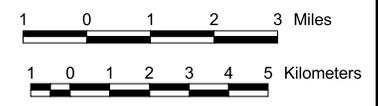
Figure 18
Hurricane Ivan
CHWM Surveyed Elevations
Panama City Area





- △ Flood Type Surge - Quality Good
- Flood Type Surge - Quality Fair
- Flood Type Run Up - Quality Good
- NOAA, USGS, USCOE Gage
- ★ City / Municipality
- Florida Counties
- Alabama Counties
- 10.5 Surveyed CHWM Elevation (NAVD88)
- Primary road
- Secondary Road
- Ferry crossing

Figure 19
Hurricane Ivan
CHWM Surveyed Elevations
Apalachicola Area



Appendices

Appendix B: Survey Sheets from Escambia County



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-1

HWM ID: UnitF7_1 **Type of Mark:** Tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Perdido Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 8.9 ft **NGVD 29:** 9.2 ft **HWM Object:** A/C housing
Flooding Type: Surge
HWM Address: 5643 Bay Forest Drive, Pensacola, FL
Location of HWM Object: Northwest side of house.

HWM Type: Water mark
Closest Municipality: Pensacola **County:** Escambia **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 9/30/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/28/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1068433.222
Survey Latitude: 30.45353 **Northing (Meters):** **Northing (feet):** 539892.5169
Survey Longitude: 87.35680 **Approx. First Floor Elevation:** 10.3 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_1b.jpg



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-2

HWM ID: UnitF7_2 **Type of Mark:** SE corner of rear concrete
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Intercoastal waterway **Quality of Mark:** Good
Survey Elevation (NAVD 88): 6.6 ft **NGVD 29:** 6.8 ft **HWM Object:** Door in garage
Flooding Type: Surge
HWM Address: 5840 Red Cedar St. Pensacola, FL
Location of HWM Object: Lower-level garage.

HWM Type: Surge
Closest Municipality: Pensacola **County:** Escambia **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 9/30/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/25/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1024330.825
Survey Latitude: 30.31264 **Northing (Meters):** **Northing (feet):** 489766.1078
Survey Longitude: 87.49254 **Approx. First Floor Elevation:** 16.1 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_2b.jpg

Fred R. Thompson, Professional Land Surveyor, State of Florida, Registration Number: 3027
Northwest Florida Land Surveying, Inc. State of Florida Corporation Number: 7277
5800 N. "W" Street, Pensacola, Florida 32505 PH 850 432-1052

PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-3

HWM ID: UnitF7_3 **Type of Mark:** Front sidewalk
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Perdido Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 8.9 ft **NGVD 29:** 9.2 ft **HWM Object:** Interior wall
Flooding Type: Surge
HWM Address: 1245 LaPaz Street, Pensacola, FL
Location of HWM Object: Inside wall transferred to front sidewalk.

HWM Type: Mud line
Closest Municipality: Pensacola **County:** Escambia **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/1/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/18/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1072723.468
Survey Latitude: 30.42680 **Northing (Meters):** **Northing (feet):** 530058.7712
Survey Longitude: 87.34241 **Approx. First Floor Elevation:** 6.1 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_3.jpg

Fred R. Thompson, Professional Land Surveyor, State of Florida, Registration Number: 3027
Northwest Florida Land Surveying, Inc. State of Florida Corporation Number: 7277
5800 N. "W" Street, Pensacola, Florida 32505 PH 850 432-1052

PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-4

HWM ID: UnitF7_4 **Type of Mark:** Front sidewalk
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Perdido Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 9.3 ft **NGVD 29:** 9.6 ft **HWM Object:** Inside wall transferred to front sidewalk in hallway
Flooding Type: Surge
HWM Address: 320 Riola Place, Pensacola, FL
Location of HWM Object: Front door sidewalk.

HWM Type: Mud line
Closest Municipality: Pensacola **County:** Escambia **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/1/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/18/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1060776.732
Survey Latitude: 30.41172 **Northing (Meters):** **Northing (feet):** 524872.8321
Survey Longitude: 87.37989 **Approx. First Floor Elevation:** 6.0 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_4.jpg

Fred R. Thompson, Professional Land Surveyor, State of Florida, Registration Number: 3027
Northwest Florida Land Surveying, Inc. State of Florida Corporation Number: 7277
5800 N. "W" Street, Pensacola, Florida 32505 PH 850 432-1052

PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-5

HWM ID: UnitF7_5 **Type of Mark:** Stake with pink tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Perdido Bay **Quality of Mark:** Fair
Survey Elevation (NAVD 88): 6.7 ft **NGVD 29:** 6.9 ft **HWM Object:** Stake with pink tape
Flooding Type: Surge
HWM Address: 900 Tracy Road
Location of HWM Object: West property line near water.

HWM Type: Debris line
Closest Municipality: Pensacola **County:** Escambia **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/1/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/18/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1049055.186
Survey Latitude: 30.40026 **Northing (Meters):** **Northing (feet):** 521001.4761
Survey Longitude: 87.41674 **Approx. First Floor Elevation:** 11.1 ft

Comment

Resident states that the wind was the strongest when coming from the SE.



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_5.jpg

Fred R. Thompson, Professional Land Surveyor, State of Florida, Registration Number: 3027
Northwest Florida Land Surveying, Inc. State of Florida Corporation Number: 7277
5800 N. "W" Street, Pensacola, Florida 32505 PH 850 432-1052

PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-6

HWM ID: UnitF7_6 **Type of Mark:** Stake with pink tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Perdido Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 13.5 ft **NGVD 29:** 13.7 ft **HWM Object:** End of driveway slab (concrete)
Flooding Type: Surge
HWM Address: 1131 Perdido Manor Drive, Pensacola, FL
Location of HWM Object: South end of driveway slab.

HWM Type: Debris line
Closest Municipality: Pensacola **County:** Escambia **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/1/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date:
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Survey Latitude: 30.39569 **Easting (Meters):** **Easting (feet):** 1046822.610
Survey Longitude: 87.41666 **Northing (Meters):** **Northing (feet):** 519396.1527
Approx. First Floor Elevation: 14.8 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_6.jpg



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-7

HWM ID: UnitF7_7 **Type of Mark:** Stake with pink tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Weekly Bayou off of Perdido Bayou **Quality of Mark:** Good
Survey Elevation (NAVD 88): 6.4 ft **NGVD 29:** 6.6 ft **HWM Object:** Ground near PVC sprinkler pipe
Flooding Type: Surge
HWM Address: 1048 Meadson Circle, Pensacola, FL
Location of HWM Object: Top of wood stake with pink tape near rear property line fence next to PVC sprinkler pipe.

HWM Type: Personal Account
Closest Municipality: Pensacola **County:** Escambia **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/1/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/18/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1050585.18
Survey Latitude: 30.35001 **Northing (Meters):** **Northing (feet):** 502681.2955
Survey Longitude: 87.41041 **Approx. First Floor Elevation:** 9.9 ft

Comment

This is a protected area. There were no waves.



UnitF7_7.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

Fred R. Thompson, Professional Land Surveyor, State of Florida, Registration Number: 3027
Northwest Florida Land Surveying, Inc. State of Florida Corporation Number: 7277
5800 N. "W" Street, Pensacola, Florida 32505 PH 850 432-1052

PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-8

HWM ID: UnitF7_8 **Type of Mark:** Duct tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Perdido Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 5.9 ft **NGVD 29:** 6.2 ft **HWM Object:** A/C slab
Flooding Type: Surge
HWM Address: 5214 Pale Moon Drive, Pensacola, FL
Location of HWM Object: East side of house.

HWM Type: Debris line
Closest Municipality: Pensacola **County:** Escambia **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/1/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/18/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1044094.662
Survey Latitude: 30.33590 **Northing (Meters):** **Northing (feet):** 497714.2739
Survey Longitude: 87.43058 **Approx. First Floor Elevation:** 7.5 ft

Comment

The debris line is on the A/C unit on the protected side house floor.



UnitF7_8.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-9

HWM ID: UnitF7_9 **Type of Mark:** Duct tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Intercoastal waterway **Quality of Mark:** Good
Survey Elevation (NAVD 88): 9.1ft **NGVD 29:** 9.3 ft **HWM Object:** 3rd step down from wooden deck on back (water-side) of house
Flooding Type: Surge
HWM Address: 13639 Canal Drive, Pensacola, FL
Location of HWM Object: Wooden stairs leading down to intercoastal waterway behind house.

HWM Type: Debris line
Closest Municipality: Pensacola **County:** Escambia **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/1/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/25/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Survey Latitude: 30.31454 **Easting (Meters):** **Easting (feet):** 1044115.904
Survey Longitude: 87.42987 **Northing (Meters):** **Northing (feet):** 489941.412
Approx. First Floor Elevation: 12.1 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_9.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-10

HWM ID: UnitF7_10 **Type of Mark:** Duct tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Perdido Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 6.4 ft **NGVD 29:** 6.7 ft **HWM Object:** Outside building wall
Flooding Type: Surge
HWM Address: 5503 Galvez Road
Location of HWM Object: South side of house, near door, under carport, side of house away from bay.

HWM Type: Mud line on exterior wall on south side of house
Closest Municipality: Pensacola **County:** Escambia **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/1/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/25/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1040265.762
Survey Latitude: 30.32066 **Northing (Meters):** **Northing (feet):** 492269.0117
Survey Longitude: 87.44226 **Approx. First Floor Elevation:** 5.6 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_10.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-11

HWM ID: UnitF7_11 **Type of Mark:** Duct tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Bayou Grande **Quality of Mark:** Good
Survey Elevation (NAVD 88): 11.4 ft **NGVD 29:** 11.7 ft **HWM Object:** Inside garage wall transferred to driveway slab
Flooding Type: Surge
HWM Address: 3608 Sunnyside Street, Pensacola, FL
Location of HWM Object: In front of garage on concrete driveway.

HWM Type: Mud line
Closest Municipality: Pensacola **County:** Escambia **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/2/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/25/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1079396.565
Survey Latitude: 30.37167 **Northing (Meters):** **Northing (feet):** 509835.8791
Survey Longitude: 87.31966 **Approx. First Floor Elevation:** 11.1 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_11.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-12

HWM ID: UnitF7_12 **Type of Mark:** Duct tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Big Lagoon **Quality of Mark:** Good
Survey Elevation (NAVD 88): 13.8 ft **NGVD 29:** 14 ft **HWM Object:** Front door transferred to front porch
Flooding Type: Surge
HWM Address: 4070 Moonraker Drive, Pensacola, FL
Location of HWM Object: Duct tape at top of steps on front porch.

HWM Type: Mud line
Closest Municipality: Pensacola **County:** Escambia **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/2/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/25/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1068521.762
Survey Latitude: 30.32941 **Northing (Meters):** **Northing (feet):** 494733.2242
Survey Longitude: 87.35293 **Approx. First Floor Elevation:** 12.0 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_12.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-13

HWM ID: UnitF7_13 **Type of Mark:** Red paint
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Big Lagoon **Quality of Mark:** Good
Survey Elevation (NAVD 88): 13.3 ft **NGVD 29:** 13.5 ft **HWM Object:** Grand Lagoon Blvd.
Flooding Type: Surge
HWM Address: 5401 Grande Lagoon Blvd, Pensacola, FL
Location of HWM Object: On Grand Lagoon Blvd adjacent to 5401 Grand Lagoon Blvd.

HWM Type: Debris line
Closest Municipality: Pensacola **County:** Escambia **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/2/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/25/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1055355.128
Survey Latitude: 30.32255 **Northing (Meters):** **Northing (feet):** 492568.6661
Survey Longitude: 87.39448 **Approx. First Floor Elevation:** 16.5 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_13.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-14

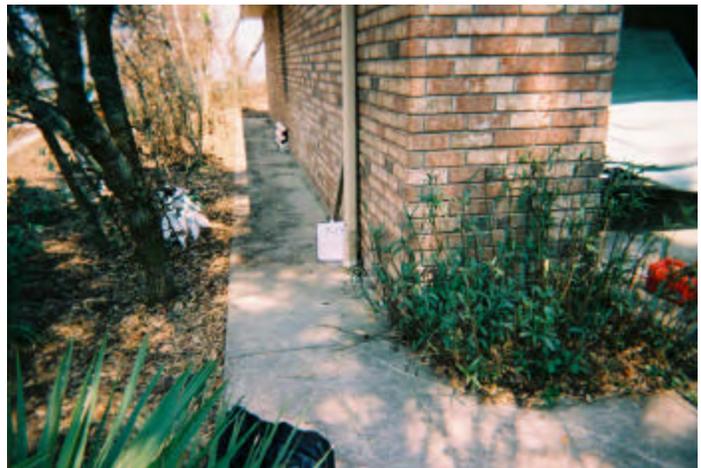
HWM ID: UnitF7_14 **Type of Mark:** Duct tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Perdido Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 5.7 ft **NGVD 29:** 5.9 ft **HWM Object:** Sidewalk next to garage
Flooding Type: Surge
HWM Address: 5468 North Shore Road, Pensacola, FL
Location of HWM Object: Sidewalk near SW corner of garage near gutter downspout.

HWM Type: Debris line
Closest Municipality: Pensacola **County:** Escambia **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/2/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/25/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Survey Latitude: 30.31974 **Easting (Meters):** **Easting (feet):** 1025669.508
Survey Longitude: 87.48851 **Northing (Meters):** **Northing (feet):** 492313.6944
Approx. First Floor Elevation: 6.6 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_14.jpg



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-15

HWM ID: UnitF7_15 **Type of Mark:** Red paint
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Gulf of Mexico **Quality of Mark:** Good
Survey Elevation (NAVD 88): 13.9 ft **NGVD 29:** 14.2 ft **HWM Object:** Inside windows transferred to building support piling
Flooding Type: Surge
HWM Address: 14587 Perdido Key Drive, Sugar Sands Condos
Location of HWM Object: Piling closest to road, next to sidewalk in front of Units 11 and 12.

HWM Type: Mud line
Closest Municipality: Pensacola **County:** Escambia **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/2/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/25/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1038831.395
Survey Latitude: 30.29462 **Northing (Meters):** **Northing (feet):** 482833.0563
Survey Longitude: 87.44603 **Approx. First Floor Elevation:** 11.3 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_15.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-16

HWM ID: UnitF7_16 **Type of Mark:** Duct tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Escambia Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 10.3 ft **NGVD 29:** 10.6 ft **HWM Object:** Inside wall transferred to front porch
Flooding Type: Surge
HWM Address: 1014 Pearson Road, Milton, FL
Location of HWM Object: Left side of front porch slab when facing front door.

HWM Type: Mud line
Closest Municipality: Pensacola **County:** Escambia **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/3/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 11/1/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1151748.564
Survey Latitude: 30.47272 **Northing (Meters):** **Northing (feet):** 544881.3251
Survey Longitude: 87.09281 **Approx. First Floor Elevation:** 7.9 ft

Comment

There is severe water and wind damage throughout the entire neighborhood.



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_16.jpg



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-17

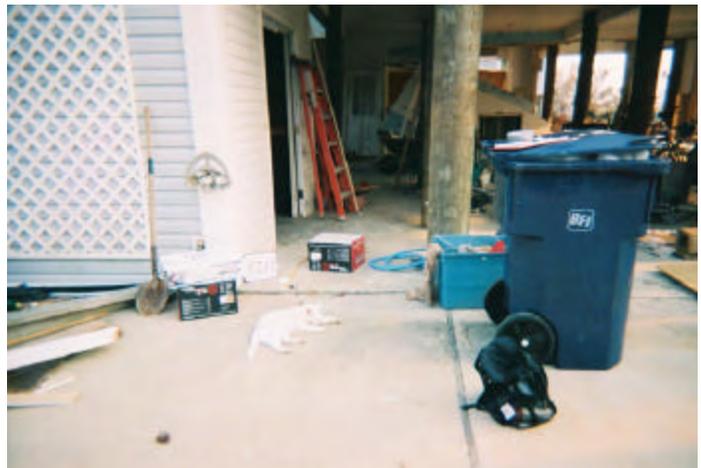
HWM ID: UnitF7_17 **Type of Mark:** Duct tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Escambia Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 12.0 ft **NGVD 29:** 12.3 ft **HWM Object:** Inside utility room wall, transferred to concrete slab
Flooding Type: Surge
HWM Address: 2641 Bayshore Parkway, Milton, FL
Location of HWM Object: North side of house at back corner of utility room (NW corner of utility room).

HWM Type: Mud line
Closest Municipality: Pensacola **County:** Escambia **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/3/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 11/1/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Survey Latitude: 30.53069 **Easting (Meters):** **Easting (feet):** 1149317.685
Survey Longitude: 87.10206 **Northing (Meters):** **Northing (feet):** 566024.8893
Approx. First Floor Elevation: 18.0 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_17.jpg



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-18

HWM ID	UnitF7_18	Type of Mark:	Duct tape
Name of Storm Event:	Ivan	Date of Flood Event:	9/16/2004
Stream Name/Flood Source:	Escambia Bay	Quality of Mark:	Fair
Survey Elevation (NAVD 88):	12.8 ft NGVD 29: 13.1 ft	HWM Object:	Carport wall transferred to carport concrete slab
Flooding Type:	Surge		
HWM Address:	4116 Parkview St., Pace, FL		
Location of HWM Object	Inside carport at south end.		
HWM Type:	Mud line		
Closest Municipality:	Pensacola	County	Escambia State: FL
Name of Flagger/Interviewer:	McLeod	Flagger Company:	URS
Date of Flagging/Interview:	10/3/2004		
Survey Crew:	AES/BP	Survey Company:	NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date:	10/29/2004		
Survey Projection:	LAMBERT, ZONE 903 (FLORIDA NORTH)	Vertical Datum:	NAVD 88 Horizontal Datum: NAD 83
		Easting (Meters):	Easting (feet): 1133847.484
Survey Latitude:	30.57905	Northing (Meters):	Northing (feet): 583975.0193
Survey Longitude:	87.15251	Approx. First Floor Elevation:	11.0 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_18.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-19

HWM ID	UnitF7_19	Type of Mark:	Duct tape
Name of Storm Event:	Ivan	Date of Flood Event:	9/16/2004
Stream Name/Flood Source:	Gulf of Mexico	Quality of Mark:	Good
Survey Elevation (NAVD 88):	11.1 ft NGVD 29: 11.4 ft	HWM Object:	Interior wall transferred to exterior wall
Flooding Type:	Surge		
HWM Address:	14620 Perdido Key Drive, Pensacola, FL		
Location of HWM Object	NW corner of building (rear of building).		
HWM Type:	Mud line		
Closest Municipality:	Pensacola	County Escambia	State: FL
Name of Flagger/Interviewer:	McLeod	Flagger Company:	URS
Date of Flagging/Interview:	10/4/2004		
Survey Crew:	AES/BP	Survey Company:	NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date:	10/20/2004		
Survey Projection:	LAMBERT, ZONE 903 (FLORIDA NORTH)	Vertical Datum: NAVD 88	Horizontal Datum: NAD 83
		Easting (Meters):	Easting (feet): 1037406.604
Survey Latitude:	30.29473	Northing (Meters):	Northing (feet): 482908.9586
Survey Longitude:	87.45055	Approx. First Floor Elevation:	10.8 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_19.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-20

HWM ID: UnitF7_20 **Type of Mark:** Duct tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Bayou Grande **Quality of Mark:** Good
Survey Elevation (NAVD 88): 11.1 ft **NGVD 29:** 11.3 ft **HWM Object:** Inside garage wall, transferred to outer garage wall
Flooding Type: Surge
HWM Address: 312 SE Kalash Road, Pensacola, FL
Location of HWM Object: Right side of garage door, when facing east.

