

Appendix B
Preliminary LEED Project Checklist



LEED 2009 for New Construction and Major Renovations

Project Checklist

Key West Public Transportation Facility

Draft: 10-21-2010

14 5 7 Sustainable Sites Possible Points: 26

Y	?	N			
Y			Prereq 1	Construction Activity Pollution Prevention	
	1		Credit 1	Site Selection	1
		5	Credit 2	Development Density and Community Connectivity	5
		1	Credit 3	Brownfield Redevelopment	1
6			Credit 4.1	Alternative Transportation—Public Transportation Access	6
1			Credit 4.2	Alternative Transportation—Bicycle Storage and Changing Rooms	1
3			Credit 4.3	Alternative Transportation—Low-Emitting and Fuel-Efficient Vehicles	3
2			Credit 4.4	Alternative Transportation—Parking Capacity	2
		1	Credit 5.1	Site Development—Protect or Restore Habitat	1
	1		Credit 5.2	Site Development—Maximize Open Space	1
	1		Credit 6.1	Stormwater Design—Quantity Control	1
	1		Credit 6.2	Stormwater Design—Quality Control	1
	1		Credit 7.1	Heat Island Effect—Non-roof	1
1			Credit 7.2	Heat Island Effect—Roof	1
1			Credit 8	Light Pollution Reduction	1

8 2 Water Efficiency Possible Points: 10

Y	?	N			
Y			Prereq 1	Water Use Reduction—20% Reduction	
4			Credit 1	Water Efficient Landscaping	2 to 4
	2		Credit 2	Innovative Wastewater Technologies	2
4			Credit 3	Water Use Reduction	2 to 4

13 7 15 Energy and Atmosphere Possible Points: 35

Y	?	N			
Y			Prereq 1	Fundamental Commissioning of Building Energy Systems	
Y			Prereq 2	Minimum Energy Performance	
Y			Prereq 3	Fundamental Refrigerant Management	
10	5	4	Credit 1	Optimize Energy Performance	1 to 19
		7	Credit 2	On-Site Renewable Energy	1 to 7
		2	Credit 3	Enhanced Commissioning	2
	2		Credit 4	Enhanced Refrigerant Management	2
3			Credit 5	Measurement and Verification	3
		2	Credit 6	Green Power	2

3 3 8 Materials and Resources Possible Points: 14

Y	?	N			
Y			Prereq 1	Storage and Collection of Recyclables	
		3	Credit 1.1	Building Reuse—Maintain Existing Walls, Floors, and Roof	1 to 3
		1	Credit 1.2	Building Reuse—Maintain 50% of Interior Non-Structural Elements	1
1	1		Credit 2	Construction Waste Management	1 to 2
		2	Credit 3	Materials Reuse	1 to 2

Materials and Resources, Continued

Y	?	N			
1	1		Credit 4	Recycled Content	1 to 2
1	1		Credit 5	Regional Materials	1 to 2
		1	Credit 6	Rapidly Renewable Materials	1
		1	Credit 7	Certified Wood	1

11 3 1 Indoor Environmental Quality Possible Points: 15

Y	?	N			
Y			Prereq 1	Minimum Indoor Air Quality Performance	
Y			Prereq 2	Environmental Tobacco Smoke (ETS) Control	
1			Credit 1	Outdoor Air Delivery Monitoring	1
		1	Credit 2	Increased Ventilation	1
1			Credit 3.1	Construction IAQ Management Plan—During Construction	1
		1	Credit 3.2	Construction IAQ Management Plan—Before Occupancy	1
1			Credit 4.1	Low-Emitting Materials—Adhesives and Sealants	1
1			Credit 4.2	Low-Emitting Materials—Paints and Coatings	1
1			Credit 4.3	Low-Emitting Materials—Flooring Systems	1
1			Credit 4.4	Low-Emitting Materials—Composite Wood and Agrifiber Products	1
1			Credit 5	Indoor Chemical and Pollutant Source Control	1
1			Credit 6.1	Controllability of Systems—Lighting	1
1			Credit 6.2	Controllability of Systems—Thermal Comfort	1
1			Credit 7.1	Thermal Comfort—Design	1
1			Credit 7.2	Thermal Comfort—Verification	1
	1		Credit 8.1	Daylight and Views—Daylight	1
1			Credit 8.2	Daylight and Views—Views	1

2 1 Innovation and Design Process Possible Points: 6

Y	?	N			
1			Credit 1.1	Innovation in Design: Specific Title: Green Cleaning	1
	1		Credit 1.2	Innovation in Design: Specific Title: XP/WE3 (45%)	1
			Credit 1.3	Innovation in Design: Specific Title	1
			Credit 1.4	Innovation in Design: Specific Title	1
			Credit 1.5	Innovation in Design: Specific Title	1
1			Credit 2	LEED Accredited Professional	1

Regional Priority Credits Possible Points: 4

Y	?	N			
			Credit 1.1	Regional Priority: Specific Credit	1
			Credit 1.2	Regional Priority: Specific Credit	1
			Credit 1.3	Regional Priority: Specific Credit	1
			Credit 1.4	Regional Priority: Specific Credit	1

51 21 31 Total Possible Points: 110

Certified 40 to 49 points Silver 50 to 59 points Gold 60 to 79 points Platinum 80 to 110

Appendix C
Geotechnical Report

**REPORT OF
GEOTECHNICAL EXPLORATION**

**CITY OF KEY WEST
TRANSIT STATION FACILITY
5701 COLLEGE ROAD
KEY WEST, FLORIDA**

FOR

**CHEN AND ASSOCIATES
420 LINCOLN ROAD
SUITE 420
MIAMI BEACH, FLORIDA 33139**

PREPARED BY

**NUTTING ENGINEERS OF FLORIDA, INC.
1310 NEPTUNE DRIVE
BOYNTON BEACH, FLORIDA 33426**

ORDER NO. 786.3

MAY 2008



**Nutting
Engineers**
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*Geotechnical & Construction Materials
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Environmental Services*

Offices throughout the state of Florida

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Geotechnical and Construction Materials | Engineering, Testing and Inspections | Environmental Services

May 12, 2008

Mr. Oscar R. Bello, P.E.
Chen and Associates, Inc.
420 Lincoln Road, Suite 420
Miami Beach, Florida 33139
Phone: 786-497-1500 ext. 104

Fax: 786-497-2300

Subject: Report of Geotechnical Exploration
City of Key West – Transit Station Facility
5701 College Road
Key West, Florida

Dear Mr. Bello, P.E.,

Nutting Engineers of Florida, Inc. (NE), has performed a Geotechnical Exploration for the proposed Transit Station Facility at the above referenced site in Key West, Florida. This exploration was performed in accordance with the written authorization to proceed provided by Chen and Associates. This evaluation was performed to develop information regarding subsurface conditions at specific test locations which along with proposed construction information provided was used to develop opinions regarding potential remedial earthwork procedures and foundations for support of the proposed construction. This report presents our findings and recommendations based upon the information examined at the time of this evaluation.

PROJECT INFORMATION

We understand that plans include the demolition of the existing buildings for the construction of a new two-story transit station facility. The facility will consist of a two-story office/administration building with an adjacent bus service bay area. The office portion of the building will consist of concrete block construction, while the service bay area will consist of concrete block and pre-fabricated metal and steel type construction. Besides the main building, a bus-wash station and a fuel island area will be constructed. We understand that the fuel will be house within above-ground storage tanks and that both the fuel island and bus-wash station are to be supported upon a mat type foundation system. Along with the proposed structures associated asphalt paved parking lots, roadways, and a retention pond will be constructed. Our office was provided a plan indicating the proposed building locations.

We understand that presently the site is being used as a waste transfer station. Because of this portions of the proposed building currently reside within the existing building footprints. Therefore at this time our subsurface exploration was limited. Further discussions also indicate that historically the placement of compost and/or debris within the building areas may have occurred. The size, location, and amount of debris were not known at the time of the exploration. We understand that due to potential environmental concerns it was determined to not perform any demucking or removal of this material, which may result in the necessity of constructing the buildings upon a deep foundation system (piles).

Discussions with Mr. Bello does indicate that the structures may be required to have 16-inch diameter augercast piles installed in order to provide the necessary lateral and uplift forces exerted on the structures due to heavy wave action. Finish floor elevations have not been fully finalized at this time; however discussions indicate that two to three feet of fill may be added to achieve finish floor elevations. This needs to be verified by others prior to final construction.

NE should be notified in writing by the client of any changes in the proposed construction along with a request to amend our foundation analysis and/or recommendations within this report as appropriate.

GENERAL SUBSURFACE CONDITIONS

Soil Survey Maps

As part of the geotechnical exploration, we have reviewed available Soil Conservation Service (SCS) survey maps for Monroe County. These SCS maps provide qualitative information about potential general shallow soil conditions in the project vicinity. This information was derived from approximately 6 ft. deep manual auger borings, aerial photo and surface feature interpretation at some point in the past (mid 1980's to early 1970's). The SCS data may or may not reflect actual current site conditions. As indicated in the Monroe County Soil Survey Map the series under exploration is Urban land. The Urban land consists of unconsolidated or heterogeneous overburden material generally consisting of crushed coralline limestone and coarse sand used for land leveling as fill. Beneath the fill layer natural silt deposits may exist or the natural limestone formation. We note that the maximum depth of the survey is approximately six feet.

Subsurface Exploration

NUTTING ENGINEERS OF FLORIDA, INC. was requested to perform six Standard Penetration Test (SPT) borings (ASTM D-1586) to depths of thirty feet below land surface. The soil boring locations may have been altered by the geotechnical engineer through site access limitations, lithologic conditions and other considerations from that originally proposed. The location of the test borings are indicated on the individual test boring reports presented in the Appendix of this report. The boring locations were identified in the field using approximate methods; namely, a measuring wheel and available surface controls. As such the soil boring locations should be considered to be approximate.

In addition, two 'Usual Open-Hole' exfiltration tests were performed, at locations established by the project civil engineer, in accordance with South Florida Water Management District specifications. The exfiltration tests were completed to depths of fifteen feet.

Test Boring Results

In general, the borings revealed two to six foot surface layer of medium dense to dense tan silty sand and limestone fragments fill material underlain by a two to five foot stratum of dark gray to brown silty sand with some organic silt and varying amounts of garbage debris to a depth of nine feet. Some debris was observed to consist of trace wood, plastic, glass, tile and other unknown materials. Below the debris zone hard to refusal light tan limestone with trace sand was encountered to a depth of thirty feet, the maximum depth explored. Please see the enclosed soil classification sheet in the Appendix of this report for additional important information regarding these descriptions, the field evaluation and other related information.

We note that the silty sand and debris was observed to be thicker in the area of the bus-wash and fuel island area averaging four to five feet in thickness, while in the approximate office/service bay area the debris was only two to three feet in thickness.

Note: Substantially different subsurface conditions may exist at intervening locations between soil borings. Buried debris may or may not be identified or adequately delineated by soil borings. Test pit excavation can provide more insight into such conditions and rock lithology if present. Such conditions may be revealed during site development activities (e.g. proof rolling, utility & foundation excavation activities) or other related activities. Should additional assurance be desired by the client, further subsurface investigation could be performed.

Exfiltration Results

Two 'Usual Open-Hole' exfiltration tests were performed in accordance with South Florida Water Management District (SFWMD) specifications to depths of fifteen feet below the existing ground surface. The tests were performed in order to determine the hydraulic conductivity of the in situ subsurface soils to evaluate drainage requirements for the project. The hydraulic conductivity value was determined to range from 1.77×10^{-5} to 5.58×10^{-2} cubic feet per second, per square foot, per foot of head. Detailed soil descriptions and flow rates are presented in the Appendix.

Groundwater Information

The immediate groundwater level was measured at the boring location at the time of drilling. The groundwater level was encountered at approximately five feet below the existing ground surface. Please review the paragraphs presented below regarding water table information and accuracy.

The immediate depth to groundwater measurements presented in this report may not provide a reliable indication of stabilized or more long term depth to groundwater at this site. Water table elevations can vary dramatically with time through rainfall, droughts, storm events, flood control activities, nearby surface water bodies, tidal activity, pumping and many other factors. For these reasons, this immediate depth to water data **should not** be relied upon alone for project design considerations.

Further information regarding stabilized groundwater elevations at the site could be developed upon specific request. Additional evaluation might include monitoring of peizometers, survey of the project area for evidence of current groundwater elevation influences such as wellfields, obvious construction dewatering, tidal activity, flood control canals and other surface water bodies.

ANALYSIS AND RECOMMENDATIONS

Proposed Office/Service Building

The borings performed within the office building location for this project revealed a surficial sand and limestone fill material in the upper four to six feet underlain by a silty debris stratum to depths of approximately eight feet. Below the debris stratum the natural limestone formation was encountered. Construction of the proposed building over the existing soil profile could result in settlements exceeding one-inch. We understand that denucking of this material is not desired; therefore the main office building and service bay building will need to be supported upon a piling foundation. The foundation design and construction must be in accordance with the local building codes.

Due to the subsurface soil conditions that are common within the keys, two types of piling methods are typically used for foundation support. The one method consisting of conventional augercast piles, while the other method consisting of open-hole low-capacity drilled pile. We understand that the City of Key West does not accept the open-hole low-capacity pile, therefore at this time provided below are augercast pile recommendations. If this information is incorrect and low-capacity piles are desired for the project, our office should be notified in writing in order to provide recommendations for this piles type. **It is imperative that discussions with local city officials be performed prior to any final design or implementation to ensure that all codes are effectively being satisfied.**

Additional Testing

We recommend that once the existing buildings have been removed, and final construction information has been developed, our office be notified in writing in order to perform additional test borings. The purpose of this is to ensure that effective building specific subsurface information has been attained throughout the buildings in order to provide the best effective foundation recommendations for the project. The analysis and recommendations provided below are based on the present findings and project information provided to us at the time of the report. These recommendations may change due to final project and subsurface information.

Augercast Pile Analysis

Due to its high load carrying capacity, high installation rate, low noise and vibration level, and economic cost, the augercast pile has in recent years dominated the pile foundation for structures in Southeast Florida. Augercast piles are cylindrical drilled-in-place piles, generally 12 to 24 inches in diameter and are constructed of a cementitious grout. Reinforcement can be placed in the core of the pile. The pile is constructed with a special hollow-stem auger. The auger is advanced to the design depth and high strength grout is pumped through the auger while the auger is being extracted from the soil. After the auger is fully extracted, a reinforcing cage is inserted to complete the pile.

