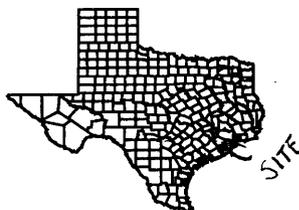


See Drawings for Details
 Exhibit A - Project Location
 Exhibit C.1 - Spoil Disposal Site
 Figure 1 - Mitigation Site (Mitigation Plan)



Source: Freeport (2865060), USGS Quadrangle, Brazoria County



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Exhibit A.0
 Project Vicinity Map
 Surfside Marina
 Brazoria County, Texas

Prepared for: Lyon Properties

Job No.: 460829

Scale: 1:72,000

Prepared by: PBS&J

Date: September 2004

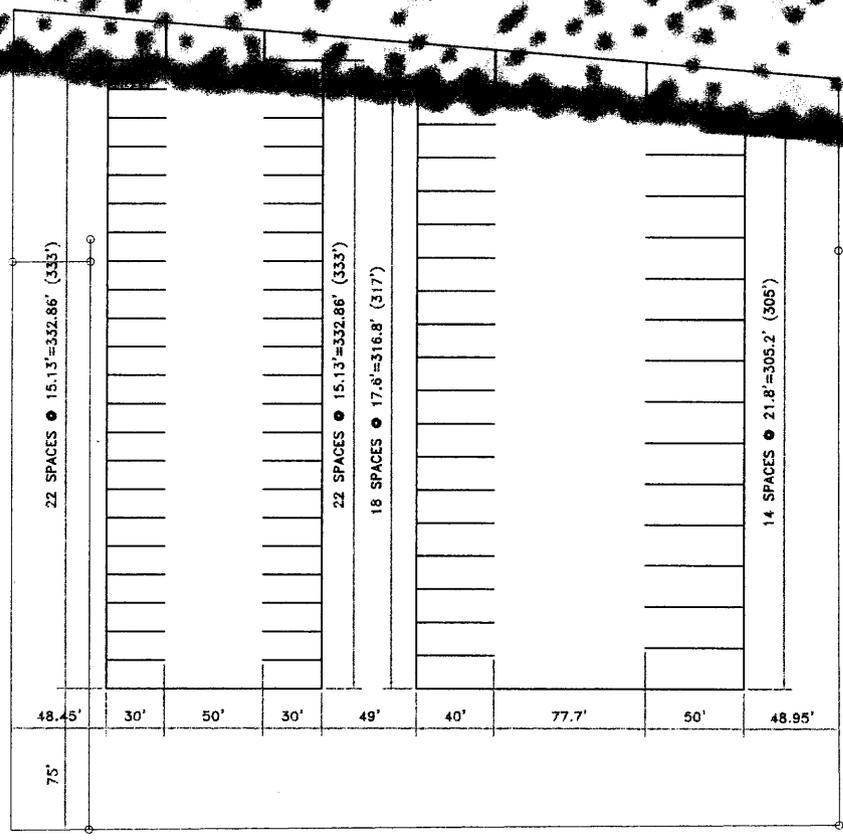
File: K://460829.00/GPS/FIG_A.mxd

LYON PROPERTIES
 23484
 SHEET 1 OF 12

Sep 10, 2004 - 9:04am 14021 K:\460829.00 Surfside Marina\Marina-CADD\dwg\xsurv prpty_line.dwg

