**NOAA FORM 76-35**

**U.S. DEPARTMENT OF COMMERCE**
**NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION**
**NATIONAL OCEAN SURVEY**

**DESCRIPTIVE REPORT**

<table>
<thead>
<tr>
<th>Type of Survey</th>
<th>Storm Evacuation Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job No.</td>
<td>PH-7125</td>
</tr>
<tr>
<td>Map No.</td>
<td>T-15006 thru</td>
</tr>
<tr>
<td>Classification No.</td>
<td></td>
</tr>
<tr>
<td>Edition No.</td>
<td>1st</td>
</tr>
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</table>

**LOCALITY**

<table>
<thead>
<tr>
<th>State</th>
<th>Texas</th>
</tr>
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<tbody>
<tr>
<td>General Locality</td>
<td>Galveston, Texas</td>
</tr>
<tr>
<td>Locality</td>
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</tr>
</tbody>
</table>

1971 TO 1972

**REGISTRY IN ARCHIVES**

DATE

* U.S. GOVERNMENT PRINTING OFFICE: 1973-761-778
JOB PH-7125
STORM EVACUATION MAPPING
GALVESTON AREA, TEXAS
SCALE 1:62,500
STORM EVACUATION MAPPING

The Storm Evacuation Mapping Program is a series of maps prepared by NOS at a scale of 1:62,500 in cooperation with the National Weather Service.

They are assigned to provide evacuation information in the event of severe coastal storms. Shown on the maps are principal evacuation routes, critical elevations along these routes, and five-foot contours with color gradients for guidance to high ground.

Details are sufficiently clear so that the maps can be reproduced by mass-communication media, including newspapers and television.

The program will eventually cover those areas of the Gulf and East Coasts which are vulnerable to flooding as a result of tropical cyclones and hurricanes.

Guidance and data received by National Ocean Survey from the National Weather Service include priority areas to be mapped, historical hurricanes and coastal storm-water levels at selected locations.

The maps are used by authorized emergency officials to determine probable areas of inundation by relating predicted maximum water elevations to the map contours.

The body of the map includes delineation of the main evacuation routes and feeder routes, low points along the road that might be engulfed, and high areas which are likely to remain above flood waters, thus affording some degree of refuge. These critical elevations are spaced on the map at intervals of at least two miles.

Both surfaced and unsurfaced evacuation roads are identified, along with county, state, and federal route designations, and the number of lanes for each road.

Contours on the maps provide a means of estimating areas of possible flooding. These areas are shown in increments of 5 and 10 feet in distinctive color tones.

Urban populations and normal and summer populations of resort areas are also shown.

A data block on each map gives the storm-water levels at selected locations of previous hurricanes.

Submitted:

A.K. Haywood
November 23, 1973
Storm Evacuation Mapping  
PH-7125  
Galveston, Texas  
T-15006 thru T-15011

This project consists of 6 manuscripts compiled at a scale of 1:62,500.

In addition to the U.S. Geological Survey Quadrangles that were used to delineate the manuscript, the following U.S. Department of Agriculture photo mosaics were used:

- Galveston County  flown 1968  parts 1,2,3,&4
- Chambers County  flown 1970  parts 1,2,3,&4
- Harris County  flown 1964  parts 8 & 9
- Liberty County  flown 1964  parts 6,7,&8
- Jefferson County  flown 1966  parts 1,2,3,4,&5
- Brazoria County  flown 1965  parts 1,2,3,4,5,6,&7

Road map of Brazoria County, 1971  
General Highway Map, Galveston County, revised to May 1970

T-15006 U.S. Geological Survey Quads: 1:24,000

- Aldine (1967)  
- Houston Heights (1967)  
- Bellaire (1967)  
- Almeda (1969)  
- Humble (1967)  
- Settegast (1967)  
- Park Place (1967)  
- Pearland (1969)  
- Harmaston (1967)  
- Jacinto City (1967)  
- Pasadena (1967)  
- Friendswood (1969)  
- Crosby (1967)  
- Highlands (1967)  
- La Porte (1967)  
- League City (1969)

T-15007 U.S. Geological Survey Quads: 1:24,000

- Sheeks (1961)  
- Moss Bluff (1961)  
- Shiloh (1961)  
- Whites Bayou (1961)  
- Mont Belvieu (1969)  
- Cove (1961)  
- Anahuac (1961)  
- Monroe City (1961)
T-15007 (Cont.)