The augercast pile has the advantage of filling voids in the adjacent soil/rock with grout, providing mechanical interlock with the surrounding foundation material developing higher compressive and uplift capacities than a prestressed concrete pile. Some disadvantages associated with augercast piles are that these piles are susceptible to problems such as necking (small pipe diameter at some locations along its length), and grout contamination by soil or bore hole collapse. These problems can be avoided by maintaining positive pressure and providing a full-length reinforcing bar with centralizers to provide some assurance that the piles have been constructed with a continuous cross section and need to be closely monitored by experienced inspection personnel. It has been noted that due to the hard to very hard coralline limestone formation that exists abundantly within the Florida Keys piling contractors have been known to have extreme difficulty drilling to the recommended pile tip elevation provided by the project geotechnical engineer. Because of this conventional augercast piles are not fully used within the Florida Keys as abundantly as the rest of South Florida.

We understand that the proposed structures including the floor slab are to be supported on 16-inch diameter augercast piles, having a design compressive capacity of 30 tons. It is our opinion that 16-inch diameter augercast piles installed to a depth approximately twelve feet below the existing ground surface will support a design compressive capacity of 30 tons. The actual depths should be expected to vary depending on the drilling conditions encountered during the installation of these piles. We recommend at a minimum 3,000 psi grout be used for the piles. This analysis is based on the existing site elevation where the borings were performed and our understanding of the subsurface conditions within the subject site. If the site elevation changes at the time of installation, the pile depth may also change accordingly.

The piling contractor shall submit the proposed pile design to Nutting Engineers of Florida, Inc. for their review and comment prior to proceeding with pile installation. Due to the possible soft conditions within the soil profile the piling contractor should anticipate the addition of more grout than the actual theoretical volume of the pile.

The Florida Building Code (FBC) in high velocity hurricane zones requires that any piles designed for greater than 36 tons should be load tested in order to verify the pile capacity. Therefore, a pile load test will not be required for this project as described in the FBC.

AUGERCAST PILE CAPACITY TABLE

Pile Diameter (Inches)	Depth Below Exist. Ground (Ft)	All. Compr. Capacity (Tons)	All. Tension Capacity (Tons)	All. Lateral Capacity (Tons)	Minimum Grout Strength (psi) (0.25 f _c)
16	12	30	10	5	3000

Pile Observations

We recommend that at least two production piles within the structure area be installed in the presence of the Nutting project geotechnical engineer. Final pile installation criteria will be provided at that time. It is important that the installation of all piles be under the full time observation of a representative of Nutting Engineers to verify the piles will support the structural loading.

Pile Reinforcement

We recommend that at a minimum, one full length #6 reinforcing steel bar utilizing centralizers be installed, plus a steel cage extending below the point of fixity in each pile. Additional reinforcing may be required depending on the structural engineer's requirements.



We recommend that a structural engineer be retained to determine the spacing and locations of the piles, and discussions should be initiated between the owners, structural engineer, contractor, and Nutting Engineers to provide detailed specifications for the foundation installation work.

Proposed Bus-Wash and Fuel Island

The borings performed in the area of the bus-wash and fuel island revealed a surficial two to four foot layer of sand and limestone fill material underlain by a four to six feet stratum of debris material with silty sand. Below depths of nine feet the natural limestone formation was encountered. It is our understanding that these structures are to be constructed upon a mat foundation system. Based on the proposed construction a settlement analysis was performed. Based on mat foundation type system, height of wall, and subsurface soils information it was determined that settlements approaching one to one and a quarter inches may occur based upon a design soil bearing pressure of 2,000 pounds per square foot at the toe of footing. If this information is suitable for the project, once the site is prepared in accordance with the recommendations presented in this report, the site may be developed with the proposed bus wash mat foundation system designed for an allowable soil bearing pressure of 2,000 pounds per square foot at the toe of footing. Once plans are more finalized for the proposed construction, we should review the plans to determine whether additional details or changes to our recommendations are warranted. All work should be completed in accordance with applicable building codes, other regulations as appropriate, and good standard local practice.

If footings are constructed, we recommend a minimum width of 24 inches for continuous footings, even though the soil bearing pressure may not be fully developed in all cases. We recommend that the bottom of footings be at least 12 inches below the lowest adjacent finished grade.

It is our opinion that the floor slab system may be constructed as a slab on grade. We recommend that a vapor barrier be placed between the soil and concrete. We also recommend that the reinforcing top and bottom steel be placed within the slab for tensile support due to the nature of the subsurface soils.

Site Fill Concerns

At this time it is not known how much fill will be needed to bring these areas up to construction grade. Our initial settlement analysis above is based upon the structures being constructed at existing grades. If fill amounts ranging from one to three feet is required within these areas, the additional fill brought to the site will cause additional immediate settlements of approximately one to three inches to the entire site. In order to reduce the amount subsidence of the ground surface during and after construction, we recommend that fill be brought to the building pad areas as soon as possible so that the consolidation process will begin before construction starts. We estimate that approximately one to two inches of settlement will occur after approximately three months of the fill being on site.

Site Preparation

The surficial organic soils, debris from the clearing operations, remnants of the existing construction, any unsuitable soils as determined by the Geotechnical Engineer will need to be completely removed within the construction area and to a lateral distance of at least 2 feet beyond the footprint limits, where practical. A Nutting Engineer's representative should be present to observe that the stripping operations are performed as we have discussed herein.

Following site clearing as discussed above, the foundation area should be excavated and the footings formed.

The bottom of foundation excavations should be compacted after excavation to develop a minimum density requirement of 98 percent of the maximum modified Proctor dry density, for a minimum depth of one (1) foot below the bottom of the footing depth, as determined by field density compaction tests.

If required by local or county codes any anchor piles that area needed for the structure should be installed to similar depths as recommended above within the main building augercast pile analysis section of this report.

Pavement Areas

The results of the soil borings indicate that the silty debris zone may exist within the new parking and roadway areas. Based on the relative loads for the parking lot, it is our opinion that it is not necessary to excavate these organic soils and replace them with clean backfill. We note that some increased frequency of maintenance should be anticipated if the organic soils are left in place. The decision as to what should be done within the parking areas will depend on costs, tolerance to settlements, additional fill that may be required and other factors. Discussions should be held with us, the owners and other interested parties to determine the best alternative concerning the pavement areas.

If the existing silty debris material is to remain, pavement areas after site clearance should be compacted to a minimum of 98 percent of the modified Proctor maximum dry density to a depth of at least 24 inches below the subgrade level. We recommend that stabilized subgrade having a minimum Limerock Bearing Ratio (LBR) of 40 be placed to a depth of approximately one foot below the base course. The base course will range from approximately 6 to 8 inches, and should have a minimum LBR of 100. We can provide more detailed pavement design recommendations including material types and thickness. However, it would be necessary to provide us with the anticipated traffic loading characteristics and pavement design life.

GENERAL INFORMATION

Our client for this geotechnical evaluation was:

Mr. Oscar R. Bello, P.E.
Chen and Associates, Inc.
420 Lincoln Road, Suite 420
Miami Beach, Florida 33139

The contents of this report are for the exclusive use of the client, the client's design & construction team and governmental authorities for this specific project exclusively. Information conveyed in this report shall not be used or relied upon by other parties or for other projects without the expressed written consent of Nutting Engineers of Florida, Inc. This report discusses geotechnical considerations for this site based upon observed conditions and our understanding of proposed construction for foundation support. Environmental issues including (but not limited to), soil and/or groundwater contamination, methane are beyond our scope of service for this project. As such, this report should not be used or relied upon for evaluation of environmental issues.

Benefit may be realized by the performance of exploratory test pits on the site to develop additional subsurface information. The client may wish to consider performance of test pits on this project to supplement information already developed.

Prior to initiating compaction operations, we recommend that representative samples of the structural fill material to be used and acceptable in-place soils be collected and tested to determine their compaction and classification characteristics. The maximum dry density, optimum moisture content, gradation and plasticity characteristics should be determined. These tests are needed for compaction quality control of the structural fill and existing soils, and to determine if the fill material is acceptable.

If conditions are encountered which are not consistent with the findings presented in this report, or if proposed construction is moved from the location investigated, this office shall be notified immediately so that the condition or change can be evaluated and appropriate action taken.

No pile shall have a tip elevation higher than the recommended elevation without first contacting Nutting Engineers of Florida, Inc. in writing so that they may analyze any proposed changes. If Nutting Engineers of Florida, Inc. is not contacted regarding a change in pile tip elevations (or pile diameters) as indicated in this report, the geotechnical engineer /piling contractor initiating this change will be responsible for the redesigned pile capacity and performance. Furthermore, if the tip elevation is raised, a pile load test shall be performed at that location where the test borings indicate the least favorable conditions. If the pile design is changed without our knowledge, Nutting Engineers of Florida, Inc. is no longer the geotechnical engineer of record.



The vibratory compaction equipment may cause vibrations that could be felt by persons within nearby buildings and could potentially induce structural settlements. Additionally, preexisting settlements may exist within these structures that could be construed to have been caused or worsened by the proposed vibratory compaction after the fact. Pre- and post conditions surveys of these structures along with the vibration monitoring during vibratory compaction could be performed to better evaluate this concern. The contractor should exercise due care during the performance of the vibratory compaction work with due consideration of potential impacts on existing structures. If potential vibrations and impacts are not considered tolerable, then alternate foundation modification techniques should be considered.

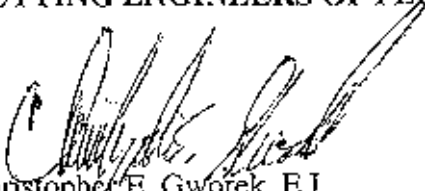
Nutting Engineers of Florida, Inc. shall bear no liability for the implementation of recommended inspection and testing services as described in this report if implemented by others. Nutting has no ability to verify the completeness, accuracy or proper technique of such procedures if performed by others.

Excavations of five feet or more in depth should be sloped or shored in accordance with OSHA and State of Florida requirements.

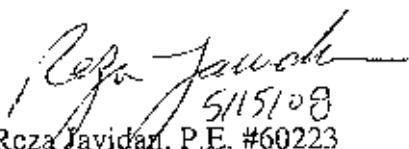
The Geotechnical Engineer warrants that the findings, recommendations, specifications, or professional advice contained herein, have been prepared after being prepared in accordance with general accepted professional practice in the field of foundation engineering, soil mechanics and engineering geology. No other warranties are implied or expressed.

We appreciate the opportunity to provide these services for you. If we can be of any further assistance, or if you need additional information, please feel free to contact us.

Sincerely,
NUTTING ENGINEERS OF FLORIDA, INC.



Christopher E. Gworek, E.I.
Project Engineer



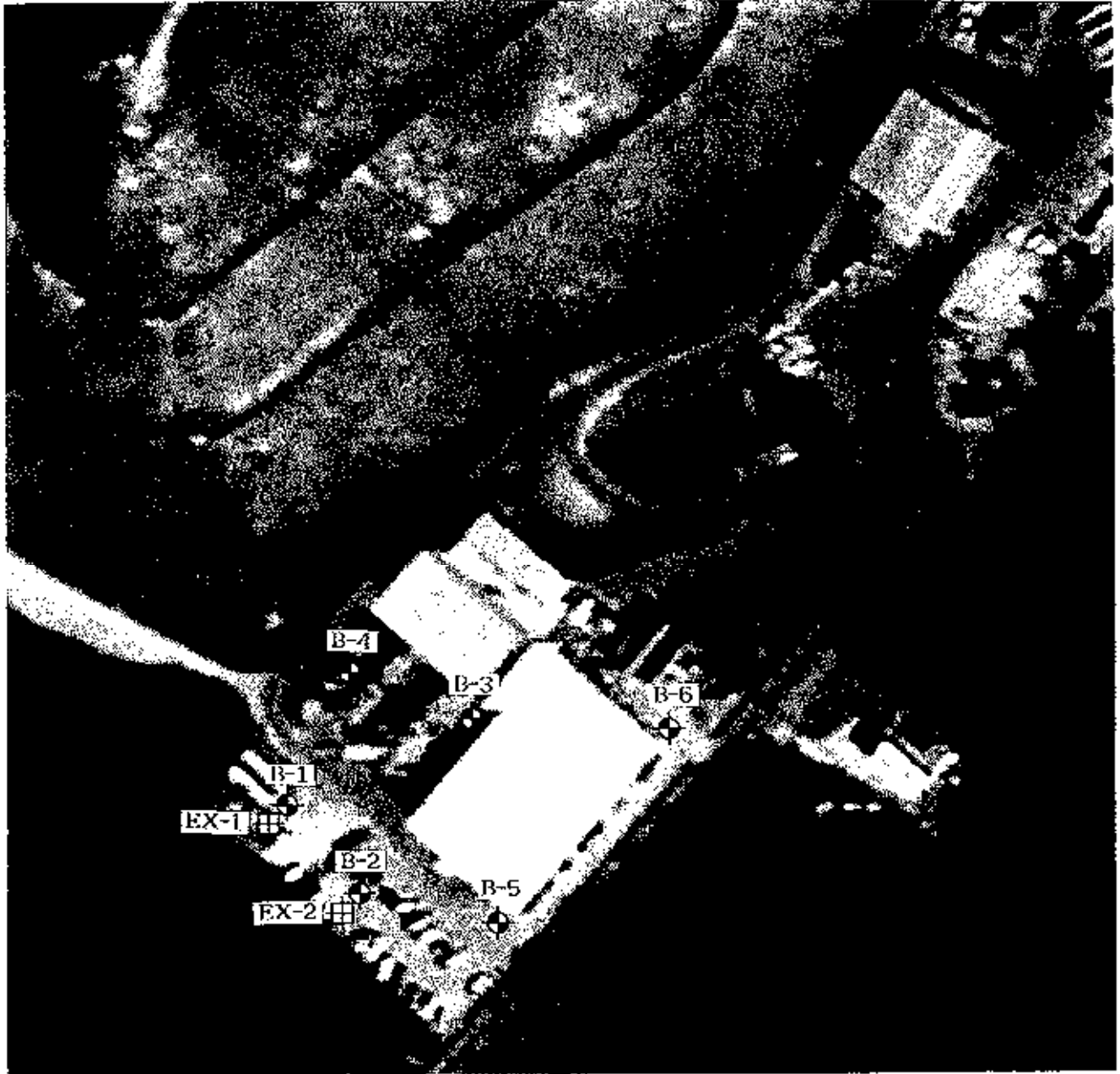
5/15/08
Reza Javidan, P.E. #60223
Senior Geotechnical Engineer

Appendix: Boring Location Plan
 Test Boring Results
 Exfiltration Test Results
 Limitations of Liability
 Soil Classification Criteria

REP CIEN KEY WEST TRANSIT STATION CEG



Nutting
Engineers
of Florida Inc. | Established 1967



NUTTING
ENGINEERS
OF FLORIDA, INC.
ESTABLISHED 1917

CHEN & ASSOCIATES
CITY OF KEY WEST
TRANSIT STATION FACILITY
5701 COLLEGE RD., KEY WEST, FL
PROJECT NO. 786.3

- GEOTECHNICAL EXPLORATION -

FIG. 1



1310 Neptune Drive
 Boynton Beach, 33426
 Telephone: 561-736-4900
 Fax: 561-737-9975

PROJECT NUMBER 786.3

CLIENT Chen & Associates

PROJECT NAME City of Key West Transit Station Facility

PROJECT LOCATION 5701 College Road, Key West, Florida

DATE STARTED 4/15/08 COMPLETED 4/15/08 SURFACE ELEVATION REFERENCE 1.5'-2' Above Road Crown

DRILLING METHOD Standard Penetration Boxing GROUND WATER LEVELS:

LOGGED BY T. Simmons CHECKED BY C. Gworek AT TIME OF DRILLING 5.0 ft

APPROXIMATE LOCATION OF BORING Approx. As Indicated on Site Plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲			
						PI	MC	LL	
						□ FINES CONTENT (%) □			
						10	20	30	40
						20	40	60	80
0		LIMESTONE, some tan quartz fine sand (fill material)	SS 1	30-31-22-15	58				>>▲
		Dark gray silty SAND and debris (fill material)	SS 2	10-7-9-9	16		▲		
5	▽		SS 3	12-13-15-5	28			▲	
		Light tan LIMESTONE, trace sand	SS 4	3-50/4"					>>▲
			SS 5	32-30-33-36	63				>>▲
10									
			SS 6	49-50	99				>>▲
15									
			SS 7	43-41-46	84				>>▲
20									
			SS 8	45-50	95				>>▲
25									
			SS 9	29-27-31	56				>>▲
30		Bottom of hole at 30.0 feet.							

