

**CAPTAIN'S KEY DEPENDENT DISTRICT  
ENGINEER'S REPORT**

**PREPARED FOR CAPTAIN'S KEY DEPENDENT DISTRICT  
BOARD OF SUPERVISORS  
PALM BEACH COUNTY, FLORIDA**

**February 9, 2005**

Prepared by:  
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## **1. INTRODUCTION**

The Captain's Key Dependent District (District) was created for the purpose of providing community services and facilities to this 30-lot subdivision.\* The District's powers are stated in Palm Beach County Ordinance 2004-018 dated 13 July 2004. The entrance and security gate improvements constitute the initial capital undertaking of the Board of Supervisors of this District.

## **2. DISTRICT LEGAL DESCRIPTION**

The Captain's Key Dependent District boundaries are as depicted on the plat of Captain's Key in Section 33, Township 41S, Range 43E, Palm Beach County, Florida recorded in Plat Book 28, Pages 176-177 and as modified in official Record Book 2160, Pages 340 – 344, Palm Beach County, Florida; less and excepting therefrom those lands replatted by the plat of Seminole Landing\* as recorded in Plat Book 30, Pages 35 and 36, Public Records of Palm Beach County, Florida. See Exhibit 1 showing the boundaries of the District.

## **3. DESCRIPTION OF THE EXISTING INFRASTRUCTURE WITHIN THE DISTRICT AND OWNERSHIP AND MAINTENANCE RESPONSIBILITY THEREFORE**

Palm Beach County Ordinance 2004-018 authorizes but does not transfer ownership and maintenance responsibility for the existing roadway and stormwater management system from Palm Beach County to the District. Based on County policies, at such time as the Entrance and Security Gate Improvements are undertaken by the District, the County will transfer ownership and maintenance responsibility of the Roadways and Stormwater Management Facilities from Palm Beach County to the District (see Exhibit 8).

A) Roadway System –The roadway system consists of approximately 2300 linear feet of approximately 20' wide asphalt roads. The roads were constructed over thirty (30) years ago within the existing 60' wide road right-of-way as shown on Exhibit 2. The roads are in generally good condition except for some signs of transverse and multi-directional cracks of up to 1/8" wide. See Exhibit 2a. Sealing of these cracks will extend the life of the pavement. On a long-term basis, it is recommended that a 1" asphaltic concrete overlay be planned within the next 5-10 years to maintain road serviceability and reduce future maintenance costs. The estimated cost of a 1" overlay, is approximately \$26,000.00 (in 2004 dollars).

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\* The original plat of Captain's Key created 32 lots but the subsequent plat of Seminole Landing eliminated Lot 32, Lot 1 and a portion of Lot 2.

B) **Stormwater Management System**– the stormwater management facilities consist of roadside swales, inlets, manholes, approximately 1,000 linear feet of reinforced concrete storm piping and five reinforced concrete endwalls as shown on Exhibit 3. The system appears to be working properly. The inlets, manholes, pipe and endwalls should last more than 50-years from the time of original construction but the system should be inspected annually to detect and repair premature deterioration.

C) **Water Distribution System** – The water distribution system was originally owned and maintained by the Town of Juno Beach. Subsequently the Seacoast Utility Authority (Seacoast) took over a portion of the Town's system including all of that within the District.

The original design met then current minimum standards but by today's standards the pipelines should be a minimum of 6" diameter rather than a combination of 6" and 4". The pipe material is cement-asbestos, which is no longer produced. These issues do not appear to pose a practical problem and since Seacoast owns and has maintenance responsibility for the system, it does not seem to be a liability for the District.

The system was originally served by a single pipeline through Seminole Landing. Subsequently a second source has been constructed from U.S One, which is a substantial improvement from the original. Exhibit 4 illustrates the general layout of the water distribution system.

D) **Power Distribution System** – Florida Power and Light (FPL) provides power to the District through their distribution system. FPL maintains and operates the system. The power distribution system within the District is underground and line locates are required to prevent conflicts with any future capital projects constructed by the District.

E) **Sanitary Sewer System** – The District area is served by individual septic systems for each residence.

#### 4. SUMMARY OF OWNERSHIP AND MAINTENANCE RESPONSIBILITY FOR EXISTING INFRASTRUCTURE

Roads and Road Right-of-Way .....	District
Stormwater System.....	District
Water Distribution System.....	Seacoast
Power Distribution System.....	FP&L
Septic Systems .....	Individual Homeowner

#### 5. PROPOSED ENTRANCE AND SECURITY GATE IMPROVEMENTS

The security gates installation proposed includes the following major features:

- Welded aluminum swing gates and related fencing
- Arm gates for supplementary access control
- Battery backup
- Radio control
- Telephone access

The other proposed entrance modifications include landscaping, associated irrigation system improvements and new pavement geometry to meet Palm Beach County and Florida Department of Transportation requirements. The entrance modifications and gates placement are shown on Exhibit 5. This exhibit has been submitted to Palm Beach County and the Florida Department of Transportation and they have approved the conceptual layout (see Exhibits 6 & 7). In order to meet these criteria it is necessary to encroach into Tract A. Preparation of construction drawings and submittal to the agencies will be necessary in order to get construction permits.