GULF INTRACOASTAL WATERWAY

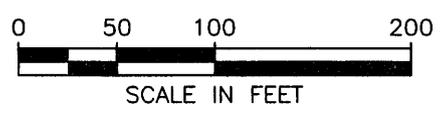
SH 332



SHARK LANE

GAFFNEY LANE

LYON PROPERTIES
R3484
SHEET 2 OF 12



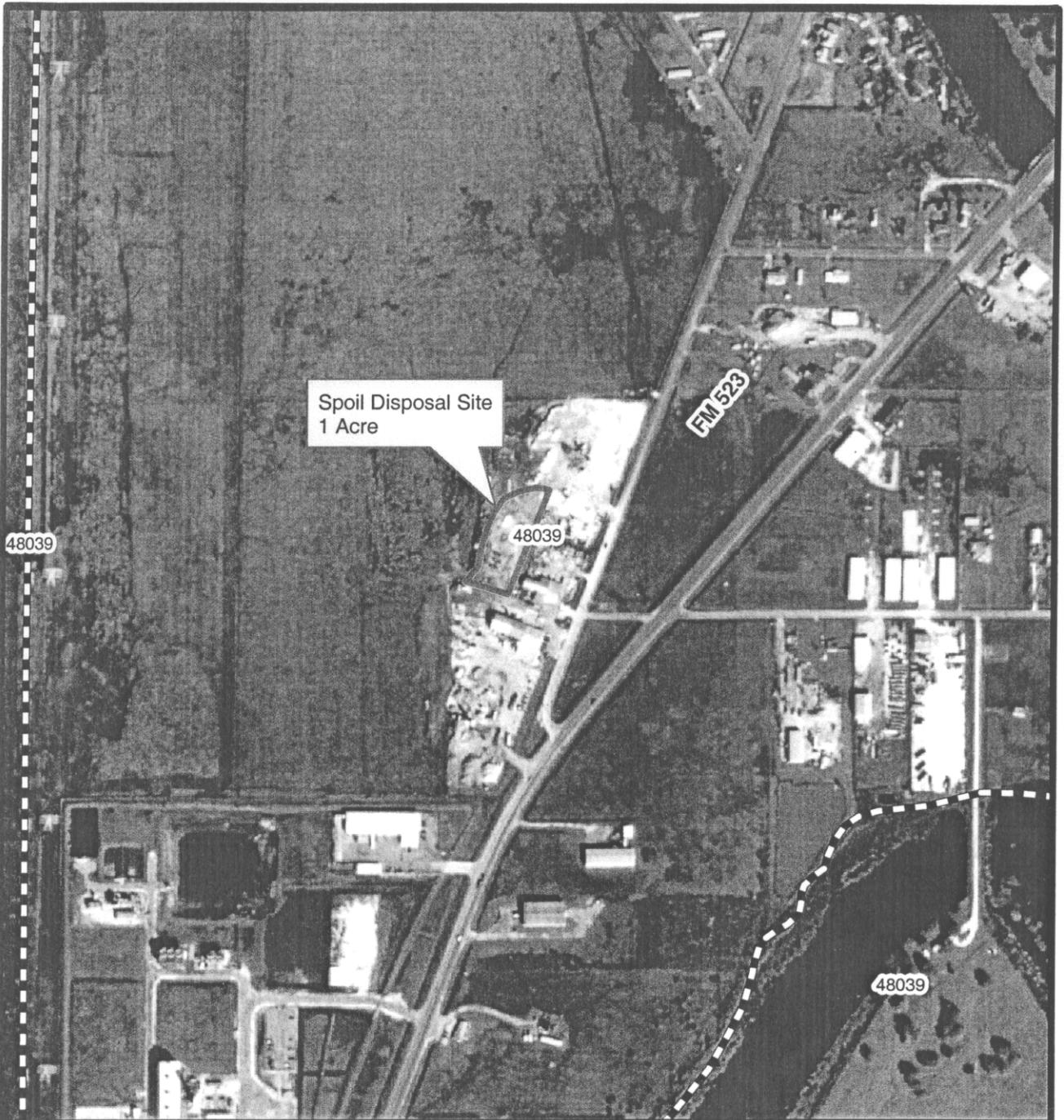
Source: USGS Freeport Quadrangle,
Brazoria County, Texas



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Exhibit C Site Plan Surfside Marina Brazoria County, Texas

Prepared for: Lyon Properties	
Job No.: 460829.00	Scale: 1" = 100'
Prepared by: PBS&J	Date: January 2004
File:	









No jurisdictional wetlands are located within the proposed disposal area.

PBSJ 1880 S. Dairy Ashford Rd., Ste. 300
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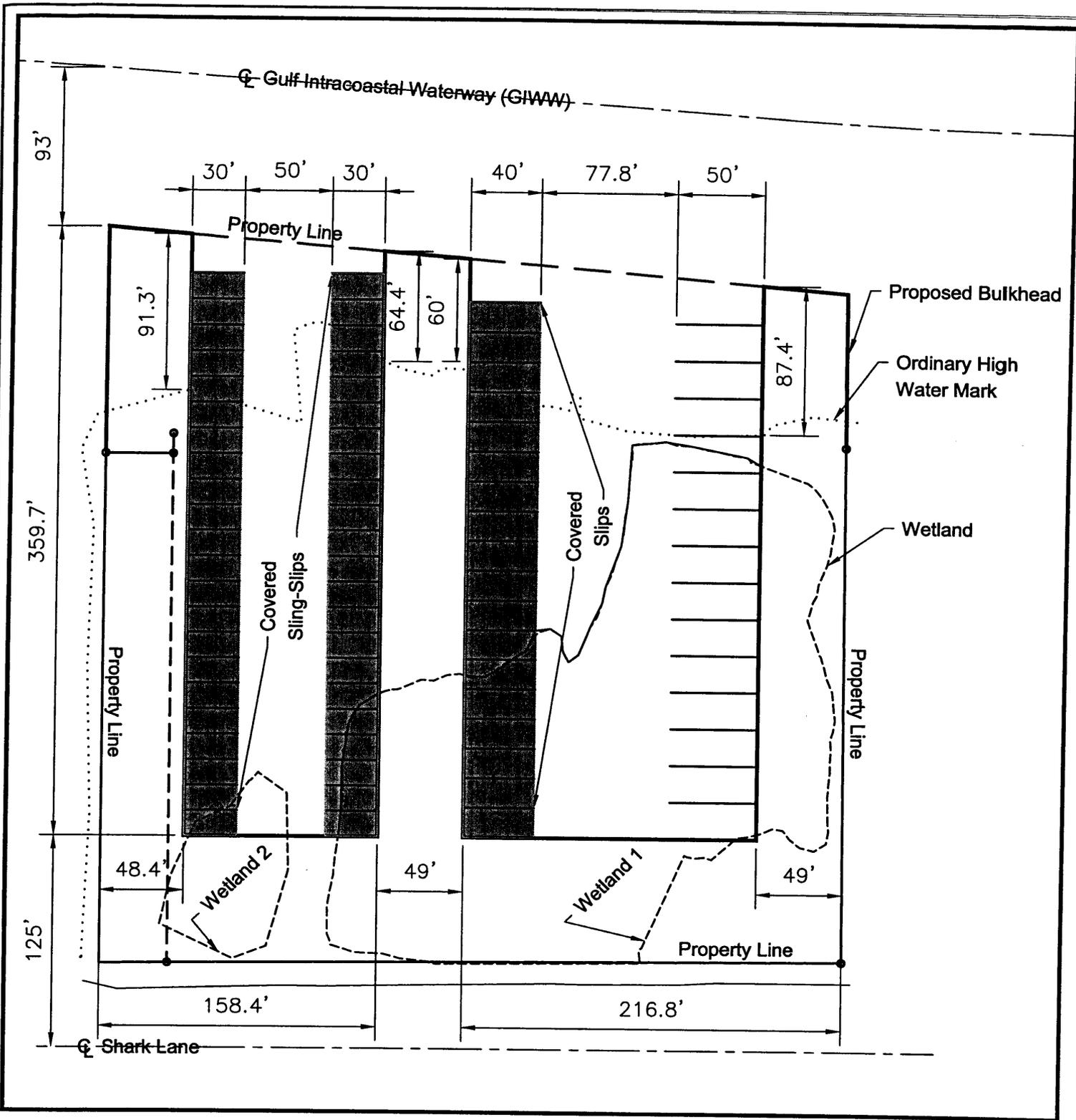
Exhibit C.1
Site Plan
Spoil Disposal Site
Brazoria County, Texas