HWM Type: Mud line
Closest Municipality: Pensacola **County:** Escambia **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/4/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/28/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1090848.961
Survey Latitude: 30.37504 **Northing (Meters):** **Northing (feet):** 510782.2591
Survey Longitude: 87.28342 **Approx. First Floor Elevation:** 6.0 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_20.jpg



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-21

HWM ID: UnitF7_21 **Type of Mark:** Duct tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Pensacola Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 11.5 ft **NGVD 29:** 11.8 ft **HWM Object:** Interior garage door transferred to garage door frame
Flooding Type: Surge
HWM Address: 510 Windrose Circle
Location of HWM Object: West end of house.

HWM Type: Mud line
Closest Municipality: Pensacola **County:** Escambia **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/4/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/28/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1104071.513
Survey Latitude: 30.39822 **Northing (Meters):** **Northing (feet):** 518894.0712
Survey Longitude: 87.24213 **Approx. First Floor Elevation:** 10.4 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_21.jpg



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-22

HWM ID: UnitF7_22 **Type of Mark:** Duct tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Pensacola Bay **Quality of Mark:** Fair
Survey Elevation (NAVD 88): 11.1 ft **NGVD 29:** 11.4 ft **HWM Object:** Pool deck
Flooding Type: Surge
HWM Address: 5150 Gull Point Road, Pensacola, FL
Location of HWM Object: Back of house.
HWM Type: Debris line and personal account
Closest Municipality: Pensacola **County:** Escambia **State:** FL
Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/4/2004
Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/18/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Survey Latitude: 30.49066 **Easting (Meters):** **Easting (feet):** 1133255.041
Survey Longitude: 87.15201 **Northing (Meters):** **Northing (feet):** 551832.7246
Approx. First Floor Elevation: 12.1 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_22.jpg

Fred R. Thompson, Professional Land Surveyor, State of Florida, Registration Number: 3027
Northwest Florida Land Surveying, Inc. State of Florida Corporation Number: 7277
5800 N. "W" Street, Pensacola, Florida 32505 PH 850 432-1052

PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-23

HWM ID: UnitF7_23 **Type of Mark:** Duct tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Escambia Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 12.6 ft **NGVD 29:** 12.9 ft **HWM Object:** Inside garage wall transferred to garage slab
Flooding Type: Surge
HWM Address: 2018 Mackey Key Drive
Location of HWM Object: SW corner of house.

HWM Type: Mud line
Closest Municipality: Pensacola **County:** Escambia **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/5/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/29/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Survey Latitude: 30.54631 **Easting (Meters):** **Easting (feet):** 1122782.402
Survey Longitude: 87.18679 **Northing (Meters):** **Northing (feet):** 572322.4193
Approx. First Floor Elevation: 10.0 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_23.jpg



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-24

HWM ID: UnitF7_24 **Type of Mark:** Patio at NW corner of slab
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Escambia Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 16.1 ft **NGVD 29:** 16.4 ft **HWM Object:** Inside patio wall transferred to patio slab
Flooding Type: Surge
HWM Address: 3841 Andrew Jackson Drive, Pace, FL
Location of HWM Object: Rear of house at SE corner.

HWM Type: Mud line
Closest Municipality: Pensacola **County:** Escambia **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/5/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/29/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Survey Latitude: 30.58137 **Easting (Meters):** **Easting (feet):** 1130783.299
Survey Longitude: 87.16231 **Northing (Meters):** **Northing (feet):** 584889.8409
Approx. First Floor Elevation: 15.5 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_24.jpg

Fred R. Thompson, Professional Land Surveyor, State of Florida, Registration Number: 3027
Northwest Florida Land Surveying, Inc. State of Florida Corporation Number: 7277
5800 N. "W" Street, Pensacola, Florida 32505 PH 850 432-1052

PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-25

HWM ID: UnitF7_25 **Type of Mark:** Duct tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Escambia Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 13.0 ft **NGVD 29:** 13.3 ft **HWM Object:** Back window transferred to back deck
Flooding Type: Surge
HWM Address: 4356 Bayside Blvd., Milton, FL
Location of HWM Object: Back deck on west side of house.

HWM Type: Mud line
Closest Municipality: Pensacola **County:** Escambia **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/5/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 11/1/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1138006.423
Survey Latitude: 30.55718 **Northing (Meters):** **Northing (feet):** 575922.0295
Survey Longitude: 87.13870 **Approx. First Floor Elevation:** 8.1 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_25.jpg



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-26

HWM ID: UnitF7_31 **Type of Mark:** Interior building slab
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Gulf of Mexico **Quality of Mark:** Fair
Survey Elevation (NAVD 88): 6.9 ft **NGVD 29:** 6.9 ft **HWM Object:** Inside wall transferred to inside slab
Flooding Type: Surge
HWM Address: No 3 Casino Beach Boardwalk
Location of HWM Object: Inside "Tiffany's Beach Restaurant".

HWM Type: Mud line
Closest Municipality: Pensacola **County:** Escambia **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/21/2004

Survey Crew: Ray (Austin) **Survey Company:** PBS & J
Survey Date: 10/28/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 346110.46239 **Easting (feet):** 1135530.742
Survey Latitude: 30.33146 **Northing (Meters):** 150530.28125 **Northing (feet):** 493864.7644
Survey Longitude: 87.14053 **Approx. First Floor Elevation:** 4.2 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_31.jpg

James E. Godfrey - Professional Land Surveyor, No. 4541, State of Florida
PBS & J License Business 24
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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-27

HWM ID	UnitF7_32	Type of Mark:	Garage slab
Name of Storm Event:	Ivan	Date of Flood Event:	9/16/2004
Stream Name/Flood Source:	Gulf of Mexico	Quality of Mark:	Good
Survey Elevation (NAVD 88):	9.5 ft NGVD 29: 9.5 ft	HWM Object:	Inside wall transferred to garage slab
Flooding Type:	Surge		
HWM Address:	102 Siguenza Dr.		
Location of HWM Object	West side of house at garage slab.		
HWM Type:	Mud line		
Closest Municipality:	Pensacola	County	Escambia State: FL
Name of Flagger/Interviewer:	McLeod	Flagger Company:	URS
Date of Flagging/Interview:	10/21/2004		
Survey Crew:	Ray (Austin)	Survey Company:	PBS & J
Survey Date:	10/29/2004		
Survey Projection:	State Plane Feet Florida North	Vertical Datum:	NAVD 88 Horizontal Datum: NAD 83
		Easting (Meters):	344281.82264 Easting (feet): 1129531.28
Survey Latitude:	30.33003	Northing (Meters):	150413.85946 Northing (feet): 493482.8039
Survey Longitude:	87.15951	Approx. First Floor Elevation:	6.7 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_32.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-28

HWM ID: UnitF7_33 **Type of Mark:** Red paint
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Gulf of Mexico **Quality of Mark:** Good
Survey Elevation (NAVD 88): 12.2 ft **NGVD 29:** 12.2 ft **HWM Object:** Inside protected wall transferred to bottom of house siding facing street
Flooding Type: Surge
HWM Address: 1299 Ft Pickens Road - Unit 2
Location of HWM Object: Townhouse Unit #2 Facing Street.

HWM Type: Mud line
Closest Municipality: Pensacola **County:** Escambia **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/21/2004

Survey Crew: Ray (Austin) **Survey Company:** PBS & J
Survey Date: 10/29/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 342920.86609 **Easting (feet):** 1125066.208
Survey Latitude: 30.32670 **Northing (Meters):** 150076.08464 **Northing (feet):** 492374.6210
Survey Longitude: 87.17358 **Approx. First Floor Elevation:** 6.8 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_33.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-29

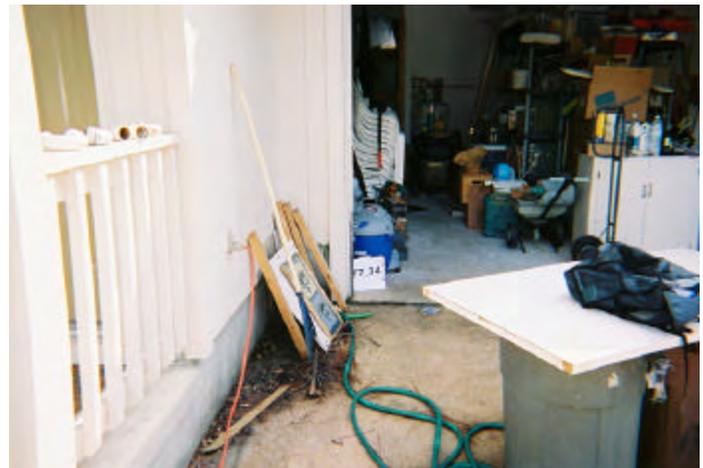
HWM ID: UnitF7_34 **Type of Mark:** Garage slab
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Perdido Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 8.7 ft **NGVD 29:** 8.8 ft **HWM Object:** Interior garage wall transferred to garage slab
Flooding Type: Surge
HWM Address: 5893 Hurst Hammock Road
Location of HWM Object: North side of house.

HWM Type: Mud line
Closest Municipality: Pensacola **County:** Escambia **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/22/2004

Survey Crew: Ray (Austin) **Survey Company:** PBS & J
Survey Date: 10/28/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 320819.18396 **Easting (feet):** 1052554.273
Survey Latitude: 30.45985 **Northing (Meters):** 165381.78305 **Northing (feet):** 542590.0666
Survey Longitude: 87.40740 **Approx. First Floor Elevation:** N/A

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_34.jpg

James E. Godfrey - Professional Land Surveyor, No. 4541, State of Florida
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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-30

HWM ID: UnitF7_35 **Type of Mark:** Front wooden porch
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Perdido River Mouth **Quality of Mark:** Good
Survey Elevation (NAVD 88): 7.7 ft **NGVD 29:** 7.7 ft **HWM Object:** Interior wall transferred to front wooden bench
Flooding Type: Surge
HWM Address: 5931 Hurst Hammden Rd
Location of HWM Object: Wooden porch facing street (East side of house).

HWM Type: Mud line
Closest Municipality: Pensacola **County:** Escambia **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/23/2004

Survey Crew: Ray (Austin) **Survey Company:** PBS & J
Survey Date: 10/29/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 320594.24798 **Easting (feet):** 1051816.295
Survey Latitude: 30.46235 **Northing (Meters):** 165664.75272 **Northing (feet):** 543518.4429
Survey Longitude: 87.40981 **Approx. First Floor Elevation:** 7.1 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_35.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-31

HWM ID: UnitF7_36 **Type of Mark:** Sidewalk
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Pensacola Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 8.0 ft **NGVD 29:** 8.0 ft **HWM Object:** Interior wall transferred to front side walk at front door
Flooding Type: Surge
HWM Address: 1 Sabine Island Bldg 49 Molecular Ecology Lab
Location of HWM Object: Sidewalk at front door on south side of building.

HWM Type: Mud line
Closest Municipality: Pensacola **County:** Escambia **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/23/2004

Survey Crew: Ray (Austin) **Survey Company:** PBS & J
Survey Date: 10/29/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 344595.86604 **Easting (feet):** 1130561.604
Survey Latitude: 30.33810 **Northing (Meters):** 151300.99297 **Northing (feet):** 496393.3411
Survey Longitude: 87.15646 **Approx. First Floor Elevation:** 7.3 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_36.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-32

HWM ID: UnitF7_37 **Type of Mark:** Garage slab
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Gulf of Mexico **Quality of Mark:** Good
Survey Elevation (NAVD 88): 10.1 ft **NGVD 29: 10.1 ft** **HWM Object:** Interior hallway of parking garage lower level, transferred to garage slab
Flooding Type: Surge
HWM Address: 2 Portofona Drive (Building 2)
Location of HWM Object: SW corner of building 2, inside parking garage elevator lobby entrance.

HWM Type: Mud line
Closest Municipality: Pensacola **County:** Escambia **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/23/2004

Survey Crew: Ray (Austin) **Survey Company:** PBS & J
Survey Date: 10/30/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 352000.78924 **Easting (feet):** 1154855.923
Survey Latitude: 30.34508 **Northing (Meters):** 151905.25781 **Northing (feet):** 498375.8334
Survey Longitude: 87.07961 **Approx. First Floor Elevation:** 5.2 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_37.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-33

HWM ID: UnitF7_38 **Type of Mark:** Lobby floor
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Gulf of Mexico **Quality of Mark:** Good
Survey Elevation (NAVD 88): 12.4 ft **NGVD 29:** 12.4 ft **HWM Object:** Mud line inside electrical closet transferred to lobby tile floor
Flooding Type: Surge
HWM Address: Regency Towers Condominiums (West Tower) 1600 Via Deluna Drive
Location of HWM Object: Lobby of West Tower of Regency Towers Condominiums.

HWM Type: Mud line
Closest Municipality: Pensacola **County:** Escambia **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/23/2004

Survey Crew: Ray (Austin) **Survey Company:** PBS & J
Survey Date: 10/29/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 350379.02133 **Easting (feet):** 1149535.172
Survey Latitude: 30.33980 **Northing (Meters):** 151356.25142 **Northing (feet):** 496574.6349
Survey Longitude: 87.09635 **Approx. First Floor Elevation:** 8.7 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_38.jpg

James E. Godfrey - Professional Land Surveyor, No. 4541, State of Florida
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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-34

HWM ID: UnitF7_39 **Type of Mark:** Concrete slab
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Gulf of Mexico **Quality of Mark:** Good
Survey Elevation (NAVD 88): 11.6 ft **NGVD 29: 11.6 ft** **HWM Object:** Interior Protected wall of storage room, transferred to concrete slab
Flooding Type: Surge
HWM Address: 8499 Gulf Blvd. Navarre, FL 32566 -The Pearl Condominiums
Location of HWM Object: 15 feet East of front entrance.

HWM Type: Mud line
Closest Municipality: Pensacola **County:** Escambia **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/25/2004

Survey Crew: Ray (Austin) **Survey Company:** PBS & J
Survey Date: 10/30/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 372392.46659 **Easting (feet):** 1221757.617
Survey Latitude: 30.37946 **Northing (Meters):** 155275.12956 **Northing (feet):** 509431.8209
Survey Longitude: 86.86830 **Approx. First Floor Elevation:** 8.9 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_39.jpg

James E. Godfrey - Professional Land Surveyor, No. 4541, State of Florida
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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-35

HWM ID	UnitF7_40	Type of Mark:	Duck tape
Name of Storm Event:	Ivan	Date of Flood Event:	9/16/2004
Stream Name/Flood Source:	Santa Rosa Sound	Quality of Mark:	Good
Survey Elevation (NAVD 88):	9.6 ft NGVD 29: 9.6 ft	HWM Object:	Inside storage area wall transferred to garage slab
Flooding Type:	Surge		
HWM Address:	1446 Sonata Ct. Navarre, FL 32566		
Location of HWM Object	Inside Garage to left of stairwell.		
HWM Type:	Mud line		
Closest Municipality:	Pensacola	County Escambia	State: FL
Name of Flagger/Interviewer:	McLeod	Flagger Company:	URS
Date of Flagging/Interview:	10/25/2004		
Survey Crew:	Ray (Austin)	Survey Company:	PBS & J
Survey Date:	10/30/2004		
Survey Projection:	State Plane Feet Florida North	Vertical Datum: NAVD 88	Horizontal Datum: NAD 83
		Easting (Meters): 372200.09846	Easting (feet): 1221126.49
Survey Latitude:	30.38216	Northing (Meters): 155578.49796	Northing (feet): 510427.1221
Survey Longitude:	86.87036	Approx. First Floor Elevation:	5.8 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_40.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 & 12033 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-36

HWM ID: UnitF7_41 **Type of Mark:** Bathroom floor slab
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Gulf of Mexico **Quality of Mark:** Good
Survey Elevation (NAVD 88): 10.4 ft **NGVD 29:** 10.4 ft **HWM Object:** Inside bathroom wall transferred to bathroom slab
Flooding Type: Surge
HWM Address: 7424 South Carolina St. Navarre Beach, FL
Location of HWM Object: Northmost garage bay.

HWM Type: Mud line
Closest Municipality: Pensacola **County:** Escambia **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/25/2004

Survey Crew: Ray (Austin) **Survey Company:** PBS & J
Survey Date: 10/30/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 368048.48259 **Easting (feet):** 1207505.73
Survey Latitude: 30.37305 **Northing (Meters):** 154654.7647 **Northing (feet):** 507396.5072
Survey Longitude: 86.91335 **Approx. First Floor Elevation:** 9.1 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_41a.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-37

HWM ID: UnitF7_42 **Type of Mark:** Sidewalk
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Santa Rosa Sound **Quality of Mark:** Good
Survey Elevation (NAVD 88): 9.8 ft **NGVD 29:** 9.8 ft **HWM Object:** Interior wall transferred to sidewalk in front of unit 1-111
Flooding Type: Surge
HWM Address: 7453 Sunset Harbor Dr., Navarre Beach, FL "The Palms" of Sunset Harbor
Location of HWM Object: Sidewalk in front of unit 1-111.