The proposed entrance and security gate improvements will be located primarily within the right of way of Captain's Key Drive. This right of way is presently owned by Palm Beach County but will be conveyed by the County to the District.

A portion of these improvements will extend into the property shown as Tract A, on the plat of Captain's Key. It is understood that Tract A is owned by the Captain's Key Homeowners Association. It will be necessary to convey the right of way for the improvements to the District.

The security gate system will require an electrical service from FPL and a dedicated telephone service from BellSouth. The FPL and BellSouth existing facilities are located within the right of way of Captain's Key Drive and are readily available to the site.

**6. COST ESTIMATE FOR ENTRANCE AND SECURITY GATE IMPROVEMENTS  
(SEE EXHIBIT 9)**

Paving Improvements .....	\$ 58,000
Gate System .....	\$ 59,000
Landscaping & Related Irrigation .....	<u>\$ 50,000</u>
Total .....	\$167,000

**7. RECOMMENDATIONS**

Based on the information presented in this Report, the following recommendations are made:

- A) That the District Board of Supervisors approve the Engineer's Report.
- B) That all lands, rights-of-way or easements required by the Report be acquired by or furnished to the District, in fee simple title and/or by perpetual easement, as the case may be.
- C) That the District utilize Chapter 170, Florida Statutes and Ordinance 2004-018, for the determination, assessment, apportionment, levy, collection and repayment of such non-ad valorem assessments, connection charges or fees as the Board of Supervisors deems appropriate for implementation of the herein described Entrance and Security Gate Improvements.
- D) That the improvements presented in this Report be implemented and upon their completion thereafter be owned by the District, which will maintain and operate same for the benefit of the lands within the District.

**8. ENGINEERS' CERTIFICATION**

It is my opinion that the extent of the proposed entrance and security gate improvements and the estimated costs are fair and reasonable. It is believed that the improvements can be permitted, constructed and installed at the costs described in this report. It is also believed that the benefit to the land within the District as a result of completing the proposed entrance and security gate improvements described herein will exceed the estimated costs.

I hereby certify as a Professional Engineer in the State of Florida, that the information in this Report for Captain's Key Dependent District was assembled under my direct responsible charge. The certifying Engineer cannot be responsible for added or deleted information once distributed. This report is not

intended or represented to be suitable for any reuse without specific verification or adoption by the Engineer. This verification is provided in accordance with the Florida Board of Professional Engineers' Rule on Certification under Chapter 61G15 -18.011(4).

*Tom Mc*

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Thomas J. McCarthy, P.E.  
Florida Registration Number 6998

*4/07/05*

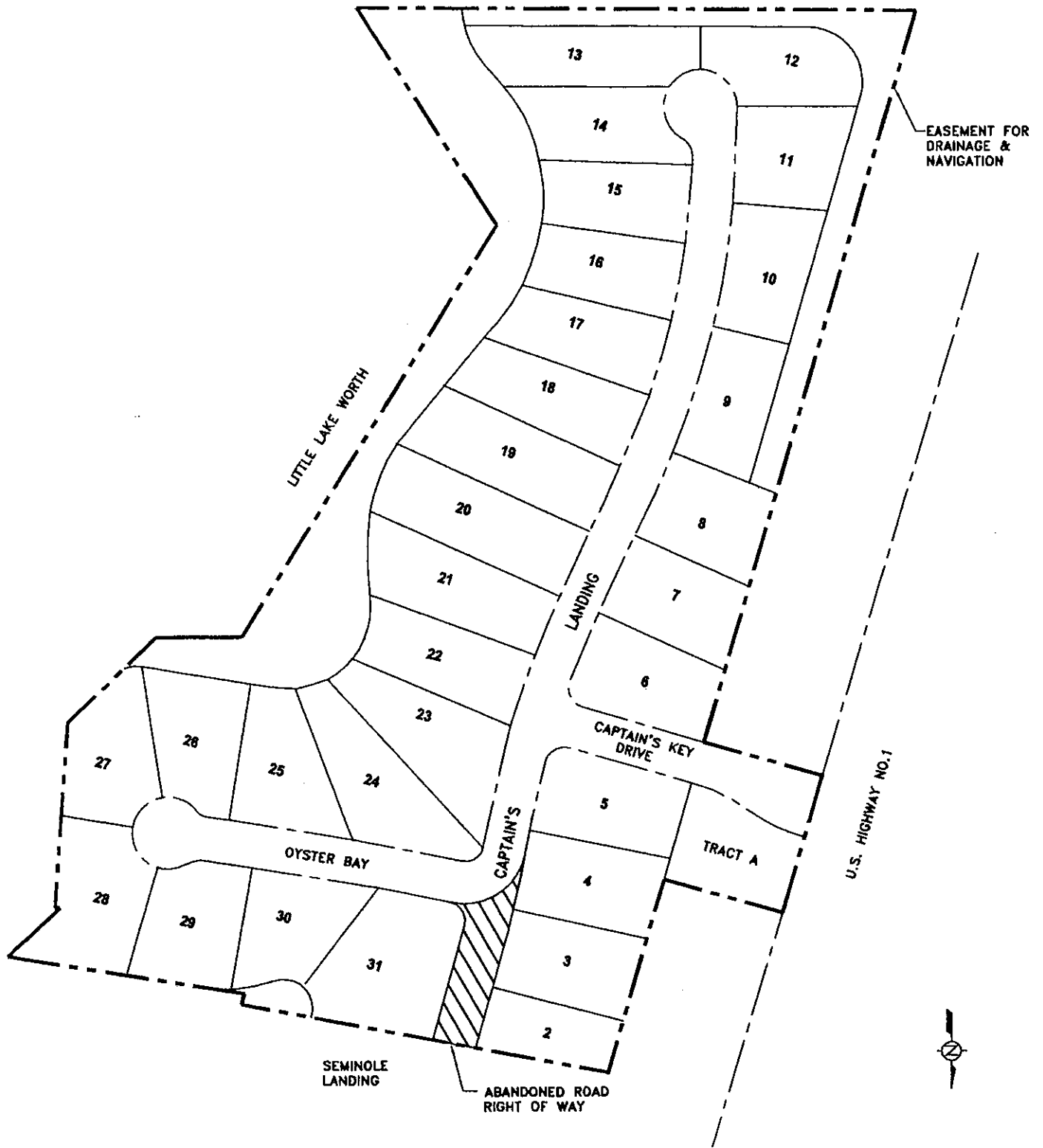
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Date