Prepared for: Lyon Properties & Custom Home, L.L.C.	
Job No.: 460829	Scale: 1:6000
Prepared by: PBSJ/pjl	Date: September 2004
File: k:/460829/figures/Aerial_site.mxd	

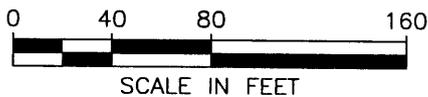
USGS Aerial Quarter Quad Freeport, 1995
 FEMA Floodplains, Digital Q3 Data, Brazoria County, 1998

LYON PROPERTIES
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Sep 09, 2004 - 10:50am 14021 K:\460829.00 Surfside Marina\CADD\dwg\PERMIT01.dwg



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SCALE IN FEET



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**Exhibit D
Plan View
Surfside Marina
Brazoria County, Texas**

Prepared for: Lyon Properties

Job No.: 460829.00

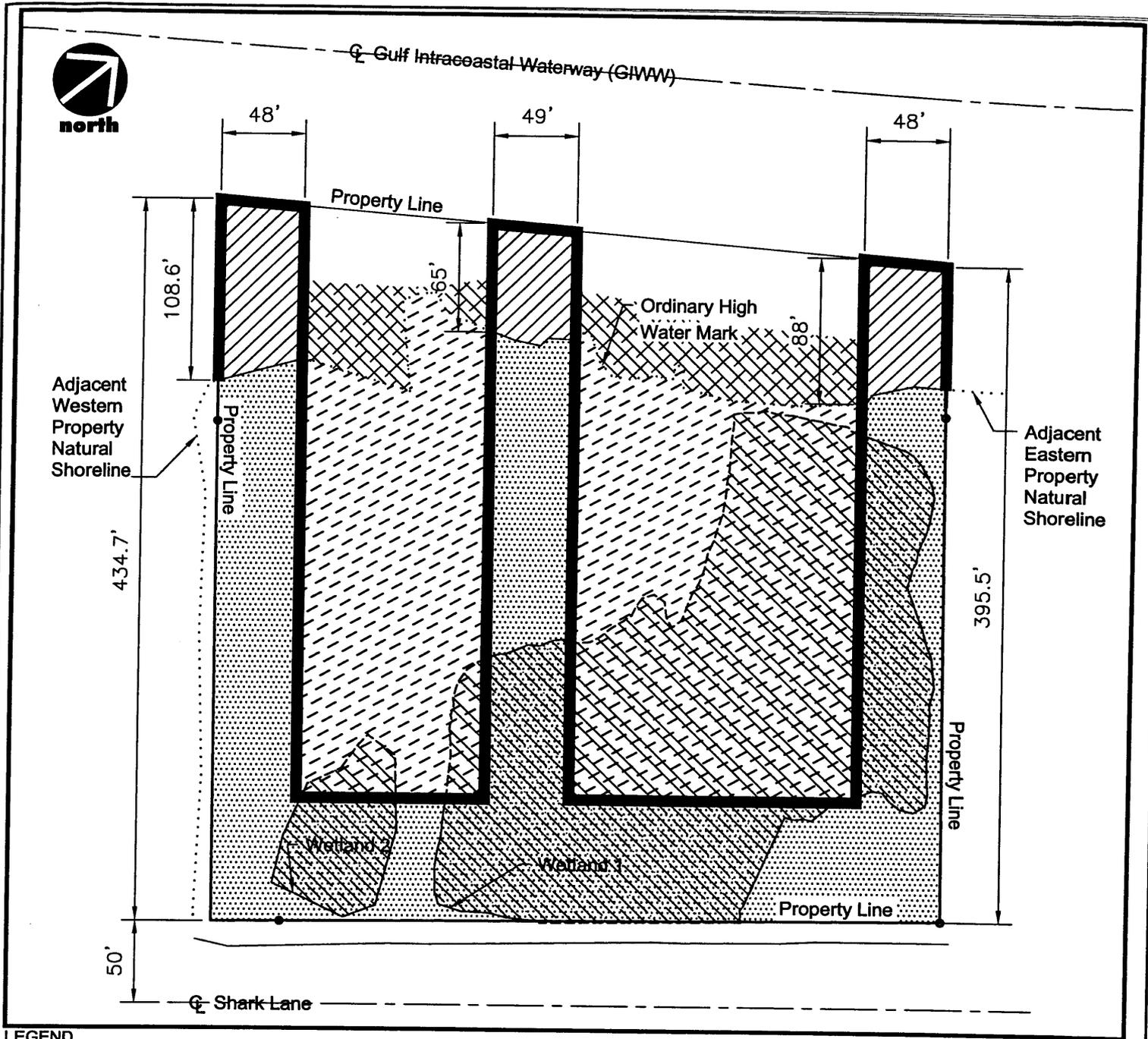
Scale: 1" = 80'

