KEYS ENGINEERING SERVICES

Daryle L. Osborn, PE #27428
"Serving the Florida Keys"

April 8, 2019

City of Key Colony Beach Building & Zoning
Key Colony Beach, Florida

Attn: Building Official

Re: Engineering Evaluation of City Hall Building
As a Result of Hurricane Irma

Numerous onsite inspections were performed by Keys Engineering Services at the above noted building over the last 5 years. In 2014 a repair program was developed to repair the "sagging" floors in the administrative area of the building. The following is a summation of my inspections and recommendations:

Existing Condition

City Hall is a partial two-story masonry structure with a wood roof truss system. Numerous additions and modifications have been performed on the structure over the years. Refer to attached sketch. The most recent event to affect the structure was Hurricane Irma. Hurricane Irma pushed hurricane force water into the structure for an approximate depth of 14". This salt water receded after 12 hours.

Foundation System

The foundation system consists of a series of concrete pilings driven to refusal, connected by pile caps and grade beams. The interior portions of the concrete slabs on-grade, however do not have a pilings system foundation. The soils in Key Colony Beach has approximately 20' of soft compressive muck over the hard pervious oolite rock substrate. Due to these prevailing soils conditions this "muck" layer decomposes and settles over time, leaving voids beneath the concrete slab on-grade. The concrete pilings and grade beam system are in good condition.

Concrete Slab On-Grade

The concrete slab on-grade are in various conditions as outlined below:

1. Post Office Wing

This wing was built in 1995 as an addition to the original City Hall building. The building has no apparent area of structural concerns.

2. Marble Hall Area

The city hall area went under significant renovations in approximately 15 years. At that time the concrete floor was structurally supported and elevated. There are no structural concerns in this area.

3. Administrative Area

The concrete slab on-grade floors in this area has a noticeable deflection in the floors. This is due to underlying soils decomposing and creating voids beneath the not structurally designed floor system. Refer to attached drawings for recommended repairs.

Exterior Masonry Walls

The existing walls show no indication of structural concerns and no repairs are required.

Roof Truss System

The existing roof truss system is in good condition and minimal repairs are required as a result of the hurricane force winds of Hurricane Irma.

Conclusion

The overall condition of the structure is in good condition for a building of this age. The "deflecting" concrete floors in the administrative area require repairs.

If you have any questions, please contact me at 305-852-0262.

Daryle L. Osborn, P.E.

CONCRETE AND STRUCTURAL NOTES

ALL POURED IN PLACE CONCRETE AND MASONRY GROUT SHALL ATTAIN A MINIMUM STRENGTH OF 5,000 P.S.I. IN 28 DAYS, UNLESS NOTED OTHERWISE. ALL CONCRETE BEAMS AND COLUMNS SHALL ATTAIN A MINIMUM OF 5,000 P.S.I. IN 28 DAYS.

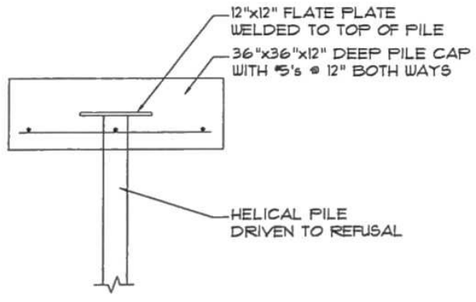
ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH "SPECIFICATIONS FOR STRUCTURAL CONCRETE BUILDING" ACI-30166.

ALL REINFORCING STEEL SHALL BE 60,000 P.S.I. MINIMUM YIELD IN ACCORDANCE WITH A.S.T.M. A-615 GRADE 60, SPECIFICATIONS FABRICATED IN ACCORDANCE WITH A.C.I. BUILDING CODE MANUAL OF STANDARD PRACTICE.

ALL REINFORCING STEEL BAR LAPS SHALL HAVE 36 BAR DIAMETERS WITH A MINIMUM OF 30". BEND ALL HORIZONTAL BEAM AND WALL BARS 36" AROUND ALL CORNERS.