**Tom McCarthy Consulting Engineer, Inc.**  
120 S. Olive Ave., Suite 300  
West Palm Beach, FL 33401  
Phone: (561) 833-5657  
Fax: (561) 833-5667  
CA Number 00007893

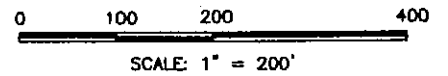
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HIDDEN KEY NORTH

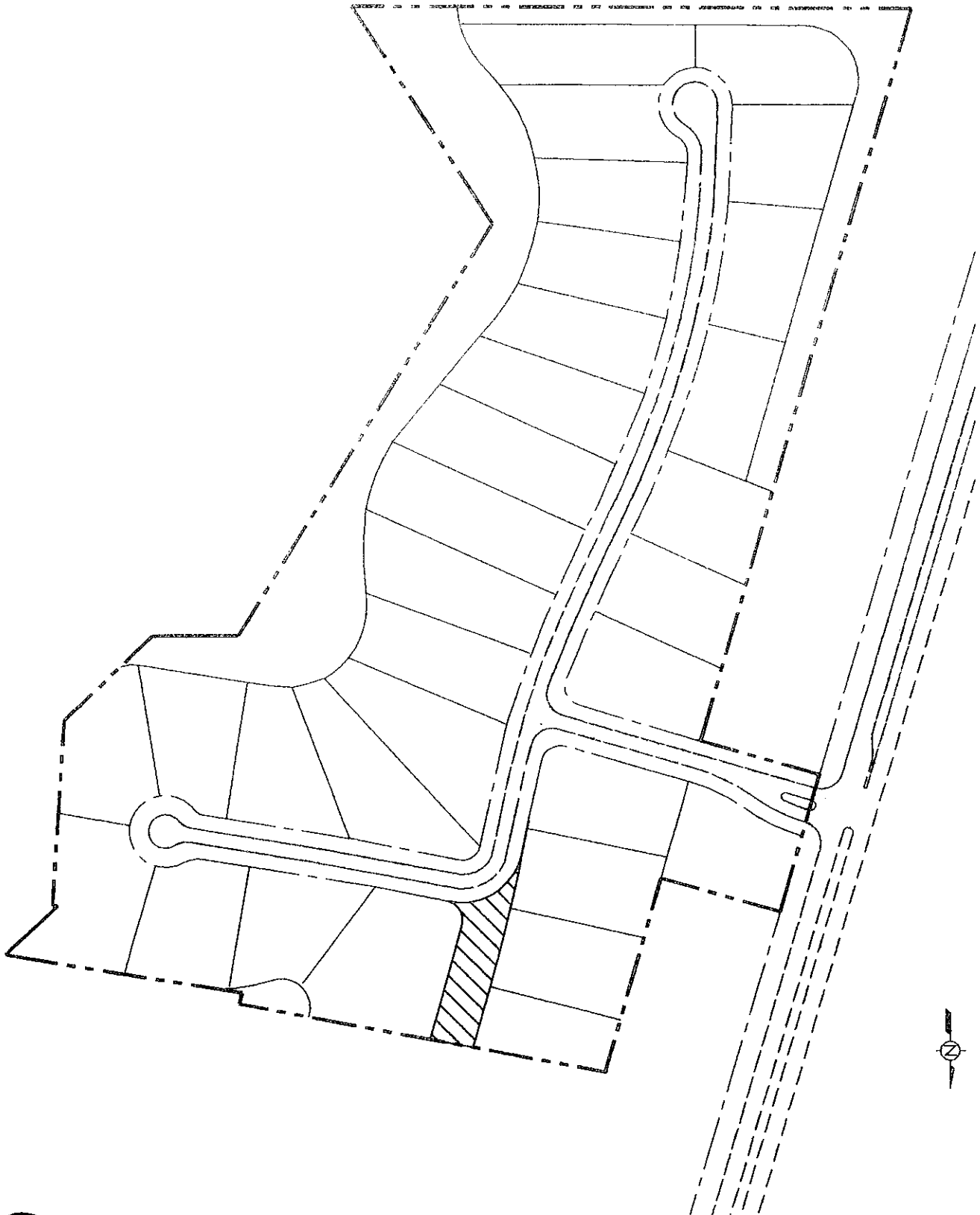


Tom McCarthy  
Consulting Engineer, Inc.