TEST NUTTING BOREHOLE 786.3 CHEN & ASSOCIATES-CITY OF KEY WEST TRANSIT STATION FACILITY.GPJ G:\NT US.GST 4/21/08



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 Baynton Beach, 33426
 Telephone: 561-735-4900
 Fax: 561-737-9975

BORING NUMBER B-2

PAGE 1 OF 1

PROJECT NUMBER 786.3

CLIENT Chen & Associates

PROJECT NAME City of Key West Transit Station Facility

PROJECT LOCATION 5701 College Road, Key West, Florida

DATE STARTED 4/16/08 COMPLETED 4/16/08 SURFACE ELEVATION REFERENCE 1.5'-2' Above Road Crown

DRILLING METHOD Standard Penetration Boring GROUND WATER LEVELS:

LOGGED BY T. Simmons CHECKED BY C. Cwerek AT TIME OF DRILLING 5.0 ft

APPROXIMATE LOCATION OF BORING Approx. As Indicated on Site Plan

TEST NUTTING BOREHOLE 786.3 CHEN & ASSOCIATES- CITY OF KEY WEST TRANSIT STATION FACILITY C&A GINT US DOT 42108

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲			
						10	20	30	40
						PL MC LL 20 40 60 80			
						□ FINES CONTENT (%) □			
						20 40 60 80			
0		ASPHALT							
		LIMESTONE and tan quartz fine sand (fill material)	SS 1	88-52-16-8	68				>>▲
		Black silty dark brown SAND and debris (fill material)							
		LIMESTONE and tan quartz fine sand (fill material)	SS 2	10-10-7-5	17		▲		
5		Silty brown quartz fine SAND and debris (fill material)	SS 3	3-8-9-3	17		▲		
			SS 4	3-3-3-4	6	▲			
10		Light tan LIMESTONE, trace sand	SS 5	3-31-14-50/3"	75				>>▲
15			SS 6	41-44-56	85				>>▲
20			SS 7	52-50-48	102				>>▲
25			SS 8	56-50	106				>>▲
30			SS 9	50-50	100				>>▲
		Bottom of hole at 30.0 feet.							



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BORING NUMBER B-3

PAGE 1 OF 1

PROJECT NUMBER 786.3

CLIENT Chen & Associates

PROJECT NAME City of Key West Transit Station Facility

PROJECT LOCATION 5701 College Road, Key West, Florida

DATE STARTED 4/16/08 COMPLETED 4/16/08 SURFACE ELEVATION REFERENCE 1.5'-2' Above Road Crown

DRILLING METHOD Standard Penetration Boring GROUND WATER LEVELS:

LOGGED BY T. Simmons CHECKED BY C. Gworek AT TIME OF DRILLING 5.3 ft

APPROXIMATE LOCATION OF BORING Approx. As Indicated on Site Plan

TEST NUTTING BOREHOLE 786.3 CHEN & ASSOCIATES-CITY OF KEY WEST TRANSIT STATION FACILITY GFW GINT US DOT 42103

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲			
						10	20	30	40
						PL MC LL 20 40 60 80			
						U FINES CONTENT (%) □ 20 40 60 80			
0		ASPHALT and basecourse							
		Tan quartz fine SAND, slight trace of debris (fill material)	SS 1	43-20-19-30	39				▲
			SS 2	20-16-11-8	27				▲
5		Brown LIMESTONE, some quartz fine sand (fill material)	SS 3	5-4-8-5	12				▲
		Dark gray quartz fine SAND and debris (fill material)	SS 4	3-2-3-15	5				▲
		Light tan LIMESTONE, trace sand	SS 5	26-33-39-41	72				>>▲
15			SS 6	39-43-51	81				>>▲
20			SS 7	37-38-42	75				>>▲
25			SS 8	25-24-29	49				▲
30			SS 9	29-36-40	65				>>▲
		Bottom of hole at 30.0 feet.							



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BORING NUMBER B-4

PAGE 1 OF 1

PROJECT NUMBER 786.3

PROJECT NAME City of Key West Transit Station Facility

CLIENT Chen & Associates

PROJECT LOCATION 5701 College Road, Key West, Florida

DATE STARTED 4/16/08

COMPLETED 4/16/08

SURFACE ELEVATION REFERENCE 1.5'-2' Above Road Crown

DRILLING METHOD Standard Penetration Boring

GROUND WATER LEVELS:

LOGGED BY T. Simmons

CHECKED BY C. Gworek

AT TIME OF DRILLING 5.0 ft

APPROXIMATE LOCATION OF BORING Approx. As Indicated on Site Plan

TEST NUTTING BOREHOLE 786.3, CHEN & ASSOCIATES, CITY OF KEY WEST TRANSIT STATION FACILITY, GP, 1, GINT, U.S. GDF, 4/21/08

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲			
						10	20	30	40
						PL	MC	LL	
						20	40	60	80
						□ FINES CONTENT (%) □			
						20	40	60	80
0		CONCRETE							
		LIMESTONE and light tan quartz fine sand (fill material)	SS 1	71-56-43-39	99				>>▲
			SS 2	22-39-50-50	89				>>▲
5		LIMESTONE, little light tan quartz fine sand	SS 3	42-25-19-19	44				▲
		LIMESTONE and dark gray quartz fine sand, some debris (fill material)	SS 4	13-10-18-22	28			▲	
		Light tan LIMESTONE, trace sand	SS 5	21-28-27-31	55				>>▲
10									
			SS 6	31-36-36	67				>>▲
15									
			SS 7	65-41-48	106				>>▲
20									
			SS 8	42-45-46	87				>>▲
25									
			SS 9	25-25-21	50				▲
30		Bottom of hole at 30.0 feet.							



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BORING NUMBER B-5

PROJECT NUMBER 786.3

CLIENT Chen & Associates

PROJECT NAME City of Key West Transit Station Facility

PROJECT LOCATION 5701 College Road, Key West, Florida

DATE STARTED 4/16/08 COMPLETED 4/16/08 SURFACE ELEVATION REFERENCE 1.5'-2' Above Road Crown

DRILLING METHOD Standard Penetration Boring GROUND WATER LEVELS:

LOGGED BY T. Simmons CHECKED BY C. Gworek AT TIME OF DRILLING 5.0 ft

APPROXIMATE LOCATION OF BORING Approx. As Indicated on Site Plan

TEST NUTTING BOREHOLE 786.3 CHEN & ASSOCIATES-CITY OF KEY WEST TRANSIT STATION FACILITY GSI GINT US GPT 4/21/08

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲			
						10	20	30	40
						PL MC LL 20 40 60 80			
						<input type="checkbox"/> FINES CONTENT (%) <input type="checkbox"/> 20 40 60 80			
0		ASPHALT							
		Tan SAND and limestone fragments (fill material)	SS 1	36-25-21-29	46				▲
			SS 2	38-60-27-19	77				>>▲
5	▽		SS 3	10-16-18-23	34				▲
		Dark gray quartz fine SAND and debris (fill material)	SS 4	15-13-9-21	22			▲	
		Light tan LIMESTONE, trace sand	SS 5	19-26-33-40	59				>>▲
15			SS 6	39-52-48	91				>>▲
20			SS 7	50-53-50	103				>>▲
25			SS 8	64-36-40	90				>>▲
30			SS 9	30-28-23	58				>>▲
		Bottom of hole at 30.0 feet.							



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BORING NUMBER B-6

PAGE 1 OF 1

PROJECT NUMBER 786.3

PROJECT NAME City of Key West Transit Station Facility

CLIENT Chen & Associates

PROJECT LOCATION 5701 College Road, Key West, Florida

DATE STARTED 4/16/08 COMPLETED 4/16/08

SURFACE ELEVATION REFERENCE 1.5' Above Road Crown

DRILLING METHOD Standard Penetration Boring

GROUND WATER LEVELS:

LOGGED BY T. Simmons CHECKED BY C. Gworek AT TIME OF DRILLING 5.0 ft

APPROXIMATE LOCATION OF BORING Approx. As Indicated on Site Plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲			
						10	20	30	40
						PL — MC — LL 20 — 40 — 60 — 80			
						□ FINES CONTENT (%) □			
						20	40	60	80
0		ASPHALT							
		LIMESTONE and light tan quartz fine sand (fill material)	SS 1	66-48-30-34	78				>>▲
			SS 2	31-29-30-25	59				>>▲
5		Silty dark gray quartz fine SAND, some debris and peat (fill material)	SS 3	8-6-5-4	11				▲
			SS 4	3-5-4-14	9				▲
		Light tan LIMESTONE, trace sand	SS 5	19-21-36-11	57				>>▲
10									
15			SS 6	35-11-40	76				>>▲
20			SS 7	43-51-59	94				>>▲
25			SS 8	38-30-29	68				>>▲
30		Bottom of hole at 30.0 feet.	SS 9	30-27-22	57				>>▲

TEST NUTTING BOREHOLE 786.3 CHEN & ASSOCIATES-CITY OF KEY WEST TRANSIT STATION FACILITY.OPJ GINT US.GDT 4/21/08

LIMITATIONS OF LIABILITY

WARRANTY

We warrant that the services performed by Nutting Engineers of Florida, Inc. are conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions. **No other warranties, expressed or implied, are made.** While the services of Nutting Engineers of Florida, Inc. are a valuable and integral part of the design and construction teams, we do not warrant, guarantee or insure the quality, completeness, or satisfactory performance of construction plans and specifications which we have not prepared, nor the ultimate performance of building site materials.

SUBSURFACE EXPLORATION

Subsurface exploration is normally accomplished by test borings; test pits are sometimes employed. The method of determining the boring location and the surface elevation at the boring is noted in the report. This information is represented on a drawing or on the boring log. The location and elevation of the borings should be considered accurate only to the degree inherent with the method used.

The soil boring log includes sampling information, description of the materials recovered, approximate depths of boundaries between soil and rock strata and groundwater data. The log represents conditions specifically at the location where the boring was made. The boundaries between different soil strata are indicated at specific depths; however, these depths are in fact approximate and dependent upon the frequency of sampling. The transition between soil strata is often gradual. Water level readings are made at the time and under conditions stated on the boring logs. Water levels change with time, precipitation, canal level, local well drawdown and other factors.

LABORATORY AND FIELD TESTS

Tests are performed in accordance with specific ASTM Standards unless otherwise indicated. All criteria included in a given ASTM Standard are not always required and performed. Each test report indicates the measurement and determination actually made.

ANALYSIS AND RECOMMENDATIONS

The geotechnical report is prepared primarily to aid in the design of site work and structural foundations. Although the information in the report is expected to be sufficient for these purposes, it is not intended to determine the cost of construction or to stand alone as a construction specification.

Report recommendations are based primarily on data from test borings made at the locations shown on the test boring reports. Soil variations may exist between borings and may not become evident until construction. If variations are then noted, the geotechnical engineer should be contacted so that field conditions can be examined and recommendations revised if necessary.

The geotechnical report states our understanding as to the location, dimensions and structural features proposed for the site. **Any significant changes in the nature, design, or location of the site improvements must be communicated to the geotechnical engineer** so that the geotechnical analysis, conclusions, and recommendations can be appropriately adjusted.

CONSTRUCTION OBSERVATION

Construction observation and testing is an important element of geotechnical services. The geotechnical engineer's field representative (G.E.F.R.) is the "owner's representative" observing the work of the contractor, performing tests and reporting data from such tests and observations. **The geotechnical engineer's field representative does not direct the contractor's construction means, methods, operations or personnel.** The G.E.F.R. does not interfere with the relationship between the owner and the contractor and, except as an observer, does not become a substitute owner on site. The G.E.F.R. is responsible for his/her safety, but has no responsibility for the safety of other personnel at the site. The G.E.F.R. is an important member of a team whose responsibility is to observe and test the work being done and report to the owner whether that work is being carried out in general conformance with the plans and specifications.