Prepared by: PBS&J

Date: January 2004

File:

Sep 09, 2004 - 10:34am 14021 K:\460829.00 Surfside Marina\Marina-CADD\dwg\PERMIT01.dwg



LEGEND

- Bulkhead
- Dredge Area
- Upland Excavation
- Uplands
- Wetland To Be Filled
- Wetland Excavation
- Fill Area (Open Water)

Approximately 24498 cy of fill required to raise site to proposed finished grade (+5.7 msl).

Regulated Activity	ac	cy
Fill in Open Water	.27	4516
Fill in Wetland 1	.61	494
Fill in Wetland 2	.09	75
Dredge in Open Water	.25	1551
Excavate in Wetland 1	.69	10240
Excavate in Wetland 2	.03	417
Excavation in Upland ¹	.90	26814
Open Upland ¹	.93	0
No Dredge/Fill for Open Water ¹	.28	0

¹ Unregulated Activity

LYON PROPERTIES
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**Exhibit E
Dredge and Fill Plan
Surfside Marina
Brazoria County, Texas**

Prepared for: Lyon Properties

Job No.: 460829.00

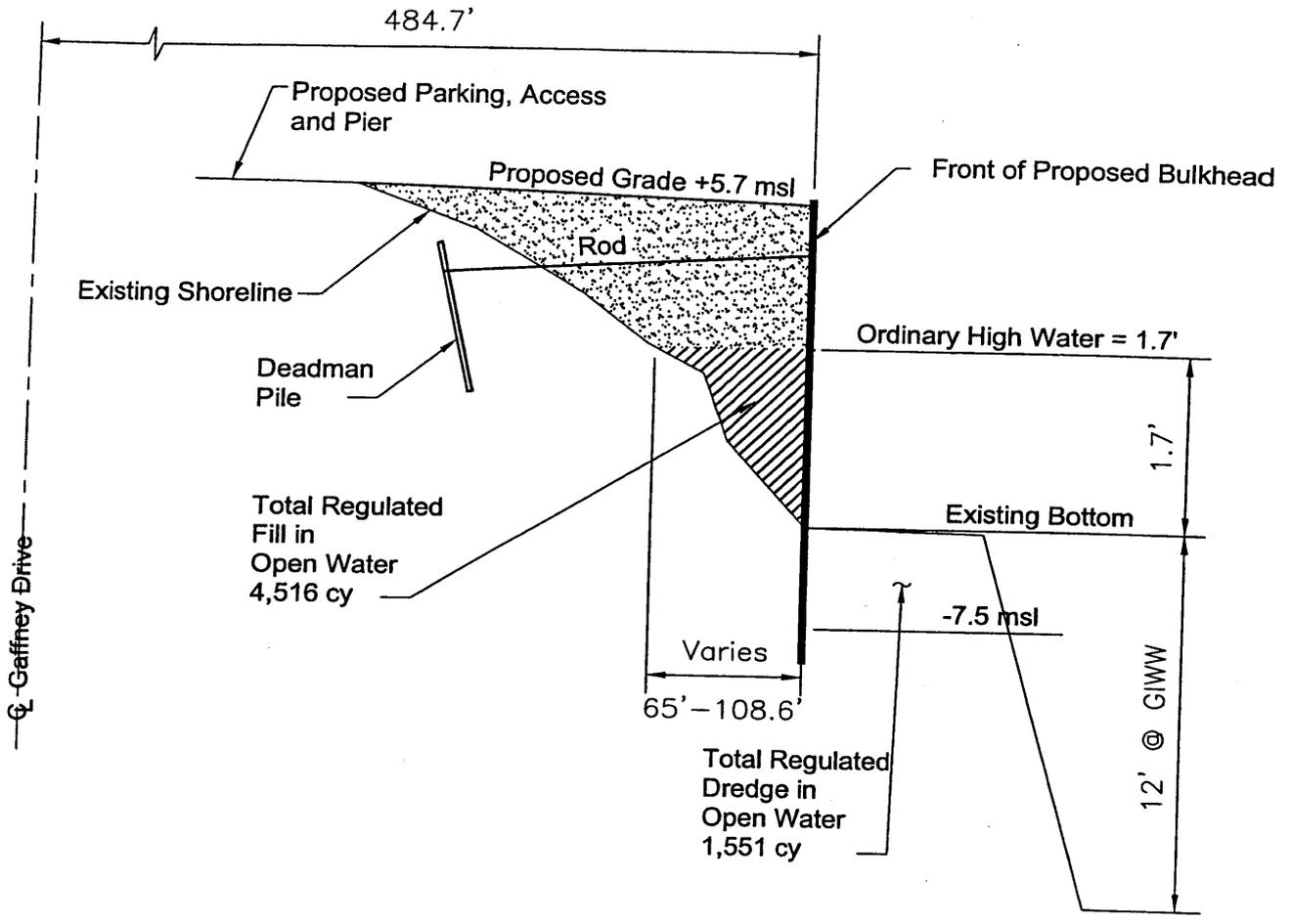
Scale: 1" = 80'