CAPTAIN'S KEY  
EXHIBIT 1: DISTRICT BOUNDARIES

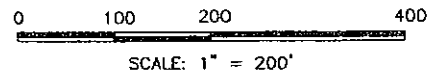


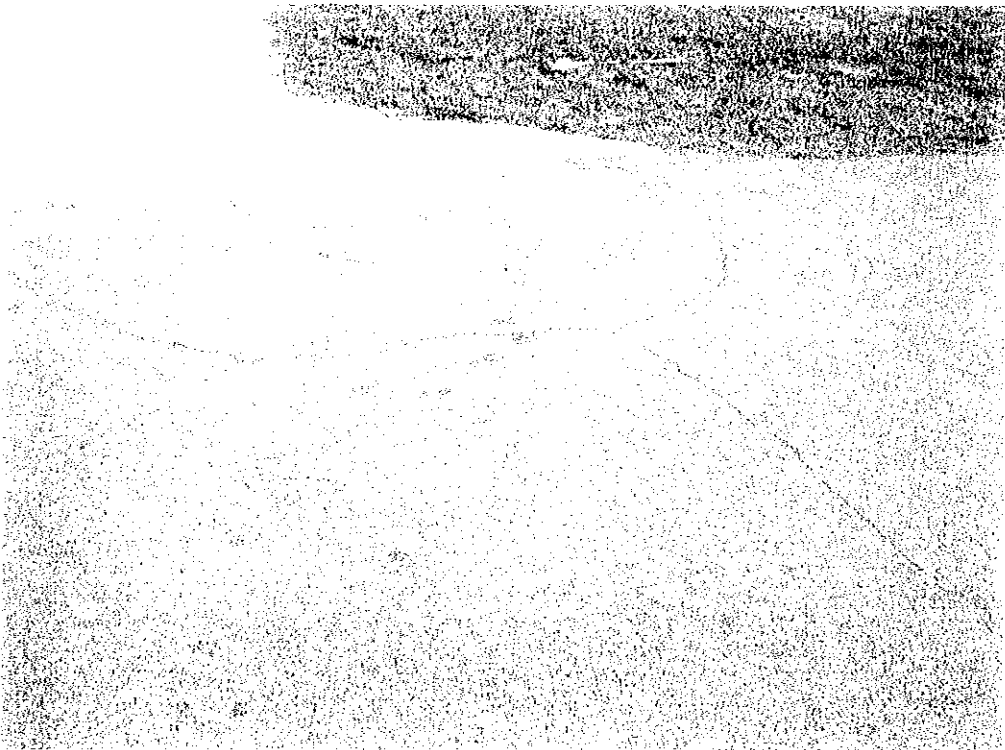




**Tom McCarthy  
Consulting Engineer, Inc.**

**CAPTAIN'S KEY  
EXHIBIT 2: ROADWAY IMPROVEMENTS**

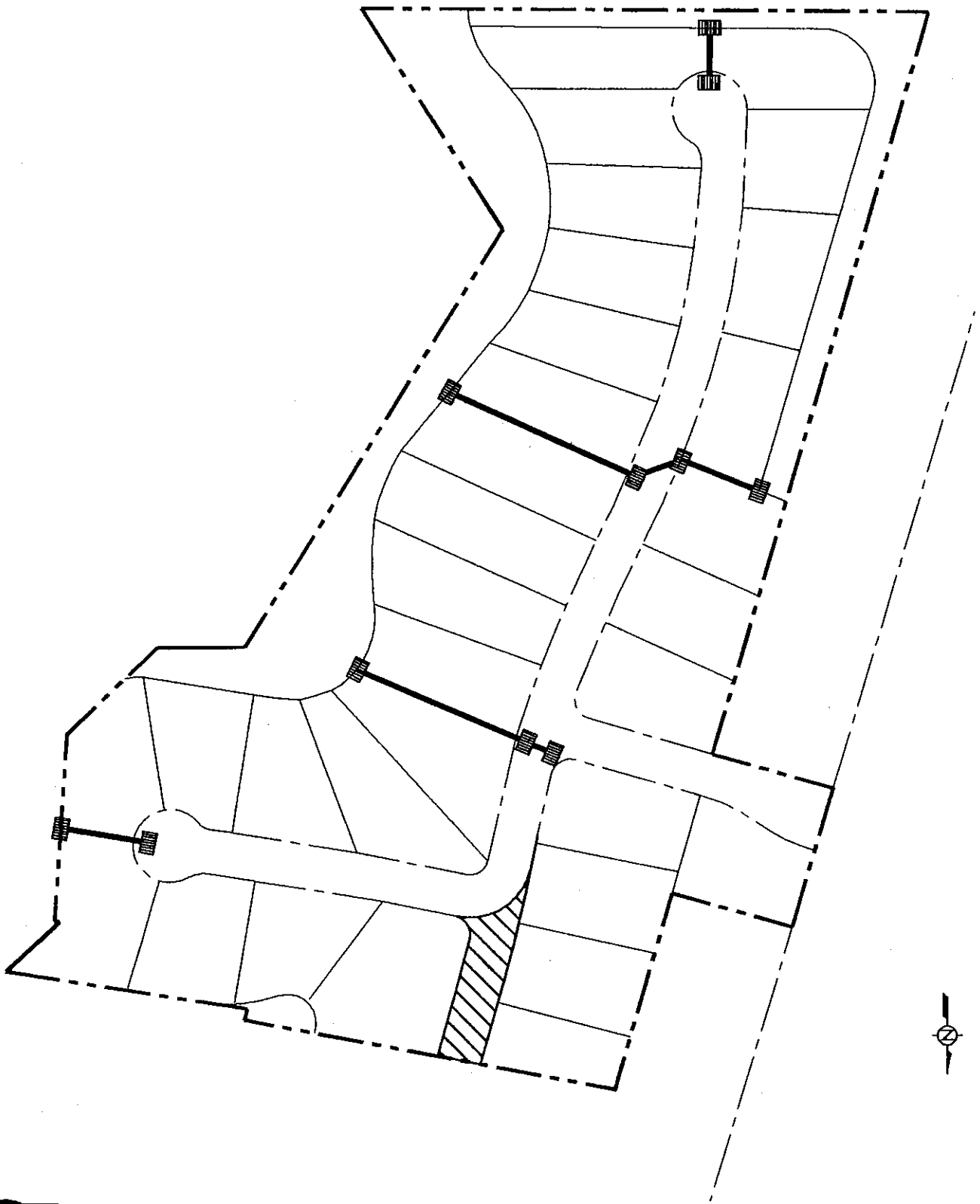




Tom McCarthy  
Consulting Engineer, Inc.

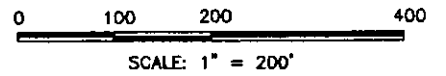
**CAPTAIN'S KEY**  
EXHIBIT 2-A: EXISTING PAVEMENT PHOTOS