SOIL CLASSIFICATION CRITERIA

RELATIVE DENSITY SAND

SPT N-VALUE (blows/ft.)	RELATIVE DENSITY
0 - 4	Very Loose
5 - 10	Loose
11 - 29	Medium
30 - 49	Dense
>50	Very Dense
100/6"	Refusal

SHEAR STRENGTH CLAY

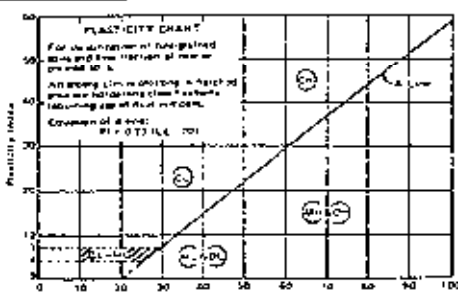
SPT N-Value (blows/ft.)	UNCONFINED COMP. STRENGTH (tons/ft.2)	CONSISTENCY
<2	<0.25	Very soft
2 - 4	0.25-0.50	Soft
5 - 8	0.50-1.00	Medium
9 - 15	1.00-2.00	Stiff
16 - 30	2.00-4.00	Very Stiff
>30	>4.00	Hard

PARTICLE SIZE

Boulder	>12 in.
Cobble	3 to 12 in.
Gravel	4.76mm to 3 in.
Sand	0.074mm to 4.76mm
Silt	0.005mm to 0.074mm
Clay	<0.005mm

DESCRIPTION MODIFIERS

0 - 5%	Slight trace
6 - 10%	Trace
11 - 20%	Little
21 - 35%	Some
>35%	And

Major Divisions		Group Symbols	Typical Names	Classification Criteria		
Coarse-Grained Soils More than 50% retained on No. 200 sieve*	Gravels 50% or more of coarse fraction retained on No. 4 sieve	GW	Well-graded gravels and gravel-sand mixtures, little or no fines	Classification on basis of percentage of fines: Less than 5% pass No. 200 sieve - GW, GP, SW, SP More than 5% pass No. 200 sieve - GM, GC, SM, SC 5% to 12% pass No. 200 sieve - Borderline classification requiring use of dual symbols	$C_u = D_{60}/D_{10}$ Greater than 4 $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between 1 and 3	
		GP	Poorly graded gravels and gravel-sand mixtures, little or no fines		Not meeting both criteria for GW	
		GM	Silty gravels, gravel-sand-silt mixtures		Atterberg limits plot below "A" line or plasticity index less than 4	Atterberg limits plotting in hatched area are borderline classifications requiring use of dual symbols
		GC	Clayey gravels, gravel-sand-clay mixtures		Atterberg limits plot above "A" line and plasticity index greater than 7	
	Sands More than 50% of coarse fraction passes No. 4 sieve	SW	Well-graded sands and gravelly sands, little or no fines		$C_u = D_{60}/D_{10}$ Greater than 6 $C_c = \frac{(W_{30})^2}{D_{10} \times D_{60}}$ Between 1 and 3	
		SP	Poorly graded sands and gravelly sands, little or no fines		Not meeting both criteria for SW	
Sands with Fines	SM	Silty sands, sand-silt mixtures	Atterberg limits plot below "A" line or plasticity index less than 4	Atterberg limits plotting in hatched area are borderline classifications requiring use of dual symbols		
	SC	Clayey sands, sand-clay mixtures	Atterberg limits plot above "A" line and plasticity index greater than 7			
	ML	Inorganic silts, very fine sands, rock flour, silty or clayey fine sands	 <p style="font-size: small;">PLASTICITY CHART For classification of fine-grained soils and the fraction of coarse gravel to 5. An organic silt is denoted as "OH" and an organic clay as "OL" (both requiring use of dual symbols). Covered by AASHTO M 1983.</p>			
	CL	Inorganic clays of low to medium plasticity, gravelly clay, sandy clays, silty clays, lean clays				
OL	Organic silts and organic silty clays of low plasticity					
MH	Inorganic silts, micaceous or laminar fine sands or silts, elastic silts					
CH	Inorganic clays of high plasticity, fat clays					
OH	Organic clays of medium to high plasticity					
Highly Organic Soils		PT	Peat, muck, and other highly organic soils	Visual-Manual Identification, see ASTM Designation D 2488.		

*Based on the material passing the 2.0- to 4.75-mm sieve.



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PROJECT NUMBER 786.3

PROJECT NAME City of Key West Transit Station Facility

CLIENT Chen & Associates

PROJECT LOCATION 5701 College Road, Key West, Florida

DATE STARTED 4/15/08 COMPLETED 4/15/08

SURFACE ELEVATION REFERENCE 1.5'-2' Above Road Crown

DRILLING METHOD Standard Penetration Boring

GROUND WATER LEVELS:

LOGGED BY T. Simmons CHECKED BY C. Gworek

▽ AT TIME OF DRILLING 5.0 ft

APPROXIMATE LOCATION OF BORING Approx. As Indicated on Site Plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲				
						10	20	30	40	
						PL — MC — LL 20 — 40 — 60 — 80				
						<input type="checkbox"/> FINES CONTENT (%) <input type="checkbox"/> 20 — 40 — 60 — 80				
0		LIMESTONE, some tan quartz fine sand (fill material)	SS 1	30-31-22-15	53					>>▲
		Dark gray silty SAND and debris (fill material)	SS 2	10-7-9-9	16		▲			
5	▽		SS 3	12-13-15-5	28			▲		
		Light tan LIMESTONE, trace sand	SS 4	3-50/4"						>>▲
			SS 5	32-30-33-36	63					>>▲
			SS 6	49-50	99					>>▲
			SS 7	43-41-46	84					>>▲
			SS 8	45-50	95					>>▲
			SS 9	29-27-31	56					>>▲
30		Bottom of hole at 30.0 feet.								

TEST HUTTING BOREHOLE 786.3 CHEN & ASSOCIATES-CITY OF KEY WEST TRANSIT STATION FACILITY.GPJ GINT US.GDT 4/21/08



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PROJECT NUMBER 786.3

CLIENT Chen & Associates

PROJECT NAME City of Key West Transit Station Facility

PROJECT LOCATION 5701 College Road, Key West, Florida

DATE STARTED 4/16/08 COMPLETED 4/16/08 SURFACE ELEVATION REFERENCE 1.5'-2' Above Road Crown

DRILLING METHOD Standard Penetration Boring GROUND WATER LEVELS:

LOGGED BY T. Simmons CHECKED BY C. Gworek ∇ AT TIME OF DRILLING 5.0 ft

APPROXIMATE LOCATION OF BORING Approx. As Indicated on Site Plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲			
						10	20	30	40
						PL MC LL 20 40 60 80			
						□ FINES CONTENT (%) □			
						20	40	60	80
0		ASPHALT							
		LIMESTONE and tan quartz fine sand (fill material)	SS 1	88-52-16-8	68				>>▲
		Black silty dark brown SAND and debris (fill material)							
		LIMESTONE and tan quartz fine sand (fill material)	SS 2	10-10-7-5	17		▲		
5		Silty brown quartz fine SAND and debris (fill material)	SS 3	3-8-9-3	17		▲		
			SS 4	3-3-3-4	6	▲			
10		Light tan LIMESTONE, trace sand	SS 5	3-31-44-50/3*	75				>>▲
15			SS 6	41-44-56	85				>>▲
20			SS 7	52-50-48	102				>>▲
25			SS 8	56-50	106				>>▲
30			SS 9	50-50	100				>>▲
		Bottom of hole at 30.0 feet.							



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CLIENT Chen & Associates
 PROJECT LOCATION 5701 College Road, Key West, Florida

PROJECT NUMBER 786.3
 PROJECT NAME City of Key West Transit Station Facility

DATE STARTED 4/16/08 COMPLETED 4/16/08 SURFACE ELEVATION REFERENCE 1.5'-2' Above Road Crown
 DRILLING METHOD Standard Penetration Boring GROUND WATER LEVELS:
 LOGGED BY T. Simmons CHECKED BY C. Gworek AT TIME OF DRILLING 5.3 ft
 APPROXIMATE LOCATION OF BORING Approx. As Indicated on Site Plan

TEST NUTTING BOREHOLE 786.3 CHEN & ASSOCIATES- CITY OF KEY WEST TRANSIT STATION FACILITY (PJ) GINT US.GDT 4/21/08

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲			
						10	20	30	40
						PL		MC	LL
						□ FINES CONTENT (%) □			
						20	40	60	80
0		ASPHALT and basecourse							
		Tan quartz fine SAND, slight trace of debris (fill material)	SS 1	43-20-19-30	39				▲
		Brown LIMESTONE, some quartz fine sand (fill material)	SS 2	20-16-11-8	27			▲	
5	▽	Dark gray quartz fine SAND and debris (fill material)	SS 3	5-4-8-5	12	▲			
		Light tan LIMESTONE, trace sand	SS 4	3-2-3-35	5	▲			
10			SS 5	26-33-39-41	72				>>▲
15			SS 6	38-43-51	81				>>▲
20			SS 7	37-38-42	75				>>▲
25			SS 8	25-24-29	49				▲
30			SS 9	29-36-40	65				>>▲
		Bottom of hole at 30.0 feet.							



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PROJECT NUMBER 786.3

CLIENT Chen & Associates

PROJECT NAME City of Key West Transit Station Facility

PROJECT LOCATION 5701 College Road, Key West, Florida

DATE STARTED 4/16/08 COMPLETED 4/16/08 SURFACE ELEVATION REFERENCE 1.5'-2' Above Road Crown

DRILLING METHOD Standard Penetration Boring GROUND WATER LEVELS:

LOGGED BY T. Simmons CHECKED BY C. Gworek ∇ AT TIME OF DRILLING 5.0 ft

APPROXIMATE LOCATION OF BORING Approx. As Indicated on Site Plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲			
						10	20	30	40
						PL		MC	LL
						□ FINES CONTENT (%) □			
						20	40	60	80
0		CONCRETE							
		LIMESTONE and light tan quartz fine sand (fill material)	SS 1	71-56-43-39	99				>>▲
			SS 2	22-39-50-50	89				>>▲
5	∇	LIMESTONE, little light tan quartz fine sand	SS 3	42-25-19-19	44				▲
		LIMESTONE and dark gray quartz fine sand, some debris (fill material)	SS 4	13-10-18-22	28			▲	
		Light tan LIMESTONE, trace sand	SS 5	21-28-27-31	55				>>▲
15			SS 6	31-36-36	67				>>▲
20			SS 7	65-41-48	106				>>▲
25			SS 8	42-45-46	87				>>▲
30		Bottom of hole at 30.0 feet.	SS 9	25-25-21	50				▲



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BORING NUMBER B-5

PAGE 1 OF 1

CLIENT Chen & Associates

PROJECT NUMBER 786.3

PROJECT NAME City of Key West Transit Station Facility

PROJECT LOCATION 5701 College Road, Key West, Florida

DATE STARTED 4/16/08

COMPLETED 4/16/08

SURFACE ELEVATION REFERENCE 1.5'-2' Above Road Crown

DRILLING METHOD Standard Penetration Boring

GROUND WATER LEVELS:

LOGGED BY T. Simmons

CHECKED BY C. Gworek

∇ AT TIME OF DRILLING 5.0 ft

APPROXIMATE LOCATION OF BORING Approx. As Indicated on Site Plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲			
						10	20	30	40
						PL MC LL 20 40 60 80			
						□ FINES CONTENT (%) □			
						20	40	60	80
0		ASPHALT							
		Tan SAND and limestone fragments (fill material)	SS 1	36-25-21-29	46				▲
			SS 2	38-50-27-19	77				>>▲
5	∇		SS 3	10-16-18-23	34				▲
		Dark gray quartz fine SAND and debris (fill material)	SS 4	15-13-9-21	22			▲	
		Light tan LIMESTONE, trace sand	SS 5	19-26-33-40	59				>>▲
10									
15			SS 6	39-52-48	91				>>▲
20			SS 7	50-53-50	103				>>▲
25			SS 8	54-36-40	90				>>▲
30			SS 9	30-28-23	58				>>▲
		Bottom of hole at 30.0 feet.							



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BORING NUMBER B-6

PAGE 1 OF 1

PROJECT NUMBER 786.3

CLIENT Chen & Associates

PROJECT NAME City of Key West Transit Station Facility

PROJECT LOCATION 5701 College Road, Key West, Florida

DATE STARTED 4/16/08 COMPLETED 4/16/08

SURFACE ELEVATION REFERENCE 1.5' Above Road Crown

DRILLING METHOD Standard Penetration Boring

GROUND WATER LEVELS:

LOGGED BY T. Simmons CHECKED BY C. Gworek

AT TIME OF DRILLING 5.0 ft

APPROXIMATE LOCATION OF BORING Approx. As Indicated on Site Plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲				
						10	20	30	40	
						PL MC LL 20 40 60 80				
						□ FINES CONTENT (%) □				
						20	40	60	80	
0	ASPHALT	LIMESTONE and light tan quartz fine sand (fill material)	SS 1	66-48-30-34	78					>>▲
			SS 2	31-29-30-25	59					>>▲
5	<input checked="" type="checkbox"/>	Silty dark gray quartz fine SAND, some debris and peat (fill material)	SS 3	8-6-5-4	11					▲
			SS 4	3-5-4-14	9					▲
		Light tan LIMESTONE, trace sand	SS 5	19-21-36-41	57					>>▲
15			SS 6	35-41-40	76					>>▲
20			SS 7	43-51-59	94					>>▲
25			SS 8	38-30-29	68					>>▲
30			SS 9	30-27-22	57					>>▲
		Bottom of hole at 30.0 feet.								

TEST NUTTING BOREHOLE 786.3 CHEN & ASSOCIATES- CITY OF KEY WEST TRANSIT STATION FACILITY GPJ GINT US.GDT 4/21/08



Nutting Engineers

of Florida Inc. | Established 1967
Your Project is Our Commitment

1310 Neptune Drive
Boynton Beach, Florida 33426
561-736-4900
Toll Free: 877-NUTTING (688-8464)
Fax: 561-737-9975
Broward 954-941-8700
St. Lucie 772-408-1050
Miami-Dade 305-557-3083
www.nuttingengineers.com

Exfiltration Test

Geotechnical and Construction Materials | Engineering, Testing and Inspections | Environmental Services

Client: Chen & Associates Order No 786.3
 Project: City of Key West Transit Station Facility Report No 2
 Location: 5701 College Road, Key West, Florida Date: 4/18/08
 Test: Usual Tpy Open Hole Exfiltration Test
 Surface
 Elevation: Approx. @ Road Crown Water table from ground surface: 5'
 Casing
 Diameter: 6"
 Tube Depth: 15'

Sample Location: Approx. As Indicated on Site Plan

Material: 0'-4' LIMESTONE and tan quartz fine sand
 4'-8.5' Silty brown quartz fine SAND and debris (fill)
 8.5'-15' LIMESTONE and light tan quartz fine sand

$K = 5.58 \times 10^{-2} \text{ cfs/ft}^2\text{ft.head}$

One Minute Increme	Pump Rate in Gal/Min
1	40.0
2	40.0
3	40.0
4	40.0
5	40.0
6	40.0
7	40.0
8	40.0
9	40.0
10	40.0

* NOTE: Driller could only raise water table one foot above initial location, while pumping maximum flow (40 gpm) with testing equipment. Calculation Based upon this condition.

Reza Javidan
51141-8
Reza Javidan, P.E. #60223

OFFICES
Palm Beach
Miami-Dade
St. Lucie

LIMITATIONS OF LIABILITY

WARRANTY

We warrant that the services performed by Nutting Engineers of Florida, Inc. are conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions. **No other warranties, expressed or implied, are made.** While the services of Nutting Engineers of Florida, Inc. are a valuable and integral part of the design and construction teams, we do not warrant, guarantee or insure the quality, completeness, or satisfactory performance of construction plans and specifications which we have not prepared, nor the ultimate performance of building site materials.

SUBSURFACE EXPLORATION

Subsurface exploration is normally accomplished by test borings; test pits are sometimes employed. The method of determining the boring location and the surface elevation at the boring is noted in the report. This information is represented on a drawing or on the boring log. The location and elevation of the borings should be considered accurate only to the degree inherent with the method used.