Morgan Point (1969)
Umbrella Point (1961)
Oak Island (1961)
Oyster Bayou (1961)
Bacliff (1969)
Smith Point (1961)
Lake Stephenson (1961)
Frozen Point (1962)

T-15008 U.S. Geological Survey Quads: 1:24,000

Whites Bayou (1961)
Winnie N.W. (1962)
Fannett West (1962)
Fannett East (1962)
Monroe City (1961)
Stowell (1952)
Hamshire (1962)
Alligator Hole Marsh (1962)
Oyster Bayou (1961)
Standalind Reservoir (1962)
Whites Ranch (1962)
Star Lake (1961)
South of Star Lake (1962)
Mud Lake (1961)
High Island (1962)
Frozen Point (1962)

T-15009 U.S. Geological Survey Quads: 1:24,000

Juliff (1963)
Manvel (1969)
Algoa (1969)
Dickinson (1969)
Rosharon (1963)
Liverpool (1963)
Mustang Bayou (1963)
Hitchcock (1969)
Anson (1963)
Danbury (1963)
Hoskins Sound (1963)
Sea Isle (1963)
T-15010 U.S. Geological Survey Quads: 1:24,000

Texas City (1969)
Port Bolivar (1969)
Flake (1969)
Caplen (1969)
Virginia Point (1969)
Galveston (1969)
The Jetties (1969)
Lake Como (1969)

T-15011 U.S. Geological Survey Quads: 1:24,000

Angleton (1963)
Danbury (1963)
Hoskins Mound (1963)
Sea Isle (1963)
Lake Jackson (1963)
Oyster Creek (1963)
Christmas Point (1965)
San Luis Pass (1963)
Jones Creek (1963)
Freeport (1964)
Cedar Lakes East (1964)

The field work for the Galveston, Texas, area was started in July 1971 and completed in November 1971.

These maps were published in January 1972.

Submitted by:

J.B. Phillips

Approved and Forwarded:
Federal Records Center

Quads having field inspection notes:

(1:24,000)
Sea Isle, Texas
Jones Creek, Texas
Freeport, Texas
Oyster Creek, Texas
Danbury, Texas
Cedar Lakes East, Texas
Christmas Point, Texas
San Luis Pass, Texas
Angeleton, Texas
Lake Jackson, Texas
Hoskins Mound, Texas
Lake Como, Texas
The Jetties, Texas
Port Bolivar, Texas
Flake, Texas
Caplen, Texas
Texas City, Texas
Virginia Point, Texas
Galveston, Texas
Dickinson, Texas
Hitchcock, Texas
Mustang Bayou, Texas
Algoa, Texas
Manvel, Texas
Liverpool, Texas
Rosharon, Texas
Juliff, Texas
Winnie N.W., Texas
High Island, Texas
Frozen Point, Texas
Fannett East, Texas
Whites Bayou, Texas
Monroe City, Texas
Oyster Bayou, Texas
Stanolind Reservoir, Texas
Whites Ranch, Texas
Star Lake, Texas
Mud Lake, Texas
South of Star Lake, Texas
Stowell, Texas
Alligator Hole Marsh, Texas
Fannett West, Texas
Hamshire, Texas
Settegast, Texas
Humble, Texas
Highlands, Texas
Crosby, Texas
League City, Texas
Park Place, Texas
Harmannston, Texas
Smith Point, Texas
Jacinto City, Texas
La Porte, Texas
Bacliff, Texas
Lake Stephenson, Texas
Mont Belvieu, Texas
Shiloh, Texas
Morgan Point, Texas
Umbrella Point, Texas
Sheeks, Texas
Almeda, Texas
Pasadena, Texas
Anahuac, Texas
Cove, Texas
Houston Heights, Texas
Bellaire, Texas
Moss Bluff, Texas
Friendswood, Texas
Pearland, Texas
Oak Island, Texas
38 Form 685A
Recovery Note, Bench Mark

6 Wye Level Books:
(1 for each manuscript - T-15006, T-15007, T-15008,
T-15009, T-15010, T-15011)

2 Hurricane - Flood Protection Maps "Status of Project"
May 1971 (one of Freeport and vicinity - the other of
Texas City and vicinity)