HWM Type: Mud line
Closest Municipality: Pensacola **County:** Escambia **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/25/2004

Survey Crew: Ray (Austin) **Survey Company:** PBS & J
Survey Date: 10/30/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 368167.82711 **Easting (feet):** 1207897.279
Survey Latitude: 30.37613 **Northing (Meters):** 154994.11451 **Northing (feet):** 508509.8574
Survey Longitude: 86.91218 **Approx. First Floor Elevation:** N/A

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_42.jpg

James E. Godfrey - Professional Land Surveyor, No. 4541, State of Florida
PBS & J License Business 24
5300 W. Cypress St. Suite 200, Tampa Florida. 33607 PH. 813 282-7275

PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-38

HWM ID: UnitF8_1 **Type of Mark:** Stake
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Pensacola Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 14.2 ft **NGVD 29:** 14.4 ft **HWM Object:** Ground/railroad embankment
Flooding Type: Surge
HWM Address: Boat launch parking lot near intersection of 17th Ave and Gregory St
Location of HWM Object: On railroad embankment north of parking lot.

HWM Type: Debris line
Closest Municipality: Pensacola, FL **County:** Escambia **State:** FL

Name of Flagger/Interviewer: Westcott **Flagger Company:** Dewberry
Date of Flagging/Interview: 10/3/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/28/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Survey Latitude: 30.42036 **Easting (Meters):** **Easting (feet):** 1119594.202
Survey Longitude: 87.19348 **Northing (Meters):** **Northing (feet):** 526578.9707
Approx. First Floor Elevation: N/A

Comment

No houses in the area, but ground elevation rises quickly so major in-house flooding is unlikely.



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF8_1.jpg

Fred R. Thompson, Professional Land Surveyor, State of Florida, Registration Number: 3027
Northwest Florida Land Surveying, Inc. State of Florida Corporation Number: 7277
5800 N. "W" Street, Pensacola, Florida 32505 PH 850 432-1052

PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-39

HWM ID: UnitF8_2 **Type of Mark:** Stake
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Bayou Texar/Pensacola Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 11.0 ft **NGVD 29:** 11.3 ft **HWM Object:** Ground
Flooding Type: Surge
HWM Address: Bayview Community Center 2000 E Lloyd St
Location of HWM Object: On ground SW of community center, 6' 1" from mark on storm drain in parking lot.

HWM Type: Debris line
Closest Municipality: Pensacola, FL **County:** Escambia **State:** FL

Name of Flagger/Interviewer: Westcott **Flagger Company:** Dewberry
Date of Flagging/Interview: 10/3/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 11/3/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1120619.666
Survey Latitude: 30.43153 **Northing (Meters):** **Northing (feet):** 530618.836
Survey Longitude: 87.19053 **Approx. First Floor Elevation:** 13.2 ft

Comment

Water did not get into the Community Center. The high banks in this area make in-house flooding unlikely.



UnitF8_2.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

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Northwest Florida Land Surveying, Inc. State of Florida Corporation Number: 7277
5800 N. "W" Street, Pensacola, Florida 32505 PH 850 432-1052

PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-40

HWM ID: UnitF8_3 **Type of Mark:** N/A
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Pensacola Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 10.5 ft **NGVD 29:** 10.8 ft **HWM Object:** Interior door transferred to outside wall between garage door and front door
Flooding Type: Surge
HWM Address: 1 Port Royal Ave, unit 19
Location of HWM Object: 20.5" above driveway slab on wall between garage door and front door.

HWM Type: Water line
Closest Municipality: Pensacola, FL **County:** Escambia **State:** FL

Name of Flagger/Interviewer: Westcott **Flagger Company:** Dewberry
Date of Flagging/Interview: 10/3/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/28/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Survey Latitude: 30.40513 **Easting (Meters):** **Easting (feet):** 1112365.431
Survey Longitude: 87.21600 **Northing (Meters):** **Northing (feet):** 521210.8759
Approx. First Floor Elevation: 9.0 ft

Comment
There was major undermining of a multi-level building. Some concrete porches collapsed as a result. A seawall with rip/rap scour protection exists at site. Water completely overtopped the seawall and damaged buildings. Seawall intact w/minor damage.

NO IMAGE TO DISPLAY

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level. N/A

Fred R. Thompson, Professional Land Surveyor, State of Florida, Registration Number: 3027
Northwest Florida Land Surveying, Inc. State of Florida Corporation Number: 7277
5800 N. "W" Street, Pensacola, Florida 32505 PH 850 432-1052

PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-41

HWM ID: UnitF8_4 **Type of Mark:** Spray paint
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Bayou Chico/Pensacola Bay **Quality of Mark:** Poor
Survey Elevation (NAVD 88): 7.6 ft **NGVD 29:** 7.9 ft **HWM Object:** Top of detention basin spillway in park
Flooding Type: Surge
HWM Address: In Park near 502 Edgewater Dr
Location of HWM Object: Top of spillway between bayou and detention basin.

HWM Type: Debris line
Closest Municipality: Pensacola, FL **County:** Escambia **State:** FL

Name of Flagger/Interviewer: Westcott **Flagger Company:** Dewberry
Date of Flagging/Interview: 10/3/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/28/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Survey Latitude: 30.40277 **Easting (Meters):** **Easting (feet):** 1096161.565
Survey Longitude: 87.26735 **Northing (Meters):** **Northing (feet):** 520739.0234
Approx. First Floor Elevation: 11.8 ft

Comment

There are relatively low banks in this area. Numerous homes most likely experienced flooding.

NO IMAGE TO DISPLAY

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

N/A

Fred R. Thompson, Professional Land Surveyor, State of Florida, Registration Number: 3027
Northwest Florida Land Surveying, Inc. State of Florida Corporation Number: 7277
5800 N. "W" Street, Pensacola, Florida 32505 PH 850 432-1052

PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-42

HWM ID: UnitF8_5 **Type of Mark:** Duct tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Santa Rosa Sound **Quality of Mark:** Good
Survey Elevation (NAVD 88): 6.7 ft **NGVD 29: 7 ft** **HWM Object:** Interior wall transferred to exterior pile NE of steps leading to front door
Flooding Type: Surge
HWM Address: 26 unname or unidentifiable rd east of Galvez CT W.
Location of HWM Object: 6' 1" down from bottom of joist attached to pile.

HWM Type: Water line
Closest Municipality: Pensacola Beach **County:** Escambia **State:** FL

Name of Flagger/Interviewer: Westcott **Flagger Company:** Dewberry
Date of Flagging/Interview: 10/4/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/18/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1123995.314
Survey Latitude: 30.32712 **Northing (Meters):** **Northing (feet):** 492554.5034
Survey Longitude: 87.17699 **Approx. First Floor Elevation:** 3.5 ft

Comment

Waves may have caused interior flooding but homes in the area are elevated on piles.



UnitF8_5.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

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5800 N. "W" Street, Pensacola, Florida 32505 PH 850 432-1052

PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-43

HWM ID: UnitF8_6 **Type of Mark:** Duct tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Santa Rosa Sound **Quality of Mark:** Good
Survey Elevation (NAVD 88): 9.9 ft **NGVD 29:** 10.2 ft **HWM Object:** Interior wall transferred to exterior wall of cinder block public restroom
Flooding Type: Surge
HWM Address: Public restroom on east side of SR399, next to Hemmingway's Island Grill
Location of HWM Object: Exterior wall beside entrance to men's room.

HWM Type: Water line
Closest Municipality: Pensacola Beach **County:** Escambia **State:** FL

Name of Flagger/Interviewer: Westcott **Flagger Company:** Dewberry
Date of Flagging/Interview: 10/4/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/18/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1134618.059
Survey Latitude: 30.33593 **Northing (Meters):** **Northing (feet):** 495512.9749
Survey Longitude: 87.14354 **Approx. First Floor Elevation:** 3.5 ft

Comment



UnitF8_6.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

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 5800 N. "W" Street, Pensacola, Florida 32505 PH 850 432-1052

PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-44

HWM ID: UnitF8_7 **Type of Mark:** Duct tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Sabine Bay/Santa Rosa Sound **Quality of Mark:** Good
Survey Elevation (NAVD 88): 6.2 ft **NGVD 29:** 6.5 ft **HWM Object:** Interior water line transferred to SE exterior wall
Flooding Type: Surge
HWM Address: Elks Lodge Pensacola Beach, 2256 SR 399
Location of HWM Object: SE wall of lodge just under middle set of windows.

HWM Type: Water line
Closest Municipality: Pensacola Beach **County:** Escambia **State:** FL

Name of Flagger/Interviewer: Westcott **Flagger Company:** Dewberry
Date of Flagging/Interview: 10/4/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/18/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1134318.271
Survey Latitude: 30.33590 **Northing (Meters):** **Northing (feet):** 495508.5931
Survey Longitude: 87.14449 **Approx. First Floor Elevation:** 3.9 ft

Comment

Interior of structure experienced major flooding.



UnitF8_7.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-45

HWM ID: UnitF8_8 **Type of Mark:** Duct tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Santa Rosa Sound **Quality of Mark:** Good
Survey Elevation (NAVD 88): 7.6 ft **NGVD 29:** 7.9 ft **HWM Object:** Interior water line transferred to exterior wall on SE side of house to right of the front door
Flooding Type: Surge
HWM Address: 815 Rio Vista Dr
Location of HWM Object: Exterior wall to the right of the front door.

HWM Type: Water line
Closest Municipality: Pensacola Beach **County:** Escambia **State:** FL

Name of Flagger/Interviewer: Westcott **Flagger Company:** Dewberry
Date of Flagging/Interview: 10/4/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/27/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Survey Latitude: 30.34126 **Easting (Meters):** **Easting (feet):** 1142961.702
Survey Longitude: 87.11723 **Northing (Meters):** **Northing (feet):** 497256.9008
Approx. First Floor Elevation: 4.9 ft

Comment

This house and most others in area are slab on grade and experienced major interior flooding.



UnitF8_8.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-46

HWM ID: UnitF8_9 **Type of Mark:** Duct tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Gulf of Mexico **Quality of Mark:** Good
Survey Elevation (NAVD 88): 11.9 ft **NGVD 29: 12.1 ft** **HWM Object:** Interior water line transferred to exterior wall under carport
Flooding Type: Surge
HWM Address: 807 Ariola Dr
Location of HWM Object: Exterior wall of house under carport on west side of house.

HWM Type: Water line
Closest Municipality: Pensacola Beach **County:** Escambia **State:** FL

Name of Flagger/Interviewer: Westcott **Flagger Company:** Dewberry
Date of Flagging/Interview: 10/4/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/27/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1143070.452
Survey Latitude: 30.33601 **Northing (Meters):** **Northing (feet):** 495346.1655
Survey Longitude: 87.11674 **Approx. First Floor Elevation:** 8.3 ft

Comment

This house is built on piles, so storage under the house was flooded, but livable space was not. Majority of houses in area are on piles, but numerous are slab on grade and these houses did experience flooding.



UnitF8_9.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

Fred R. Thompson, Professional Land Surveyor, State of Florida, Registration Number: 3027
Northwest Florida Land Surveying, Inc. State of Florida Corporation Number: 7277
5800 N. "W" Street, Pensacola, Florida 32505 PH 850 432-1052

PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-47

HWM ID: UnitF10_1 **Type of Mark:** N/A
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Big Lagoon **Quality of Mark:** Good
Survey Elevation (NAVD 88): 14.4 ft **NGVD 29:** 14.6 ft **HWM Object:** Interior wall
Flooding Type: Surge
HWM Address: 10635 Gulf Beach Hwy 32507
Location of HWM Object: Right hand side wall inside garage. Elevation transferred to exterior front entrance stoop.
HWM Type: Water line
Closest Municipality: Pensacola, FL **County:** Escambia **State:** FL
Name of Flagger/Interviewer: Hatchett **Flagger Company:** URS
Date of Flagging/Interview: 10/3/2004
Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/28/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Survey Latitude: 30.32734 **Easting (Meters):** **Easting (feet):** 1063840.856
Survey Longitude: 87.36771 **Northing (Meters):** **Northing (feet):** 494098.0568
Approx. First Floor Elevation: 15.1 ft

Comment

Structure is a 2-story, yellow vinyl sided house.



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF10_1.jpg

Fred R. Thompson, Professional Land Surveyor, State of Florida, Registration Number: 3027
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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-48

HWM ID: UnitF10_2 **Type of Mark:** Duct tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Big Lagoon **Quality of Mark:** Good
Survey Elevation (NAVD 88): 15.7 ft **NGVD 29: 16 ft** **HWM Object:** Interior wall transferred to exterior wall
Flooding Type: Surge
HWM Address: 6225 Siquenza
Location of HWM Object: Interior wall transferred to exterior wall right side garage entrance.

HWM Type: Water line
Closest Municipality: Pensacola, FL **County:** Escambia **State:** FL

Name of Flagger/Interviewer: Hatchett **Flagger Company:** URS
Date of Flagging/Interview: 10/3/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/25/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1045680.352
Survey Latitude: 30.30820 **Northing (Meters):** **Northing (feet):** 487595.714
Survey Longitude: 87.42473 **Approx. First Floor Elevation:** 13.6 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF10_2.jpg



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-49

HWM ID: UnitF10_3 **Type of Mark:** Duct tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Big Lagoon or Gulf **Quality of Mark:** Good
Survey Elevation (NAVD 88): 11.3 ft **NGVD 29:** 11.5 ft **HWM Object:** Interior wall
Flooding Type: Surge
HWM Address: 13526 Perdido Key Drive
Location of HWM Object: Interior wall elevation transferred to exterior wall on front porch.

HWM Type: Water line
Closest Municipality: Pensacola, FL **County:** Escambia **State:** FL

Name of Flagger/Interviewer: Hatchett **Flagger Company:** URS
Date of Flagging/Interview: 10/3/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/25/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1044688.579
Survey Latitude: 30.30623 **Northing (Meters):** **Northing (feet):** 486903.2913
Survey Longitude: 87.42781 **Approx. First Floor Elevation:** 8.1 ft

Comment



UnitF10_3.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-50

HWM ID: UnitF10_4 **Type of Mark:** Duct tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Gulf of Mexico **Quality of Mark:** Good
Survey Elevation (NAVD 88): 12.2 ft **NGVD 29:** 12.5 ft **HWM Object:** Interior wall transferred to exterior wall
Flooding Type: Surge
HWM Address: 13585 Perdido Key Dr. (Perdido Key Beach Best Western)
Location of HWM Object: Wall to left of main entrance.
HWM Type: Water line
Closest Municipality: Pensacola, FL **County:** Escambia **State:** FL
Name of Flagger/Interviewer: Hatchett **Flagger Company:** URS
Date of Flagging/Interview: 10/3/2004
Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/25/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1044912.331
Survey Latitude: 30.30118 **Northing (Meters):** **Northing (feet):** 485059.9063
Survey Longitude: 87.42695 **Approx. First Floor Elevation:** 9.3 ft

Comment



UnitF10_4b.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

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 Northwest Florida Land Surveying, Inc. State of Florida Corporation Number: 7277
 5800 N. "W" Street, Pensacola, Florida 32505 PH 850 432-1052

PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-51

HWM ID	UnitF10_5	Type of Mark:	N/A
Name of Storm Event:	Ivan	Date of Flood Event:	9/16/2004
Stream Name/Flood Source:	Gulf of Mexico	Quality of Mark:	Good
Survey Elevation (NAVD 88):	17.6 ft NGVD 29: 17.8 ft	HWM Object:	Interior wall transferred to exterior wall
Flooding Type:	Surge		
HWM Address:	1218 Posasol Place		
Location of HWM Object	Exterior wall.		
HWM Type:	Water line		
Closest Municipality:	Pensacola, FL	County	Escambia State: FL
Name of Flagger/Interviewer:	Hatchett	Flagger Company:	URS
Date of Flagging/Interview:	10/4/2004		
Survey Crew:	AES/BP	Survey Company:	NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date:	10/25/2004		
Survey Projection:	LAMBERT, ZONE 903 (FLORIDA NORTH)	Vertical Datum:	NAVD 88 Horizontal Datum: NAD 83
		Easting (Meters):	Easting (feet): 1045973.344
Survey Latitude:	30.29769	Northing (Meters):	Northing (feet): 483764.2581
Survey Longitude:	87.42349	Approx. First Floor Elevation:	15.7 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF10_5.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-52

HWM ID: UnitF10_6 **Type of Mark:** N/A
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Gulf of Mexico **Quality of Mark:** Good
Survey Elevation (NAVD 88): 12.4 ft **NGVD 29:** 12.6 ft **HWM Object:** Interior wall
Flooding Type: Surge
HWM Address: 924 Nautilus Court
Location of HWM Object: Transferred to exterior wall.
HWM Type: Water line
Closest Municipality: Pensacola, FL **County:** Escambia **State:** FL
Name of Flagger/Interviewer: Hatchett **Flagger Company:** URS
Date of Flagging/Interview: 10/4/2004
Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/20/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Survey Latitude: 30.30052 **Easting (Meters):** **Easting (feet):** 1046278.485
Survey Longitude: 87.42260 **Northing (Meters):** **Northing (feet):** 484785.4551
Approx. First Floor Elevation: 10.6 ft

Comment



UnitF10_6.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-53

HWM ID: UnitF10_7 **Type of Mark:** N/A
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Old River **Quality of Mark:** Good
Survey Elevation (NAVD 88): 6.9 ft **NGVD 29:** 7.1 ft **HWM Object:** Interior wall
Flooding Type: Surge
HWM Address: 14630 River Bend
Location of HWM Object: Transferred to exterior wall by front door.

HWM Type: Water line
Closest Municipality: Pensacola, FL **County:** Escambia **State:** FL

Name of Flagger/Interviewer: Hatchett **Flagger Company:** URS
Date of Flagging/Interview: 10/4/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/20/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1037883.502
Survey Latitude: 30.29816 **Northing (Meters):** **Northing (feet):** 484144.3605
Survey Longitude: 87.44914 **Approx. First Floor Elevation:** 5.2 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF10_7.jpg

Fred R. Thompson, Professional Land Surveyor, State of Florida, Registration Number: 3027
Northwest Florida Land Surveying, Inc. State of Florida Corporation Number: 7277
5800 N. "W" Street, Pensacola, Florida 32505 PH 850 432-1052

PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-54

HWM ID: UnitF10_8 **Type of Mark:** Duct tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Gulf of Mexico **Quality of Mark:** Good
Survey Elevation (NAVD 88): 13.4 ft **NGVD 29:** 13.6 ft **HWM Object:** Interior wall
Flooding Type: Surge
HWM Address: 3541 Radford Boulevard
Location of HWM Object: Transferred to exterior wall garage door entrance on south side of building.

