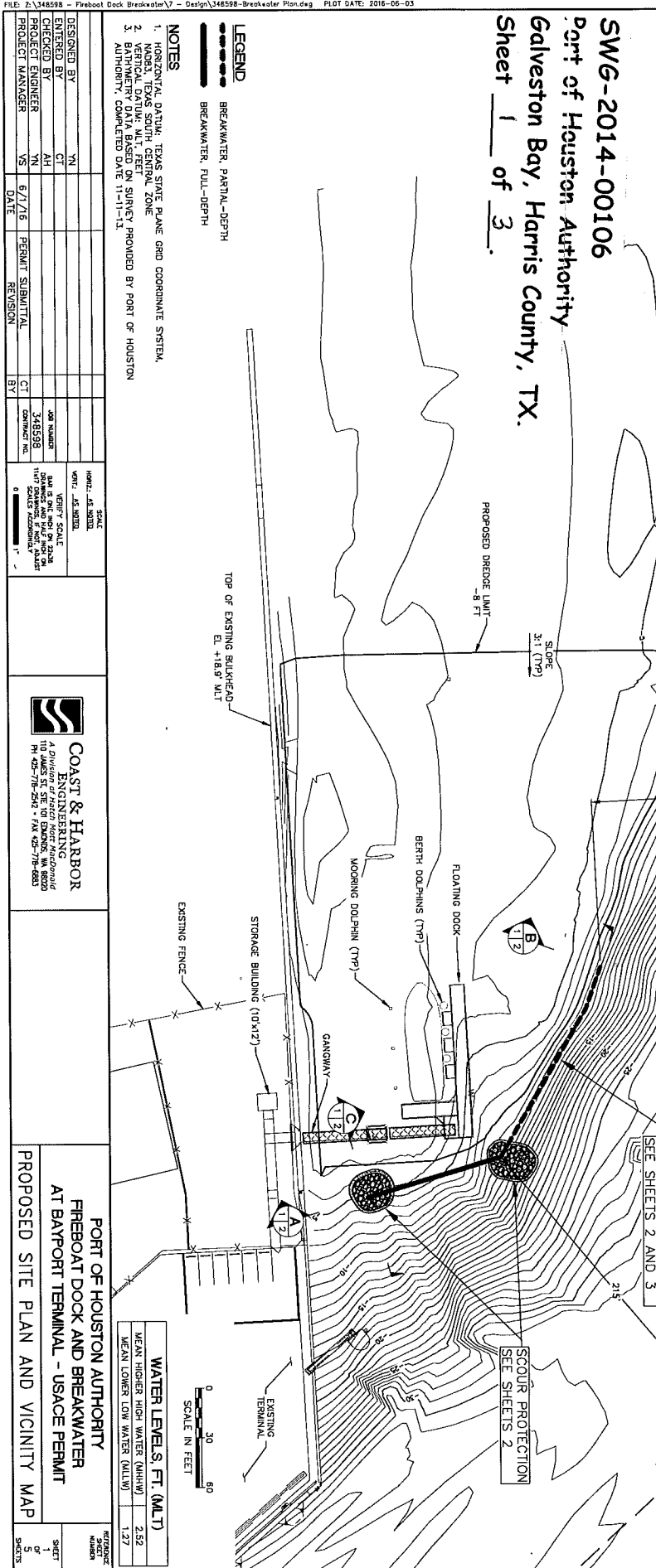
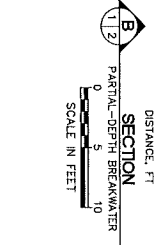
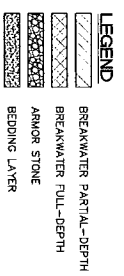
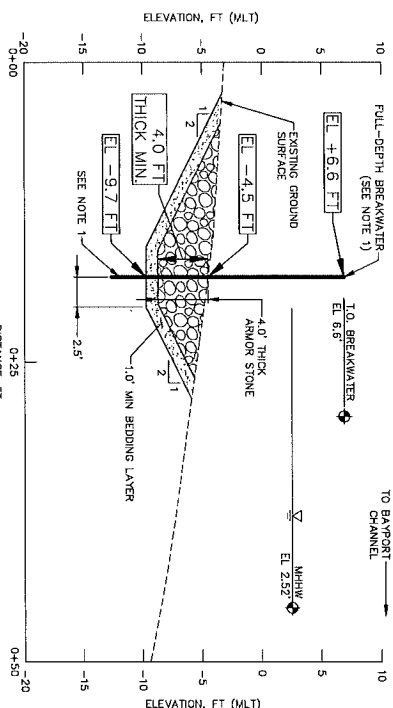