Ozalid copies of manuscripts with field inspection:
T-15006 (2 copies)
T-15007
T-15008 (2 copies)
T-15009
T-15010
T-15011

Also used to compile Galveston Area:
General Highway Map, Galveston County, Texas, 1962, revised
to May 1, 1970
Road Map of Brazoria County, Texas 1971
Street Map of Brazosport, Texas, 1971
Chambers County Road Map 1965

Bureau Archives

Copy of published maps
Descriptive Report (one report for T-15006 thru T-15011)

Reproduction Division

Negatives of the published maps are filed by "T" number in
the Reproduction Division.
PHOTO PARTY 63
JOB 7123
Galveston, Texas
Storm Evacuation Mapping
July, 1971
T-15006
Field Inspection Report

Respectfully Submitted,
Dale M. Fuller
Dale H. Fuller
Chief, Photo Party 63
F.E.A.A. - U.S.
PHOTO PARTY 63

Job 7125

Galveston, Texas

Storm Evacuation Mapping

July, 1971

T-15006

1. Assignment:

Field work was assigned to Photo Party 63. Field work was done in accordance with Project Instructions dated 2 July, 1971.

2. Unusual Conditions:

Local engineers and surveying organizations state that due to subsidence U.S.G. & G.S. level lines along Galveston Bay area are sinking at a rate of approximately .01 ft to .03 ft per year. Their studies are based on the 1964 level circuit. All elevations used by this party were of the latest published elevations of the N.O.S.

3. Additional Information:

Mr. Velbrecht HIC of Houston and Mr. Bouton HIC of Galveston were contacted and provided assistance in the selection of routes and information relative to the area encompassed by this map.

4. Evacuation Routes:

All evacuation routes and critical elevations were delineated in red ink on the USGS quads or a red check mark was placed by the route number and name if found correct as agreed to alleviate congestion of detail. This was also done if the number of lanes were correct.

Respectfully Submitted:

Dale W. Fuller

Chief, Photo Party 63
Field Edit Report
Maps T-15006 and T-15007
Galveston, Texas Area
Storm Evacuation Mapping
Photo Party 63
November, 1971

T-15006
All field edit questions were answered in red ink on the field edit copy of the manuscript (ozalid).

T-15007
All field edit questions were answered in red ink on the field edit ozalid. Two additional elevations were determined and recorded on the Oak Island Quadrangle. They were also annotated on the ozalid.

Respectfully Submitted,

Dale H. Fuller
Chief, Photo Party 63
N.O.A.A. — N.O.S.
Field Edit Report

Map T-15008

Storm Evacuation Mapping

Galveston, Texas Area

Photo Party 63

November, 1971

All corrections and questions were answered in red ink on the ozalid copy of the field edit manuscript.

Dale M. Fuller
Chief, Photo Party 63
Field Inspection Report

Photo Party 63

Storm Evacuation Mapping

T-15007

July, 1971

Dale K. Piller

Chief, Photo Party 63

Dale M. Pollie
Field Inspection Report

Photo Party 63
Storm Evacuation Mapping
Job 7125
Map T-15007 July, 1971

1. General Area:
The area encompassed by this map in general are the northern and eastern shorelines of Galveston Bay. The land area in general is flat. Critical elevations generally were found to be 1 to 2 feet above or below the normal contours. The northern portion of this map is traversed by I-10 a 4 lane divided highway. A plethora of elevations were determined on this highway though it is mostly above the 20 foot contour to enhance the map.

2. Critical Elevations:
Critical elevations were recorded in the Wye Level Volume and also annotated on the USGS Quads in red ink.

3. Unusual Conditions:
As stated in the field inspection report for T-15006, a general subsidence is occurring in the area and level lines are reported by surveying organizations to be subsiding at a rate of 0.1 to 0.2 foot per year.

4. Additional Information:
Mr. Benton M I C of Galveston, Texas was contacted and informed of the criteria for the selection of evacuation routes. It is recommended by Mr. Benton that the first 5 foot contour of the final map be shown in a separate shade of red.
The four USGS Quads on the eastern border of this map overlap T-15008 and will be submitted with this map.

Respectfully Submitted,

Dale M. Fuller
Chief, Photo Party 63
N.O.A.A. - N.O.S.
Field Inspection Report

Photo Party 63

Storm Evacuation Hearing

T-15008

September, 1971

Dale N. Fuller

Chief, Photo Party 63

N.O.A.A. - N.O.S.
Job PH 7125

General:

Map T-1508 was field inspected by Photo Party 63 in accordance with Project Instructions dated 2 July, 1971 and amended 30 August, 1971.