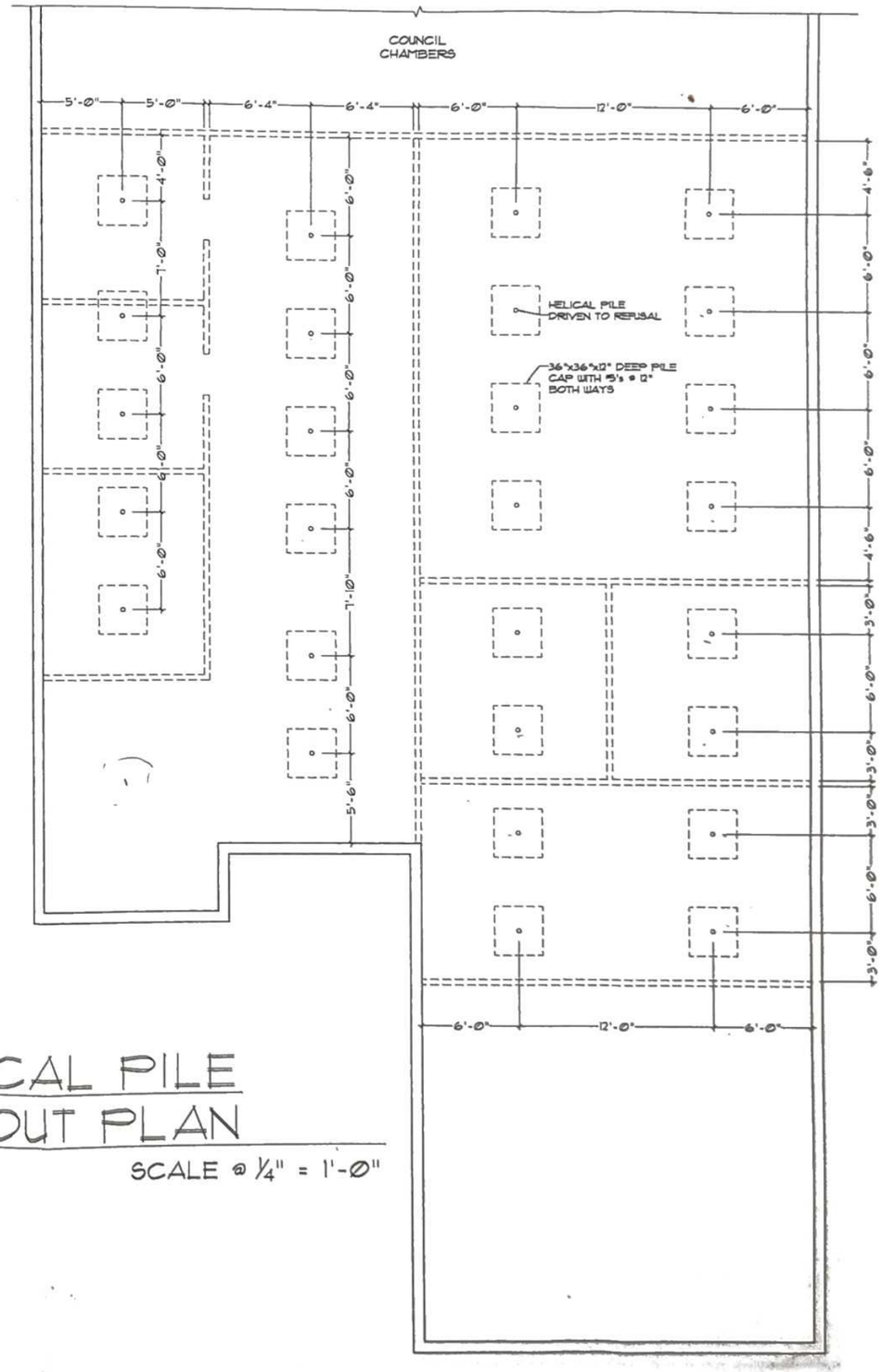
MINIMUM COVERAGE FOR REINFORCING STEEL UNLESS OTHERWISE NOTED

A. CONCRETE DEPOSITED AGAINST THE GROUND	3"
B. WALLS EXPOSED TO WEATHER OR IN CONTACT	2"
C. WALLS NOT EXPOSED TO THE WEATHER	3/4"
D. BEAMS (OVER MAIN REINFORCING)	2" CENTERLINE
E. STRUCTURAL SLABS	3/4"



TYPICAL SECTION

SCALE @ 1" = 1'-0"



HELICAL PILE LAYOUT PLAN

SCALE @ 1/4" = 1'-0"

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P.E. No. FL 27428
91700 SUITE 1 OVERSEAS HIGHWAY
TAVERNIER, FLORIDA 33070 - PH. (305) 852-0262

No.	REVISION	DATE
0	REVISION 1	6/14/2014

SCALE:	AS SHOWN
DATE:	06/29/2014
DWG BY:	AA.
REVIEWED:	
BIDS DATE:	
ACAD FILE:	

TITLE: STRUCTURAL PLAN

PROJECT: KEY COLONY BEACH CITY HALL-600 W OCEAN DRIVE KEY COLONY BEACH, FL.

DRAWING No. S-1

PROJECT No. D-14-138

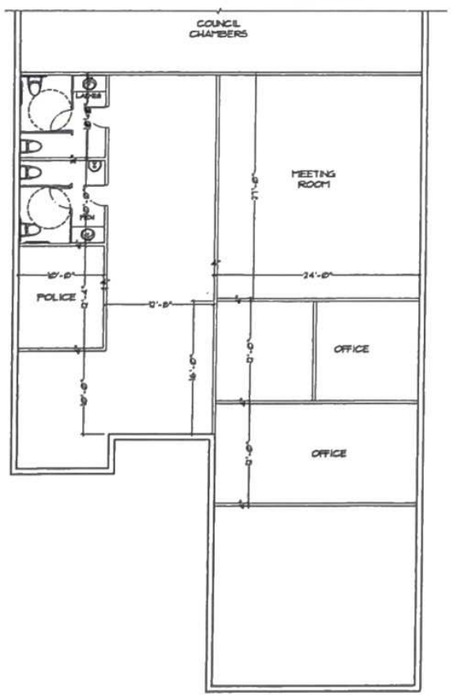
LEGAL DESCRIPTION:

TRACT "A", BLOCK 7, "KEY COLONY BEACH FIRST ADDITION", ACCORDING TO THE AMENDED PLAT THEREOF RECORDED IN PLAT BOOK 4, AT PAGE 11, OF THE PUBLIC RECORDS OF MONROE COUNTY, FLORIDA.