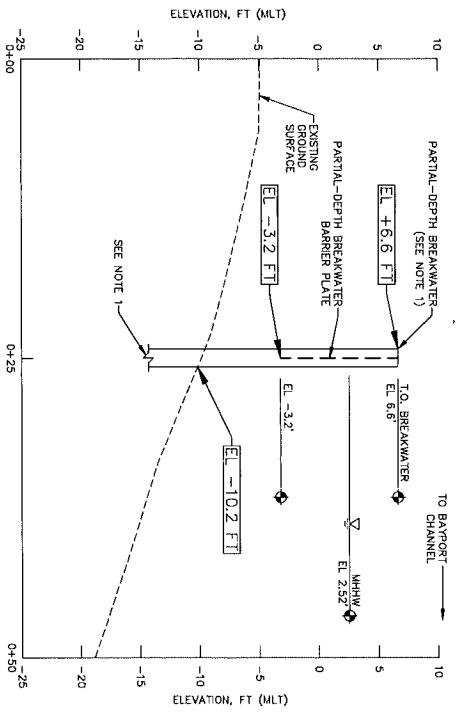
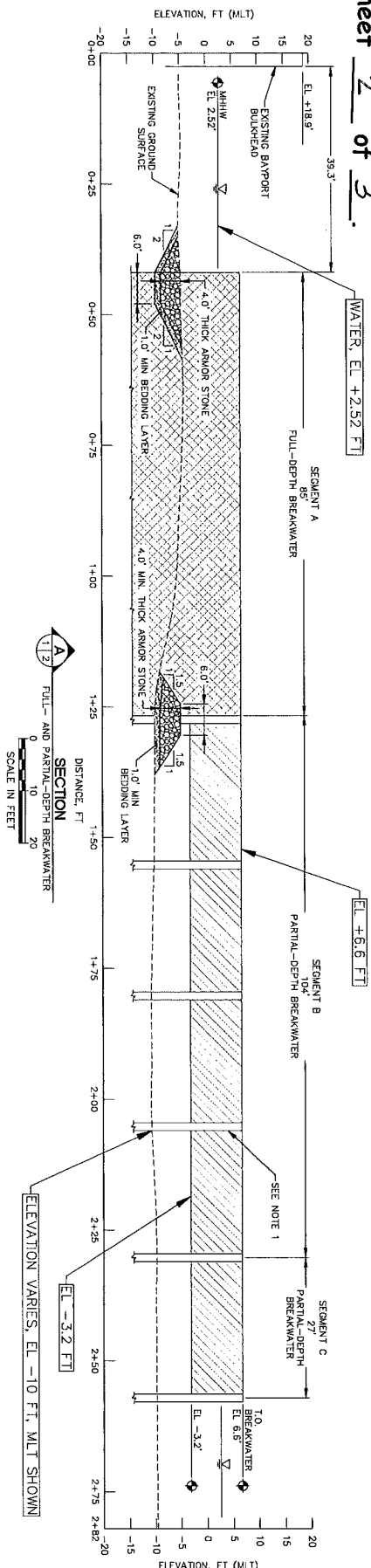
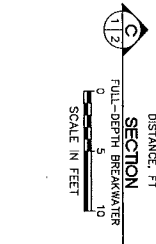