The area encompassed by this map is generally low and flat. It is mainly farm land and oil fields. Three major ro as traverse the map, I-10 to the north, State 67 to the south, and State 124 in the center.

Critical Elevations:

Critical elevations were determined in accordance with Project Instructions, annotated in red ink on their respective USGS Quads, and recorded in the Site Level Volume. Critical Elevations were indexed on the fly leaf of the Site Volume by page, number, and quad.

Unusual Conditions:

Two road locations were noted as not being current. The proper location was sketched on the appropriate USGS quad and verified by Chambers County Engineer.

Also one route number was changed and corrected on the quad.

Additional Information:

Mr. Banton of the NWS Galveston, Texas was informed of the map and shown the evacuation routes.

The four USGS Quads of the western boundary of this map overlap map T-15007.
STORM EVACUATION MAPPING

OCTOBER, 1971

PHOTO PARTY 63

JOB PH-7125

MAP T-15009

Respectfully Submitte,

Dale M. Fuller

Chief, Photo Party 63

N.O.A.A. - N.O.S.
General:

Map T-15009 was Field Inspected by Photo Party 63 in accordance with Project Instructions dated 2 July, 1971 and amended 30 August, 1971.

The area encompassed by this map is generally low and flat.

Critical Elevations:

Critical elevations were determined in accordance with Project Instructions, annotated on their respective USGS Quads in red ink, and recorded in the Wye Level Volume. Critical elevations were indexed on the fly leaf cover of the Wye Level Volume by page, number, and Quadrangle.

The official copy of this map should be considered as a complete inventory of all evacuation routes used and their location.

Unusual Conditions:

The road location was not current (south section of route 2917) and was drawn correctly on the appropriate quad in red ink.

Various engineering concerns are aware of a general subsidence in the area. Data has been submitted with this report concerning the subsidence of USGS level marks. No attempt was made to adjust or otherwise use this material in leveling. All elevations were of the published elevations by the USGS.

Additional Information:

Mr. Benton of the KMS Galveston, Texas was informed of the evacuation routes selected.

The four quadrangles on the south boundary of this map also affect Map T-15011.
### VERTICAL CONTROL DATA

Coast and Geodetic Survey

Sealevel Datum of 1929

#### LINE 102 - ADJUSTED ELEVATIONS

<table>
<thead>
<tr>
<th>Bench Mark</th>
<th>1936</th>
<th>1951</th>
<th>1953-54</th>
<th>1956</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>First-order</td>
<td>First-order</td>
<td>First-order</td>
<td>First-order</td>
</tr>
<tr>
<td>(Feet)</td>
<td>(Feet)</td>
<td>(Feet)</td>
<td>(Feet)</td>
<td>(Feet)</td>
</tr>
<tr>
<td>T 458</td>
<td>2.684</td>
<td>7.930</td>
<td>7.877</td>
<td>7.829</td>
</tr>
<tr>
<td>T 458</td>
<td>4.160</td>
<td>3.960</td>
<td>3.916</td>
<td>3.951</td>
</tr>
<tr>
<td>L 1137</td>
<td>7.503</td>
<td>7.451</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M 1137</td>
<td>4.930</td>
<td>Destroyed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M 1137 RESET (1954)</td>
<td>8.130</td>
<td>Not recovered</td>
<td>Not recovered</td>
<td>3.583</td>
</tr>
<tr>
<td>10 + 00 (USED)</td>
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<td>Not recovered</td>
<td>Not recovered</td>
<td>Destroyed</td>
</tr>
<tr>
<td>B 1137 (USED)</td>
<td></td>
<td></td>
<td>Destroyed</td>
<td></td>
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<tr>
<td>J 1137 (USED)</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>20 + 00 (USED)</td>
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<td></td>
<td>Destroyed</td>
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<tr>
<td>D 1137 (USED)</td>
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<tr>
<td>E 1137 (USED)</td>
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<td>Destroyed</td>
<td></td>
</tr>
<tr>
<td>F 1137 (USED)</td>
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<td></td>
<td>Destroyed</td>
<td></td>
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<tr>
<td>J 168</td>
<td>7.224</td>
<td>Destroyed</td>
<td></td>
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<tr>
<td>J 168 RESET (1951)</td>
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<td>Not recovered</td>
<td>Destroyed</td>
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<td>Not recovered</td>
<td>Not recovered</td>
<td>Destroyed</td>
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<tr>
<td>60 + 00 (USED)</td>
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<td>TIDAL 2 OFFATS BAYOU</td>
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<td></td>
<td>7.172</td>
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<td>TIDAL 1 OFFATS BAYOU</td>
<td>5.151</td>
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<td>70 + 00 (USED)</td>
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<td>6.430</td>
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<td>TIDAL 3 OFFATS BAYOU</td>
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<td>Not recovered</td>
<td>Destroyed</td>
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<tr>
<td>K 168</td>
<td>5.020</td>
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<td></td>
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</tbody>
</table>