HWM Type: Water line
Closest Municipality: Pensacola, FL **County:** Escambia **State:** FL

Name of Flagger/Interviewer: Hatchett **Flagger Company:** URS
Date of Flagging/Interview: 10/4/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/28/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1077643.499
Survey Latitude: 30.33504 **Northing (Meters):** **Northing (feet):** 496555.8608
Survey Longitude: 87.32417 **Approx. First Floor Elevation:** 8.5 ft

Comment

The HWM is located at building #3482 at 3541 Radford Blvd. Sherman Cove Marina



UnitF10_8.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

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Northwest Florida Land Surveying, Inc. State of Florida Corporation Number: 7277
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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-55

HWM ID: UnitF10_9 **Type of Mark:** Duct tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Intercoastal waterway **Quality of Mark:** Good
Survey Elevation (NAVD 88): 13.4 ft **NGVD 29:** 13.6 ft **HWM Object:** Interior wall
Flooding Type: Surge
HWM Address: Pensacola NAS
Location of HWM Object: Right hand wall at main entrance.
HWM Type: Water line
Closest Municipality: Pensacola, FL **County:** Escambia **State:** FL
Name of Flagger/Interviewer: Hatchett **Flagger Company:** URS
Date of Flagging/Interview: 10/4/2004
Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/28/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Survey Latitude: 30.34542 **Easting (Meters):** **Easting (feet):** 1095528.805
Survey Longitude: 87.26775 **Northing (Meters):** **Northing (feet):** 499893.329
Approx. First Floor Elevation: 8.5 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF10_9.jpg

Fred R. Thompson, Professional Land Surveyor, State of Florida, Registration Number: 3027
Northwest Florida Land Surveying, Inc. State of Florida Corporation Number: 7277
5800 N. "W" Street, Pensacola, Florida 32505 PH 850 432-1052

PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-56

HWM ID: UnitF10_13 **Type of Mark:** N/A
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Gulf of Mexico **Quality of Mark:** Good
Survey Elevation (NAVD 88): 14.2 ft **NGVD 29:** 14.4 ft **HWM Object:** Utility/storage shed
Flooding Type: Surge
HWM Address: 16777 Perdido Key Drive (Windward Condos)
Location of HWM Object: To left of entrance is shed row, seaward side of shed row is unit 804.

HWM Type: Water line
Closest Municipality: Pensacola, FL **County:** Escambia **State:** FL

Name of Flagger/Interviewer: Hatchett **Flagger Company:** URS
Date of Flagging/Interview: 9/30/2004

Survey Crew: Tim Tipton **Survey Company:** PBS & J
Survey Date: 10/27/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 311020.7375 **Easting (feet):** 1020407.203
Survey Latitude: 30.28405 **Northing (Meters):** 146141.2157 **Northing (feet):** 479464.9718
Survey Longitude: 87.50412 **Approx. First Floor Elevation:** N/A

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF10_13.jpg

James E. Godfrey - Professional Land Surveyor, No. 4541, State of Florida
PBS & J License Business 24
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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12033C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Esca-57

HWM ID: UnitF10_14 **Type of Mark:** Duct tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Gulf of Mexico **Quality of Mark:** Good
Survey Elevation (NAVD 88): 13.8 ft **NGVD 29: 14.0 ft** **HWM Object:** Wall of stairwell
Flooding Type: Surge
HWM Address: 16281 Perdido Key Drive (Eden Condos)
Location of HWM Object: South side of outside wall at stairwell under west part of complex in the garage.

HWM Type: Water line
Closest Municipality: Pensacola, FL **County:** Escambia **State:** FL

Name of Flagger/Interviewer: Hatchett **Flagger Company:** URS
Date of Flagging/Interview: 9/30/2004

Survey Crew: Tim Tipton **Survey Company:** PBS & J
Survey Date: 10/27/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 312740.8389 **Easting (feet):** 1026050.569
Survey Latitude: 30.28731 **Northing (Meters):** 146457.6284 **Northing (feet):** 480503.0692
Survey Longitude: 87.48633 **Approx. First Floor Elevation:** 13.1 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF10_14.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida

Appendices

Appendix C: Survey Sheets from Santa Rosa County



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-1

HWM ID: UnitF5_1 **Type of Mark:** No mark - personal account
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Blackwater Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 11.4 ft **NGVD 29:** 11.5 ft **HWM Object:** Top brick line on rear patio
Flooding Type: Surge
HWM Address: 7514 Old Bay Pointe Rd, Milton, FL
Location of HWM Object: Behind house (bay side of house) no mark was left.

HWM Type: Personal Account
Closest Municipality: Bagdad, FL **County:** Santa Rosa **State:** FL

Name of Flagger/Interviewer: Wiley **Flagger Company:** URS
Date of Flagging/Interview: 9/30/2004

Survey Crew: Tim Tipton **Survey Company:** PBS & J
Survey Date: 10/30/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 359279.17624 **Easting (feet):** 1178735.097
Survey Latitude: 30.57458 **Northing (Meters):** 177190.58181 **Northing (feet):** 581332.7672
Survey Longitude: 87.00972 **Approx. First Floor Elevation:** 11.6 ft

Comment



UnitF5_1.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-2

HWM ID: UnitF5_2 **Type of Mark:** Personal account, picture
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Blackwater Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 12.7 ft **NGVD 29:** 12.8 ft **HWM Object:** Inside wall of garage
Flooding Type: Surge
HWM Address: 7796 Peterson Point Rd., Milton FL
Location of HWM Object: In garage and house, right (east) side.

HWM Type: Personal Account
Closest Municipality: Bagdad, FL **County:** Santa Rosa **State:** FL

Name of Flagger/Interviewer: Wiley **Flagger Company:** URS
Date of Flagging/Interview: 10/1/2004

Survey Crew: Keith (Dallas) **Survey Company:** PBS & J
Survey Date: 10/27/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 360400.60945 **Easting (feet):** 1182414.333
Survey Latitude: 30.57894 **Northing (Meters):** 177649.53616 **Northing (feet):** 582838.5199
Survey Longitude: 86.99813 **Approx. First Floor Elevation:** 8.8 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF5_2b.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-3

HWM ID: UnitF5_3 **Type of Mark:** Red paint on road
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Blackwater River **Quality of Mark:** Good
Survey Elevation (NAVD 88): 11.1 ft **NGVD 29:** 11.2 ft **HWM Object:** Inside wall
Flooding Type: Surge
HWM Address: 7384 San Ramon, Milton, FL 32583
Location of HWM Object: Entryway of home.
HWM Type: Mud line, personal account
Closest Municipality: Milton, FL **County:** Santa Rosa **State:** FL

Name of Flagger/Interviewer: Wiley **Flagger Company:** URS
Date of Flagging/Interview: 10/3/2004

Survey Crew: Keith (Dallas) **Survey Company:** PBS & J
Survey Date: 10/27/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 359008.9027 **Easting (feet):** 1177848.375
Survey Latitude: 30.59588 **Northing (Meters):** 179559.03423 **Northing (feet):** 589103.2648
Survey Longitude: 87.01308 **Approx. First Floor Elevation:** 9.6 ft

Comment
HWM is 39" above slab in entryway.



UnitF5_3b.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-4

HWM ID: UnitF5_4 **Type of Mark:** Black line
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Yellow River/Blackwater Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 12.9 ft **NGVD 29:** 13 ft **HWM Object:** Inside wall
Flooding Type: Surge
HWM Address: 8110 Glenview Rd, Milton, FL 32583
Location of HWM Object: Shop on the 1st floor.

HWM Type: Mud line, personal account
Closest Municipality: Milton, FL **County:** Santa Rosa **State:** FL

Name of Flagger/Interviewer: Wiley **Flagger Company:** URS
Date of Flagging/Interview: 10/3/2004

Survey Crew: Austin (Ray) **Survey Company:** PBS & J
Survey Date: 10/31/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 361626.57651 **Easting (feet):** 1186436.526
Survey Latitude: 30.56266 **Northing (Meters):** 178329.05832 **Northing (feet):** 585067.9188
Survey Longitude: 86.98494 **Approx. First Floor Elevation:** 7.9 ft

Comment

HWM is 62 1/2" from top of slab, slab is 32" off ground.



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF5_4a.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120276 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-5

HWM ID: UnitF5_5 **Type of Mark:** Red mark
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Blackwater River **Quality of Mark:** Good
Survey Elevation (NAVD 88): 5.5 ft **NGVD 29:** 5.6 ft **HWM Object:** Gazebo on riverwalk
Flooding Type: Surge
HWM Address: Riverwald Rd., 50 yds north of Hwy 90 Bridge over Blackwater
Location of HWM Object: North of and adjacent to 90 Bridge behind buildings.
HWM Type: Mud line, personal account, AP photo
Closest Municipality: Milton, FL **County:** Santa Rosa **State:** FL

Name of Flagger/Interviewer: Wiley **Flagger Company:** URS
Date of Flagging/Interview: 10/3/2004

Survey Crew: Keith (Dallas) **Survey Company:** PBS & J
Survey Date: 10/27/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 356867.47217 **Easting (feet):** 1170822.698
Survey Latitude: 30.62391 **Northing (Meters):** 182714.39056 **Northing (feet):** 599455.4630
Survey Longitude: 87.03613 **Approx. First Floor Elevation:** N/A

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF5_5.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-6

HWM ID: UnitF5_7 **Type of Mark:** Tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: East Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 15.4 ft **NGVD 29: 15.4 ft** **HWM Object:** Level in house - steps in den
Flooding Type: Surge
HWM Address: 7209 Bayshore Dr., Milton, FL 32583
Location of HWM Object: Adjacent to fireplace.

HWM Type: Personal Account
Closest Municipality: Milton, FL **County:** Santa Rosa **State:** FL

Name of Flagger/Interviewer: Wiley **Flagger Company:** URS
Date of Flagging/Interview: 10/3/2004

Survey Crew: Tim Tipton **Survey Company:** PBS & J
Survey Date: 10/30/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 343433.77579 **Easting (feet):** 1126748.979
Survey Latitude: 30.54658 **Northing (Meters):** 174446.01452 **Northing (feet):** 572328.2993
Survey Longitude: 87.17419 **Approx. First Floor Elevation:** 15.0 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF5_7a.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-7

HWM ID: UnitF5_8 **Type of Mark:** Red paint
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: East Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 12.6 ft **NGVD 29:** 12.8 ft **HWM Object:** Inside wall
Flooding Type: Surge
HWM Address: 2204 Tidewater Dr., Milton, FL 32583
Location of HWM Object: Inside the room off of the patio.
HWM Type: Personal Account
Closest Municipality: Milton, FL **County:** Santa Rosa **State:** FL
Name of Flagger/Interviewer: Wiley **Flagger Company:** URS
Date of Flagging/Interview: 10/4/2004
Survey Crew: Keith (Dallas) **Survey Company:** PBS & J
Survey Date: 10/27/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 355644.68921 **Easting (feet):** 1166810.951
Survey Latitude: 30.51608 **Northing (Meters):** 170784.36842 **Northing (feet):** 560315.0487
Survey Longitude: 87.04611 **Approx. First Floor Elevation:** 10.9 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF5_8a.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-8

HWM ID: UnitF5_9 **Type of Mark:** Mud line
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: East Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 9.6 ft **NGVD 29:** 9.7 ft **HWM Object:** Inside wall line
Flooding Type: Surge
HWM Address: 288 South Garcon Point Rd., Milton, FL 32583
Location of HWM Object: Utility room off garage entry.

HWM Type: Mud line, personal account
Closest Municipality: Milton, FL **County:** Santa Rosa **State:** FL

Name of Flagger/Interviewer: Wiley **Flagger Company:** URS
Date of Flagging/Interview: 10/4/2004

Survey Crew: Keith (Dallas) **Survey Company:** PBS & J
Survey Date: 10/27/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 350164.36643 **Easting (feet):** 1148830.926
Survey Latitude: 30.44961 **Northing (Meters):** 163537.34121 **Northing (feet):** 536538.7603
Survey Longitude: 87.10147 **Approx. First Floor Elevation:** 7.3 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF5_9.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-9

HWM ID: UnitF5_10 **Type of Mark:** Red mark
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: East Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 10.7 ft **NGVD 29: 10.9 ft** **HWM Object:** Inside wall of shower
Flooding Type: Surge
HWM Address: 6407 Glory Ave./1261 Vista Del Mar, Milton, FL 32583
Location of HWM Object: In bath off garage.

HWM Type: Mud line in bath shower
Closest Municipality: Milton, FL **County:** Santa Rosa **State:** FL

Name of Flagger/Interviewer: Wiley **Flagger Company:** URS
Date of Flagging/Interview: 10/5/2004

Survey Crew: Tim Tipton **Survey Company:** PBS & J
Survey Date: 10/30/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 354282.0962 **Easting (feet):** 1162340.511
Survey Latitude: 30.48158 **Northing (Meters):** 166989.35524 **Northing (feet):** 547864.243
Survey Longitude: 87.05941 **Approx. First Floor Elevation:** 7.9 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF5_10.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-10

HWM ID: UnitF6_26 **Type of Mark:** N/A
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Santa Rosa Sound **Quality of Mark:** Fair
Survey Elevation (NAVD 88): 10.5 ft **NGVD 29:** 10.9 ft **HWM Object:** End of white line of first row of parking
Flooding Type: Surge
HWM Address: 8006 Navarre Pkwy, Navarre FL
Location of HWM Object: Front parking lot, south near Hwy 98.

HWM Type: Personal Account
Closest Municipality: Navarre **County:** Santa Rosa **State:** FL

Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 10/5/2004

Survey Crew: Dick Davis **Survey Company:** PBS & J
Survey Date: 10/30/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 370530.55055 **Easting (feet):** 1215648.981
Survey Latitude: 30.40205 **Northing (Meters):** 157818.59063 **Northing (feet):** 517776.4928
Survey Longitude: 86.88822 **Approx. First Floor Elevation:** 12.2 ft

Comment

There was water in the parking lot by the front lawn ditch extending to the first row of cars.



UnitF6_26a.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

James E. Godfrey - Professional Land Surveyor, No. 4541, State of Florida
 PBS & J License Business 24
 5300 W. Cypress St. Suite 200, Tampa Florida. 33607 PH. 813 282-7275

PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-11

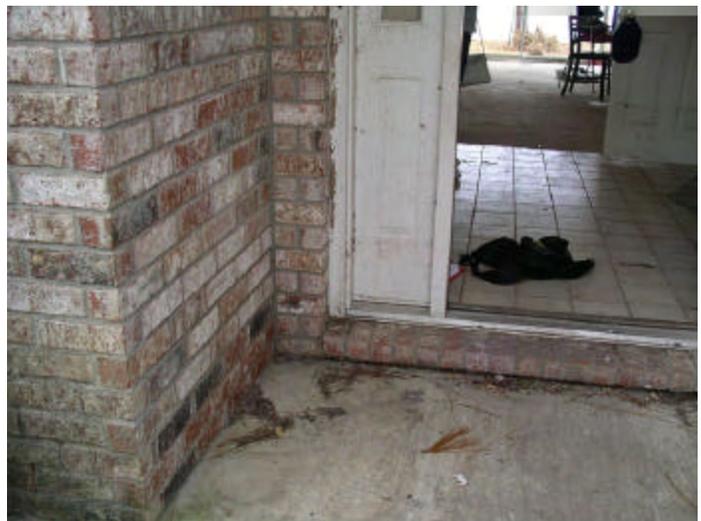
HWM ID: UnitF6_27 **Type of Mark:** N/A
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Santa Rosa Sound **Quality of Mark:** Good
Survey Elevation (NAVD 88): 11.4 ft **NGVD 29: 11.8 ft** **HWM Object:** Mark transferred outside to front door mark from concrete stoop to 12" on bricks
Flooding Type: Surge
HWM Address: 6817 Tidewater Dr., Navarre, FL
Location of HWM Object: At front door - 12" from concrete stoop to HWM in brick - east side of door facing south.

HWM Type: High water mark
Closest Municipality: Navarre **County:** Santa Rosa **State:** FL

Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 10/5/2004

Survey Crew: Keith (Dallas) **Survey Company:** PBS & J
Survey Date: 10/30/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 365473.92883 **Easting (feet):** 1199059.048
Survey Latitude: 30.39658 **Northing (Meters):** 157318.93326 **Northing (feet):** 516137.2002
Survey Longitude: 86.94072 **Approx. First Floor Elevation:** 10.7 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF6_27b.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-12

HWM ID: UnitF6_28 **Type of Mark:** N/A
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Santa Rosa Sound **Quality of Mark:** Good
Survey Elevation (NAVD 88): 12.3 ft **NGVD 29:** 12.6 ft **HWM Object:** Front door - window next to door (east)
Flooding Type: Surge
HWM Address: 4407 Sound Side Drive
Location of HWM Object: Facing south at front door object is bottom of window 11" from floor.

HWM Type: High water mark/personal account
Closest Municipality: Navarre **County:** Santa Rosa **State:** FL

Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 10/5/2004

Survey Crew: Austin (Ray) **Survey Company:** PBS & J
Survey Date: 10/30/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 355793.4251 **Easting (feet):** 1167298.929
Survey Latitude: 30.38208 **Northing (Meters):** 155922.68986 **Northing (feet):** 511556.3583
Survey Longitude: 87.04111 **Approx. First Floor Elevation:** 11.5 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF6_28b.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-13

HWM ID: UnitF6_29 **Type of Mark:** Water line
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: East Bay **Quality of Mark:** Fair
Survey Elevation (NAVD 88): 8.8 ft **NGVD 29: 9.1 ft** **HWM Object:** Yard facing north east bay
Flooding Type: Surge
HWM Address: 5588 East Bay Blvd
Location of HWM Object: Yard.
HWM Type: Water mark on grass - debris line
Closest Municipality: Navarre **County:** Santa Rosa **State:** FL
Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 10/5/2004
Survey Crew: Austin (Ray) **Survey Company:** PBS & J
Survey Date: 10/31/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 359993.15849 **Easting (feet):** 1181077.554
Survey Latitude: 30.41008 **Northing (Meters):** 158934.54421 **Northing (feet):** 521437.7505
Survey Longitude: 86.99811 **Approx. First Floor Elevation:** N/A

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF6_29b.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-14

HWM ID: UnitF6_30 **Type of Mark:** N/A
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: East Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 11.3 ft **NGVD 29: 11.6 ft** **HWM Object:** Garage wall 23" above floor
Flooding Type: Surge
HWM Address: 6300 East Bay Blvd
Location of HWM Object: Outside garage - 23" above outside door.