The soil boring log includes sampling information, description of the materials recovered, approximate depths of boundaries between soil and rock strata and groundwater data. The log represents conditions specifically at the location where the boring was made. The boundaries between different soil strata are indicated at specific depths; however, these depths are in fact approximate and dependent upon the frequency of sampling. The transition between soil strata is often gradual. Water level readings are made at the time and under conditions stated on the boring logs. Water levels change with time, precipitation, canal level, local well drawdown and other factors.

LABORATORY AND FIELD TESTS

Tests are performed in accordance with specific ASTM Standards unless otherwise indicated. All criteria included in a given ASTM Standard are not always required and performed. Each test report indicates the measurement and determination actually made.

ANALYSIS AND RECOMMENDATIONS

The geotechnical report is prepared primarily to aid in the design of site work and structural foundations. Although the information in the report is expected to be sufficient for these purposes, it is not intended to determine the cost of construction or to stand alone as a construction specification.

Report recommendations are based primarily on data from test borings made at the locations shown on the test boring reports. Soil variations may exist between borings and may not become evident until construction. If variations are then noted, the geotechnical engineer should be contacted so that field conditions can be examined and recommendations revised if necessary.

The geotechnical report states our understanding as to the location, dimensions and structural features proposed for the site. **Any significant changes in the nature, design, or location of the site improvements must be communicated to the geotechnical engineer** so that the geotechnical analysis, conclusions, and recommendations can be appropriately adjusted.

CONSTRUCTION OBSERVATION

Construction observation and testing is an important element of geotechnical services. The geotechnical engineer's field representative (G.E.F.R.) is the "owner's representative" observing the work of the contractor, performing tests and reporting data from such tests and observations. **The geotechnical engineer's field representative does not direct the contractor's construction means, methods, operations or personnel.** The G.E.F.R. does not interfere with the relationship between the owner and the contractor and, except as an observer, does not become a substitute owner on site. The G.E.F.R. is responsible for his/her safety, but has no responsibility for the safety of other personnel at the site. The G.E.F.R. is an important member of a team whose responsibility is to observe and test the work being done and report to the owner whether that work is being carried out in general conformance with the plans and specifications.

SOIL CLASSIFICATION CRITERIA

RELATIVE DENSITY SAND

SPT N-VALUE (blows/ft.)	RELATIVE DENSITY
0 - 4	Very Loose
5 - 10	Loose
11 - 29	Medium
30 - 49	Dense
>50	Very Dense
100/6"	Refusal

PARTICLE SIZE

Boulder	>12 in.
Cobble	3 to 12 in.
Gravel	4.76mm to 3 in.
Sand	0.074mm to 4.76mm
Silt	0.005mm to 0.074mm
Clay	<0.005mm

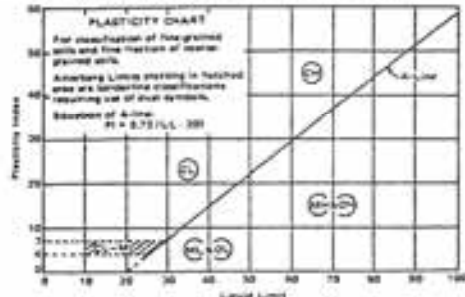
SHEAR STRENGTH CLAY

SPT N-Value (blows/ft.)	UNCONFINED COMP. STRENGTH (tons/ft.2)	CONSISTENCY
<2	<0.25	Very soft
2 - 4	0.25-0.50	Soft
5 - 8	0.50-1.00	Medium
9 - 15	1.00-2.00	Stiff
16 - 30	2.00-4.00	Very Stiff
>30	>4.00	Hard

DESCRIPTION MODIFIERS

0 - 5%	Slight trace
6 - 10%	Trace
11 - 20%	Little
21 - 35%	Some
>35%	And

Major Divisions	Group Symbols	Typical Names	Classification Criteria		
Coarse-Grained Soils More than 50% retained on No. 200 sieve*	Gravels 50% or more of coarse fraction retained on No. 4 sieve	GW	Well-graded gravels and gravel-sand mixtures, little or no fines		
		GP	Poorly graded gravels and gravel-sand mixtures, little or no fines		
		Gravels with Fines	GM	Silty gravels, gravel-sand-silt mixtures	
			GC	Clayey gravels, gravel-sand-clay mixtures	
	Sands More than 50% of coarse fraction passes No. 4 sieve	Clean Sands	SW	Well-graded sands and gravelly sands, little or no fines	
			SP	Poorly graded sands and gravelly sands, little or no fines	
		Sands with Fines	SM	Silty sands, sand-silt mixtures	
			SC	Clayey sands, sand-clay mixtures	
			Classification on basis of percentage of fines Less than 5% pass No. 200 sieve More than 12% pass No. 200 sieve 5% to 12% pass No. 200 sieve requiring use of dual symbols	GM	Greater than 4 $C_u = \frac{D_{60}}{D_{10}}$ $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between 1 and 3
				GP	Between 1 and 3
SM	Greater than 6 $C_u = \frac{D_{60}}{D_{10}}$ $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between 1 and 3				
SC	Between 1 and 3				
GM	Greater than 4				
GP	Greater than 6				
SM	Greater than 7				
SC	Greater than 7				
Fine-Grained Soils 60% or more passes No. 200 sieve*	Silts and Clays Liquid limit 50% or less	ML	Inorganic silts, very fine sands, rock flour, silty or clayey fine sands		
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays		
		OL	Organic silts and organic silty clays of low plasticity		
	Silts and Clays Liquid limit greater than 50%	MH	Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts		
		CH	Inorganic clays of high plasticity, fat clays		
		OH	Organic clays of medium to high plasticity		
		PT	Peat, muck, and other highly organic soils		
Highly Organic Soils	PT	Peat, muck, and other highly organic soils	Visual-Manual Identification, see ASTM Designation D 2488.		



*Based on the material passing the 3-in. (75-mm.) sieve.

Appendix D
South Florida Water Management District (SFWMD)
Permit



**SOUTH FLORIDA WATER MANAGEMENT DISTRICT
 ENVIRONMENTAL RESOURCE
 STANDARD GENERAL PERMIT NO. 44-00076-S
 DATE ISSUED: August 23, 2010**

Form #0941
08/95

PERMITTEE: CITY OF KEY WEST
 604 SIMONTON STREET
 KEY WEST, FL 33040

PROJECT DESCRIPTION: Modification of Permit No. 44-00076-S for the construction and operation of a surface water management system to serve a 3.86 acre municipal development known as the City of Key West Public Transportation Facility.

PROJECT LOCATION: MONROE COUNTY, SEC 27 TWP 67S RGE 25E

PERMIT DURATION: See Special Condition No:1. See attached Rule 40E-4.321, Florida Administrative Code.

This is to notify you of the District's agency action concerning Notice of Intent for Permit Application No. 090617-6, dated June 17, 2009. This action is taken pursuant to Rule 40E-1.803 and Chapter 40E-40, Florida Administrative Code (F.A.C.).

Based on the information provided, District rules have been adhered to and an Environmental Resource General Permit is in effect for this project subject to:

1. Not receiving a filed request for a Chapter 120, Florida Statutes, administrative hearing.
2. the attached 19 General Conditions (See Pages : 2 - 4 of 6),
3. the attached 14 Special Conditions (See Pages : 5 - 6 of 6) and
4. the attached 2 Exhibit(s)

Should you object to these conditions, please refer to the attached "Notice of Rights" which addresses the procedures to be followed if you desire a public hearing or other review of the proposed agency action. Please contact this office if you have any questions concerning this matter. If we do not hear from you in accordance with the "Notice of Rights," we will assume that you concur with the District's action.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a "Notice of Rights" has been mailed to the Permittee (and the persons listed in the attached distribution list) no later than 5:00 p.m. on this 23rd day of August, 2010, in accordance with Section 120.60(3), Florida Statutes.

BY: 

Anita R. Bain
 Director - Environmental Resource Permitting Division
 Palm Beach Service Center

Certified mail number 7009 2250 0003 1260 9165

09/23/2010 09:03:00

GENERAL CONDITIONS

1. All activities authorized by this permit shall be implemented as set forth in the plans, specifications and performance criteria as approved by this permit. Any deviation from the permitted activity and the conditions for undertaking that activity shall constitute a violation of this permit and Part IV, Chapter 373, F.S.
2. This permit or a copy thereof, complete with all conditions, attachments, exhibits, and modifications shall be kept at the work site of the permitted activity. The complete permit shall be available for review at the work site upon request by District staff. The permittee shall require the contractor to review the complete permit prior to commencement of the activity authorized by this permit.
3. Activities approved by this permit shall be conducted in a manner which does not cause violations of State water quality standards. The permittee shall implement best management practices for erosion and pollution control to prevent violation of State water quality standards. Temporary erosion control shall be implemented prior to and during construction, and permanent control measures shall be completed within 7 days of any construction activity. Turbidity barriers shall be installed and maintained at all locations where the possibility of transferring suspended solids into the receiving waterbody exists due to the permitted work. Turbidity barriers shall remain in place at all locations until construction is completed and soils are stabilized and vegetation has been established. All practices shall be in accordance with the guidelines and specifications described in Chapter 6 of the Florida Land Development Manual; A Guide to Sound Land and Water Management (Department of Environmental Regulation, 1988), incorporated by reference in Rule 40E-4.091, F.A.C. unless a project-specific erosion and sediment control plan is approved as part of the permit. Thereafter the permittee shall be responsible for the removal of the barriers. The permittee shall correct any erosion or shoaling that causes adverse impacts to the water resources.
4. The permittee shall notify the District of the anticipated construction start date within 30 days of the date that this permit is issued. At least 48 hours prior to commencement of activity authorized by this permit, the permittee shall submit to the District an Environmental Resource Permit Construction Commencement Notice Form Number 0960 indicating the actual start date and the expected construction completion date.
5. When the duration of construction will exceed one year, the permittee shall submit construction status reports to the District on an annual basis utilizing an annual status report form. Status report forms shall be submitted the following June of each year.
6. Within 30 days after completion of construction of the permitted activity, the permittee shall submit a written statement of completion and certification by a professional engineer or other individual authorized by law, utilizing the supplied Environmental Resource/Surface Water Management Permit Construction Completion/Certification Form Number 0881A, or Environmental Resource/Surface Water Management Permit Construction Completion Certification - For Projects Permitted prior to October 3, 1995 Form No. 0881B, incorporated by reference in Rule 40E-1.659, F.A.C. The statement of completion and certification shall be based on onsite observation of construction or review of as-built drawings for the purpose of determining if the work was completed in compliance with permitted plans and specifications. This submittal shall serve to notify the District that the system is ready for inspection. Additionally, if deviation from the approved drawings are discovered during the certification process, the certification must be accompanied by a copy of the approved permit drawings with deviations noted. Both the original and revised specifications must be clearly shown. The plans must be clearly labeled as "as-built" or "record" drawings. All surveyed dimensions and elevations shall be certified by a registered surveyor.
7. The operation phase of this permit shall not become effective: until the permittee has complied with the requirements of condition (6) above, and submitted a request for conversion of Environmental Resource Permit from Construction Phase to Operation Phase, Form No. 0920; the District determines the system to be in compliance with the permitted plans and specifications; and the entity approved by the District in accordance with Sections 9.0 and 10.0 of the Basis of Review for Environmental Resource Permit

090617-6 PERMITS 090617-6

GENERAL CONDITIONS

Applications within the South Florida Water Management District, accepts responsibility for operation and maintenance of the system. The permit shall not be transferred to such approved operation and maintenance entity until the operation phase of the permit becomes effective. Following inspection and approval of the permitted system by the District, the permittee shall initiate transfer of the permit to the approved responsible operating entity if different from the permittee. Until the permit is transferred pursuant to Section 40E-1.6107, F.A.C., the permittee shall be liable for compliance with the terms of the permit.

8. Each phase or independent portion of the permitted system must be completed in accordance with the permitted plans and permit conditions prior to the initiation of the permitted use of site infrastructure located within the area served by that portion or phase of the system. Each phase or independent portion of the system must be completed in accordance with the permitted plans and permit conditions prior to transfer of responsibility for operation and maintenance of the phase or portion of the system to a local government or other responsible entity.
9. For those systems that will be operated or maintained by an entity that will require an easement or deed restriction in order to enable that entity to operate or maintain the system in conformance with this permit, such easement or deed restriction must be recorded in the public records and submitted to the District along with any other final operation and maintenance documents required by Sections 9.0 and 10.0 of the Basis of Review for Environmental Resource Permit applications within the South Florida Water Management District, prior to lot or units sales or prior to the completion of the system, whichever comes first. Other documents concerning the establishment and authority of the operating entity must be filed with the Secretary of State, county or municipal entities. Final operation and maintenance documents must be received by the District when maintenance and operation of the system is accepted by the local government entity. Failure to submit the appropriate final documents will result in the permittee remaining liable for carrying out maintenance and operation of the permitted system and any other permit conditions.
10. Should any other regulatory agency require changes to the permitted system, the permittee shall notify the District in writing of the changes prior to implementation so that a determination can be made whether a permit modification is required.
11. This permit does not eliminate the necessity to obtain any required federal, state, local and special district authorizations prior to the start of any activity approved by this permit. This permit does not convey to the permittee or create in the permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in the permit and Chapter 40E-4 or Chapter 40E-40, F.A.C..
12. The permittee is hereby advised that Section 253.77, F.S. states that a person may not commence any excavation, construction, or other activity involving the use of sovereign or other lands of the State, the title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund without obtaining the required lease, license, easement, or other form of consent authorizing the proposed use. Therefore, the permittee is responsible for obtaining any necessary authorizations from the Board of Trustees prior to commencing activity on sovereign lands or other state-owned lands.
13. The permittee must obtain a Water Use permit prior to construction dewatering, unless the work qualifies for a general permit pursuant to Subsection 40E-20.302(3), F.A.C., also known as the "No Notice" Rule.
14. The permittee shall hold and save the District harmless from any and all damages, claims, or liabilities which may arise by reason of the construction, alteration, operation, maintenance, removal, abandonment or use of any system authorized by the permit.
15. Any delineation of the extent of a wetland or other surface water submitted as part of the permit

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SPECIAL CONDITIONS

1. The construction phase of this permit shall expire on August 23, 2015.
2. Operation of the surface water management system shall be the responsibility of the permittee.
3. Discharge Facilities:
 - 1-2' W X 2' L drop inlet with crest at elev. 5.65' NGVD 29.
 - 1-2' dia. drop inlet with crest at elev. 3' NGVD 29.