#### SPUR LINE TO GALVESTON MUNICIPAL AIRPORT

<table>
<thead>
<tr>
<th>Location</th>
<th>Elevation</th>
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<tbody>
<tr>
<td>X 639</td>
<td>5.732</td>
</tr>
<tr>
<td>X 179</td>
<td>5.038</td>
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<tr>
<td>HIGH POINT</td>
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<td>AIRPORT 2 (USED)</td>
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**END OF THE SPUR LINE**
### Vertical Control Data

**Line 103 (Continued) Adjusted Elevations**

<table>
<thead>
<tr>
<th>Bench Mark</th>
<th>1905-6</th>
<th>1936</th>
<th>1951</th>
<th>1953-54</th>
<th>1955-56</th>
<th>1956-57</th>
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<tr>
<td>EAGLE POINT RM 1 TIDAL 2 EAGLE POINT EAGLE POINT - TIDAL 1 EAGLE POINT RM 1</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>D 1187</td>
<td>12.031</td>
<td>11.558</td>
<td>11.447</td>
<td>11.283</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>11.954</td>
<td>11.268</td>
<td>11.191</td>
<td>10.991</td>
<td>9.613</td>
<td></td>
</tr>
</tbody>
</table>

**End of the Spur Line**

| | 17.711 | 11.319 | 11.308 | 11.063 | 15.713 | 15.713 |

**Line 104 - Adjusted Elevations**

|------------|--------|------|------|------|------|---------|---------|

*Second-order elevation.*
### VERTICAL CONTROL DATA

**LINE 106 - ADJUSTED ELEVATIONS**

<table>
<thead>
<tr>
<th>Bench Mark</th>
<th>1949 Second-order (Feet)</th>
<th>1954 Second-order (Feet)</th>
<th>1959 First-order (Feet)</th>
<th>1964 First-order (Feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>K 646 RESET 1949</td>
<td>11.609</td>
<td>11.368</td>
<td>11.148</td>
<td>10.951</td>
</tr>
<tr>
<td>W 1186</td>
<td></td>
<td></td>
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<td>10.489</td>
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### LINE 107 - ADJUSTED ELEVATIONS

<table>
<thead>
<tr>
<th>Bench Mark</th>
<th>1935 First-order (Feet)</th>
<th>1951 First-order (Feet)</th>
<th>1954 First-order (Feet)</th>
<th>1959 First-order (Feet)</th>
<th>1964 First-order (Feet)</th>
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<tbody>
<tr>
<td>X 456</td>
<td>7.520</td>
<td>Not recovered</td>
<td>Destroyed</td>
<td>6.842</td>
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<tr>
<td>L 1144</td>
<td>7.982</td>
<td>7.405</td>
<td>Not recovered</td>
<td>6.103</td>
<td></td>
</tr>
<tr>
<td>N 305</td>
<td>7.592</td>
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<td>Destroyed</td>
<td>6.103</td>
<td></td>
</tr>
<tr>
<td>M 1124</td>
<td>8.045</td>
<td>Not recovered</td>
<td>Destroyed</td>
<td>6.103</td>
<td></td>
</tr>
<tr>
<td>T 456</td>
<td>7.795</td>
<td>6.900</td>
<td>Not recovered</td>
<td>Destroyed</td>
<td>6.103</td>
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<td>P 305</td>
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<td>6.900</td>
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<td>6.103</td>
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<td>N 1144</td>
<td>9.045</td>
<td>Not recovered</td>
<td>Destroyed</td>
<td>6.103</td>
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<tr>
<td>E 305</td>
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<td>10.825</td>
<td>10.052</td>
<td>9.502</td>
<td>8.332</td>
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</table>
### VERTICAL CONTROL DATA