Prepared by: PBS&J

Date: January 2004

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23484
Sheet 6 of 12



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Exhibit F
Typical Pier Bulkhead
Cross Section
Surfside Marina
Brazoria County, Texas

Prepared for: Lyon Properties

Job No.: 460829.00

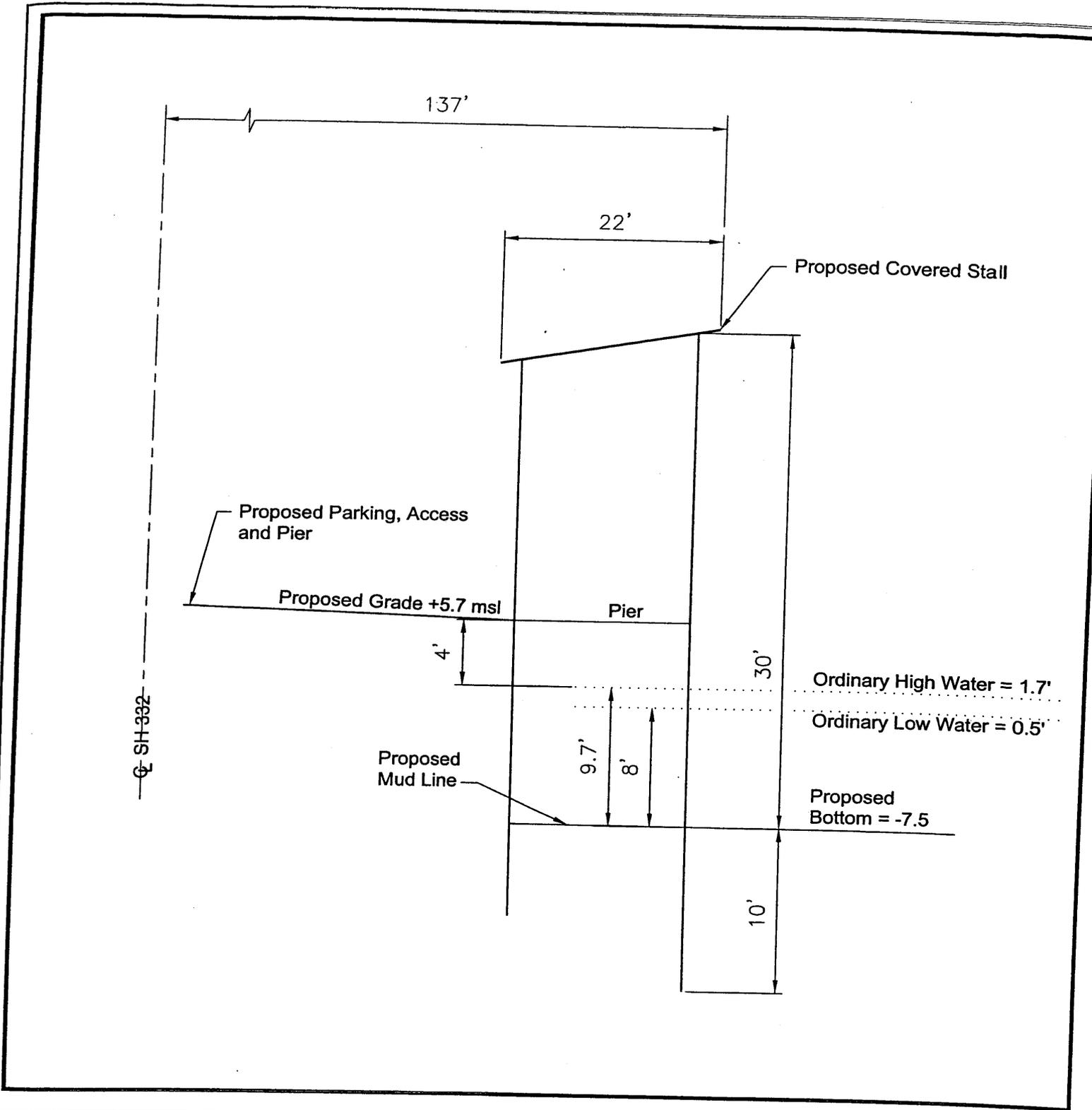
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Prepared by: PBS&J

Date: January 2004

File:

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23484
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Exhibit G
Typical Cross-Section
Of Covered Stall
Surfside Marina
Brazoria County, Texas

Prepared for: Lyon Properties	
Job No.: 460829.00	Scale: 1" = 80'
Prepared by: PBS&J	Date: January 2004
File:	

Attachment E

Mitigation Plan Surfside Marina Surfside, Brazoria County, Texas

Background

Lyon Properties is proposing to construct a marina in Surfside, Brazoria County, Texas on approximately four acres of land adjacent to the Gulf Intracoastal Waterway (GIWW). The proposed marina is located along the GIWW, north of State Highway 332 at the intersection with Gaffney Road (Exhibit A). The proposed project consists of the following activities.

