



DEPARTMENT OF THE ARMY
GALVESTON DISTRICT, CORPS OF ENGINEERS
5151 FLYNN PARKWAY #306
CORPUS CHRISTI, TX 78411-4318

April 27, 2005

REPLY TO
ATTENTION OF:

Regulatory Branch

SUBJECT: Permit Application 16339(03)

John D. Mercer
John D. Mercer and Associates, Inc.
118 E. Main Street
Edna, TX 77957

Dear Mr. Mercer:

This is in reference to a letter dated November 1, 2004 in which you requested, on behalf of the Pelican Cove Canal Owner's Association, a modification of permit 16639(02). The proposed modification includes the installation of large pumps in two of six 42-60-inch pipes intended for tidal exchange. The pumps are designed to improve the poor water-exchange and water-quality in the residential canal system. Upon completion of a year-long water-quality monitoring regimen; if the water quality achieves water-quality standards set forth in the original authorization, the remaining four exchange pipes would be filled to preclude their collapse. The proposed project is located in the Pelican Cove Subdivision adjacent to Redfish Bay and Ransom Channel, in Aransas Pass, San Patricio County, Texas.

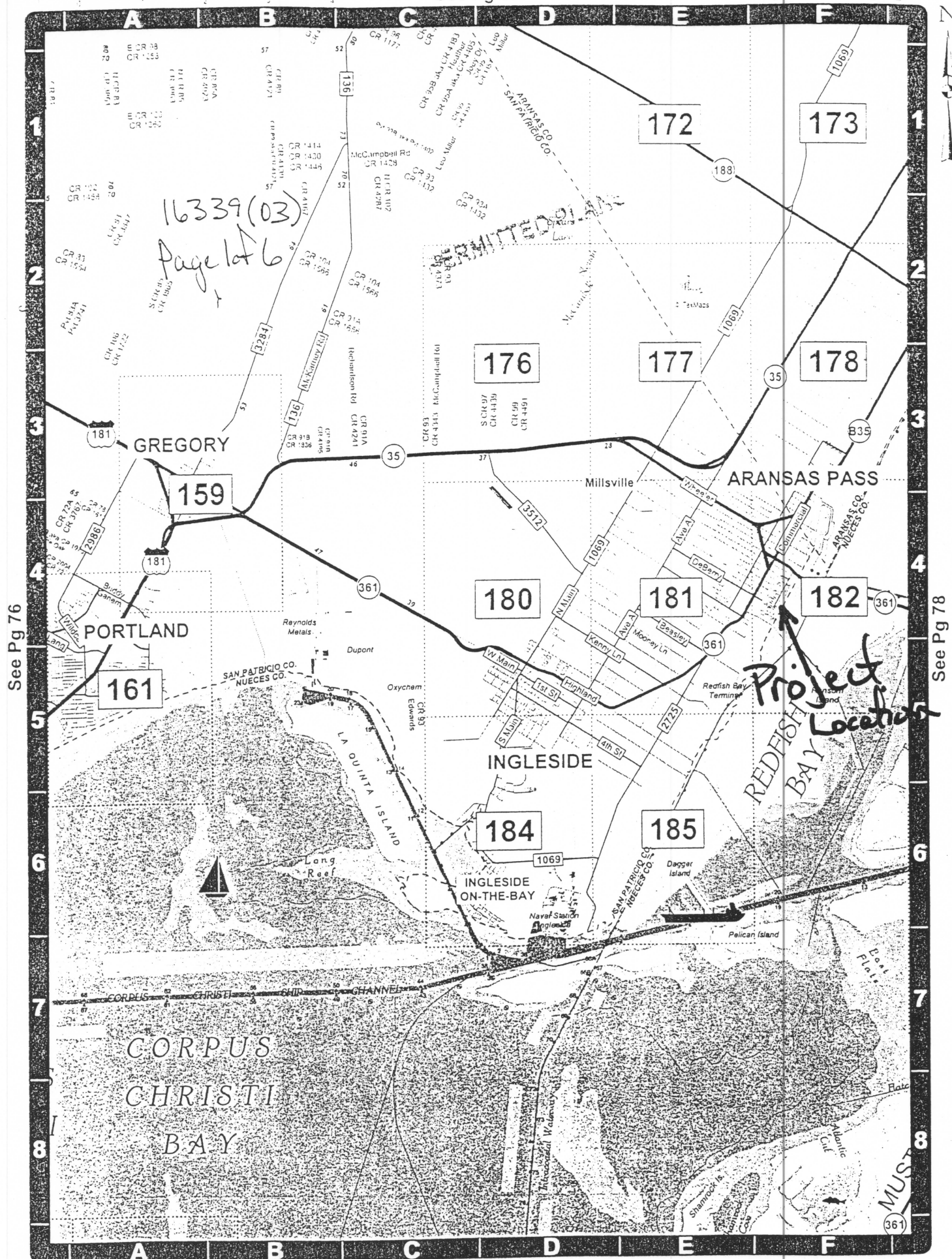
We have reviewed the information you submitted and determined that additional permitting is not required since the revisions are designed to lessen adverse impacts to areas subject to Corps of Engineers jurisdiction. The enclosed plans, in 6 sheets are supplemental to the previous authorization.

