



MIAMI BEACH

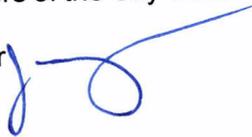
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CITY CLERK'S OFFICE

OFFICE OF THE CITY MANAGER
NO. LTC # 236-2007

LETTER TO COMMISSION

TO: Mayor David Dermer and Members of the City Commission
FROM: Jorge M. Gonzalez, City Manager 
DATE: October 29, 2007
SUBJECT: Beach Renourishment: Sand Back-passing Project

The purpose of this LTC is to provide an update to the Mayor and City Commission on the beach renourishment activities undertaken on our beaches until the end of the year.

Previous Sand Relocation Projects:

In 2002, the 32nd Street breakwater structures were constructed in order to decrease the rate of erosion at this hotspot location. Approximately 125,000 cubic yards of sand were excavated from the Lummus Park shoreline and used to backfill behind the breakwater structures to create a stable and wide beach area in the hotspot, which had experienced severe constant erosion previous to the construction of the breakwater. For that project, material was loaded into all-terrain dump trucks and transported north to the breakwater site. While this method was very cost effective, it was operationally disruptive to our beachgoers and created safety and environmental concerns.

Sand Back-passing from Accretional to Erosional Areas:

The southern portion of Miami Beach, from approximately 22nd to 5th Streets, have been accretional (accumulating sand) since the initial major sand renourishment project was completed in the 1980's. The County commissioned a study to determine the feasibility of sand back-passing, or passing sand from southern accretional areas to erosional areas in the north, in order to further investigate the concept of relocating excess sand given the scarcity of off-shore sources. The Miami-Dade County Morphological Change Study (Coastal Systems International, Inc. study of the coastline completed in 2006) stated that approximately 60,000 cubic yards per year could be back-passed (pumped from south to north) from the Lummus Park shoreline north to erosional areas without impacting the existing shoreline and provide a very cost effective source of sand for relatively small nourishment projects.

In order to evaluate alternative methodologies for back-passing sand, Miami-Dade County contracted with a consulting firm to provide an analysis of methodologies and their associated cost. The analysis evaluated the feasibility, cost-effectiveness, and level of safety and disruption associated with moving the sand hydraulically (by pumping) to areas in need via water- or shore-based dredging, trucking, and other methods. This report was completed in November 2006. In anticipation of this report, Miami-Dade County included a funding request in its FY 2007-08 State Beach Erosion Capital Plan to provide for the

implementation of sand back-passing projects from accretional areas in the south to erosional areas to the north.

In December 2006, the County awarded the contract to SubAqueous Inc. to provide earth moving services, including the excavation and transport of sand as needed for the Sand Back-passing Project. The project has obtained all necessary permits from the Army Corps of Engineers (ACE), Florida Department of Environmental Protection (FDEP), and Miami-Dade County Department of Environmental Resources Management (DERM). The County expects to begin work after October 31st, 2007, observing the end of Turtle Nesting Season on Miami Beach, as the FDEP permit stipulates. The City will issue a ROW permit for the project this week and mobilization by the Contractor west of the dune will be permitted at such time. However, work east of the dune will not be permitted until after a city-sponsored community meeting is held on Friday November 2nd, which DERM will attend. The project is estimated by the County to last approximately 30-45 days, concluding in mid-December. The Sand Back-passing Project will replace the truck hauling project currently on-going at 29th Street.