#### Line 106 - Adjusted Elevations

<table>
<thead>
<tr>
<th>Bench Mark</th>
<th>1936 (First-order)</th>
<th>1941 (First-order)</th>
<th>1951 (First-order)</th>
<th>1953-54 (First-order)</th>
<th>1958 (First-order)</th>
<th>1964 (First-order)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Feet)</td>
<td>(Feet)</td>
<td>(Feet)</td>
<td>(Feet)</td>
<td>(Feet)</td>
<td>(Feet)</td>
</tr>
<tr>
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<td>6.469</td>
<td>5.295</td>
<td>4.974</td>
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<td>Not recovered</td>
</tr>
<tr>
<td>LIM 6 A</td>
<td>6.469</td>
<td>6.699</td>
<td>5.801</td>
<td>5.882</td>
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<td>Not recovered</td>
</tr>
<tr>
<td>L (C. &amp; S.P. Ry.)</td>
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### Vertical Control Data

**Coast and Geodetic Survey**
**Sealevel Datum of 1929**

#### Line 108 - Adjusted Elevations

<table>
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<th>Bench Mark</th>
<th>1935 (Feet)</th>
<th>1940 (Feet)</th>
<th>1944 (Feet)</th>
<th>1951 (Feet)</th>
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**Spur Line to Hitchcock Naval Air Station (Abandoned)**

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**End of Spur Line**

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Not Recovered: DEstroyed
were continued through the area and a 3rd order closure obtained.

The results of this leveling compared to the 1964 LPE's are shown in the following table:

<table>
<thead>
<tr>
<th>Monument</th>
<th>LPE 1964</th>
<th>Relev. 1965</th>
<th>Indicated Settlement</th>
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<tbody>
<tr>
<td>U-456</td>
<td>13.418</td>
<td>13.419</td>
<td>0.003</td>
</tr>
<tr>
<td>L-363</td>
<td>13.393</td>
<td>13.396</td>
<td>0.003</td>
</tr>
<tr>
<td>W-466</td>
<td>10.995</td>
<td>10.995</td>
<td>0.000</td>
</tr>
<tr>
<td>N-1144</td>
<td>6.004</td>
<td>5.877</td>
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<tr>
<td>K-1144</td>
<td>7.441</td>
<td>7.289</td>
<td>-0.152</td>
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<tr>
<td>N-1156</td>
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<td>9.841</td>
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<tr>
<td>P-646</td>
<td>2.051</td>
<td>2.145</td>
<td>-0.096</td>
</tr>
<tr>
<td>X-365</td>
<td>6.708</td>
<td>6.655</td>
<td>-0.053</td>
</tr>
<tr>
<td>A-633</td>
<td>3.433</td>
<td>3.445</td>
<td>0.012</td>
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<tr>
<td>B-635 (Reset)</td>
<td>12.507</td>
<td>17.865</td>
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<td>K-168</td>
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<td>9.833</td>
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<tr>
<td>Q-456</td>
<td>5.400</td>
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<tr>
<td>M-456</td>
<td>11.386</td>
<td>11.533</td>
<td>-0.147</td>
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The leveling results were added to Fig. 1 and the difference in "error of projection" shown in the right hand column. The leveling indicates that most of the monuments are settling at a slightly more rapid rate than is indicated by the straight line projections. This is reasonable as a considerable amount of heavy construction is underway by the chemical and oil industries in Texas City. (indicated in water pressure)

It can be argued that projection of earlier and more severe settlement rates would have introduced an unusually large error. However, projection of the settlement rate of a single monument is not advocated. The settlement rates of several monuments in the area of interest should be projected and levels run through them to determine if they are in reasonable agreement.
<table>
<thead>
<tr>
<th>Bench Mark</th>
<th>USC#GS 1918</th>
<th>USC#GS 1954</th>
<th>USC#GS 1959</th>
<th>Projected to 1970</th>
<th>70 Rerun Adj to V-57 Proj to 70</th>
<th>Diff from Proj to 70</th>
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</thead>
<tbody>
<tr>
<td>ROW (USE)</td>
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<td>4.823</td>
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<tr>
<td>P-1015</td>
<td>4.856</td>
<td>4.800</td>
<td>4.671</td>
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<tr>
<td>V-57</td>
<td>9.957</td>
<td>9.678</td>
<td>9.533</td>
<td>9.534</td>
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<td>Bench Mark</td>
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<td>USCGS 1954</td>
<td>USCGS 1959</td>
<td>Projected to 1970</td>
<td>70 Rerun Adj to V-57 Proj to 70</td>
<td>Diff from Proj to 70</td>
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</tbody>
</table>
Storm Evacuation Mapping