This authorization will expire on December 31, 2010. Please notify the Regulatory Branch, in writing upon completion of this work. A pre-addressed postcard has been enclosed for your convenience. If you have any questions concerning this matter, please contact Reagan Richter at the letterhead address or by telephone at 361-814-5847 ext 129.

Sincerely,

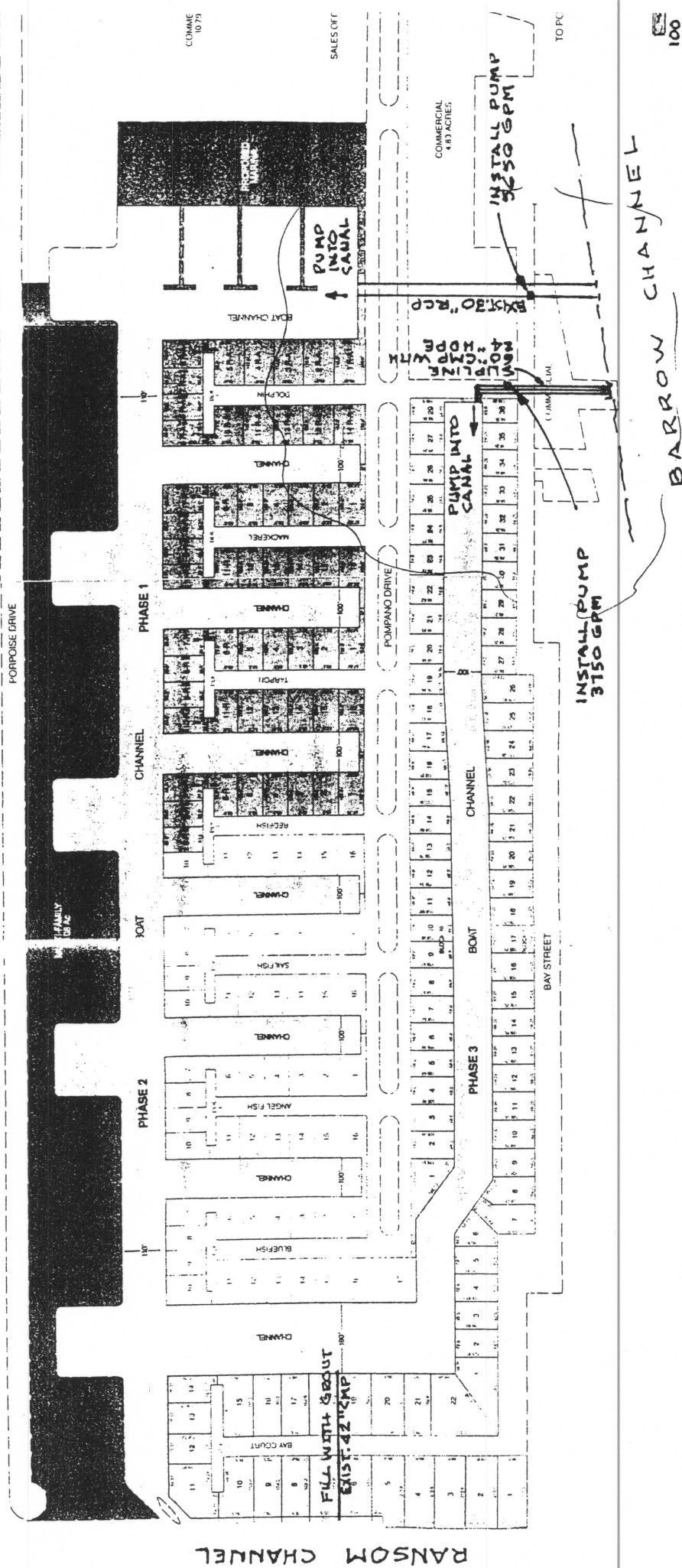
Lloyd Mullins, Unit Leader
Corpus Christi Field Office