SCOPE OF PROJECT:

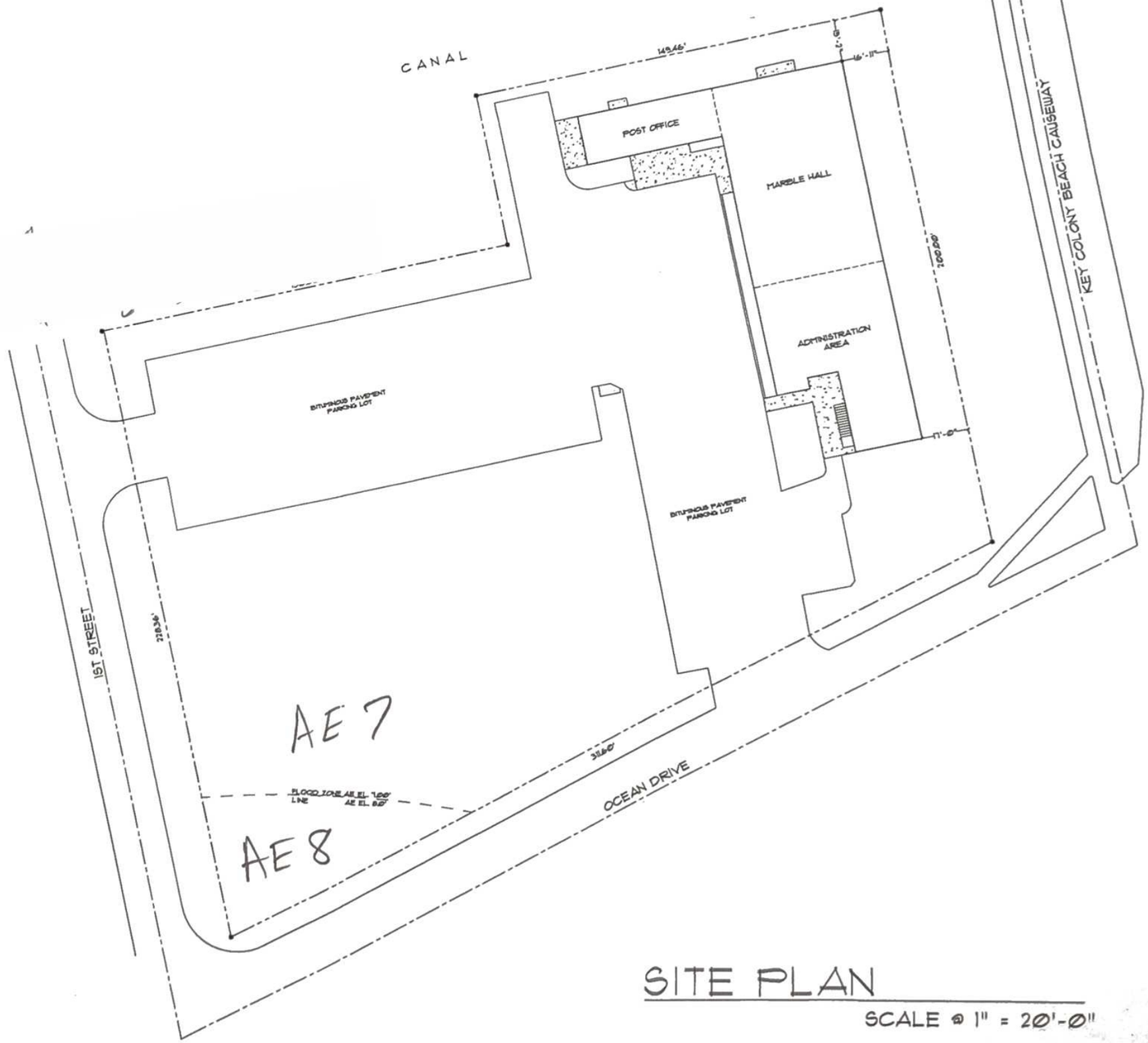
1. REPAIR CONCRETE FLOOR IN FRONT HALF OF BUILDING
2. NO INCREASE IN FOOTPRINT

FLOOD ZONE: AE-8.0'



LAYOUT PLAN

SCALE @ 1/8" = 1'-0"



SITE PLAN

SCALE @ 1" = 20'-0"

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No.	REVISION	DATE
0	REVISION 1	8/14/2014

SCALE:	AS SHOWN
DATE:	06/19/2014
DRG BY:	A.B.
REVISED:	
BIDS DATE:	
ACAD FILE:	

TITLE: SITE PLAN

PROJECT: KEY COLONY BEACH CITY HALL-600 W OCEAN DRIVE KEY COLONY BEACH, FL.

DRAWING No: C-1

PROJECT No: D-14-138