 - Receiving body : Groundwater Table
 - Control elev : 2.5 feet NGVD 29. /2.5 FEET NGVD 29 DRY SEASON.
4. The permittee shall be responsible for the correction of any erosion, shoaling or water quality problems that result from the construction or operation of the surface water management system.
5. Measures shall be taken during construction to insure that sedimentation and/or turbidity violations do not occur in the receiving water.
6. The District reserves the right to require that additional water quality treatment methods be incorporated into the drainage system if such measures are shown to be necessary.
7. Facilities other than those stated herein shall not be constructed without an approved modification of this permit.
8. A stable, permanent and accessible elevation reference shall be established on or within one hundred (100) feet of all permitted discharge structures no later than the submission of the certification report. The location of the elevation reference must be noted on or with the certification report.
9. The permittee shall provide routine maintenance of all of the components of the surface water management system in order to remove all trapped sediments/debris. All materials shall be properly disposed of as required by law. Failure to properly maintain the system may result in adverse flooding conditions.
10. If prehistoric or historic artifacts, such as pottery or ceramics, stone tools or metal implements, dugout canoes, or any other physical remains that could be associated with Native American cultures, or early colonial or American settlement are encountered at any time within the project site area, the permitted project should cease all activities involving subsurface disturbance in the immediate vicinity of such discoveries. The permittee, or other designee, should contact the Florida Department of State, Division of Historical Resources, Review and Compliance Section at (850) 245-6333 or (800) 847-7278, as well as the appropriate permitting agency office. Project activities should not resume without verbal and/or written authorization from the Division of Historical Resources. In the event that unmarked human remains are encountered during permitted activities, all work shall stop immediately and the proper authorities notified in accordance with Section 872.05, Florida Statutes.
11. The permittee acknowledges that, pursuant to Rule 40E-4.101(2), F.A.C., a notice of Environmental Resource or Surface Water Management Permit may be recorded in the county public records. Pursuant to the specific language of the rule, this notice shall not be considered an encumbrance upon the property.
12. Minimum building floor elevation: 12.0 Feet NGVD
13. Silt fence shall be utilized during construction and shall be installed and properly "trenched" etc, in accordance with Exhibit 2. All areas shall be stabilized and vegetated immediately after construction to prevent erosion into the wetlands and other surface waters.
14. The permittee shall install a chain link fence around the entire perimeter of the project site, which will

SPECIAL CONDITIONS

eliminate or minimize secondary adverse impacts to the mangrove wetlands located along the southwest side of the project site, as shown in Exhibit 2. The fence shall be maintained in perpetuity.

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40E-4.321 Duration of Permits

(1) Unless revoked or otherwise modified pursuant to Rules 40E-4.331 and 40E-4.441, F.A.C., the duration of a surface water management permit issued under this chapter is as follows:

(a) Two years from the date of issuance for Conceptual Approval, unless within that period an application for a construction and operation permit is filed for any portion of the project. If an application for a construction and operation permit is filed, then the Conceptual Approval remains valid until final action is taken on the application. If the application is granted, then the Conceptual Approval is valid for an additional two years from the date of issuance of the construction and operation permit. Conceptual Approvals which have no applications for construction and operation filed for a period of two years will expire automatically.

(b) Five years from the date of issuance for a construction permit.

(c) Perpetual for an operation permit.

(2) The Governing Board shall issue permit extensions provided that a permittee files a written request with the District showing good cause. For the purpose of this rule, good cause shall mean a set of extenuating circumstances outside of the control of the permittee. Requests for extensions, which shall include documentation of the extenuating circumstances and how they have delayed this project, will not be accepted more than 180 days prior to the expiration date.

(3) For a Conceptual Approval filed concurrently with a development of regional impact (DRI) application for development approval (ADA) and a local government comprehensive amendment, the duration of the Conceptual Approval shall be two years from whichever one of the following occurs at the latest date:

(a) the effective date of the local government's comprehensive plan amendment,

(b) the effective date of the local government development order, or

(c) the date on which the district issues the Conceptual Approval, or

(d) the latest date of the resolution of any Chapter 120 or other legal appeals.

(4) Substantial modifications to Conceptual Approvals will extend the duration of the Conceptual Approval for two years from the date of issuance of the modification. For the purposes of this section, the term "substantial modification" shall mean a modification which is reasonably expected to lead to substantially different water resource or environmental impacts which require a detailed review.

(5) Modifications to construction permits issued pursuant to a formal permit application extend the duration of the permit for three years from the date of issuance of the modification. Construction permit modifications do not extend the duration of a Conceptual Approval.

(6) Permit modifications issued pursuant to subsection 40E-4.331(2)(b), F.A.C. (letter modifications) do not extend the duration of a permit.

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NOTICE OF RIGHTS

As required by Sections 120.569(1), and 120.60(3), Fla. Stat., following is notice of the opportunities which may be available for administrative hearing or judicial review when the substantial interests of a party are determined by an agency. Please note that this Notice of Rights is not intended to provide legal advice. Not all the legal proceedings detailed below may be an applicable or appropriate remedy. You may wish to consult an attorney regarding your legal rights.

RIGHT TO REQUEST ADMINISTRATIVE HEARING

A person whose substantial interests are or may be affected by the South Florida Water Management District's (SFWMD or District) action has the right to request an administrative hearing on that action pursuant to Sections 120.569 and 120.57, Fla. Stat. Persons seeking a hearing on a District decision which does or may determine their substantial interests shall file a petition for hearing with the District Clerk within 21 days of receipt of written notice of the decision, unless one of the following shorter time periods apply: 1) within 14 days of the notice of consolidated intent to grant or deny concurrently reviewed applications for environmental resource permits and use of sovereign submerged lands pursuant to Section 373.427, Fla. Stat.; or 2) within 14 days of service of an Administrative Order pursuant to Subsection 373.119(1), Fla. Stat. "Receipt of written notice of agency decision" means receipt of either written notice through mail, or electronic mail, or posting that the District has or intends to take final agency action, or publication of notice that the District has or intends to take final agency action. Any person who receives written notice of a SFWMD decision and fails to file a written request for hearing within the timeframe described above waives the right to request a hearing on that decision.

Filing Instructions

The Petition must be filed with the Office of the District Clerk of the SFWMD. Filings with the District Clerk may be made by mail, hand-delivery or facsimile. **Filings by e-mail will not be accepted.** Any person wishing to receive a clerked copy with the date and time stamped must provide an additional copy. A petition for administrative hearing is deemed filed upon receipt during normal business hours by the District Clerk at SFWMD headquarters in West Palm Beach, Florida. Any document received by the office of the SFWMD Clerk after 5:00 p.m. shall be filed as of 8:00 a.m. on the next regular business day. Additional filing instructions are as follows:

- Filings by mail must be addressed to the Office of the SFWMD Clerk, P.O. Box 24680, West Palm Beach, Florida 33416.
- Filings by hand-delivery must be delivered to the Office of the SFWMD Clerk. **Delivery of a petition to the SFWMD's security desk does not constitute filing. To ensure proper filing, it will be necessary to request the SFWMD's security officer to contact the Clerk's office.** An employee of the SFWMD's Clerk's office will receive and file the petition.
- Filings by facsimile must be transmitted to the SFWMD Clerk's Office at (561) 682-6010. Pursuant to Subsections 28-106.104(7), (8) and (9), Fla. Admin. Code, a party who files a document by facsimile represents that the original physically signed document will be retained by that party for the duration of that proceeding and of any subsequent appeal or subsequent proceeding in that cause. Any party who elects to file any document by facsimile shall be responsible for any delay, disruption, or interruption of the electronic signals and accepts the full risk that the document may not be properly filed with the clerk as a result. The filing date for a document filed by facsimile shall be the date the SFWMD Clerk receives the complete document.

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Initiation of an Administrative Hearing

Pursuant to Rules 28-106.201 and 28-106.301, Fla. Admin. Code, initiation of an administrative hearing shall be made by written petition to the SFWMD in legible form and on 8 and 1/2 by 11 inch white paper. All petitions shall contain:

1. Identification of the action being contested, including the permit number, application number, District file number or any other SFWMD identification number, if known.
2. The name, address and telephone number of the petitioner and petitioner's representative, if any.
3. An explanation of how the petitioner's substantial interests will be affected by the agency determination.
4. A statement of when and how the petitioner received notice of the SFWMD's decision.
5. A statement of all disputed issues of material fact. If there are none, the petition must so indicate.
6. A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the SFWMD's proposed action.
7. A statement of the specific rules or statutes the petitioner contends require reversal or modification of the SFWMD's proposed action.
8. If disputed issues of material fact exist, the statement must also include an explanation of how the alleged facts relate to the specific rules or statutes.
9. A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the SFWMD to take with respect to the SFWMD's proposed action.

A person may file a request for an extension of time for filing a petition. The SFWMD may, for good cause, grant the request. Requests for extension of time must be filed with the SFWMD prior to the deadline for filing a petition for hearing. Such requests for extension shall contain a certificate that the moving party has consulted with all other parties concerning the extension and that the SFWMD and any other parties agree to or oppose the extension. A timely request for extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

If the District takes action with substantially different impacts on water resources from the notice of intended agency decision, the persons who may be substantially affected shall have an additional point of entry pursuant to Rule 28-106.111, Fla. Admin. Code, unless otherwise provided by law.

Mediation

The procedures for pursuing mediation are set forth in Section 120.573, Fla. Stat., and Rules 28-106.111 and 28-106.401-405, Fla. Admin. Code. The SFWMD is not proposing mediation for this agency action under Section 120.573, Fla. Stat., at this time.

RIGHT TO SEEK JUDICIAL REVIEW

Pursuant to Sections 120.60(3) and 120.68, Fla. Stat., a party who is adversely affected by final SFWMD action may seek judicial review of the SFWMD's final decision by filing a notice of appeal pursuant to Florida Rule of Appellate Procedure 9.110 in the Fourth District Court of Appeal or in the appellate district where a party resides and filing a second copy of the notice with the SFWMD Clerk within 30 days of rendering of the final SFWMD action.

09/23/2010 09:09:00

Last Date For Agency Action: October 4, 2010

GENERAL ENVIRONMENTAL RESOURCE PERMIT STAFF REPORT

Project Name: City Of Key West Public Transportation Facility

Permit No.: 44-00076-S

Application No.: 090617-6

Application Type: Environmental Resource (General Permit Modification)

Location: Monroe County, S27/T67S/R25E

Permittee : City Of Key West

Operating Entity : City Of Key West

Project Area: 3.86 acres

Project Land Use: Government

Drainage Basin: GULF OF MEXICO

Receiving Body: Groundwater Table

Class: N/A

Special Drainage District: NA

Conservation Easement To District : No

Sovereign Submerged Lands: No

PROJECT PURPOSE:

This application is a request for modification of Permit No. 44-00076-S for the construction and operation of a surface water management system to serve a 3.86 acre municipal development known as City of Key West Public Transportation Facility.

PROJECT EVALUATION:**PROJECT SITE DESCRIPTION:**

The site is located on the north side of East Junior College Road and on the south side of the Stock Island landfill, on Stock Island in the City of Key West, Monroe County, as shown on Exhibit 1.

The 3.86 acre project site currently contains a City of Key West resource recovery plant and ash transfer station, for which the surface water management system was previously permitted by the District under Permit No. 44-00076-S, Application No. 921027-8.

The 3.86 acre project site is part of a larger overall parcel which is owned by the City of Key West, which contains a portion of the closed out Stock Island landfill, City of Key West Utilities, the Key West Golf Club, salt marsh and mangrove wetlands, and submerged lands.

No wetlands or other surface waters are located within the 3.86 acre project site, and no adjacent wetlands or other surface waters located outside of the project site will be adversely affected by the proposed project.

PROPOSED PROJECT:

The project includes constructing a surface water management system that will serve a new public transportation facility for the City of Key West Department of Transportation, as shown on Exhibit 2. The facility will include a 2-story administrative office building, parking, service bays for buses, and a bus washing station.

The proposed surface water management system will consist of site grading and stormwater inlets that will direct all runoff to a series of interconnected dry retention areas for water quality treatment. After treatment, the runoff will be directed to a drainage well for final disposal.

No wetlands or other surface waters located adjacent to the project site on the southwest side of the site will be adversely affected by the proposed project. Specifically, the permittee will install and maintain a chain link fence around the entire perimeter of the project site, which will eliminate or minimize secondary adverse impacts to the mangrove wetlands located along the southwest side of the project site, as shown in Exhibit 2 and in accordance with the special conditions of this permit.

LAND USE:**Construction:****Project:**

	This Phase	Total Project	
Dry Retention Areas	.45	.45	acres
Impervious	2.32	2.32	acres
Pervious	1.09	1.09	acres
Total:	3.86	3.86	

WATER QUANTITY :**Discharge Rate :**

The surface water management system has been designed to retain the volume of runoff from the 25 year/3 day storm event onsite. Final disposal of the runoff is to a drainage well.

Control Elevation :

Basin	Area (Acres)	Ctrl Elev (ft, NGVD 29)	WSWT Ctrl Elev (ft, NGVD 29)	Method Of Determination
KW Transport Fac.	3.86	2.5/2.5	2.50	Previously Permitted

Receiving Body :

Basin	Str.#	Receiving Body
Kw Transport Fac.		Well Box (G' Groundwater Table

Major Structures: Note: The units for all the elevation values of structures are (ft, NGVD 29)

Inlets:

Basin	Str#	Count	Type	Width	Length	Dia.	Crest Elev.
KW Transport Fac.	Well Box (GW-1)	1	Drainage Well			2'	3
KW Transport Fac.	Well Box (GW-1)	1	Drop Inlet	2'	2'		5.65

WATER QUALITY :

No adverse water quality impacts are anticipated as a result of the proposed project. The surface water management system has been designed to treat a volume of runoff equal to 2.5 inches times the percent impervious area. The treatment is provided within interconnected dry retention areas.

To ensure that proposed construction activities do not degrade adjacent wetlands and surface waters, the permittee will install and maintain temporary silt fences around the limits of construction in accordance with Exhibit 2 and as stipulated in the special conditions of this permit. The temporary erosion control barriers will be installed prior to and will be removed upon completion of construction activities.

Basin	Treatment Method	Vol Req.d (ac-ft)	Vol Prov'd
KW Transport Fac.	Treatment Dry Retention	.45 acres .24	.24

Wildlife Issues:

The 3.86 acre project site does not contain preferred habitat for wetland-dependent endangered or threatened wildlife species or species of special concern. No wetland-dependent endangered/threatened species or species of special concern were observed on-site and submitted information indicates that potential use of the site by such species is minimal.

This permit does not relieve the permittee from complying with all applicable rules and any other agencies' requirements if, in the future, endangered/threatened species or species of special concern are

discovered on the project site.

CERTIFICATION AND MAINTENANCE OF THE WATER MANAGEMENT SYSTEM:

It is suggested that the permittee retain the services of a Professional Engineer registered in the State of Florida for periodic observation of construction of the surface water management (SWM) system. This will facilitate the completion of construction completion certification Form #0881 which is required pursuant to Section 10 of the Basis of Review for Environmental Resource Permit Applications within the South Florida Water Management District, and Rule 40E-4.361(2), Florida Administrative Code (F.A.C.).