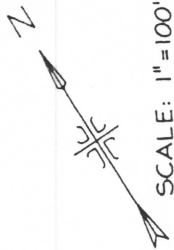
Enclosures
Copy Furnished:
PCCOA
PO Box 1655
Aransas Pass, TX 78335



16339(03)

22 Feb





SCALE: 1" = 100'

BOAT BASIN
"PUDDLE"

CHANNEL

POMPANO DRIVE

PERMITTED PLANS

BOAT CANAL

DOLPHIN AVENUE

BAY STREET

To be Filled

EXISTING 42" CMP
EXISTING 60" CMP

PROPOSED INSTALL
PUMP IN GATE BOX

PROPOSED CLEAN
PIPE & INSTALL
PUMP IN GATE BOX

EXISTING
60" CMP

PROPOSED SLIP-LINE
60" CMP W/24" HDPE

STORM LEVEE

EXISTING
HEAD WALL

RANSOM CHANNEL

EXISTING 42" CMP
(To be Filled)

16339(03)

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PROPOSED 2005
WATER EXCHANGE PIPE
IMPROVEMENTS
PELICAN COVE CANAL
OWNER'S ASSOCIATION

FEB 24 2005

John D. Mercer, P.E. President

Consulting Engineers

November 1, 2004
U.S. Army Corps of Engineers
5151 Flynn Parkway, Suite 306
Corpus Christi, Texas 78411-4318

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Attn: Reagan R. Richter

RE: Permit No. 16639(03)
Pelican Cove Property Owners Association (PCCOA)

PERMITTED PLANS

Dear Sir:

As a follow-up to my letter addressed to Mr. Lloyd Mullins, dated June 9, 2004 and in response to the meeting held in your office on September 28, 2004, the PCCOA respectfully requests that the subject permit be "administratively amended" to provide for maintenance and/or modification of existing facilities. A water quality testing program conducted during June - September 2004 has indicated the potential for problems in the PCCOA canal system as a result of poor water quality. Rectifying the conditions that are causing the poor water quality will require the expenditure of a significant amount of funds by PCCOA in an effort to increase the rate of water exchange in the canals.

As originally required by Permit 16639, the development included two (2) 60-inch pipes connecting the bayside canal in Pelican Cove with Redfish Bay and the utilization of an existing 42-inch pipe connecting the marina in Pelican Cove and Redfish Bay. The Permit also required water quality testing program, and if the dissolved oxygen (DO) dropped below 3.0 ppm during the testing program, the District Engineer could require corrective measures that could have included (1) construction of a 42-inch pipe connection from the bayside canal into Ransom Channel, (2) construction of a 42-inch pipe adjacent to the two 60-inch pipes connection the bayside canal to Redfish Bay and (3) construction of a 36-inch pipe connection between the bayside canal and the marina. The developer included these three additional lines in the initial development construction to preclude the possibility of having to make the installations after the development had been essentially completed. The permit also included 36-inch circulation pipe connections between the ends of the finger canals and the bayside canal. Refer to Attachment No. 1 for a location map of the various pipes.

In the comments attached to Permit 16639 is found the following:

"The Corps of Engineers calculated various aspects of water flow in the canal system. It was determined that a 1-foot variance in tide would provide an approximately 19% exchange of water within the canal system. Most of the water exchange would occur through the opening to Ransom Channel."

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118 E. Main Street

Edna, Texas 77957

(361)782-7121

Registered Professional Land Surveyors
FAX (361)782-6852

During the testing performed by PCCOA during June – September 2004 it was found that the tide range did not vary by more than about three (3) inches in the canal system for a near twelve (12) inch tide range at the Aransas Pass jetty. This indicates that the exchange volume during a normal tide change is significantly less than originally anticipated and calculated by USACE. With most of the exchange volume coming into the canals through the tide gate into Ransom Channel, the quality of water in the Ransom Channel directly impacts the quality of water in the interior canal system of the Pelican Cove development. Ransom Channel is a dead end channel that receives a significant urban run-off from the City of Aransas Pass at the upper end of the channel. The channel also serves as a marina with numerous docked marine vessels, fish cleaning facilities and other sources of pollutants which serve to degrade the quality of the water available for exchange in the Pelican Cove canal system. Since the development of Pelican Cove, the quality of the water in Ransom Channel has undoubtedly deteriorated.