HWM Type: High Water mark - 23"
Closest Municipality: Navarre **County:** Santa Rosa **State:** FL

Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 10/5/2004

Survey Crew: Austin (Ray) **Survey Company:** PBS & J
Survey Date: 10/31/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 361429.64119 **Easting (feet):** 1185790.414
Survey Latitude: 30.42925 **Northing (Meters):** 161028.38274 **Northing (feet):** 528307.2857
Survey Longitude: 86.98363 **Approx. First Floor Elevation:** 9.3 ft

Comment

The seawall is approximately 6 feet in height at this location.



UnitF6_30b.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-15

HWM ID: UnitF6_31 **Type of Mark:** N/A
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: East Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 13.2 ft **NGVD 29:** 13.5 ft **HWM Object:** Inside wall transferred outside door
Flooding Type: Surge
HWM Address: 6595 Avenida del Galvez, Navarre, FL
Location of HWM Object: Front door.

HWM Type: Water line mark
Closest Municipality: Navarre **County:** Santa Rosa **State:** FL

Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 10/5/2004

Survey Crew: Austin (Ray) **Survey Company:** PBS & J
Survey Date: 10/31/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 365779.94839 **Easting (feet):** 1200063.047
Survey Latitude: 30.45136 **Northing (Meters):** 163386.16569 **Northing (feet):** 536042.7786
Survey Longitude: 86.93888 **Approx. First Floor Elevation:** 11.1 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF6_31a.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-16

HWM ID: UnitF6_60 **Type of Mark:** Bottom of A/C stand
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Santa Rosa Sound **Quality of Mark:** Good
Survey Elevation (NAVD 88): 12.9 ft **NGVD 29:** 13.3 ft **HWM Object:** Outside wall near AC units
Flooding Type: Surge
HWM Address: 2026 Pritchard Point Dr
Location of HWM Object: Below AC units - bottom of wooden air conditioner.

HWM Type: Surge
Closest Municipality: Narvarre **County:** Santa Rosa **State:** FL

Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 11/4/2004

Survey Crew: Starkey **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 11/17/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Survey Latitude: 30.40621 **Easting (Meters):** **Easting (feet):** 1243230.845
Survey Longitude: 86.80081 **Northing (Meters):** **Northing (feet):** 518721.9091
Approx. First Floor Elevation: 14.0 ft

Comment



UnitF6_60B.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120275 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-17

HWM ID: UnitF7_26 **Type of Mark:** Red paint
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Escambia Bay **Quality of Mark:** Fair
Survey Elevation (NAVD 88): 10.3 ft **NGVD 29:** 10.5 ft **HWM Object:** Tree next to wooden steps near water
Flooding Type: Surge
HWM Address: 72 Highpoint Dr., Gulf Breeze, FL 32561
Location of HWM Object: Rear of house near water.

HWM Type: Debris line
Closest Municipality: Pensacola **County:** Santa Rosa **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/7/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 11/1/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Survey Latitude: 30.36903 **Easting (Meters):** **Easting (feet):** 1122471.687
Survey Longitude: 87.18295 **Northing (Meters):** **Northing (feet):** 507837.3261
Approx. First Floor Elevation: 35.7 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_26.jpg

Fred R. Thompson, Professional Land Surveyor, State of Florida, Registration Number: 3027
Northwest Florida Land Surveying, Inc. State of Florida Corporation Number: 7277
5800 N. "W" Street, Pensacola, Florida 32505 PH 850 432-1052

PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120275 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-18

HWM ID: UnitF7_27 **Type of Mark:** Red "x"
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Pensacola Bay **Quality of Mark:** Fair
Survey Elevation (NAVD 88): 12.3 ft **NGVD 29:** 12.6 ft **HWM Object:** Red paint on concrete step
Flooding Type: Surge
HWM Address: 512 Navy Cove Blvd.
Location of HWM Object: Rear of house.

HWM Type: Debris line
Closest Municipality: Pensacola **County:** Santa Rosa **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/7/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/23/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1119451.826
Survey Latitude: 30.36202 **Northing (Meters):** **Northing (feet):** 505357.9233
Survey Longitude: 87.19234 **Approx. First Floor Elevation:** 15.6 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_27.jpg

Fred R. Thompson, Professional Land Surveyor, State of Florida, Registration Number: 3027
Northwest Florida Land Surveying, Inc. State of Florida Corporation Number: 7277
5800 N. "W" Street, Pensacola, Florida 32505 PH 850 432-1052

PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120275 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-19

HWM ID: UnitF7_28 **Type of Mark:** Red paint
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Escambia Bay **Quality of Mark:** Fair
Survey Elevation (NAVD 88): 7.3 ft **NGVD 29:** 7.6 ft **HWM Object:** Top of sea wall
Flooding Type: Surge
HWM Address: 512 Kenilworth Ave, Gulf Breeze, FL 32561
Location of HWM Object: Rear our house at bottom of wooden steps.

HWM Type: Coastal surge
Closest Municipality: Pensacola **County:** Santa Rosa **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/7/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 10/25/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1128788.075
Survey Latitude: 30.36737 **Northing (Meters):** **Northing (feet):** 507083.9019
Survey Longitude: 87.16287 **Approx. First Floor Elevation:** 18.1 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_28.jpg

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Northwest Florida Land Surveying, Inc. State of Florida Corporation Number: 7277
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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-20

HWM ID: UnitF7_29 **Type of Mark:** Duct tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Pensacola Sound **Quality of Mark:** Good
Survey Elevation (NAVD 88): 10.7 ft **NGVD 29:** 11 ft **HWM Object:** Concrete step at front door (duct tape) transferred from interior wall
Flooding Type: Surge
HWM Address: 944 Gondolier Blvd., Gulf Breeze, FL 32563
Location of HWM Object: Top concrete step.

HWM Type: Mud line
Closest Municipality: Pensacola **County:** Santa Rosa **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/7/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 11/1/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Survey Latitude: 30.37174 **Easting (Meters):** **Easting (feet):** 1144480.046
Survey Longitude: 87.11322 **Northing (Meters):** **Northing (feet):** 508309.8819
Approx. First Floor Elevation: 6.9 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_29.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-21

HWM ID: UnitF7_30 **Type of Mark:** Duct tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Escambia Bay **Quality of Mark:** Fair
Survey Elevation (NAVD 88): 9.6 ft **NGVD 29:** 9.9 ft **HWM Object:** Concrete steps to waterfront
Flooding Type: Surge
HWM Address: 2346 W. Bayshore Rd., Gulf Breeze, FL 32563
Location of HWM Object: Rear of house, steps leading to water.

HWM Type: Debris line
Closest Municipality: Pensacola **County:** Santa Rosa **State:** FL

Name of Flagger/Interviewer: McLeod **Flagger Company:** URS
Date of Flagging/Interview: 10/7/2004

Survey Crew: AES/BP **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 11/1/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Survey Latitude: 30.38495 **Easting (Meters):** **Easting (feet):** 1140394.016
Survey Longitude: 87.12653 **Northing (Meters):** **Northing (feet):** 513211.9068
Approx. First Floor Elevation: 13.9 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF7_30.jpg



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-22

HWM ID: UnitF8_10 **Type of Mark:** Stake
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: East Bay/Santa Rosa Sound **Quality of Mark:** Fair
Survey Elevation (NAVD 88): 6.83 ft **NGVD 29:** 7.1 ft **HWM Object:** Ground
Flooding Type: Surge
HWM Address: Construction site between 6720 and 6728 East Bay Blvd
Location of HWM Object: On ground at construction site.

HWM Type: Debris line
Closest Municipality: Holly or Navarre **County:** Santa Rosa **State:** FL

Name of Flagger/Interviewer: Westcott **Flagger Company:** Dewberry
Date of Flagging/Interview: 10/4/2004

Survey Crew: Dick Davis **Survey Company:** PBS & J
Survey Date: 11/19/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 364723.0726 **Easting (feet):** 1196595.614
Survey Latitude: 30.44325 **Northing (Meters):** 162509.4578 **Northing (feet):** 533166.4461
Survey Longitude: 86.94969 **Approx. First Floor Elevation:**

Comment

Most houses in area suffered interior flooding.



UnitF8_10.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-23

HWM ID	UnitF8_11	Type of Mark:	N/A
Name of Storm Event:	Ivan	Date of Flood Event:	9/16/2004
Stream Name/Flood Source:	East Bay/Santa Rosa Sound	Quality of Mark:	Fair
Survey Elevation (NAVD 88):	2.57 ft NGVD 29: 2.9 ft	HWM Object:	Culvert
Flooding Type:	Surge		
HWM Address:	Between 5648 and 5664 East Bay Blvd near intersection of Church St		
Location of HWM Object	Approx 20' NW of mark in road between 5648 and 5664 East Bay Blvd.		
HWM Type:	Water line		
Closest Municipality:	Holly or Navarre	County	Santa Rosa State: FL
Name of Flagger/Interviewer:	Westcott	Flagger Company:	Dewberry
Date of Flagging/Interview:	10/4/2004		
Survey Crew:	Dick Davis	Survey Company:	PBS & J
Survey Date:	11/19/2004		
Survey Projection:	State Plane Feet Florida North	Vertical Datum:	NAVD 88 Horizontal Datum: NAD 83
		Easting (Meters):	360412.247 Easting (feet): 1156232.523
Survey Latitude:	30.41125	Northing (Meters):	159054.7298 Northing (feet): 521832.0594
Survey Longitude:	86.99378	Approx. First Floor Elevation:	

Comment

A 6' bulkhead exists in this area which does not appear to have been overtopped, or was just slightly overtopped.

**NO IMAGE TO
DISPLAY**

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

N/A

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-24

HWM ID	UnitF9_1	Type of Mark:	Duct tape
Name of Storm Event:	Ivan	Date of Flood Event:	9/16/2004
Stream Name/Flood Source:	Santa Rosa Sound	Quality of Mark:	Good
Survey Elevation (NAVD 88):	10.6 ft NGVD 29: 10.9 ft	HWM Object:	Inside wall
Flooding Type:	Surge		
HWM Address:	3140 Bay St		
Location of HWM Object	11 3/4" from slab.		
HWM Type:	Water line		
Closest Municipality:	Gulf Breeze	County Santa Rosa	State: FL
Name of Flagger/Interviewer:	Phillips	Flagger Company:	URS
Date of Flagging/Interview:	10/3/2004		
Survey Crew:	Dick Davis	Survey Company:	PBS & J
Survey Date:	11/18/2004		
Survey Projection:	State Plane Feet Florida North	Vertical Datum: NAVD 88	Horizontal Datum: NAD 83
		Easting (Meters): 350831.57696	Easting (feet): 1125496.935
Survey Latitude:	30.37464	Northing (Meters): 155208.96017	Northing (feet): 509214.7302
Survey Longitude:	87.09256	Approx. First Floor Elevation:	8.7 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF9_1.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120275 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-25

HWM ID	UnitF9_2	Type of Mark:	Duct tape
Name of Storm Event:	Ivan	Date of Flood Event:	9/16/2004
Stream Name/Flood Source:	Santa Rosa Sound	Quality of Mark:	Good
Survey Elevation (NAVD 88):	10.4 ft NGVD 29: 10.6 ft	HWM Object:	Outside wall
Flooding Type:	Surge		
HWM Address:	1403 Soundview Trl		
Location of HWM Object	Under house.		
HWM Type:	Water line		
Closest Municipality:	Gulf Breeze	County Santa Rosa	State: FL
Name of Flagger/Interviewer:	Phillips	Flagger Company:	URS
Date of Flagging/Interview:	10/3/2004		
Survey Crew:	Dick Davis	Survey Company:	PBS & J
Survey Date:	11/18/2004		
Survey Projection:	State Plane Feet Florida North	Vertical Datum: NAVD 88	Horizontal Datum: NAD 83
		Easting (Meters): 344243.79602	Easting (feet): 1104362.785
Survey Latitude:	30.35394	Northing (Meters): 153066.0873	Northing (feet): 502184.3214
Survey Longitude:	87.16056	Approx. First Floor Elevation:	13.8 ft

Comment



UnitF9_2b.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120275 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-26

HWM ID	UnitF9_3	Type of Mark:	Duct tape
Name of Storm Event:	Ivan	Date of Flood Event:	9/16/2004
Stream Name/Flood Source:	Santa Rosa Sound	Quality of Mark:	Good
Survey Elevation (NAVD 88):	11.4 ft NGVD 29: 11.7 ft	HWM Object:	Inside wall
Flooding Type:	Surge		
HWM Address:	1303 Soundview St		
Location of HWM Object	To left of front door.		
HWM Type:	Water line		
Closest Municipality:	Gulf Breeze	County Santa Rosa	State: FL
Name of Flagger/Interviewer:	Phillips	Flagger Company:	URS
Date of Flagging/Interview:	10/3/2004		
Survey Crew:	Dick Davis	Survey Company:	PBS & J
Survey Date:	11/18/2004		
Survey Projection:	State Plane Feet Florida North	Vertical Datum: NAVD 88	Horizontal Datum: NAD 83
		Easting (Meters): 343616.83946	Easting (feet): 1102351.456
Survey Latitude:	30.35308	Northing (Meters): 152985.25483	Northing (feet): 501919.1236
Survey Longitude:	87.16706	Approx. First Floor Elevation:	10.4 ft

Comment



UnitF9_3.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-27

HWM ID: UnitF9_4 **Type of Mark:** Duct tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Santa Rosa Sound **Quality of Mark:** Good
Survey Elevation (NAVD 88): 10.7 ft **NGVD 29: 11 ft** **HWM Object:** Outside door
Flooding Type: Surge
HWM Address: 3149 Laurl Dr
Location of HWM Object: Front door.
HWM Type: Water line
Closest Municipality: Gulf Breeze **County:** Santa Rosa **State:** FL
Name of Flagger/Interviewer: Phillips **Flagger Company:** URS
Date of Flagging/Interview: 10/3/2004
Survey Crew: Dick Davis **Survey Company:** PBS & J
Survey Date: 11/18/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 350863.80876 **Easting (feet):** 1125600.337
Survey Latitude: 30.37578 **Northing (Meters):** 155334.50999 **Northing (feet):** 509626.6382
Survey Longitude: 87.09225 **Approx. First Floor Elevation:** 7.4 ft

Comment



UnitF9_4.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120275 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-28

HWM ID: UnitF9_5 **Type of Mark:** N/A
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Santa Rosa Sound **Quality of Mark:** Fair
Survey Elevation (NAVD 88): 14.3 ft **NGVD 29:** 14.5 ft **HWM Object:** 1st level entrance of decking
Flooding Type: Surge
HWM Address: 506 Deer Point Dr
Location of HWM Object: Front of house.

HWM Type: Personal Account
Closest Municipality: Gulf Breeze **County:** Santa Rosa **State:** FL

Name of Flagger/Interviewer: Phillips **Flagger Company:** URS
Date of Flagging/Interview: 10/4/2004

Survey Crew: Dick Davis **Survey Company:** PBS & J
Survey Date: 11/18/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 341970.21605 **Easting (feet):** 1097068.951
Survey Latitude: 30.34514 **Northing (Meters):** 152142.99243 **Northing (feet):** 499155.801
Survey Longitude: 87.18397 **Approx. First Floor Elevation:** 15.2 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF9_5.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120275 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-29

HWM ID	UnitF9_6	Type of Mark:	N/A
Name of Storm Event:	Ivan	Date of Flood Event:	9/16/2004
Stream Name/Flood Source:	Santa Rosa Sound	Quality of Mark:	Fair
Survey Elevation (NAVD 88):	15.0 ft NGVD 29: 15.2 ft	HWM Object:	Outside wall
Flooding Type:	Surge		
HWM Address:	510 Deer Point Rd		
Location of HWM Object	To the right of the stairs at the entrance.		
HWM Type:	Personal Account		
Closest Municipality:	Gulf Breeze	County Santa Rosa	State: FL
Name of Flagger/Interviewer:	Phillips	Flagger Company:	URS
Date of Flagging/Interview:	10/4/2004		
Survey Crew:	Dick Davis	Survey Company:	PBS & J
Survey Date:	11/18/2004		
Survey Projection:	State Plane Feet Florida North	Vertical Datum: NAVD 88	Horizontal Datum: NAD 83
		Easting (Meters): 341964.73111	Easting (feet): 1097051.354
Survey Latitude:	30.34508	Northing (Meters): 152136.96136	Northing (feet): 499136.0141
Survey Longitude:	87.18403	Approx. First Floor Elevation:	16.2 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF9_6.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120275 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-30

HWM ID: UnitF9_7 **Type of Mark:** Stake and flag
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Santa Rosa Sound **Quality of Mark:** Good
Survey Elevation (NAVD 88): 9.9 ft **NGVD 29:** 10.1 ft **HWM Object:** Ground
Flooding Type: Run-up
HWM Address: 1 Beach Dr
Location of HWM Object: Backyard.
HWM Type: Debris line
Closest Municipality: Gulf Breeze **County:** Santa Rosa **State:** FL
Name of Flagger/Interviewer: Phillips **Flagger Company:** URS
Date of Flagging/Interview: 10/4/2004
Survey Crew: Dick Davis **Survey Company:** PBS & J
Survey Date: 11/18/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 340905.19676 **Easting (feet):** 1093652.28
Survey Latitude: 30.35544 **Northing (Meters):** 153310.84303 **Northing (feet):** 502987.3242
Survey Longitude: 87.19533 **Approx. First Floor Elevation:** 13.5 ft

Comment



UnitF9_7.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-31

HWM ID: UnitF9_8 **Type of Mark:** Duct tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Pensacola Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 18.9 ft **NGVD 29:** 19.1 ft **HWM Object:** Inside wall
Flooding Type: Surge
HWM Address: 3148 Coquina Way
Location of HWM Object: To the left of front door.