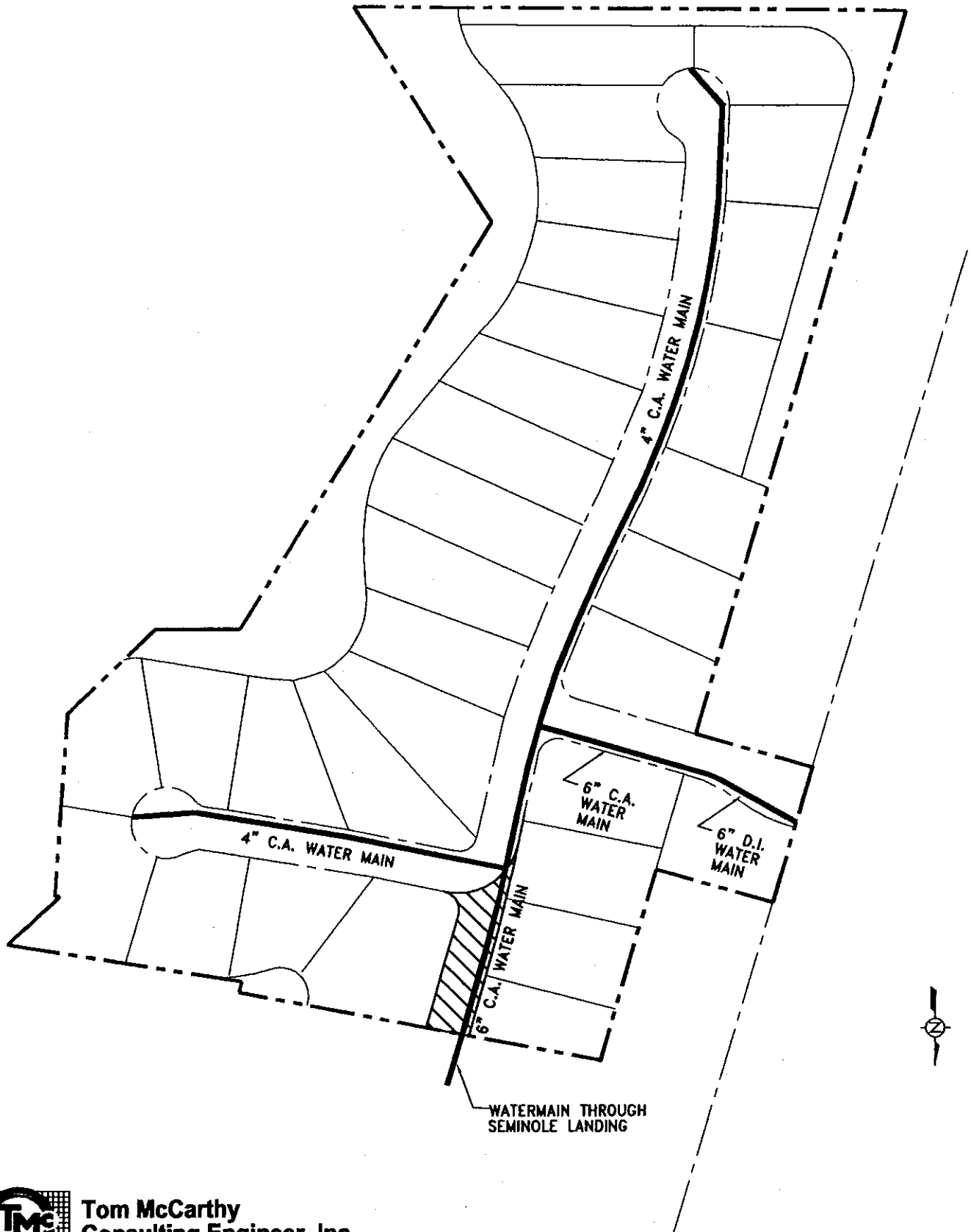
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**Tom McCarthy  
Consulting Engineer, Inc.**

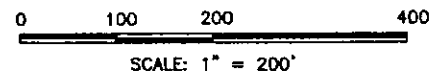