PH 7125

Map T 15010

Galveston, Texas

October, 1971

Respectfully Submitted,

[Signature]

Dale X. Fuller
Chief, Photo Party 63
N.O.A.A. - N.O.S.
Job PH-7125
Map T – 15010

General:
Map T 15010 was Field Inspected in accordance with Project Instructions dated 2 July, 1971 and amended 30 August, 1971.
The area encompassed by this map is generally low and flat. Two large communities are within the map.

Critical Elevations:
Critical elevations were determined in accordance with Project Instructions, annotated on their respective USGS quads in red ink, and recorded on the fly leaf cover of the Wye Volume by page, number, and Quadrangle.
The ozalid copy of this map should be considered as a complete inventory of all evacuation routes, also by name, route number, and number of lanes. On one quad it was impossible to label all routes and this was done on the Ozalid.

Unusual Conditions:
One new route was constructed since the printing of the Quadrangle. This route was drawn on the Ozalid in red ink and supplemented by a Galveston County map.
A series of levees have been constructed in the Texas City area. Maps, data, elevations were obtained from the Corps of Engineers and submitted. No elevations of the levees were submitted as critical elevation points as their horizontal position could not be plotted precisely by the Field Party. Office compilation of the points and elevations are necessary. These points are P.I. of the curves on the levees and will represent the levee as the external distance is generally less than three feet. These levees are built of earth and are 250 feet wide at their base and 24 feet wide on top.

Accuracy of the USGS Quadrangles:
With the exceptions of the discrepancies mentioned under the previous heading of this report, Quad elevations (street intersections in Texas City, on or near Texas Avenue) were found incorrect. A level line was run between at least two USGS bench marks to validate this.

Additional Information:
Mr. Benton of the NWS in Galveston, Texas was shown all evacuation routes selected and suggestions by he incorporated in the field inspection of this map.
A general subsidence of all level marks has been reported by various engine ring organizations. All elevations used by this party were of the 1964 USGS leveling.
Storm Evacuation Mapping
Galveston, Texas Area
Map T-15011
Photo Party 63
November, 1971

Respectfully submitted,

Dale H. Fuller
Chief, Photo Party 63
N.O.A.A. - N.O.S.
Job Ph- 7125

Map T-15011

General:
Map T-15011 was field inspected by Photo party 63 in accordance with Project Instructions dated 2 July, 1971 and amended 30 August, 1971.
The area encompassed by this Map is generally low and flat. Several communities in the southwest section of this Map form an area known as Brazosport. The principal industry being chemical plants.

Critical Elevations:
Critical elevations were determined in accordance with Project Instructions, annotated on the quadrangles in red ink, and recorded on the fly leaf cover of the VHS Volume by page, number, and quadrangle.
A number of elevations were determined or obtained from the Corps of Engineers, Velasco Drainage Commission, and directly from the Quad.

Ozalid:
The ozalid of this Map should be considered as a complete inventory of all evacuation routes. Dashed red lines indicate new routes, and green ink indicates deletions.

Populations:
Additional population figures were obtained from Chamber of Commerces, City Halls, and Civil Defense. Difficulty was encountered obtaining populations of specific isolated sub-divisions. A notation was made on the ozalid concerning this.

Unusual Conditions:
The levees on this map are defined on the USGS quads. One new levee was constructed and drawn on the ozalid. There are roads on top of most of the levees for mainly maintenance purposes. The roads on levees to be used as evacuation routes are so marked on the quad and ozalid.

Additional Information:
Mr. Benton of the NWS and the Civil Defense Director of Brazoria County were shown the ozalid copy of the map and their ideas used in field inspection.

Adequacy Of USGS Quadrangles:
The USGS quads are adequate with the exception of the extension of state route 1495 on the Freeport Quad.