HWM Type: Water line
Closest Municipality: Gulf Breeze **County:** Santa Rosa **State:** FL

Name of Flagger/Interviewer: Phillips **Flagger Company:** URS
Date of Flagging/Interview: 10/4/2004

Survey Crew: Dick Davis **Survey Company:** PBS & J
Survey Date: 11/18/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 350918.84059 **Easting (feet):** 1125776.884
Survey Latitude: 30.39656 **Northing (Meters):** 157637.15516 **Northing (feet):** 517181.2332
Survey Longitude: 87.09222 **Approx. First Floor Elevation:** 14.2 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF9_8.jpg

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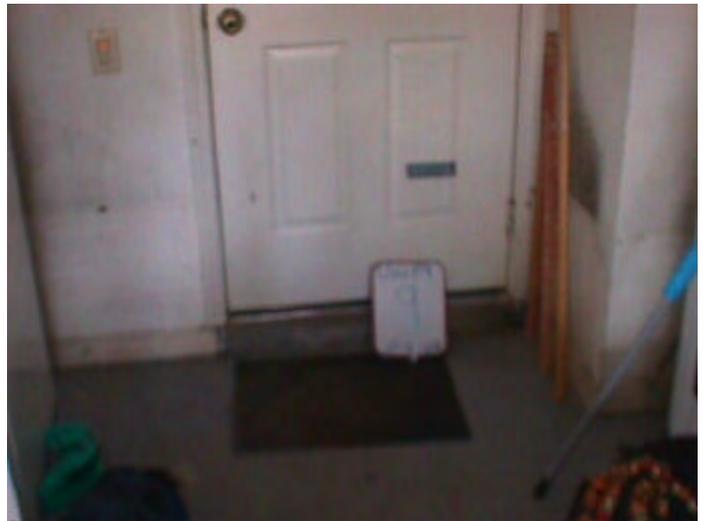
PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-32

HWM ID	UnitF9_9	Type of Mark:	N/A
Name of Storm Event:	Ivan	Date of Flood Event:	9/16/2004
Stream Name/Flood Source:	Pensacola Bay	Quality of Mark:	Good
Survey Elevation (NAVD 88):	8.6 ft NGVD 29: 8.8 ft	HWM Object:	Inside door
Flooding Type:	Surge		
HWM Address:	2722 Sunrunner Ln		
Location of HWM Object	Door inside garage.		
HWM Type:	Water line		
Closest Municipality:	Gulf Breeze	County Santa Rosa	State: FL
Name of Flagger/Interviewer:	Phillips	Flagger Company:	URS
Date of Flagging/Interview:	10/4/2004		
Survey Crew:	Dick Davis	Survey Company:	PBS & J
Survey Date:	11/18/2004		
Survey Projection:	State Plane Feet Florida North	Vertical Datum: NAVD 88	Horizontal Datum: NAD 83
		Easting (Meters): 349135.5608	Easting (feet): 1120055.974
Survey Latitude:	30.39000	Northing (Meters): 156950.9498	Northing (feet): 514929.9078
Survey Longitude:	87.11061	Approx. First Floor Elevation:	6.6 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF9_9.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-33

HWM ID: UnitF9_10 **Type of Mark:** Stake and flag
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Pensacola Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 9.9 ft **NGVD 29:** 10.2 ft **HWM Object:** Ground
Flooding Type: Run-up
HWM Address: 4090 Sandy Bluff Dr W
Location of HWM Object: 52' 5" NE from NW corner of chain link fence.

HWM Type: Debris line
Closest Municipality: Gulf Breeze **County:** Santa Rosa **State:** FL

Name of Flagger/Interviewer: Phillips **Flagger Company:** URS
Date of Flagging/Interview: 10/4/2004

Survey Crew: Dick Davis **Survey Company:** PBS & J
Survey Date: 11/19/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 354734.4217 **Easting (feet):** 1138017.586
Survey Latitude: 30.39739 **Northing (Meters):** 157643.457 **Northing (feet):** 517201.9085
Survey Longitude: 87.05253 **Approx. First Floor Elevation:** 27.7 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF9_10.jpg

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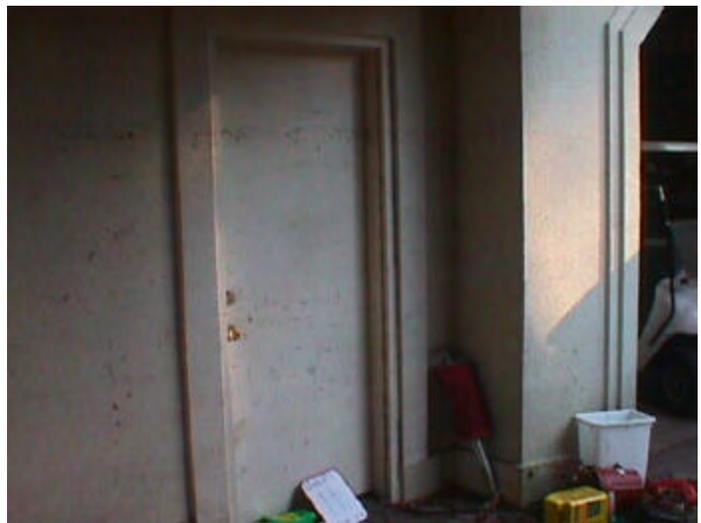
PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-34

HWM ID: UnitF9_11 **Type of Mark:** N/A
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Santa Rosa Sound **Quality of Mark:** Good
Survey Elevation (NAVD 88): 15.7 ft **NGVD 29: 16 ft** **HWM Object:** Outside wall
Flooding Type: Surge
HWM Address: 4547 Soundside Dr
Location of HWM Object: Front of house.
HWM Type: Water line
Closest Municipality: Gulf Breeze **County:** Santa Rosa **State:** FL
Name of Flagger/Interviewer: Phillips **Flagger Company:** URS
Date of Flagging/Interview: 10/4/2004
Survey Crew: Dick Davis **Survey Company:** PBS & J
Survey Date: 11/20/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 356377.269 **Easting (feet):** 1169214.423
Survey Latitude: 30.38506 **Northing (Meters):** 156239.2591 **Northing (feet):** 512594.9561
Survey Longitude: 87.03511 **Approx. First Floor Elevation:** 15.7 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF9_11.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-35

HWM ID	UnitF9_12	Type of Mark:	N/A
Name of Storm Event:	Ivan	Date of Flood Event:	9/16/2004
Stream Name/Flood Source:	Pensacola Bay	Quality of Mark:	Fair
Survey Elevation (NAVD 88):	8.6 ft NGVD 29: 8.9 ft	HWM Object:	Slab
Flooding Type:	Surge		
HWM Address:	5148 Cedar St		
Location of HWM Object	7" from patio on east side of house.		
HWM Type:	Personal Account		
Closest Municipality:	Gulf Breeze	County Santa Rosa	State: FL
Name of Flagger/Interviewer:	Phillips	Flagger Company:	URS
Date of Flagging/Interview:	10/4/2004		
Survey Crew:	Dick Davis	Survey Company:	PBS & J
Survey Date:	11/19/2004		
Survey Projection:	State Plane Feet Florida North	Vertical Datum: NAVD 88	Horizontal Datum: NAD 83
		Easting (Meters): 359575.2421	Easting (feet): 1153547.341
Survey Latitude:	30.40831	Northing (Meters): 158746.5879	Northing (feet): 520821.0971
Survey Longitude:	87.00242	Approx. First Floor Elevation:	9.2 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF9_12.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-36

HWM ID: UnitF9_13 **Type of Mark:** Duct tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Pensacola Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 9.3 ft **NGVD 29:** 9.6 ft **HWM Object:** Inside wall
Flooding Type: Surge
HWM Address: 5156 Cedar St
Location of HWM Object: Laundry room.
HWM Type: Water line
Closest Municipality: Gulf Breeze **County:** Santa Rosa **State:** FL
Name of Flagger/Interviewer: Phillips **Flagger Company:** URS
Date of Flagging/Interview: 10/4/2004
Survey Crew: Dick Davis **Survey Company:** PBS & J
Survey Date: 11/19/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 359645.0253 **Easting (feet):** 1153771.212
Survey Latitude: 30.40847 **Northing (Meters):** 158763.5365 **Northing (feet):** 520876.7027
Survey Longitude: 87.00169 **Approx. First Floor Elevation:** 6.7 ft

Comment



UnitF9_13.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-37

HWM ID	UnitF9_14	Type of Mark:	N/A
Name of Storm Event:	Ivan	Date of Flood Event:	9/16/2004
Stream Name/Flood Source:	Santa Rosa Sound	Quality of Mark:	Good
Survey Elevation (NAVD 88):	11.6 ft NGVD 29: 11.9 ft	HWM Object:	Inside wall
Flooding Type:	Surge		
HWM Address:	6771 Tide Water Dr		
Location of HWM Object	26" from slab.		
HWM Type:	Water line		
Closest Municipality:	Navarre	County Santa Rosa	State: FL
Name of Flagger/Interviewer:	Phillips	Flagger Company:	URS
Date of Flagging/Interview:	10/4/2004		
Survey Crew:	Dick Davis	Survey Company:	PBS & J
Survey Date:	11/20/2004		
Survey Projection:	State Plane Feet Florida North	Vertical Datum: NAVD 88	Horizontal Datum: NAD 83
		Easting (Meters): 365131.606	Easting (feet): 1171372.62
Survey Latitude:	30.39628	Northing (Meters): 157292.3879	Northing (feet): 516050.1093
Survey Longitude:	86.94428	Approx. First Floor Elevation:	9.5 ft

Comment



UnitF9_14.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-38

HWM ID	UnitF10_10	Type of Mark:	N/A
Name of Storm Event:	Ivan	Date of Flood Event:	9/16/2004
Stream Name/Flood Source:	Santa Rosa Sound	Quality of Mark:	Good
Survey Elevation (NAVD 88):	12.1 ft NGVD 29: 12.4 ft	HWM Object:	Interior wall transferred to exterior wall
Flooding Type:	Surge		
HWM Address:	4569 Sabine Court		
Location of HWM Object	Wall to left of front entrance.		
HWM Type:	Water line		
Closest Municipality:	Gulf Breeze	County Santa Rosa	State: FL
Name of Flagger/Interviewer:	Hatchett	Flagger Company:	URS
Date of Flagging/Interview:	10/4/2004		
Survey Crew:	Dick Davis	Survey Company:	PBS & J
Survey Date:	11/20/2004		
Survey Projection:	State Plane Feet Florida North	Vertical Datum: NAVD 88	Horizontal Datum: NAD 83
		Easting (Meters): 356631.3738	Easting (feet): 1144103.166
Survey Latitude:	30.38311	Northing (Meters): 156018.0045	Northing (feet): 511869.0698
Survey Longitude:	87.03242	Approx. First Floor Elevation:	8.4 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF10_10.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 120274 **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Sant-39

HWM ID: UnitF10_11 **Type of Mark:** Duct tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Santa Rosa Sound **Quality of Mark:** Good
Survey Elevation (NAVD 88): 15.0 ft **NGVD 29:** 15.4 ft **HWM Object:** Interior wall transferred to exterior window
Flooding Type: Surge
HWM Address: Best Western 8697 Navarre Pkwy
Location of HWM Object: Exterior window, food prep room.
HWM Type: Water line
Closest Municipality: Navarre **County:** Santa Rosa **State:** FL
Name of Flagger/Interviewer: Hatchett **Flagger Company:** URS
Date of Flagging/Interview: 10/4/2004
Survey Crew: Dick Davis **Survey Company:** PBS & J
Survey Date: 11/19/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 373317.7199 **Easting (feet):** 1197634.355
Survey Latitude: 30.40139 **Northing (Meters):** 157686.6367 **Northing (feet):** 517343.5739
Survey Longitude: 86.85919 **Approx. First Floor Elevation:** 13.4 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF10_11.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida

Appendices

Appendix D: Survey Sheets from Okaloosa County



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12091C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Okal-1

HWM ID: UnitF6_1 **Type of Mark:** Water line
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Gulf of Mexico **Quality of Mark:** Good
Survey Elevation (NAVD 88): 10.2 ft **NGVD 29:** 10.7 ft **HWM Object:** Water line inside garage
Flooding Type: Surge
HWM Address: 71 Landsend Drive, Holidite Ile, Destin, FL
Location of HWM Object: In the garage facing the street.

HWM Type: High water mark
Closest Municipality: Destin **County:** Okaloosa **State:** FL

Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 10/1/2004

Survey Crew: Tim Tipton **Survey Company:** PBS & J
Survey Date: 10/23/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 407536.35143 **Easting (feet):** 1337058.846
Survey Latitude: 30.38291 **Northing (Meters):** 154983.91741 **Northing (feet):** 508476.4024
Survey Longitude: 86.50265 **Approx. First Floor Elevation:** 8.3 ft

Comment

House is Gulf front.



UnitF6_1a.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12091C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Okal-2

HWM ID: UnitF6_2 **Type of Mark:** High water mark
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Gulf of Mexico **Quality of Mark:** Good
Survey Elevation (NAVD 88): 12.7 ft **NGVD 29:** 13.1 ft **HWM Object:** Outside wall facing Gulf
Flooding Type: Surge
HWM Address: 638 Gulf Shore Dr.
Location of HWM Object: Front porch facing the gulf.

HWM Type: High water mark
Closest Municipality: Destin **County:** Okaloosa **State:** FL

Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 10/1/2004

Survey Crew: Dick Davis **Survey Company:** PBS & J
Survey Date: 10/23/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 408944.1004 **Easting (feet):** 1341677.436
Survey Latitude: 30.38427 **Northing (Meters):** 155110.18619 **Northing (feet):** 508890.6692
Survey Longitude: 86.48802 **Approx. First Floor Elevation:** 12.9 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF6_2b.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12091C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Okal-3

HWM ID: UnitF6_3 **Type of Mark:** High water line
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Gulf of Mexico **Quality of Mark:** Good
Survey Elevation (NAVD 88): 8.7 ft **NGVD 29:** 9.1 ft **HWM Object:** Inside sheetrock wall in garage
Flooding Type: Surge
HWM Address: 623 Gulfshore Drive
Location of HWM Object: Inside garage wall facing north.

HWM Type: High water mark
Closest Municipality: Destin **County:** Okaloosa **State:** FL

Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 10/1/2004

Survey Crew: Keith (Dallas) **Survey Company:** PBS & J
Survey Date: 10/23/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 408662.9 **Easting (feet):** 1340755
Survey Latitude: 30.38427 **Northing (Meters):** 155117.4 **Northing (feet):** 508914.2
Survey Longitude: 86.49094 **Approx. First Floor Elevation:** N/A

Comment



UnitF6_3a.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12091C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Okal-4

HWM ID	UnitF6_4	Type of Mark:	Water stain
Name of Storm Event:	Ivan	Date of Flood Event:	9/16/2004
Stream Name/Flood Source:	Gulf of Mexico	Quality of Mark:	Good
Survey Elevation (NAVD 88):	5.5 ft NGVD 29: 5.9 ft	HWM Object:	High water mark stain on sheetrock
Flooding Type:	Surge		
HWM Address:	365 Gulfshore Drive #4		
Location of HWM Object	Right side of garage.		
HWM Type:	Water mark in garage		
Closest Municipality:	Destin	County	Okaloosa
		State:	FL
Name of Flagger/Interviewer:	Stroufe	Flagger Company:	URS
Date of Flagging/Interview:	10/1/2004		
Survey Crew:	Keith (Dallas)	Survey Company:	PBS & J
Survey Date:	10/23/2004		
Survey Projection:	State Plane Feet Florida North	Vertical Datum:	NAVD 88
		Horizontal Datum:	NAD 83
		Easting (Meters):	407421
		Easting (feet):	1336680
Survey Latitude:	30.38822	Northing (Meters):	155575.1
		Northing (feet):	510416.1
Survey Longitude:	86.50394	Approx. First Floor Elevation:	N/A

Comment

This is condominium, all condos were wet with water from the Gulf. These condos are located on the north side of the island.



UnitF6_4.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12091C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Okal-5

HWM ID: UnitF6_5 **Type of Mark:** Water line
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Gulf of Mexico **Quality of Mark:** Good
Survey Elevation (NAVD 88): 8.7 ft **NGVD 29:** 9.1 ft **HWM Object:** Water mark on wall and stairs
Flooding Type: Surge
HWM Address: 501 Gulfshore Dr. Unit 15
Location of HWM Object: Directly inside front door.

HWM Type: High water mark
Closest Municipality: Destin **County:** Okaloosa **State:** FL

Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 10/1/2004

Survey Crew: Keith (Dallas) **Survey Company:** PBS & J
Survey Date: 10/23/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 407792.70794 **Easting (feet):** 1337899.909
Survey Latitude: 30.38516 **Northing (Meters):** 155228.87703 **Northing (feet):** 509280.0740
Survey Longitude: 86.50002 **Approx. First Floor Elevation:** N/A

Comment

There is continued evidence of storm surge from the Gulf over land to inland condos.



UnitF6_5b.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12091C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Okal-6

HWM ID: UnitF6_6 **Type of Mark:** Mud and water line
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Gulf of Mexico **Quality of Mark:** Good
Survey Elevation (NAVD 88): 12.9 ft **NGVD 29:** 13.4 ft **HWM Object:** Bathroom shower wall
Flooding Type: Surge
HWM Address: 128 Southbay By the Gulf 940 Highway 98 East
Location of HWM Object: Bathroom shower off 1st hallway.
HWM Type: Water mark
Closest Municipality: Destin **County:** Okaloosa **State:** FL
Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 10/1/2004
Survey Crew: Tim Tipton **Survey Company:** PBS & J
Survey Date: 10/23/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 409862.77617 **Easting (feet):** 1344691.458
Survey Latitude: 30.38423 **Northing (Meters):** 155089.27705 **Northing (feet):** 508822.0698
Survey Longitude: 86.47846 **Approx. First Floor Elevation:** 11.5 ft

Comment

All Gulf front condos in this Southbay by the Gulf were impacted.



UnitF6_6a.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12131C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Okal-7

HWM ID: UnitF6_7 **Type of Mark:** Defined water mark
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Gulf of Mexico **Quality of Mark:** Good
Survey Elevation (NAVD 88): 9.8 ft **NGVD 29:** 10.2 ft **HWM Object:** Inside wall water mark
Flooding Type: Surge
HWM Address: 110 Beach Drive West (Miramar Beach, Gulf Pines Subdivision)
Location of HWM Object: Directly inside door on wall.