The condition of the water exchange pipes into Redfish Bay has deteriorated with time. There is an accumulation of silt/sand in the pipes and the ends of the pipes in the Redfish Bay channel are severely obstructed by mud and silt. While these pipes were never intended to be the primary source for water exchange in the canals, they are even less significant today as a secondary source of exchange water today.

PERMITTED PLANS

Considering the potential for problems with poor water quality (i.e., low dissolved oxygen) in the canals, PCCOA is proposing that Permit 16639 be administratively amended to allow a project of construction that would provide for an increased water exchange from Redfish Bay into the interior canals. The project that is proposed by PCCOA would include installation of mechanical equipment in one of the pipes to the marina and one of the pipes into the bayside canal to “pump” water from Redfish Bay into the canals. Long-term utilization of the pipes may also require installation of smaller diameter HDPE liners in the pipes. The installations would be designed to provide an inflow into the canals of at least 20% - 30% of the total water volume in the canals, on a daily basis. Water would thus flow from Redfish Bay into the canals and out the tide gate into Ransom Channel. With this flow, the quality of water in Ransom Channel would also be improved.

PCCOA would prefer that installation of the mechanical equipment be completed by the spring of 2005. Following completion of the lining and “pump” installation, it is proposed by PCCOA that a post-installation testing program be performed to verify improvement in the water quality in the canals. A significant body of water quality data was collected during June – September 2004 that will serve as a pre-installation baseline of water quality during the summer months. Depending on when the equipment becomes operational, water quality and current flows in the canals will be determined approximately one week before commencement of operation and again approximately one week after operation. Additional weekly water quality monitoring will be performed during the period of June – September 2005 for a direct comparison with the 2004 baseline water quality data. More extensive current flow data will be collected if the anticipated water quality improvements are not realized. Such measurements would be used to determine whether the inflows into the marina and bayside canals needs redirection to maximize exchange efficiency. All of the testing will be performed at the same locations and at the approximate same times of the day (pre-dawn morning and late afternoon) as during the 2004 testing program. Should post installation monitoring verify the effectiveness of the pumped water exchange

system, PCCOA proposes that the other three water exchange pipes into Redfish Bay and the exchange pipe into Ransom Channel be filled to preclude a continued deterioration of the pipes from causing a collapse and sink hole.

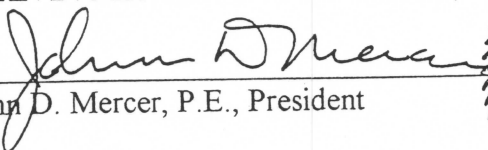
During the 2004 testing program, flow velocity measurements were made at various locations within the canal system. As a result of these measurements, it has been determined that there is very little, if any, benefit to the 36-inch pipes between the finger canals and the bayside canal. The 36-inch pipes are galvanized steel pipes and 20 years of deterioration is beginning to cause problems. There are six (6) pipes between the finger canals and the bayside canal and one (1) pipe between the marina and the bayside canal. The pipes were installed approximately 10 feet deep, to the top of the pipe, in narrow easements. Residential structures have now been constructed in close proximity to the easements and sink-holes have started to develop over several of the pipes, posing a danger to the foundations of residences.

Following completion of the pumped water exchange system, PCCOA is proposing a program to test the usefulness and necessity of maintaining the internal circulation pipes. It is proposed that three (3) of the finger canal circulation pipes and the marina circulation pipe be temporarily sealed by placing a steel plate over the end of the pipes at the face of the bulkhead. The water quality will be tested in the finger canals and in the marina prior to, and after the pipes have been sealed to determine if sealing the circulation pipe has a detrimental impact on water quality. If no significant impact on water quality is determined, PCCOA is proposing that all of the internal circulation pipes be permanently sealed and filled with sand or a flowable fill.

Please consider this request for an administrative amendment to Permit No. 16639 at your earliest convenience. If you have questions or comments please do not hesitate to contact me.

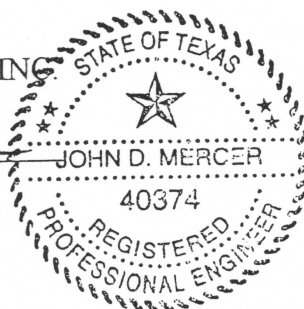
Sincerely,

JOHN D. MERCER & ASSOCIATES, INC.


John D. Mercer, P.E., President

Attachment

cc: Tracy Villareal, PCCOA



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PERMITTED PLANS

I:\ENGINEERING\1649.03\LTR 10 19 04 USACE

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