- NOTES**
1. PILES AND CROSS SECTIONAL CONFIGURATION OF PARTIAL-DEPTH BREAKWATER SHALL BE DETERMINED BY THE PORT OF HOUSTON AUTHORITY.
  2. VERTICAL DRAINAGE: M.L.T. FEET SHALL BE DETERMINED BY THE PORT OF HOUSTON AUTHORITY.
  3. OF HOUSTON AUTHORITY, COMPLETED DATE 11-11-13.

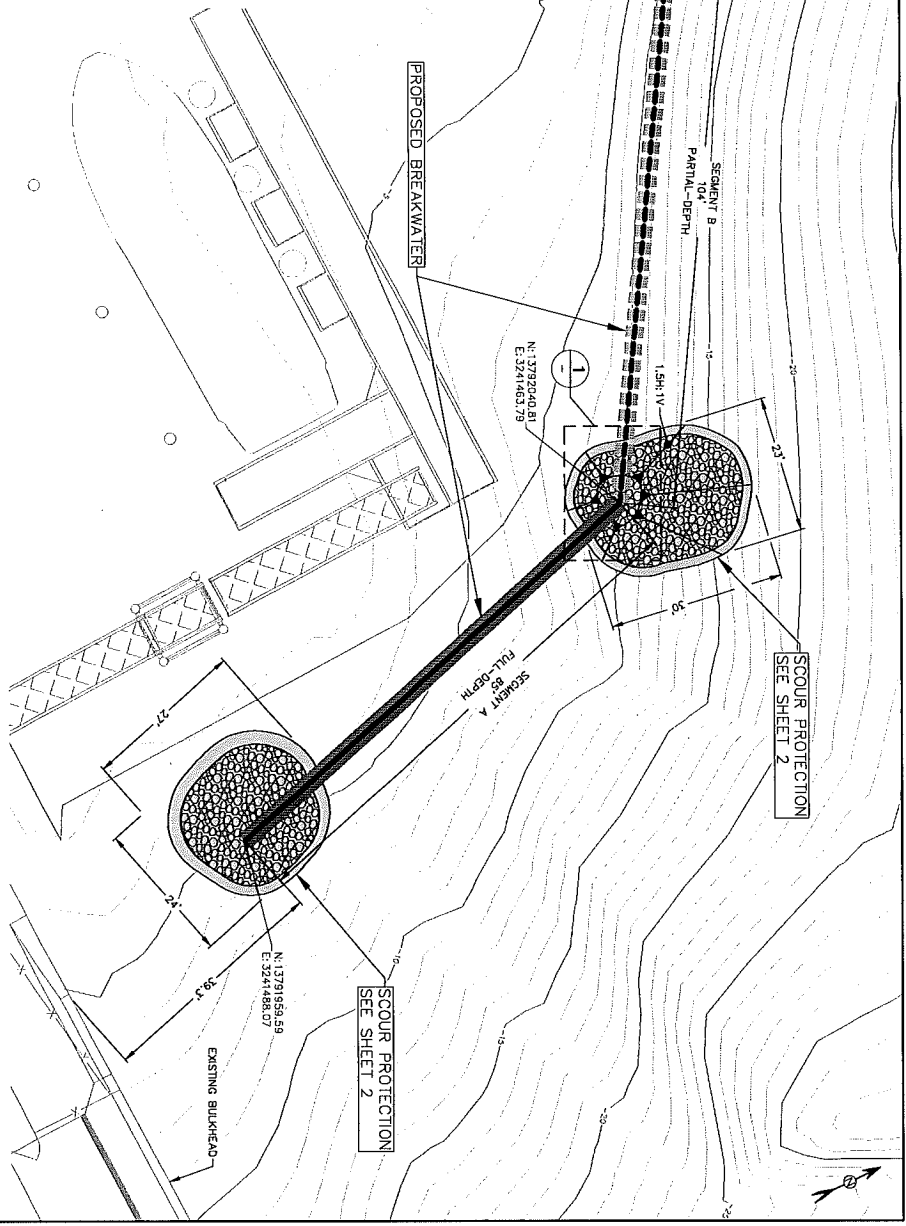
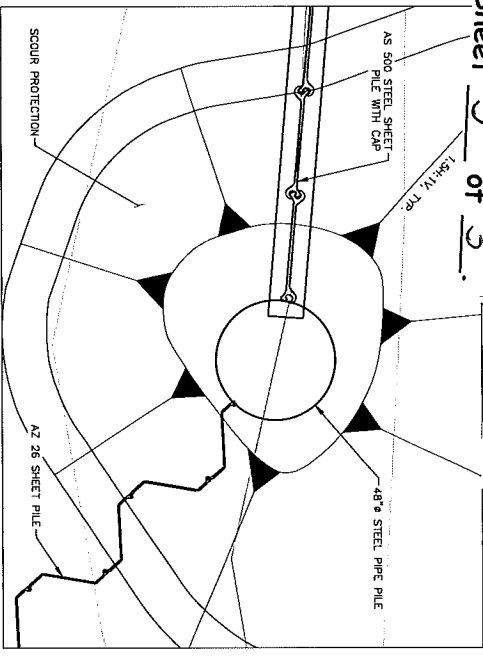