**CAPTAIN'S KEY**  
EXHIBIT 3: STORMWATER MANAGEMENT SYSTEM





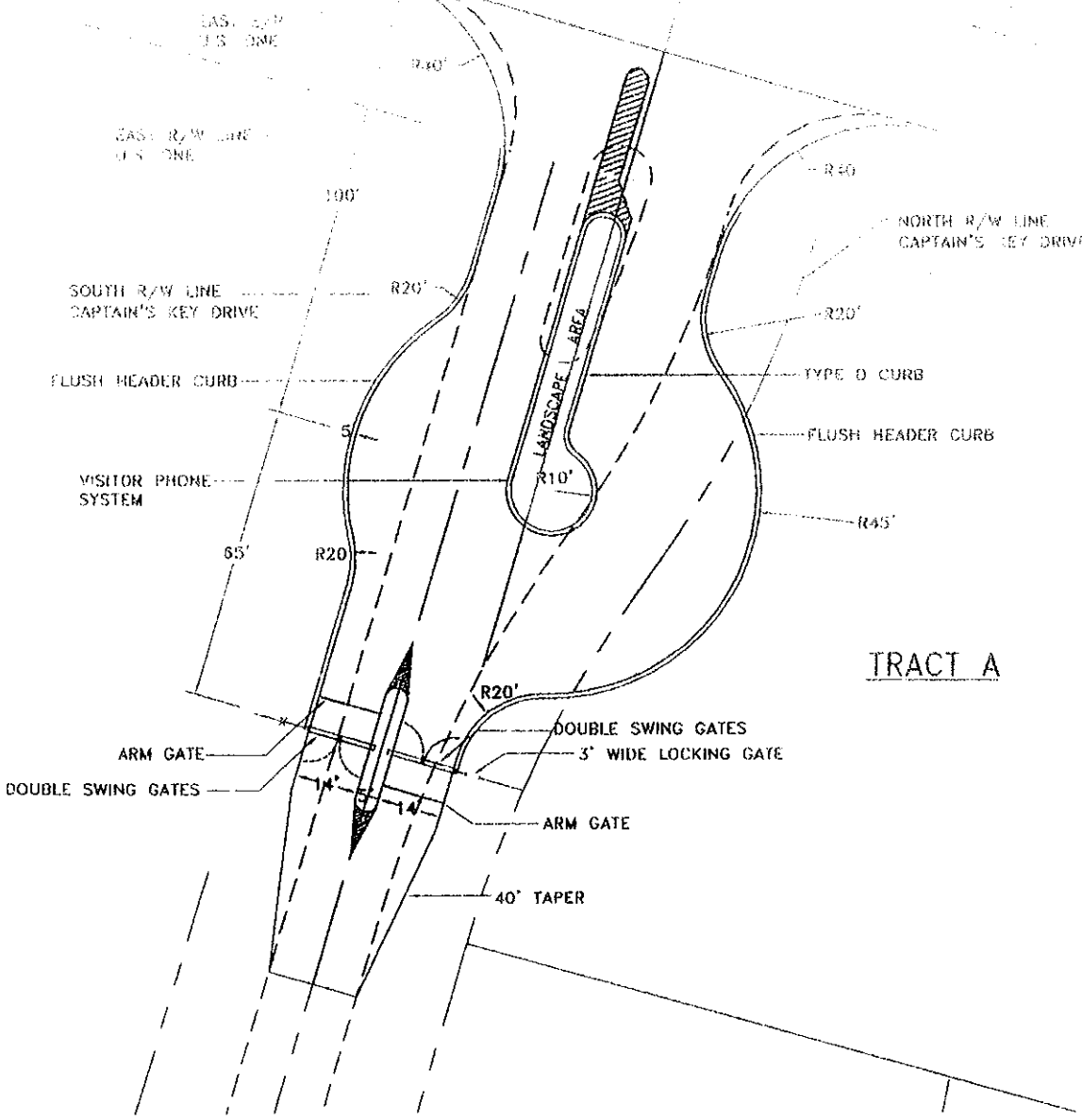
**Tom McCarthy  
Consulting Engineer, Inc.**