Existing Conditions	Acres	Regulated Activity	Proposed Conditions	Acres	Cubic Yard Balance
Adjacent waters	0.80	Fill	Mooring pier	0.27	4,516
		Dredge	Harbor-slips	0.25	-1,551
		No action	Harbor-slips	0.28	0
Wetlands	1.34	Fill	Park-access-pier	0.70	571
		Excavate	Harbor-slips	0.72	-10,657
Uplands	1.91	Excavate	Harbor-slips	0.89	-26,814
		No action	Park-access-pier	1.02	0
Site to grade +5.7 ft msl	NA	NA	NA	NA	24,498
Total	4.05		Total	3.98	-9,437

A wetland delineation was conducted for the marina site during July 2003. The Corps verified the delineation on November 18, 2003 (D-15141) that the proposed project contains a total of 2.34 acres of waters of the U.S., including adjacent wetlands. Of the 2.34 acres, approximately 1.0 acre of open water was associated with the GIWW and 1.34 acres were considered adjacent wetlands (Wetlands 1 and 2). However, further study of the plat indicates that there is only 0.80 acre of open tidal water adjacent to the GIWW rather than 1.0 acre. A total of 2.14 acres of waters of the U.S. are contained within the property boundary.

Mitigation Sequencing

Impacts to the wetlands cannot be avoided due to the nature and size of both the project and the property. Marinas are water dependent projects. No other alternatives were explored in detail as the location of the property is highly desirable for this activity and no other properties of this size are in the vicinity of the proposed location.

The proposal results in an overall mitigation ratio of more than 7.3:1 for all impacts; this higher ratio is offered to offset the out of kind mitigation proposal (i.e., tidal waters impacted for created/enhanced freshwater emergent marsh). Additionally, 2.13 acres of

Attachment E

tidal water will be created at the marina. Only 0.97 acre of waters of the U.S. (including wetlands) will be filled; 0.97 acre of waters of the U.S. will be excavated or dredged. The proposed mitigation offers more than a 16:1 total mitigation ratio and more than an 8.7:1 creation ratio for lower quality impacted wetlands.

Compensatory Mitigation

Lyon Properties proposes to compensate for overall impacts associated with the proposed project by installing two water control structures within an existing swale on the Peach Point Wildlife Management Area (PPWMA). PPWMA is owned and managed by the Texas Parks and Wildlife Department as a wildlife conservation area. The mitigation site is approximately seven miles west of the marina site (Figure 1). The watershed for the marina site drains directly to the GIWW. The proposed mitigation site will drain directly to the GIWW located approximately 1.7 miles to the south.

The swale is between two natural ridges that are at approximately +4 feet msl elevation; it is depicted as an intermittent drainage on the USGS topographic map. The project would result in approximately 15.7 acres of wetlands, creating 8.5 acres and enhancing 7.2 acres of existing wetlands. Figures 2 and 3 depict the existing wetland area and the proposed created wetland area. The swale currently contains a variety of plant species including cattail, saltmeadow cordgrass, and seashore paspalum in the deeper portions, and Gulf cordgrass and saltmeadow cordgrass in the higher elevations. Please refer to the attached photo pages for a depiction of the existing wetland.

Currently, the site is naturally flooded with rainfall to about six inches in the deeper portions of the swale (approximately 7.2 acres). The higher elevations lie at about +2.5 feet msl and rise to +3 feet msl and are sometimes flooded with sheet water during extreme events.

The proposed mitigation would involve the installation of two aluminum water control structures with flashboard risers, at two separate locations. The risers will be 24-inch diameter and five feet tall. One riser will have a 40-foot pipe under the access road (Figure 3) and the other will have a 20-foot pipe through a levee into an existing roadside ditch. The dual riser locations will give Texas Parks and Wildlife Department (TPWD) water management options for other parts of the PPWMA. Additionally Lyon Properties will be placing a 30-foot by 24-inch pipe under an access road that currently crosses the natural swale to ensure hydrologic connectivity between these two isolated portions of the swale. An earthen plug will be placed within a pipeline ditch that currently drains the slough off to the east. The plug will enable the 15.2-acre wetland to maintain its pool level more consistently when seasonal conditions require. Currently, water drains off to the south through the remnant channel and to the east through the pipeline ditch. The water control structures will control the south drain and the plug will control the east drain (Figure 3). This mitigation project would involve an existing natural swale that drains through a permanent freshwater emergent marsh area.