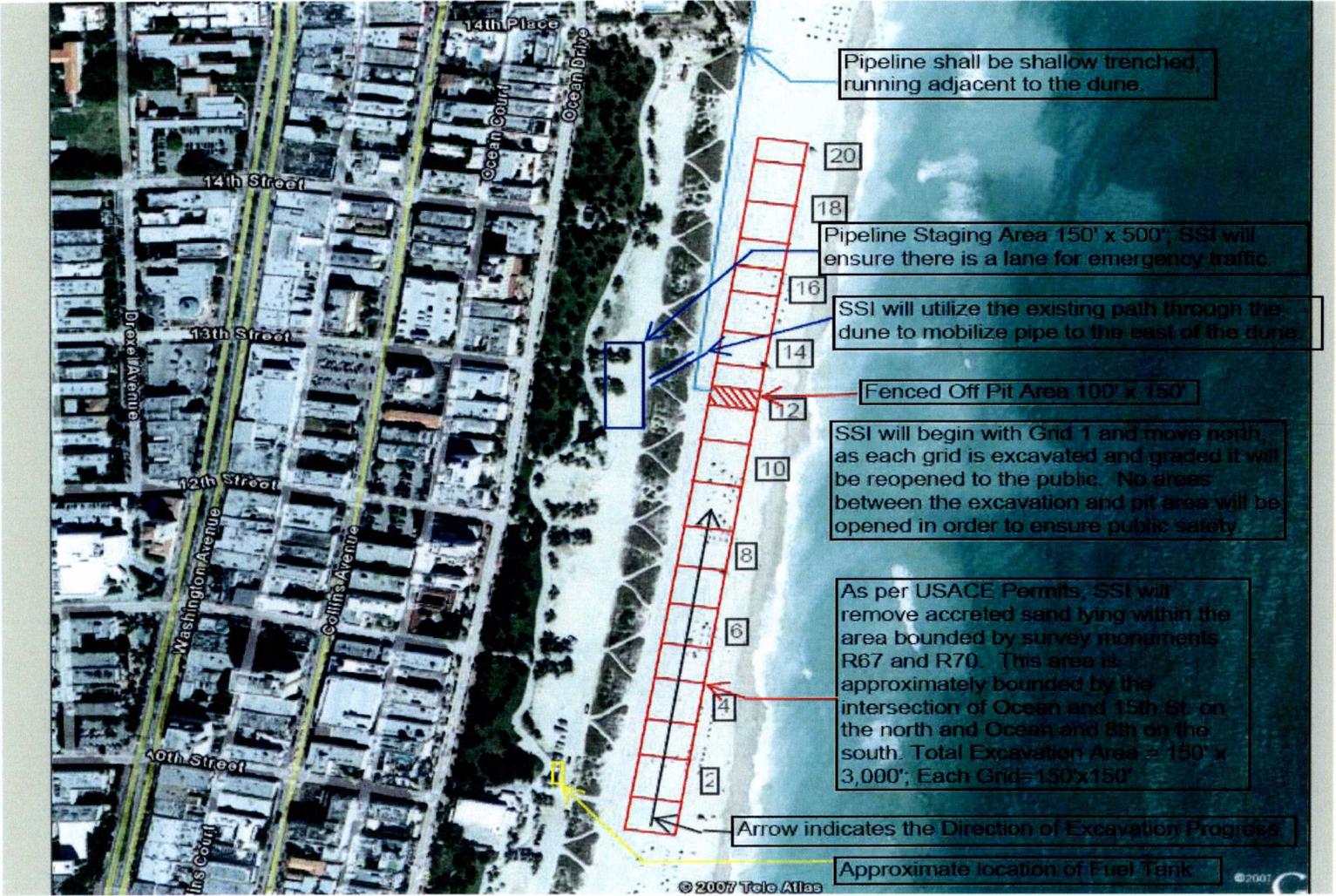
The project scope includes the dredging of sand material from the beach area between 8th and 15th Street, the transport of this sand via truck along the hard-pack to a dredge pit located at 13th Street, the entrenchment of a pipe adjacent to oceanfront side of the dune, and the pumping of dredged sand through the pipe north to the area between 22nd-29th Street. Please see attached site plan for details. The contractor will remove accreted sand as per the cross-section detail attached. Each excavation area relates to a grid cell on the site plan and will measure 150 feet in length by 150 feet in width. Each grid cell should take approximately 1-2 days to completely excavate and re-grade to specified slope and surface conditions. The contractor will use pay loaders and all terrain vehicles to transport the sand to the pit area from the excavation area. The sand will then be pumped through an underground pipeline that will empty onto the 22nd-29th Street beach area. Bulldozers will then grade the sand to the approved slopes in the area between 22nd and 29th Streets, or the area just south of the southernmost breakwater installation. The contractor will use hospital-grade mufflers on the dredge and booster pump equipment in order to minimize noise levels. The County will have a full-time construction inspector for the duration of this project.