HWM Type: Gulf surge
Closest Municipality: Destin **County:** Okaloosa **State:** FL

Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 10/1/2004

Survey Crew: Dick Davis **Survey Company:** PBS & J
Survey Date: 10/30/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 423273.10635 **Easting (feet):** 1388688.516
Survey Latitude: 30.37097 **Northing (Meters):** 153394.52247 **Northing (feet):** 503261.8625
Survey Longitude: 86.33866 **Approx. First Floor Elevation:** 9.8 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF6_7.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12091C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Okal-8

HWM ID: UnitF6_9 **Type of Mark:** Water mark
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Intercoastal waterway **Quality of Mark:** Good
Survey Elevation (NAVD 88): 9.8 ft **NGVD 29:** 10.2 ft **HWM Object:** Front door
Flooding Type: Surge
HWM Address: 13 Calle Rio, Mary Ester, FL
Location of HWM Object: Front door entryway.

HWM Type: High water mark
Closest Municipality: Mary Esther **County:** Okaloosa **State:** FL

Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 10/2/2004

Survey Crew: Tim Tipton **Survey Company:** PBS & J
Survey Date: 10/23/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 393511.23837 **Easting (feet):** 1291044.788
Survey Latitude: 30.40731 **Northing (Meters):** 157944.59449 **Northing (feet):** 518189.8904
Survey Longitude: 86.64913 **Approx. First Floor Elevation:** 8.6 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF6_9a.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12091C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Okal-9

HWM ID: UnitF6_10 **Type of Mark:** Top of deck
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Gulf surge into intercoastal waterway **Quality of Mark:** Good
Survey Elevation (NAVD 88): 10.2 ft **NGVD 29:** 10.6 ft **HWM Object:** Deck off south side of house, top of wood deck
Flooding Type: Surge
HWM Address: 18 Misty Water Lane, Mary Ester, FL
Location of HWM Object: Top of west end of deck.

HWM Type: Homeowner interview - pictures, homeowner was home during flood
Closest Municipality: Mary Esther **County:** Okaloosa **State:** FL

Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 10/2/2004

Survey Crew: Tim Tipton **Survey Company:** PBS & J
Survey Date: 10/23/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 393410.92376 **Easting (feet):** 1290715.672
Survey Latitude: 30.40758 **Northing (Meters):** 157976.05253 **Northing (feet):** 518293.0990
Survey Longitude: 86.65018 **Approx. First Floor Elevation:** N/A

Comment

Homeowner saw Gulf water flowing over Okaloosa Island and photographed the water level at the top of his deck.



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF6_10.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12091C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Okal-10

HWM ID: UnitF6_11 **Type of Mark:** Spray paint
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Gulf surge into intercoastal waterway **Quality of Mark:** Good
Survey Elevation (NAVD 88): 7.6 ft **NGVD 29:** 8 ft **HWM Object:** Debris on sidewalk at Hwy 98
Flooding Type: Surge
HWM Address: Lisa Jackson Park, West entrance Highway 98, Ft. Walton Beach, FL
Location of HWM Object: Debris on sidewalk on Hwy 98 at west park entrance.

HWM Type: Debris line
Closest Municipality: Ft. Walton Beach **County:** Okaloosa **State:** FL

Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 10/2/2004

Survey Crew: Tim Tipton **Survey Company:** PBS & J
Survey Date: 10/23/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 394638.09844 **Easting (feet):** 1294741.828
Survey Latitude: 30.40715 **Northing (Meters):** 157904.93023 **Northing (feet):** 518059.7586
Survey Longitude: 86.63740 **Approx. First Floor Elevation:** N/A

Comment



UnitF6_11a.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12091C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Okal-11

HWM ID	UnitF6_12	Type of Mark:	Water line
Name of Storm Event:	Ivan	Date of Flood Event:	9/16/2004
Stream Name/Flood Source:	Gulf of Mexico	Quality of Mark:	Good
Survey Elevation (NAVD 88):	8.1 ft NGVD 29: 8.5 ft	HWM Object:	Inside garage door
Flooding Type:	Surge		
HWM Address:	756 Seahorse Ave, Okaloosa Island		
Location of HWM Object	Left (west) side of garage wall.		
HWM Type:	Water mark in garage		
Closest Municipality:	Ft. Walton Beach	County	Okaloosa State: FL
Name of Flagger/Interviewer:	Stroufe	Flagger Company:	URS
Date of Flagging/Interview:	10/2/2004		
Survey Crew:	Dick Davis	Survey Company:	PBS & J
Survey Date:	10/23/2004		
Survey Projection:	State Plane Feet Florida North	Vertical Datum:	NAVD 88 Horizontal Datum: NAD 83
		Easting (Meters):	395965.76003 Easting (feet): 1299097.664
Survey Latitude:	30.39825	Northing (Meters):	156893.34277 Northing (feet): 514740.9088
Survey Longitude:	86.62338	Approx. First Floor Elevation:	7.6 ft

Comment

House is behind condo's on beach, facing south.



UnitF6_12a.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

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PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12091C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Okal-12

HWM ID: UnitF6_13 **Type of Mark:** Red paint
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Intercoastal waterway **Quality of Mark:** Good
Survey Elevation (NAVD 88): 8.5 ft **NGVD 29:** 8.9 ft **HWM Object:** East window in front porch
Flooding Type: Surge
HWM Address: 831 Tarpin Dr., Ft. Walton Beach
Location of HWM Object: Outside window on front porch.

HWM Type: High water and debris mark
Closest Municipality: Ft. Walton Beach **County:** Okaloosa **State:** FL

Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 10/2/2004

Survey Crew: Dick Davis **Survey Company:** PBS & J
Survey Date: 10/23/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 395464.62822 **Easting (feet):** 1297453.534
Survey Latitude: 30.39983 **Northing (Meters):** 157078.23827 **Northing (feet):** 515347.5201
Survey Longitude: 86.62863 **Approx. First Floor Elevation:** 7.7 ft

Comment

Eyewitness states that the Intercoastal waterway backed up onto island.



UnitF6_13a.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12091C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Okal-13

HWM ID: UnitF6_14 **Type of Mark:** Water faucet
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Gulf of Mexico **Quality of Mark:** Good
Survey Elevation (NAVD 88): 6.9 ft **NGVD 29:** 7.3 ft **HWM Object:** North side of house
Flooding Type: Surge
HWM Address: 851 Tarpin Dr., Ft. Walton Beach, Okaloosa Island
Location of HWM Object: At outdoor water faucet.

HWM Type: Water mark
Closest Municipality: Ft. Walton Beach **County:** Okaloosa **State:** FL

Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 10/2/2004

Survey Crew: Keith (Dallas) **Survey Company:** PBS & J
Survey Date: 10/23/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 395640.36595 **Easting (feet):** 1298030.101
Survey Latitude: 30.39963 **Northing (Meters):** 157053.39955 **Northing (feet):** 515266.0284
Survey Longitude: 86.62680 **Approx. First Floor Elevation:** 5.7 ft

Comment

There was surge debris in the back yard.



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF6_14a.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12091C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Okal-14

HWM ID: UnitF6_15 **Type of Mark:** Directly under window
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Gulf of Mexico **Quality of Mark:** Good
Survey Elevation (NAVD 88): 8.5 ft **NGVD 29:** 8.9 ft **HWM Object:** West garage window - under window
Flooding Type: Surge
HWM Address: 812 Tarpin Dr., Ft. Walton Beach, FL, Okaloosa Island
Location of HWM Object: Window on garage faces west of house.

HWM Type: High water mark
Closest Municipality: Ft. Walton Beach **County:** Okaloosa **State:** FL

Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 10/2/2004

Survey Crew: Keith (Dallas) **Survey Company:** PBS & J
Survey Date: 10/23/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 395575.25495 **Easting (feet):** 1297816.482
Survey Latitude: 30.40041 **Northing (Meters):** 157140.84955 **Northing (feet):** 515552.9372
Survey Longitude: 86.62750 **Approx. First Floor Elevation:** 6.5 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF6_15b.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12091C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Okal-15

HWM ID: UnitF6_16 **Type of Mark:** Stake with spray paint
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Intercoastal waterway **Quality of Mark:** Good
Survey Elevation (NAVD 88): 5.8 ft **NGVD 29:** 6.2 ft **HWM Object:** Debris line on grass on east side of boat launch
Flooding Type: Surge
HWM Address: 139 Brooks Street, Emerald Coast Science Center, Ft. Walton Beach, FL
Location of HWM Object: One foot from wooden deck - stake installed.

HWM Type: Debris line on grass
Closest Municipality: Ft. Walton Beach **County:** Okaloosa **State:** FL

Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 10/2/2004

Survey Crew: Tim Tipton **Survey Company:** PBS & J
Survey Date: 10/23/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 397596.39761 **Easting (feet):** 1304447.514
Survey Latitude: 30.40215 **Northing (Meters):** 157295.4982 **Northing (feet):** 516060.3137
Survey Longitude: 86.60650 **Approx. First Floor Elevation:** N/A

Comment

This is a boat launch area with a defined debris line. There is a stake at the debris line.



UnitF6_16b.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

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PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12091C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Okal-16

HWM ID: UnitF6_17 **Type of Mark:** Water stain
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Gulf of Mexico **Quality of Mark:** Good
Survey Elevation (NAVD 88): 13.4 ft **NGVD 29: 13.8 ft** **HWM Object:** Inside hall wall
Flooding Type: Surge
HWM Address: 925 Whelk Court #2, Ft. Walton Beach, FL. Vista Del Mar - West condo
Location of HWM Object: Inside front door - north side, west wall.

HWM Type: High water mark
Closest Municipality: Ft. Walton Beach **County:** Okaloosa **State:** FL

Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 10/2/2004

Survey Crew: Keith (Dallas) **Survey Company:** PBS & J
Survey Date: 10/23/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 395217.8 **Easting (feet):** 1296644
Survey Latitude: 30.39736 **Northing (Meters):** 156810.1 **Northing (feet):** 514467.7
Survey Longitude: 86.63113 **Approx. First Floor Elevation:** N/A

Comment

There was water damage throughout ground floor.



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF6_17a.jpg

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CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12091C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Okal-17

HWM ID: UnitF6_18 **Type of Mark:** Water line
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Shirk Bayou/Choctawhatchee Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 2.5 ft **NGVD 29:** 2.9 ft **HWM Object:** Brick mail box on roadway
Flooding Type: Surge
HWM Address: 223 Yacht Club Drive, Niceville, FL, Dana Point Subdivision
Location of HWM Object: Brick mail box numbered 223 Yacht Club Dr.

HWM Type: Personal account/pictures
Closest Municipality: Niceville **County:** Okaloosa **State:** FL

Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 10/3/2004

Survey Crew: Tim Tipton **Survey Company:** PBS & J
Survey Date: 10/24/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 411528.52133 **Easting (feet):** 1350156.490
Survey Latitude: 30.48666 **Northing (Meters):** 166417.45761 **Northing (feet):** 545987.9422
Survey Longitude: 86.46316 **Approx. First Floor Elevation:** N/A

Comment

Mr. Richburg reported that water was two blocks inland, he had to park his truck and walk in to house.



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF6_18b.jpg

James E. Godfrey - Professional Land Surveyor, No. 4541, State of Florida
PBS & J License Business 24
5300 W. Cypress St. Suite 200, Tampa Florida. 33607 PH. 813 282-7275

PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12091C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Okal-18

HWM ID: UnitF6_19 **Type of Mark:** Red paint
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Boggy Bayou **Quality of Mark:** Good
Survey Elevation (NAVD 88): 9.1 ft **NGVD 29:** 9.5 ft **HWM Object:** 6' from concrete - wooden stake
Flooding Type: Surge
HWM Address: 201 Bayshore Drive, 110 feet west of Niceville Beauty Shop
Location of HWM Object: Near guard rail & sidewalk.

HWM Type: Debris line
Closest Municipality: Niceville **County:** Okaloosa **State:** FL

Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 10/3/2004

Survey Crew: Tim Tipton **Survey Company:** PBS & J
Survey Date: 10/24/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 409061.66335 **Easting (feet):** 1342063.141
Survey Latitude: 30.51985 **Northing (Meters):** 170139.38498 **Northing (feet):** 558198.9656
Survey Longitude: 86.48953 **Approx. First Floor Elevation:** N/A

Comment

There was much debris in the area, including a boat.



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF6_19b.jpg

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PBS & J License Business 24
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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12091C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Okal-19

HWM ID: UnitF6_20 **Type of Mark:** No mark
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Boggy Bayou **Quality of Mark:** Good
Survey Elevation (NAVD 88): 5.1 ft **NGVD 29:** 5.5 ft **HWM Object:** Inside garage transferred outside
Flooding Type: Surge
HWM Address: 22 Bayshore Point, Valparaiso, FL
Location of HWM Object: Garage - next to wall.
HWM Type: Personal account, Mr. Brown was home during storm
Closest Municipality: Valparaiso **County:** Okaloosa **State:** FL
Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 10/3/2004
Survey Crew: Tim Tipton **Survey Company:** PBS & J
Survey Date: 10/24/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 409385.39817 **Easting (feet):** 1343125.261
Survey Latitude: 30.50528 **Northing (Meters):** 168518.67211 **Northing (feet):** 552881.6768
Survey Longitude: 86.48586 **Approx. First Floor Elevation:** 1.1 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF6_20b.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12091C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Okal-20

HWM ID: UnitF6_21 **Type of Mark:** Red paint + stake
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Boggy Bayou **Quality of Mark:** Good
Survey Elevation (NAVD 88): 4.7 ft **NGVD 29: 5 ft** **HWM Object:** Debris + boat
Flooding Type: Surge
HWM Address: 1271 Bayshore Drive, across street from address - debris + boat
Location of HWM Object: Across street from 1271 Bayshore Drive.

HWM Type: Debris line
Closest Municipality: Valparaiso **County:** Okaloosa **State:** FL

Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 10/3/2004

Survey Crew: Tim Tipton **Survey Company:** PBS & J
Survey Date: 10/24/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 408948.31052 **Easting (feet):** 1341691.249
Survey Latitude: 30.51251 **Northing (Meters):** 169328.28468 **Northing (feet):** 555537.8807
Survey Longitude: 86.49056 **Approx. First Floor Elevation:** N/A

Comment



UnitF6_21b.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

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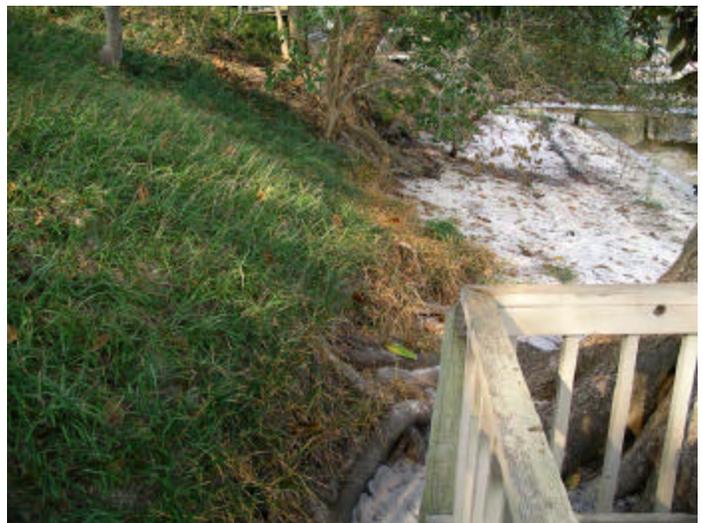
PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12091C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Okal-21

HWM ID	UnitF6_22	Type of Mark:	N/A
Name of Storm Event:	Ivan	Date of Flood Event:	9/16/2004
Stream Name/Flood Source:	Rocky Bayou	Quality of Mark:	Good
Survey Elevation (NAVD 88):	5.5 ft NGVD 29: 5.9 ft	HWM Object:	Slope of lot, debris line
Flooding Type:	Surge		
HWM Address:	622 Sail Boat Dr., Niceville		
Location of HWM Object	Near steps to boat dock.		
HWM Type:	Debris line - personal account, present during storm		
Closest Municipality:	Niceville	County	Okaloosa State: FL
Name of Flagger/Interviewer:	Sroufe	Flagger Company:	URS
Date of Flagging/Interview:	10/4/2004		
Survey Crew:	Keith (Dallas)	Survey Company:	PBS & J
Survey Date:	10/24/2004		
Survey Projection:	State Plane Feet Florida North	Vertical Datum:	NAVD 88 Horizontal Datum: NAD 83
		Easting (Meters):	413514.90849 Easting (feet): 1356673.496
Survey Latitude:	30.50126	Northing (Meters):	168001.56166 Northing (feet): 551185.1236
Survey Longitude:	86.44276	Approx. First Floor Elevation:	N/A

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF6_22a.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12091C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Okal-22

HWM ID: UnitF6_23 **Type of Mark:** N/A
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Rocky Bayou **Quality of Mark:** Good
Survey Elevation (NAVD 88): 7.2 ft **NGVD 29:** 7.5 ft **HWM Object:** Outside lattice on deck
Flooding Type: Surge
HWM Address: 2420 Edgewater Drive
Location of HWM Object: Deck facing Bayou.

HWM Type: Personal account - present during storm
Closest Municipality: Niceville **County:** Okaloosa **State:** FL

Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 10/4/2004

Survey Crew: Keith (Dallas) **Survey Company:** PBS & J
Survey Date: 10/24/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 413435.9379 **Easting (feet):** 1356414.406
Survey Latitude: 30.50715 **Northing (Meters):** 168656.7521 **Northing (feet):** 553334.6942
Survey Longitude: 86.44370 **Approx. First Floor Elevation:** N/A

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF6_23b.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12091C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Okal-23

HWM ID: UnitF6_24 **Type of Mark:** N/A
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Rocky Bayou **Quality of Mark:** Good
Survey Elevation (NAVD 88): 5.8 ft **NGVD 29:** 6.1 ft **HWM Object:** Outside west door step
Flooding Type: Surge
HWM Address: 1905 Valpariso Blvd., Niceville, FL
Location of HWM Object: Water mark on top of step, 10" above ground.