The purpose of the proposed compensatory mitigation is to maintain the swale as a semi-permanent freshwater emergent wetland. There is a considerable lack of such wetlands

Attachment E

within the PPWMA. By maintaining the site as a semi-permanent wetland, the deeper 7.2 acres of the swale would provide critical habitat for breeding and brood rearing mottled ducks and other breeding waterfowl/waterbirds in the area. The 8.5 acres of created wetlands would be managed as a moist-soil-type system, shallowly flooded during the fall/winter/spring seasons, but allowed to dry during the summer months. The site would collect some water on its own due to rainfall runoff and from upstream areas that drain to the slough. Installation of the culvert will significantly expand the watershed to ensure sufficient hydrology for the 8.5 acres of created wetlands. As an additional management tool, PPWMA has the ability to pump water to the wetland area should conditions warrant.

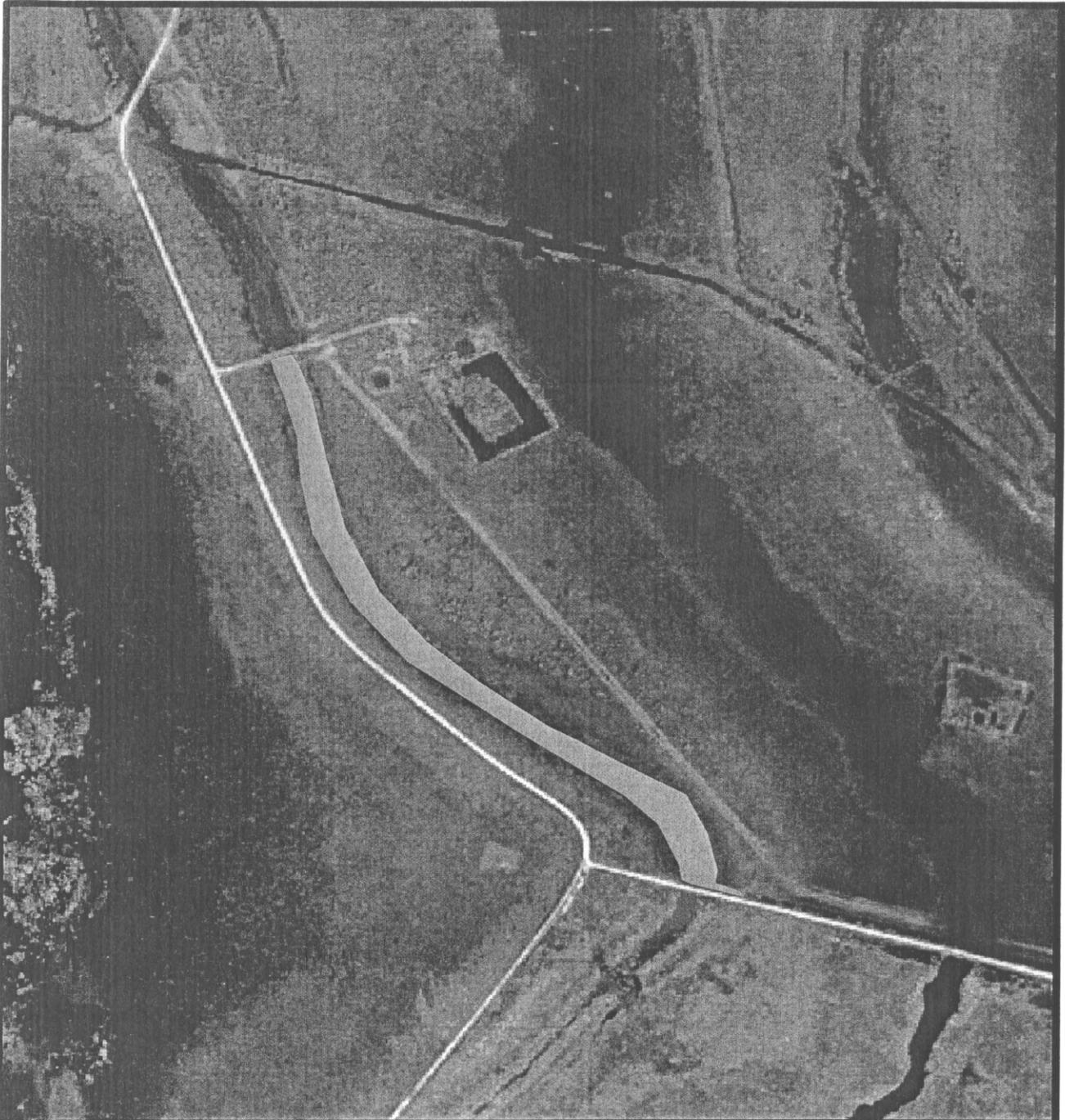
Success Criteria

Success of the mitigation project will be determined by the successful installation of the two water control structures, culvert and earthen plug. A contractor has met on site with a PBS&J biologist and Mr. Todd Merindino (manager, PPWMA) to discuss the project. The contractor has worked with the PPWMA in the past. Access to the mitigation site is via existing access roads. Minimal disturbance will be required to make the installation of the structures. The entire project can be accomplished in two or three days with one backhoe.

The proposed mitigation site is partially a medium to high quality wetland – vegetation and hydrology are available. The proposed project will create and enhance the natural wetland system to facilitate mottled duck production and provide habitat for other coastal marsh birds, mammals and herptiles.