**CAPTAIN'S KEY**  
EXHIBIT 4: WATER DISTRIBUTION SYSTEM



**LEGEND**

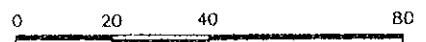
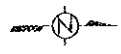
□ = NEW PAVEMENT



**TRACT A**



**Tom McCarthy  
Consulting Engineer, Inc.**



SCALE: 1" = 40'

**CAPTAIN'S KEY**  
EXHIBIT 5: ENTRANCE AND SECURITY GATE IMPROVEMENTS



Tom McCarthy  
Consulting Engineer, Inc.

**CAPTAIN'S KEY**  
EXHIBIT 5-A: EXISTING ENTRANCE PHOTOS

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# Florida Department of Transportation

JEB BUSH  
GOVERNOR

JOSÉ ABREU  
SECRETARY

District Four - Permits  
3400 West Commercial Boulevard  
Fort Lauderdale, Florida 33309-3421  
Telephone (954) 777-4383, Fax 954-677-7893  
Toll-Free: 866-336-8435

December 7, 2004

Mr. Tom McCarthy, P.E.  
Consulting Engineering  
The Guarantee Building  
120 South Olive Avenue, Suite 300  
West Palm Beach, Florida 33401

Dear Mr. McCarthy:

Subject: State Section 93040, State Road 5  
Captain's Key Subdivision Proposed Gate.

We have reviewed your transmittal dated November 23, 2004 requesting input concerning the proposed entrance improvements.

The proposed driveway throat as proposed is approximately 155 feet prior to encountering the gate. The referenced 32 lots subdivision will generate approximately 325 daily trips. The storage within the throat is more than adequate to handle the minimal peak hour trips generated. We, therefore, have no objection to your proposal.

Please be advised that any work within FDOT right-of-way will require a permit. Since there is no significant change in traffic associated with your request, permit fees should be waived.

Please contact this office with any further questions.

Sincerely,

Alan Rothmann  
District Permits Coordinator

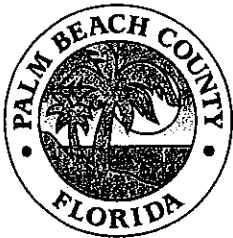
Cc: Brett Drouin

File: s:\permit\_d\permits\Return\Alan-04\



**Tom McCarthy**  
Consulting Engineer, Inc.

**CAPTAIN'S KEY**  
EXHIBIT 6: FDOT APPROVAL



December 7, 2004

**Department of Engineering  
and Public Works**

P.O. Box 21229  
West Palm Beach, FL 33416-1229  
(561) 684-4000  
www.pbcgov.com



**Palm Beach County  
Board of County  
Commissioners**

- Tony Masilotti, Chairman
- Addie L. Greene, Vice Chairperson
- Karen T. Marcus
- Jeff Koons
- Warren H. Newell
- Mary McCarty
- Burt Aaronson

**County Administrator**

Robert Weisman

Tom McCarthy, P.E., Consulting Engineer  
The Guaranty Building  
120 South Olive Ave., Suite 300  
West Palm Beach, FL 33401

**RE: CAPTAIN'S KEY SUBDIVISION**

Dear Mr. McCarthy:

The Traffic Division has reviewed the proposed gated entrance for Captain's Key subdivision. The submitted drawings are in general compliance with Palm Beach County's standards. Please provide a detail construction drawing with your next submittal and return the red-lined comments.