| WATER LEVELS, FT. (MLT)       |      |
|-------------------------------|------|
| MEAN HIGHER HIGH WATER (MHHW) | 2.52 |
| MEAN LOWER LOW WATER (MLLW)   | 1.27 |

|                                                                                                                                                                            |            |          |            |            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|------------|------------|
| DESIGNED BY                                                                                                                                                                | NA         | SCALE    | DATE       | 06/16/2016 |
| CHECKED BY                                                                                                                                                                 | CT         | DATE     | 06/16/2016 |            |
| PROJECT ENGINEER                                                                                                                                                           | NA         | DATE     | 06/16/2016 |            |
| PROJECT MANAGER                                                                                                                                                            | NA         | DATE     | 06/16/2016 |            |
| DATE                                                                                                                                                                       | 06/16/2016 | REVISION | BT         |            |
| <p><b>COAST &amp; HARBOR ENGINEERING</b><br/>                 4100 W. 11th St., Suite 100, Houston, TX 77057<br/>                 PH: 409-778-2942 • FAX: 409-778-8883</p> |            |          |            |            |
| <p><b>PORT OF HOUSTON AUTHORITY</b><br/>                 FIREBOAT DOCK AND BREAKWATER<br/>                 AT BAYPORT TERMINAL - USACE PERMIT</p>                          |            |          |            |            |
| <p><b>SECTIONS</b></p>                                                                                                                                                     |            |          |            |            |
| SHEET                                                                                                                                                                      | 2          | OF       | 3          |            |

JUN 16 2016

SWG-2014-00106  
Port of Houston Authority  
Galveston Bay, Harris County, TX.  
Sheet 3 of 3.



- LEGEND**
- BREAKWATER, PARTIAL-DEPTH
  - BREAKWATER, FULL-DEPTH

- NOTES**
- HORIZONTAL DATUM: TEXAS STATE PLANE GRID COORDINATE SYSTEM, NAD83, T84, SOUTH CENTRAL ZONE
  - VERTICAL DATUM: MLLT, FEET
  - BATHYMETRY DATA BASED ON SURVEY PROVIDED BY PORT OF HOUSTON AUTHORITY, COMPLETED DATE 11-11-13.

|                  |        |             |                            |
|------------------|--------|-------------|----------------------------|
| DESIGNED BY      | WM     | SCALE       | HORIZ. AS SHOWN            |
| CHECKED BY       | CT     | VERT. SCALE | BAU IS ONE INCH TO 20 FEET |
| PROJECT ENGINEER | WM     | DATE        | 6/1/16                     |
| PROJECT MANAGER  | VS     | REVISION    | BY                         |
| DATE             | 6/1/16 | REVISION    | BY                         |
| DESIGNED BY      | WM     | SCALE       | HORIZ. AS SHOWN            |
| CHECKED BY       | CT     | VERT. SCALE | BAU IS ONE INCH TO 20 FEET |
| PROJECT ENGINEER | WM     | DATE        | 6/1/16                     |
| PROJECT MANAGER  | VS     | REVISION    | BY                         |
| DATE             | 6/1/16 | REVISION    | BY                         |



**COAST & HARBOR**  
ENGINEERING  
A Division of Hochtief North America  
14455 7th Street, Suite 200  
Houston, TX 77057  
Tel: 409-778-2500 Fax: 409-778-8880

**PORT OF HOUSTON AUTHORITY**  
FREEBOAT DOCK AND BREAKWATER  
AT BAYPORT TERMINAL - USACE PERMIT  
PROPOSED BREAKWATER LAYOUT

|                                |      |
|--------------------------------|------|
| <b>WATER LEVELS, FT. (MLT)</b> |      |
| MEAN HIGHER HIGH WATER (MHHW)  | 2.52 |
| MEAN LOWER LOW WATER (MLLW)    | 1.27 |

SCALE IN FEET  
0 10 20

PROJECT NUMBER  
5