Pursuant to Chapter 40E-4 F.A.C., this permit may not be converted from the construction phase to the operation phase until certification of the SWM system is submitted to and accepted by this District. Rule 40E-4.321(7) F.A.C. states that failure to complete construction of the SWM system and obtain operation phase approval from the District within the permit duration shall require a new permit authorization unless a permit extension is granted.

For SWM systems permitted with an operating entity who is different from the permittee, it should be noted that until the permit is transferred to the operating entity pursuant to Rule 40E-1.6107, F.A.C., the permittee is liable for compliance with the terms of this permit.

The permittee is advised that the efficiency of a SWM system will normally decrease over time unless the system is periodically maintained. A significant reduction in flow capacity can usually be attributed to partial blockages of the conveyance system. Once flow capacity is compromised, flooding of the project may result. Maintenance of the SWM system is required to protect the public health, safety and the natural resources of the state. Therefore, the permittee must have periodic inspections of the SWM system performed to ensure performance for flood protection and water quality purposes. If deficiencies are found, it is the responsibility of the permittee to correct these deficiencies in a timely manner.

SOVEREIGN/SUBMERGED LANDS:

The proposed work is not located within and is not anticipated to adversely affect sovereign submerged lands.

0000 09:03 0102/2780 00:03 0102/2780 00:03 0102/2780

RELATED CONCERNS:

Water Use Permit Status:

The permittee has indicated that dewatering is not required for construction of this project. The permittee has also indicated that landscape irrigation activities are not proposed as part of the project.

This permit does not release the permittee from obtaining all necessary Water Use authorization(s) prior to the commencement of activities which will require such authorization, including construction dewatering and irrigation, unless the work qualifies for a No-Notice Short-Term Dewatering permit pursuant to Chapter 40E-20.302(3) or is exempt pursuant to Section 40E-2.051, FAC.

CERP:

The proposed project is not located within or adjacent to a Comprehensive Everglades Restoration Project component.

Potable Water Supplier:

Florida Keys Aqueduct Authority

Waste Water System/Supplier:

Key West Resort Utilities

Right-Of-Way Permit Status:

A District Right-of-Way Permit is not required for this project.

DRI Status:

This project is not a DRI.

Historical/Archeological Resources:

The District has received correspondence from the Florida Department of State, Division of Historical Resources indicating that the agency has no objections to the issuance of this permit.

This permit does not release the permittee from compliance with any other agencies' requirements in the event that historical and/or archaeological resources are found on the site.

DCA/CZM Consistency Review:

The issuance of this permit constitutes a finding of consistency with the Florida Coastal Management Program.

Third Party Interest:

No third party has contacted the District with concerns about this application.

Enforcement:

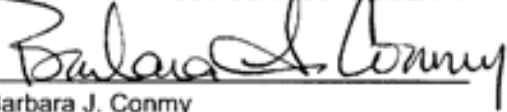
There has been no enforcement activity associated with this application.

STAFF REVIEW:

09/23/2010 09:08:00


DIVISION APPROVAL:

NATURAL RESOURCE MANAGEMENT:


Barbara J. Conmy

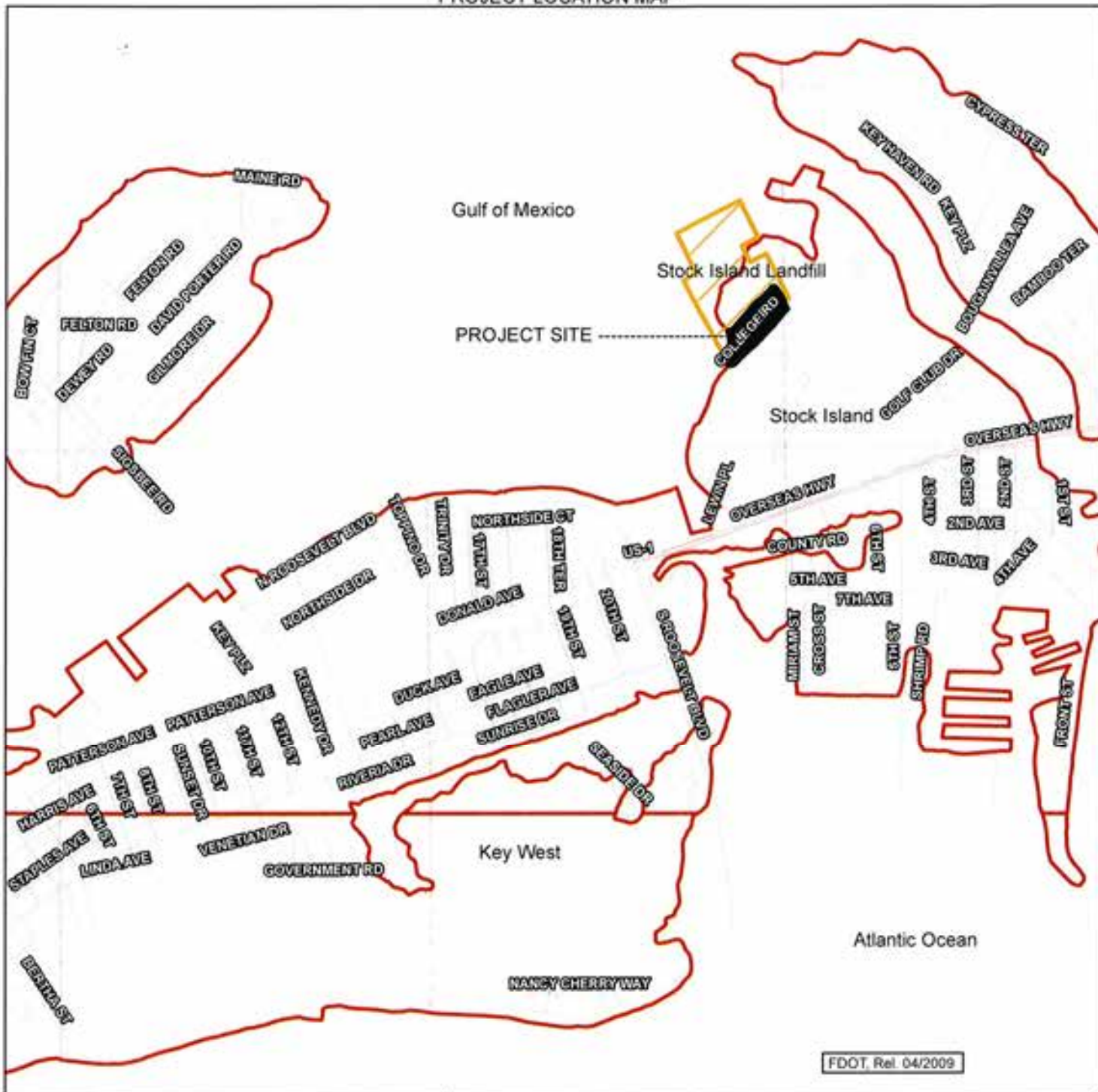
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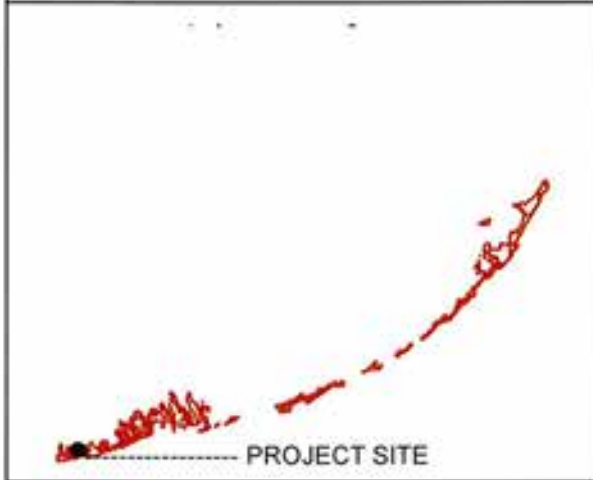

Carlos A. de Rojas, P.E.

DATE: 8/19/10

PROJECT LOCATION MAP



FDOT, Rel. 04/2009



MONROE COUNTY, FLORIDA



Legend

 Application

Map Date: 8/9/2010

Application Number: 090617-6

Permit Number: 44-00076-S

Project Name: CITY OF KEY WEST PUBLIC
TRANSPORTATION FACILITY



CITY OF KEY WEST PUBLIC TRANSPORTATION FACILITY

5701 COLLEGE ROAD, KEY WEST, FL 33040

CIVIL - VOLUME I
SFWMD PERMIT SET



VICINITY MAP



PREPARED FOR THE
City of Key West
Key West, Florida

INDEX TO DRAWINGS	
DRAWING	DESCRIPTION
0000	GENERAL NOTES
0001	EXISTING CONDITIONS
0002	PROPOSED CIVIL PLAN
0003	DETAILS
0004	UTILITY