Please call me at 684-4030 if you have additional questions.

Sincerely,

OFFICE OF THE COUNTY ENGINEER

Bogdan T. Piorkowski, P.E.  
Registered Engineer, Traffic Division

*E 4/14 CJB*

BTP:EGM:CJB:meo

Attachment: Plans returned herewith

pc: Dan Weisberg, P.E., Director, Traffic Division

File: Developments – "C" Misc.

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**Tom McCarthy  
Consulting Engineer, Inc.**

**CAPTAIN'S KEY  
EXHIBIT 7: PALM BEACH COUNTY  
APPROVAL**





## INTEROFFICE MEMORANDUM

Department of Engineering  
and Public Works  
P.O. Box 21229  
West Palm Beach, FL 33416-1229  
(561) 684-4000  
www.pbcgov.com

**DATE:** December 8, 2004  
**TO:** Bob Banks  
Assistant County Attorney  
**FROM:** K. S. Rogers, P. E., Director  
Land Development Division *KSR*  
**SUBJECT:** Captain's Key Dependant District

On July 13, 2004 the Board of County Commissioners approved an ordinance establishing the Captain's Key Dependant District (Ordinance 2004-018, copy attached). Part of the impetus of establishing this Dependant District was for the residents to take over, from the County, the maintenance of the roads and drainage systems within this development.

The question has been raised whether any additional action must be take place by the County to transfer the maintenance responsibility of the roads and drainage system to the Dependant District. Please advise what additional action, if any, is required.

KSR:mb

Attachment

copy w/o attachment:

Barbara Alterman, Director, Planning, Zoning & Building  
Tom McCarthy, P. E., Consulting Engineer

copy w/attachment:

Tanya N. McConnell, P. E., Deputy County Engineer

Ref: CaptainsKey-Ordinance2004-018.doc



**Tom McCarthy  
Consulting Engineer, Inc.**

**CAPTAIN'S KEY  
EXHIBIT 8: TRANSFER OF MAINTENANCE  
RESPONSIBILITY**

**CAPTAIN'S KEY CONSTRUCTION COST ESTIMATE  
FOR  
PROPOSED ENTRANCE SECURITY GATE IMPROVEMENTS**

ITEM NO.	ITEM	UNIT	QUANT.	PER UNIT	TOTAL
<b>Entrance Road Modifications</b>					
1	M.O.T	LS	1	\$ 5,000.00	\$ 5,000.00
2	CLEARING & GRUBBING	LS	1	\$ 5,000.00	\$ 5,000.00
3	GRADING	LS	1	\$ 5,000.00	\$ 5,000.00
4	CONST. 8" CRUSHED CONCRETE BASE	SY	1,300	\$ 7.50	\$ 9,750.00
5	1 1/2" TYPE SIII ACSC	SY	1,300	\$ 4.00	\$ 5,200.00
6	TYPE D CURB	LF	160	\$ 13.00	\$ 2,080.00
7	FLUSH HEADER CURB	LF	310	\$ 12.00	\$ 3,720.00
8	PAVEMENT MARKING & SIGNAGE	LS	1	\$ 1,500.00	\$ 1,500.00
<b>SUBTOTAL</b>					\$ 37,250.00
FEES FOR DESIGN, PERMITTING, AND CONSTRUCTION PHASE SERVICES					\$ 15,000.00
CONTINGENCIES (15%)					\$ 5,587.50
<b>TOTAL (Rounded)</b>					\$ 58,000.00
<b>Gate System</b>					
9	SWING GATES & FENCING	LS			\$ 7,500.00
10	SWING GATE OPERATORS	LS			\$ 11,500.00
11	BATTERY BACKUP UNITS	LS			\$ 2,700.00
12	TELEPHONE SYSTEMS*	LS			\$ 6,000.00
13	ARM GATES	LS			\$ 6,000.00
14	RESIDENT ENTRY SYSTEM	LS			\$ 7,500.00
15	VENDOR ENTRY SYSTEM	LF			\$ 1,000.00
16	ELECTRICAL WIRING	LS			\$ 4,500.00
<b>SUBTOTAL</b>					\$ 46,700.00
FEES FOR DESIGN, PERMITTING, AND CONSTRUCTION PHASE SERVICES					\$ 5,000.00
CONTINGENCIES (15%)					\$ 7,005.00
<b>TOTAL</b>					\$ 59,000.00
<b>Landscaping &amp; Related Irrigation</b>		LS			\$ 50,000.00
<b>TOTAL</b>					\$ 50,000.00
*DEDICATED PHONE LINE NOT INCLUDED					
<b>ESTIMATED TOTAL COST</b>					\$ 167,000.00



**Tom McCarthy  
Consulting Engineer, Inc.**

**CAPTAIN'S KEY**  
EXHIBIT 9: CONSTRUCTION COST ESTIMATE