The contractor has submitted a Maintenance of Traffic (MOT) plan and a Work Plan, on which Staff has provided comment to DERM relative to public safety and minimization of impact to residents and tourists using the beach during construction. Staff has coordinated and participated in several meetings with the leadership of the Ocean Drive Association, the Boucher Brothers, and DERM officials regarding this project. A public pre-construction informational meeting is scheduled for Friday November 2, at 1:00 PM at the Miami Beach Police Department Community Room.

Miami Beach Truck Haul Nourishment Project: This project was developed as a relatively small nourishment of three localized erosional hotspots located at approximately 29th and 44th Streets in Miami Beach. The Project started in April of 2006. The project was conducted using sand trucked in from inland quarries in Central Florida. Due to limited truck access points onto the beach, and the need to handle the sand several times, the rate of sand placement on the beach was relatively low and somewhat inefficient. As a result of this, and the beginning of the seasonal increase in beach tourism, construction was discontinued on December 1st, 2006. The project was restarted in July 2007 and will continue on through the end of December at the 44th-46th Street location.


JMG/RCM/FHB/FV/leb





Pipeline shall be shallow trenched, running adjacent to the dune.

Pipeline Staging Area 150' x 500'; SSI will ensure there is a lane for emergency traffic.

SSI will utilize the existing path through the dune to mobilize pipe to the east of the dune.

Fenced Off Pit Area 100' x 150'

SSI will begin with Grid 1 and move north, as each grid is excavated and graded it will be reopened to the public. No areas between the excavation and pit area will be opened in order to ensure public safety.

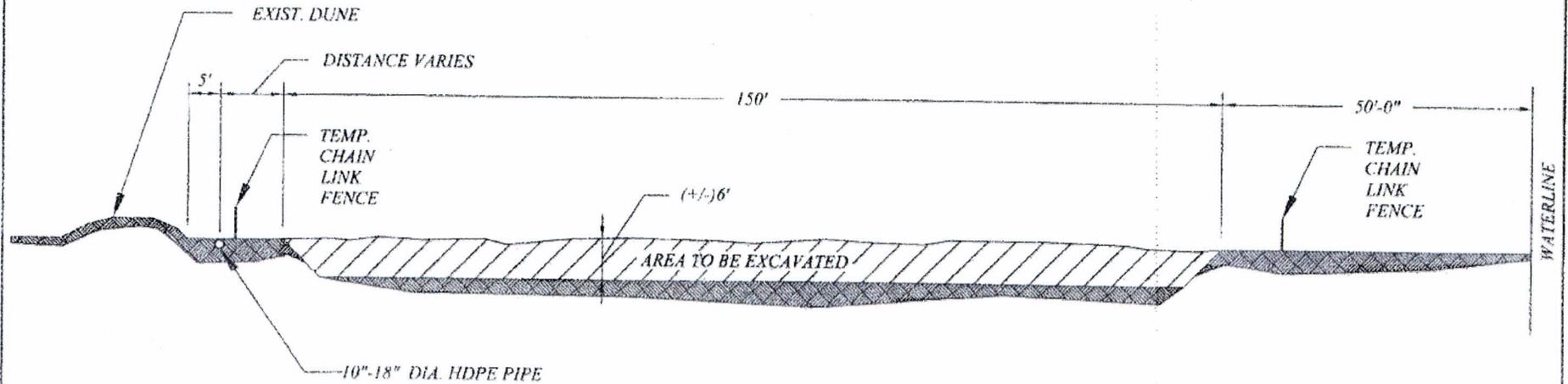
As per USACE Permits, SSI will remove accreted sand lying within the area bounded by survey monuments R67 and R70. This area is approximately bounded by the intersection of Ocean and 15th St. on the north and Ocean and 8th on the south. Total Excavation Area = 150' x 3,000'; Each Grid=150'x150'

Arrow indicates the Direction of Excavation Progress

Approximate location of Fuel Tank

CROSS SECTION AREA OF PROPOSED WORK

NOT TO SCALE



The excavation shown will be done along the existing beach grade lines. As per the approved Army Corps. of Engineers Permit, the proposed 10-18 inch diameter HDPE pipe must be buried at depth of at least six (6) inches.

MIAMI-DADE COUNTY DERM
WATER MANAGEMENT
DIVISION

701 NW 1st Court, 5th Floor
MIAMI, FLORIDA 33136

BEACH RESTORATION
PROJECT SITE PLAN

JOB:

DATE:

BY:

SHEET: 1