Monitoring and Reporting

To document the successful installation of the structures, the applicant will provide photo-documentation of the mitigation site. A letter from the PPWMA management staff will be provided to the Corps along with the photos and cover letter to demonstrate the success of the installation.



 Existing Wetland - Approx. 7.2 Acres



0 200 400 Feet



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Figure 2

Existing Wetland Swlae on the PPWMA
Proposed Lyon Properties 4 Acre Marina
Brazoria County, TX

Prepared for: Lyon Properties

Job No.: 460829.00

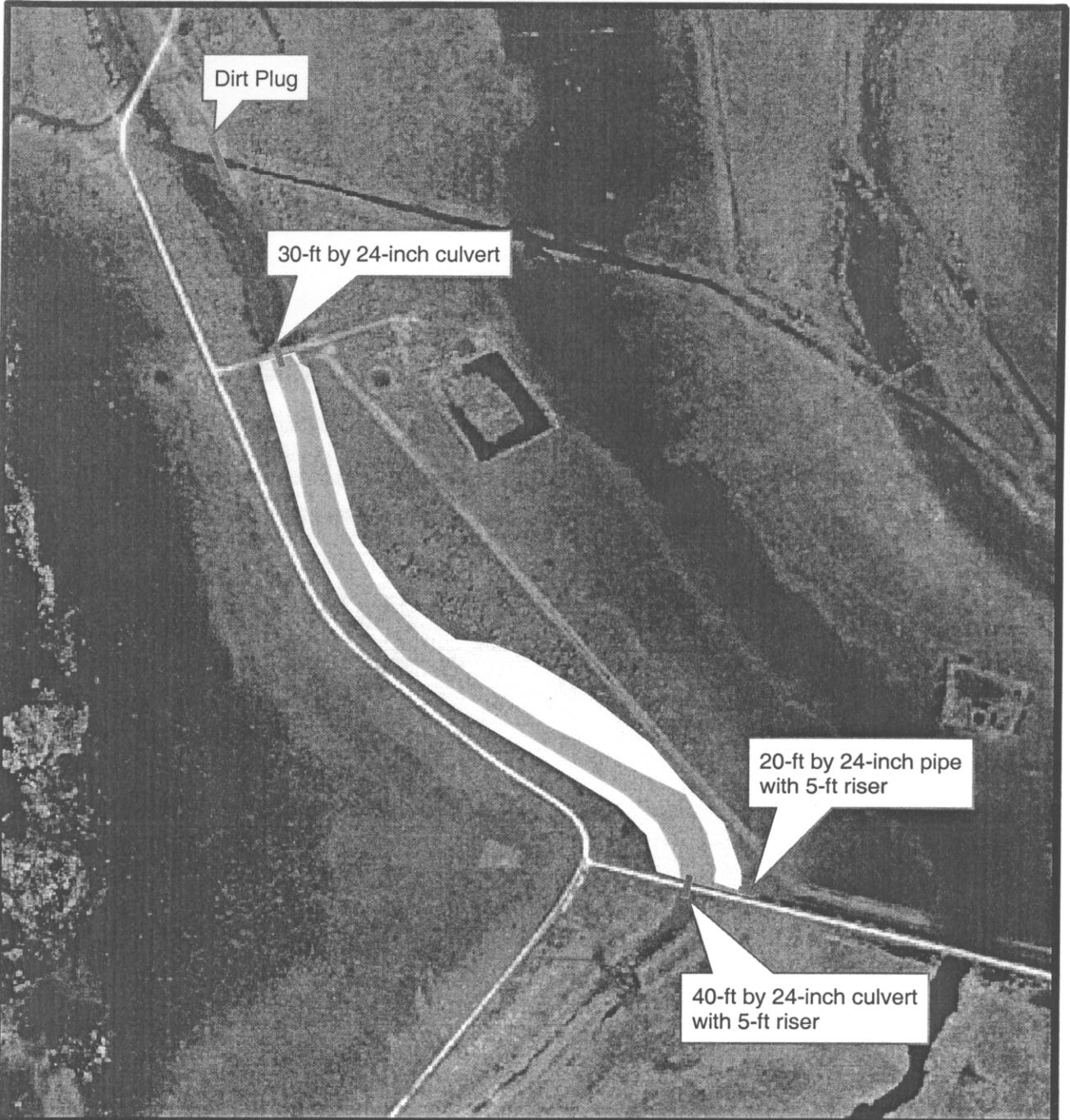
Scale: 1: 7,500

Prepared by: PBSJ

Date: March 29, 2004

File: K:\460829.00 Surfside Marina\GPS\FIG 2.mxd

LYON PROPERTIES
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Proposed Structures
 Existing Wetland - Approx. 7.2 Acres
 Created Wetland - Approx. 8.5 Acres



0 200 400 Feet



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Figure 3

**Proposed Mitigation for the
 Proposed Lyon Properties 4 Acre Marina
 Brazoria County, TX**

Prepared for: Lyon Properties

Job No.: 460829.00

Scale: 1: 7,500

Prepared by: AGR- IS

Date: March 29, 2004

File: K:\460829.00 Surfside Marina\GPSFIG 3.mxd

LYON PROPERTIES
 23484
 SHEET 12 of 12