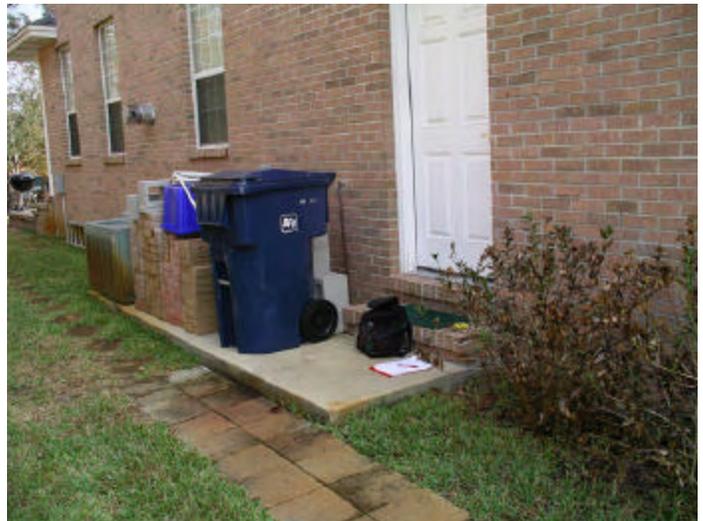
HWM Type: Personal Account
Closest Municipality: Niceville **County:** Okaloosa **State:** FL

Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 10/4/2004

Survey Crew: Keith (Dallas) **Survey Company:** PBS & J
Survey Date: 10/24/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 412367.63987 **Easting (feet):** 1352909.498
Survey Latitude: 30.50096 **Northing (Meters):** 167987.91051 **Northing (feet):** 551140.3364
Survey Longitude: 86.45470 **Approx. First Floor Elevation:** 6.3 ft

Comment

This is a personal account of water rise at this location.



UnitF6_24b.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12091C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Okal-24

HWM ID: UnitF6_25 **Type of Mark:** N/A
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Choctwhatchee Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 4.1 ft **NGVD 29:** 4.5 ft **HWM Object:** Debris line near marina
Flooding Type: Surge
HWM Address: Bluewater Bay Beach, Bluewater Bay Marina
Location of HWM Object: South side of marina.

HWM Type: Debris line
Closest Municipality: Niceville **County:** Okaloosa **State:** FL

Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 10/4/2004

Survey Crew: Keith (Dallas) **Survey Company:** PBS & J
Survey Date: 10/24/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 413183.66675 **Easting (feet):** 1355586.747
Survey Latitude: 30.49458 **Northing (Meters):** 167266.51716 **Northing (feet):** 548773.5651
Survey Longitude: 86.44608 **Approx. First Floor Elevation:** N/A

Comment

Docks were destroyed in some parts.



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF6_25b.jpg

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12091C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Okal-25

HWM ID: UnitF6_32 **Type of Mark:** N/A
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Gulf of Mexico **Quality of Mark:** Fair
Survey Elevation (NAVD 88): 7.7 ft **NGVD 29:** 8.1 ft **HWM Object:** Near isolated pine tree
Flooding Type: Surge
HWM Address: Hwy 98 between Destin and Ft. Walton
Location of HWM Object: North of Hwy 98, west bound lane on sand dune.
HWM Type: Debris line
Closest Municipality: Destin **County:** Okaloosa **State:** FL
Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 10/7/2004
Survey Crew: Keith (Dallas) **Survey Company:** PBS & J
Survey Date: 10/31/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 403301.70493 **Easting (feet):** 1323165.677
Survey Latitude: 30.39252 **Northing (Meters):** 156124.7268 **Northing (feet):** 512219.2078
Survey Longitude: 86.54691 **Approx. First Floor Elevation:** N/A

Comment

Sand dunes are missing in this area and debris was found past the fence extending on to military property.



UnitF6_32c.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

James E. Godfrey - Professional Land Surveyor, No. 4541, State of Florida
 PBS & J License Business 24
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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12091C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Okal-26

HWM ID: UnitF6_33 **Type of Mark:** N/A
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Gulf of Mexico **Quality of Mark:** Fair
Survey Elevation (NAVD 88): 2.5 ft **NGVD 29:** 2.9 ft **HWM Object:** Debris line near Coast Guard entrance
Flooding Type: Surge
HWM Address: Destin Coast Guard Station, Hwy 98
Location of HWM Object: West of entrance, road looking west.

HWM Type: Debris line
Closest Municipality: Destin **County:** Okaloosa **State:** FL

Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 10/7/2004

Survey Crew: Dick Davis **Survey Company:** PBS & J
Survey Date: 10/23/2004
Survey Projection: State Plane Feet Florida North **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): 405294.52118 **Easting (feet):** 1329703.775
Survey Latitude: 30.39069 **Northing (Meters):** 155885.86253 **Northing (feet):** 511435.534
Survey Longitude: 86.52613 **Approx. First Floor Elevation:** N/A

Comment

HWM is a debris line at entrance of Coast Guard station.



UnitF6_33a.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12091C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Okal-27

HWM ID: UnitF6_61 **Type of Mark:** Debris line
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Santa Rosa Sound **Quality of Mark:** Good
Survey Elevation (NAVD 88): 13.6 ft **NGVD 29:** 13.9 ft **HWM Object:** Ground debris line
Flooding Type: Surge
HWM Address: 2831 Hwy 98 West
Location of HWM Object: North West corner of house by electric meter.

HWM Type: Surge
Closest Municipality: Narvarre **County:** Okaloosa **State:** FL

Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 11/4/2004

Survey Crew: Starkey **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 11/17/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1250415.132
Survey Latitude: 30.41024 **Northing (Meters):** **Northing (feet):** 520040.7328
Survey Longitude: 86.77811 **Approx. First Floor Elevation:** 14.5 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF6_61A.jpg



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12091C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Okal-28

HWM ID: UnitF6_62 **Type of Mark:** Water mark
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Santa Rosa Sound **Quality of Mark:** Good
Survey Elevation (NAVD 88): 10.9ft **NGVD 29:** 11.3 ft **HWM Object:** Water mark on inside wall
Flooding Type: Surge
HWM Address: 1495 Hwy 98 West
Location of HWM Object: Transferred to front door.

HWM Type: Surge
Closest Municipality: Mary Ester/Ft. Walton Beach **County:** Okaloosa **State:** FL

Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 11/4/2004

Survey Crew: Starkey **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 11/17/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1268135.68
Survey Latitude: 30.41148 **Northing (Meters):** **Northing (feet):** 520142.2925
Survey Longitude: 86.72191 **Approx. First Floor Elevation:** 7.1 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF6_62A.jpg

Fred R. Thompson, Professional Land Surveyor, State of Florida, Registration Number: 3027
Northwest Florida Land Surveying, Inc. State of Florida Corporation Number: 7277
5800 N. "W" Street, Pensacola, Florida 32505 PH 850 432-1052

PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12091C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Okal-29

HWM ID: UnitF6_63 **Type of Mark:** Water line - tape
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Santa Rosa Sound **Quality of Mark:** Good
Survey Elevation (NAVD 88): 10.1 ft **NGVD 29:** 10.5 ft **HWM Object:** HWM transferred to front door
Flooding Type: Surge
HWM Address: 582 Radiant Circle
Location of HWM Object: Front door facing North.

HWM Type: Surge
Closest Municipality: Ft. Walton Beach **County:** Okaloosa **State:** FL

Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 11/4/2004

Survey Crew: Starkey **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 11/17/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Survey Latitude: 30.40420 **Easting (Meters):** **Easting (feet):** 1259421.138
Survey Longitude: 86.74940 **Northing (Meters):** **Northing (feet):** 517667.5158
Approx. First Floor Elevation: 8.9 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF6_63A.jpg



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12091C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Okal-30

HWM ID: UnitF6_64 **Type of Mark:** Debris line on ground
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Santa Rosa Sound **Quality of Mark:** Good
Survey Elevation (NAVD 88): 12.2 ft **NGVD 29:** 12.6 ft **HWM Object:** On ground behind apartment bldg
Flooding Type: Surge
HWM Address: The Cedars 209 Hwy 98 West Mary Ester
Location of HWM Object: South of light pole at west end of building.

HWM Type: Surge
Closest Municipality: Mary Ester/Ft. Walton Beach **County:** Okaloosa **State:** FL

Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 11/4/2004

Survey Crew: Starkey **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 11/17/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1285346.297
Survey Latitude: 30.40853 **Northing (Meters):** **Northing (feet):** 518739.4295
Survey Longitude: 86.66724 **Approx. First Floor Elevation:** 15.0 ft

Comment



UnitF6_64.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12091C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Okal-31

HWM ID: UnitF6_65 **Type of Mark:** Water mark
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Santa Rosa Sound **Quality of Mark:** Good
Survey Elevation (NAVD 88): 9.7 ft **NGVD 29:** 10.1 ft **HWM Object:** Inside wall transferred to outside garage door
Flooding Type: Surge
HWM Address: 27 Neptune Drive Mary Ester
Location of HWM Object: 33" above concrete floor at garage door.

HWM Type: Surge
Closest Municipality: Mary Ester/Ft. Walton Beach **County:** Okaloosa **State:** FL

Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 11/4/2004

Survey Crew: Starkey **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 11/17/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1263667.893
Survey Latitude: 30.40676 **Northing (Meters):** **Northing (feet):** 519323.1136
Survey Longitude: 86.73603 **Approx. First Floor Elevation:** 7.8 ft

Comment



UnitF6_65B.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

Appendices

Appendix E: Survey Sheets from Walton County



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12131C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Walt-1

HWM ID: UnitF6_8 **Type of Mark:** Stake and ribbon
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Stallworth Lake - Gulf **Quality of Mark:** Good
Survey Elevation (NAVD 88): 6.0 ft **NGVD 29:** 6.3 ft **HWM Object:** Debris mark - water observed
Flooding Type: Coastal surge - Gulf surge into lake
HWM Address: 6465 West 30A, Santa Rosa Beach
Location of HWM Object: Front/south yard.
HWM Type: Water-Mud line
Closest Municipality: Destin **County:** Walton **State:** FL

Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 10/1/2004

Survey Crew: Starkey **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 11/24/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Survey Latitude: 30.35774 **Easting (Meters):** **Easting (feet):** 1413145.528
Survey Longitude: 86.26075 **Northing (Meters):** **Northing (feet):** 498086.2461
Approx. First Floor Elevation: 14.0 ft

Comment



UnitF6_8.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12131C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Walt-2

HWM ID: UnitF6_35 **Type of Mark:** N/A
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Choctawhatchee Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 6.9 ft **NGVD 29:** 7.3 ft **HWM Object:** Outside screen porch
Flooding Type: Surge
HWM Address: 1724 Baygrove Rd
Location of HWM Object: South facing screen porch.
HWM Type: Debris line on screen porch
Closest Municipality: Freeport **County:** Walton **State:** FL
Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 10/7/2004
Survey Crew: Starkey **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 11/24/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Survey Latitude: 30.45053 **Easting (Meters):** **Easting (feet):** 1445285.003
Survey Longitude: 86.16051 **Northing (Meters):** **Northing (feet):** 531330.9582
Approx. First Floor Elevation: 6.0 ft

Comment

The seawall is approximately 3 feet in height at this location.



UnitF6_35a.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12131C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Walt-3

HWM ID: UnitF6_36 **Type of Mark:** N/A
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Choctawhatchee Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 5.9 ft **NGVD 29:** 6.3 ft **HWM Object:** Garage door water line
Flooding Type: Surge
HWM Address: 2708 Baygrove Drive
Location of HWM Object: Front of house - north side garage door.
HWM Type: Water mark
Closest Municipality: Freeport **County:** Walton **State:** FL
Name of Flagger/Interviewer: Sroufe **Flagger Company:** URS
Date of Flagging/Interview: 10/7/2004
Survey Crew: Starkey **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 11/24/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Survey Latitude: 30.43640 **Easting (Meters):** **Easting (feet):**
Survey Longitude: 86.15709 **Northing (Meters):** **Northing (feet):**
Approx. First Floor Elevation: 5.4 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF6_36a.jpg

Appendices

Appendix F: Survey Sheets from Bay County



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12005C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Bay-1

HWM ID: UnitF9_15 **Type of Mark:** Stake and flag
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Intercoastal waterway **Quality of Mark:** Good
Survey Elevation (NAVD 88): 2.9 ft **NGVD 29:** 3.4 ft **HWM Object:** Ground
Flooding Type: Run-up
HWM Address: 14856 Bay View Circle
Location of HWM Object: When looking toward intercoastal waterway, the stake and flag are to the left of some pilings laying on the ground.
HWM Type: Debris line
Closest Municipality: West Bay **County:** Bay **State:** FL
Name of Flagger/Interviewer: Phillips **Flagger Company:** URS
Date of Flagging/Interview: 10/5/2004
Survey Crew: Starkey **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 11/24/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Survey Latitude: 30.29340 **Easting (Meters):** **Easting (feet):** 1539853.808
Survey Longitude: 85.85821 **Northing (Meters):** **Northing (feet):** 472929.2392
Approx. First Floor Elevation: 4.5 ft

Comment



Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

UnitF9_15.jpg

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 Northwest Florida Land Surveying, Inc. State of Florida Corporation Number: 7277
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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12005C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Bay-2

HWM ID: UnitF10_12 **Type of Mark:** Red spray paint
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: St Andrews Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 4.6 ft **NGVD 29:** 5.1 ft **HWM Object:** Support pole on boat storage unit
Flooding Type: Surge
HWM Address: Marina Bay Condo 1600 Marina Bay Dr
Location of HWM Object: East side of condos nearest road, NE pole.

HWM Type: Water line
Closest Municipality: Lynn Haven **County:** Bay **State:** FL

Name of Flagger/Interviewer: Hatchett **Flagger Company:** URS
Date of Flagging/Interview: 10/5/2004

Survey Crew: Starkey **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 11/23/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Survey Latitude: 30.26471 **Easting (Meters):** **Easting (feet):** 1606586.850
Survey Longitude: 85.64642 **Northing (Meters):** **Northing (feet):** 461760.0435
Approx. First Floor Elevation: 8.7 ft

Comment

Eye witness states still water level reached 6" above top of sea wall.



UnitF10_12.jpg

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

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PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12025C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Bay-3

HWM ID	UnitF12_3	Type of Mark:	Horizontal offset
Name of Storm Event:	Ivan	Date of Flood Event:	9/16/2004
Stream Name/Flood Source:	St Andrews Bay	Quality of Mark:	Fair
Survey Elevation (NAVD 88):	4.6 ft NGVD 29: 5.1 ft	HWM Object:	2 wrack lines showing two distinct levels
Flooding Type:	Surge		
HWM Address:	N/A		
Location of HWM Object	No marker left - use directions given below.		
HWM Type:	Surge		
Closest Municipality:	Panama City	County	Bay State: FL
Name of Flagger/Interviewer:	Niedoroda	Flagger Company:	URS
Date of Flagging/Interview:	10/3/2004		
Survey Crew:	Starkey, Sanders	Survey Company:	NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date:	11/23/2004		
Survey Projection:	LAMBERT, ZONE 903 (FLORIDA NORTH)	Vertical Datum:	NAVD 88 Horizontal Datum: NAD 83
		Easting (Meters):	Easting (feet): 1579924.960
Survey Latitude:	30.18713	Northing (Meters):	Northing (feet): 433822.3
Survey Longitude:	85.72991	Approx. First Floor Elevation:	8.1 ft

Comment

There were two wrack lines found at this location.

**NO IMAGE TO
DISPLAY**

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

N/A

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Northwest Florida Land Surveying, Inc. State of Florida Corporation Number: 7277
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PROJECT: Hurricane Ivan, 1551 DR - Florida

Appendices

Appendix G: Survey Sheets from Franklin County



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12037C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Fran-1

HWM ID: UnitF12_1 **Type of Mark:** Eyewitness defined location
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Apalachicola River Mouth **Quality of Mark:** Good
Survey Elevation (NAVD 88): 5.0 ft **NGVD 29:** 5.5 ft **HWM Object:** Eye witness
Flooding Type: Surge
HWM Address: The Oyster Town Resturant
Location of HWM Object: Corner of Penton and Water Street.

HWM Type: Surge
Closest Municipality: Apalachicola **County:** Franklin **State:** FL

Name of Flagger/Interviewer: Niedoroda **Flagger Company:** URS
Date of Flagging/Interview: 10/3/2004

Survey Crew: Starkey, Sanders **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 12/10/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1815490.201
Survey Latitude: 29.72752 **Northing (Meters):** **Northing (feet):** 264901.8357
Survey Longitude: 84.98206 **Approx. First Floor Elevation:** 6.5 ft

Comment
Waiter gave an eyewitness report.

**NO IMAGE TO
DISPLAY**

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

N/A

Fred R. Thompson, Professional Land Surveyor, State of Florida, Registration Number: 3027
Northwest Florida Land Surveying, Inc. State of Florida Corporation Number: 7277
5800 N. "W" Street, Pensacola, Florida 32505 PH 850 432-1052

PROJECT: Hurricane Ivan, 1551 DR - Florida



PROJECT: Hurricane Ivan, 1551 DR - Florida
CONTENTS: Individual Historical High Water Mark Survey Report
TYPE: High Water Mark Survey
COMM. NO. 12037C **PREL.** 11/10/2004 **FINAL** 12/23/2004 **SHEET** Fran-2

HWM ID: UnitF12_2 **Type of Mark:** Wrack Line
Name of Storm Event: Ivan **Date of Flood Event:** 9/16/2004
Stream Name/Flood Source: Apalachicola Bay **Quality of Mark:** Good
Survey Elevation (NAVD 88): 4.3 ft **NGVD 29:** 4.9 ft **HWM Object:** Wrack Line
Flooding Type: Surge
HWM Address: City Park at 14 Street and Avenue C.
Location of HWM Object: Directly below at point that is 82 feet out on the boardwalk in front of bandstand at 14street and Ave C.

HWM Type: Surge
Closest Municipality: Apalachicola **County:** Franklin **State:** FL

Name of Flagger/Interviewer: Niedoroda **Flagger Company:** URS
Date of Flagging/Interview: 10/3/2004

Survey Crew: Starkey, Sanders **Survey Company:** NORTH WEST FLORIDA LAND SURVEYING, INC.
Survey Date: 12/10/2004
Survey Projection: LAMBERT, ZONE 903 (FLORIDA NORTH) **Vertical Datum:** NAVD 88 **Horizontal Datum:** NAD 83
Easting (Meters): **Easting (feet):** 1813465.231
Survey Latitude: 29.71803 **Northing (Meters):** **Northing (feet):** 261458.7356
Survey Longitude: 84.98839 **Approx. First Floor Elevation:** N/A

Comment

**NO IMAGE TO
DISPLAY**

Survey Certification: Coastal High Water Mark Location survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level.

N/A

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Northwest Florida Land Surveying, Inc. State of Florida Corporation Number: 7277
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PROJECT: Hurricane Ivan, 1551 DR - Florida