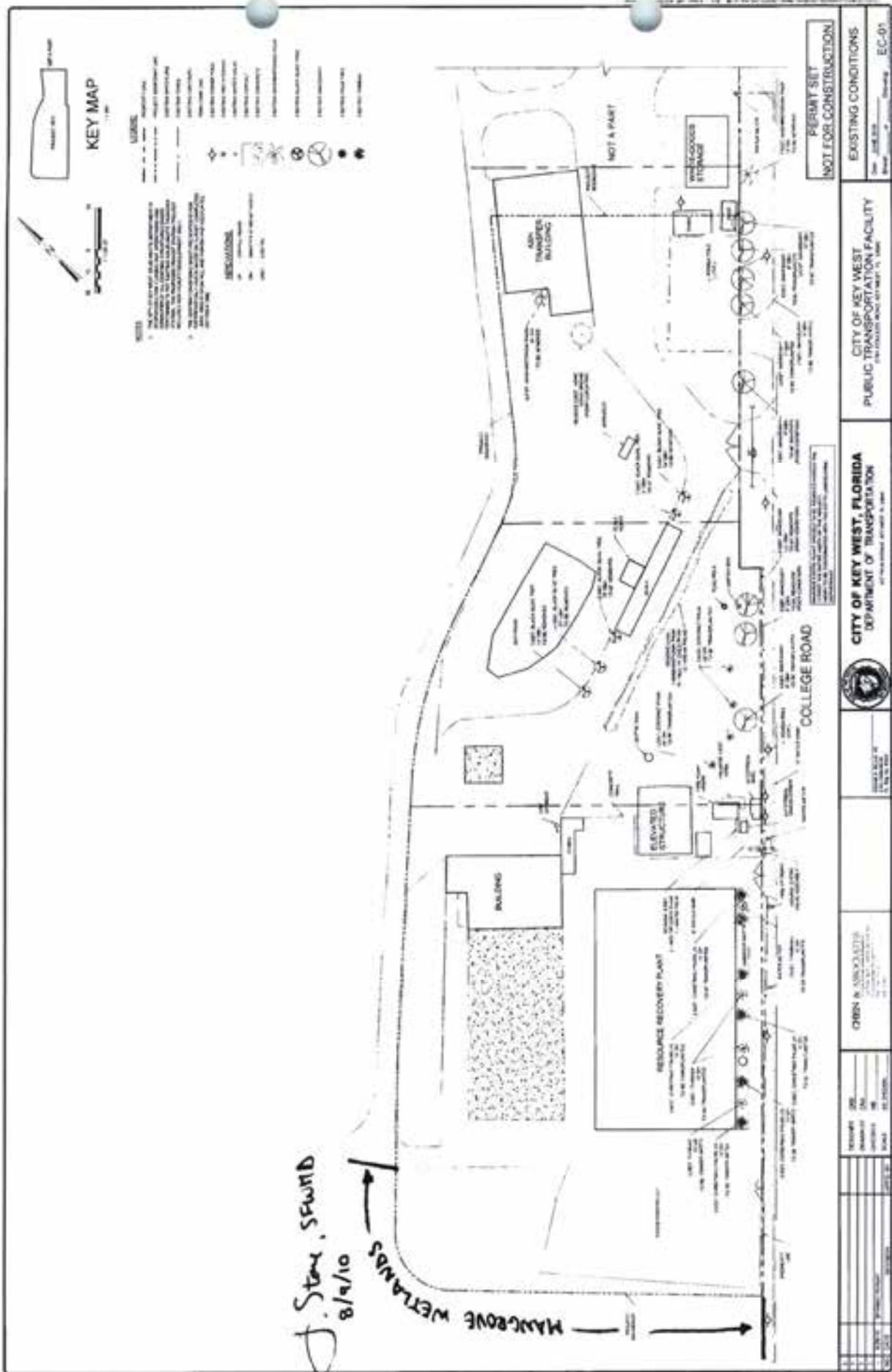
PERMIT SET
NOT FOR CONSTRUCTION

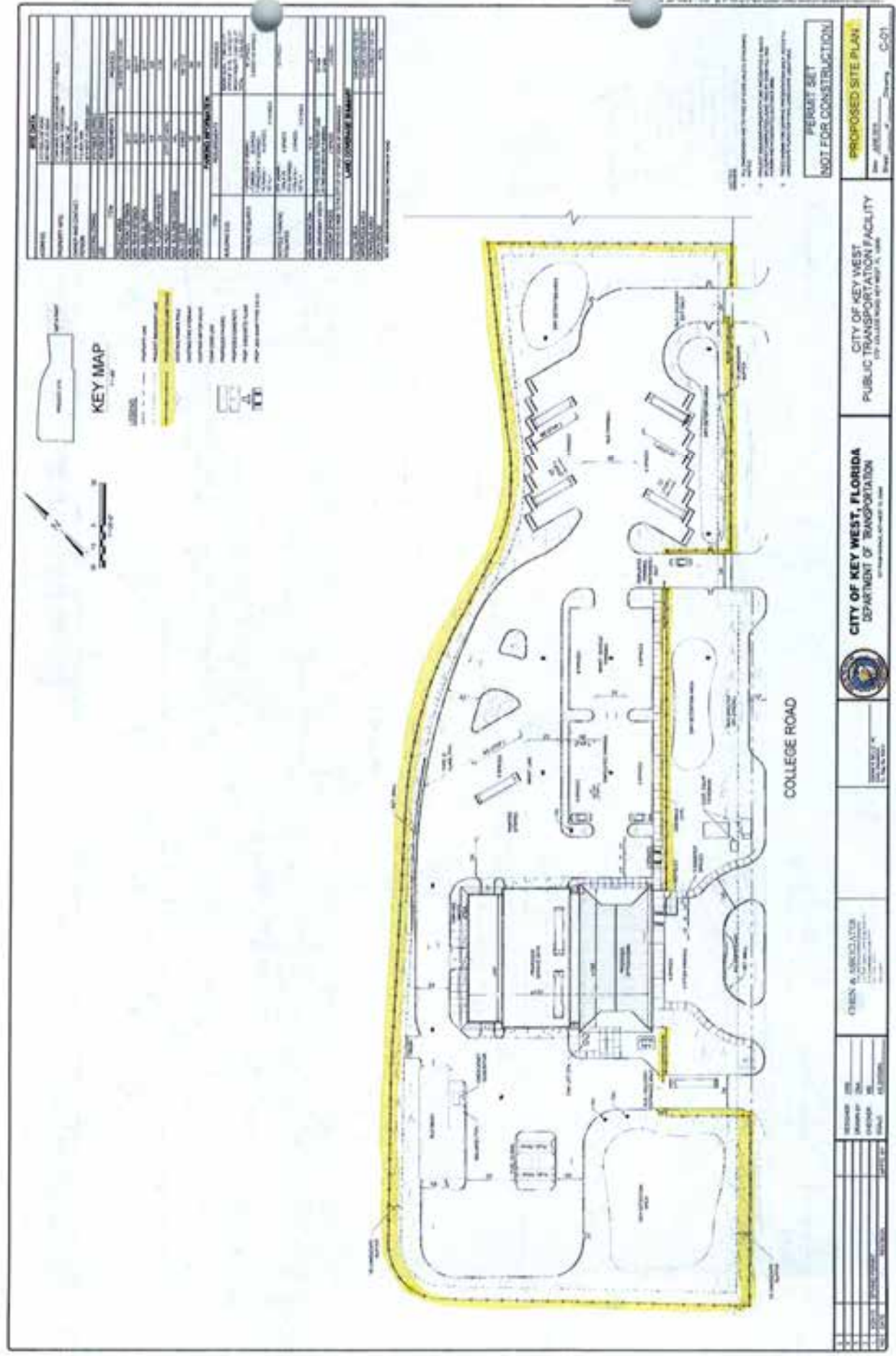
CIVIL ENGINEER

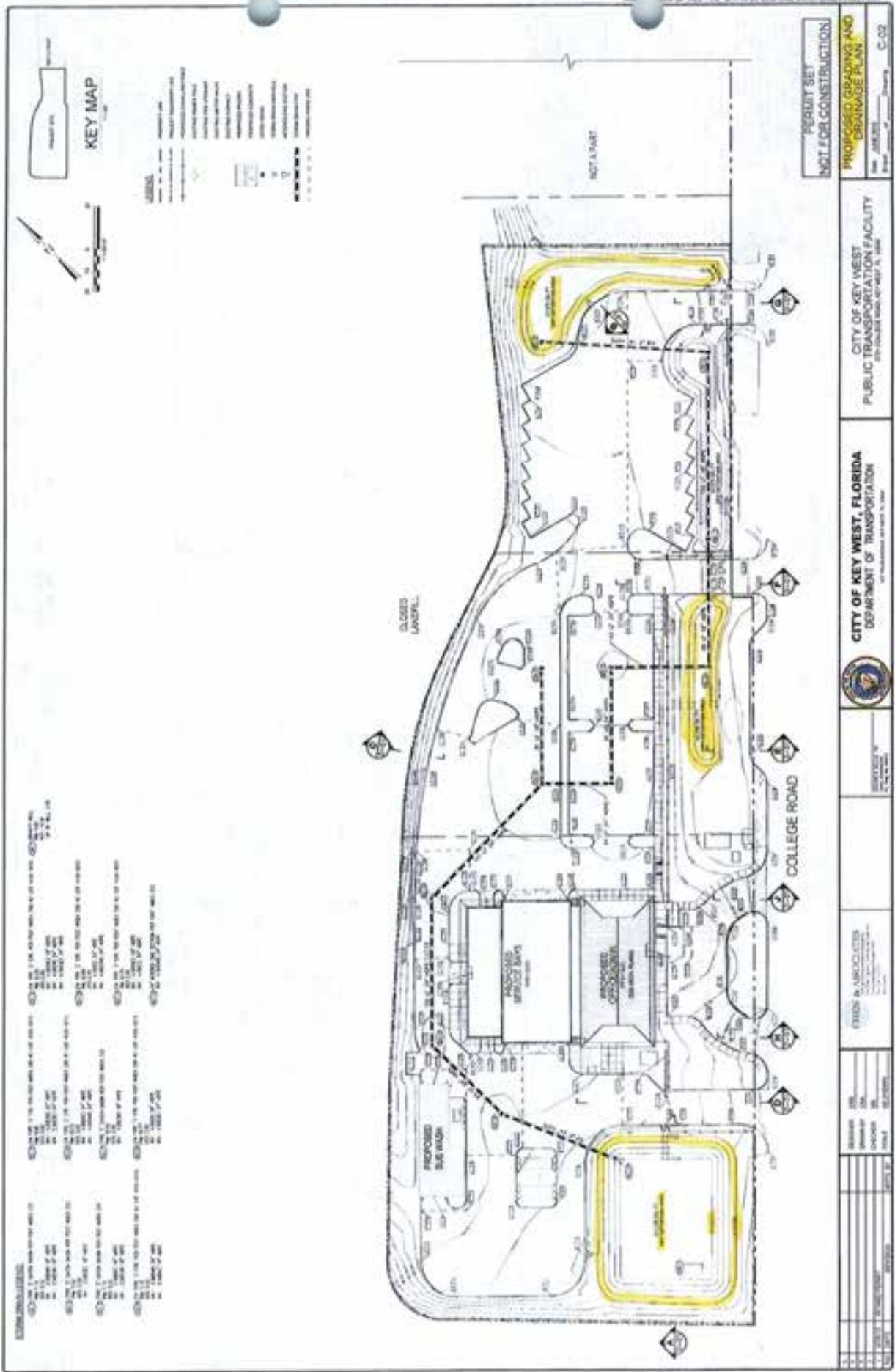


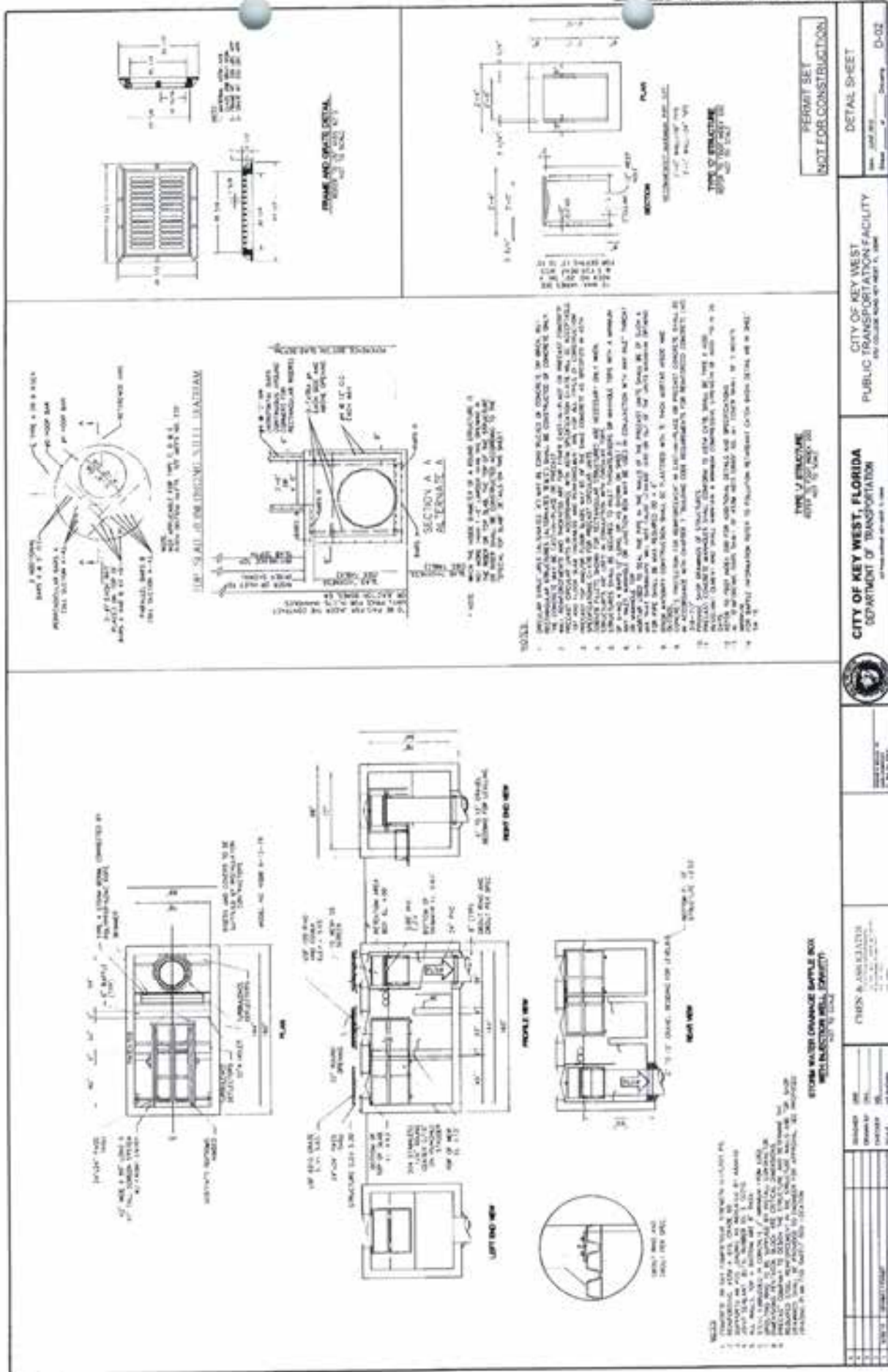
J. J. & ASSOCIATES
 Civil and Environmental Engineers
 1001 N. Duval Street, Suite 100
 Key West, FL 33040
 (305) 854-1111
 FAX: (305) 854-1177

JUNE 2010

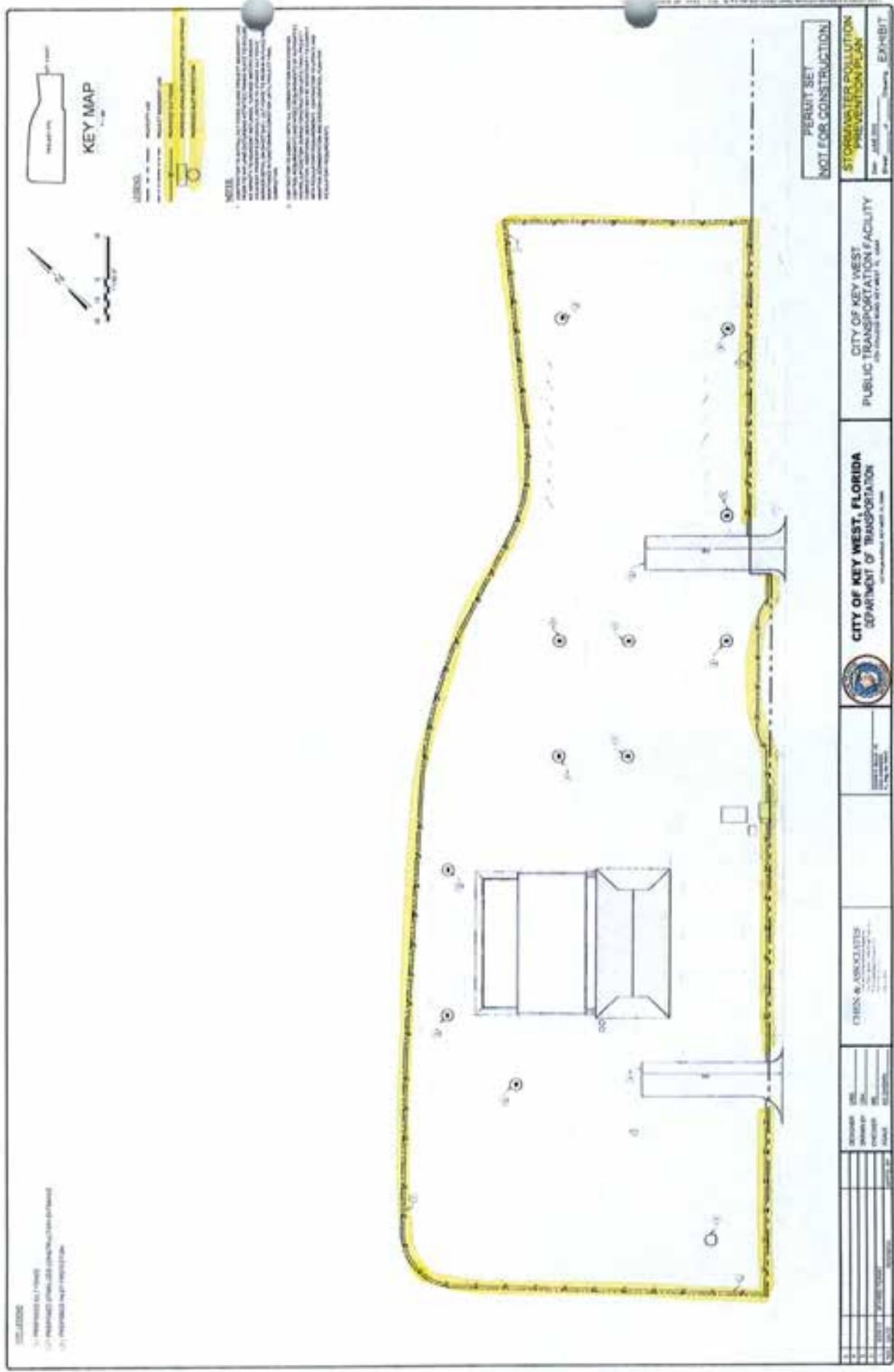








<p>CITY OF KEY WEST, FLORIDA DEPARTMENT OF TRANSPORTATION</p>		<p>CITY OF KEY WEST PUBLIC TRANSPORTATION FACILITY</p>		<p>PERMIT SET NOT FOR CONSTRUCTION</p>	
<p>PROJECT NO. 090617-6</p>		<p>DATE: 08/14/17</p>		<p>SCALE: AS SHOWN</p>	
<p>DESIGNED BY: [Name]</p>		<p>CHECKED BY: [Name]</p>		<p>DATE: 08/14/17</p>	
<p>DRAWN BY: [Name]</p>		<p>APPROVED BY: [Name]</p>		<p>DATE: 08/14/17</p>	
<p>PROJECT LOCATION: [Address]</p>		<p>PROJECT DESCRIPTION: [Description]</p>		<p>PROJECT STATUS: [Status]</p>	



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CITY OF KEY WEST PUBLIC TRANSPORTATION FACILITY

Application No: 090617-6

Permit No: 44-00076-S

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- X City Engineer, City of Key West
- X Div of Recreation and Park - District 5 - FDEP
- X Florida Department of Community Affairs -Jerry Buckley
- X Monroe County Engineer
- X Monroe County Planning Dept - Steve Ferris, Dev. Review Coord.

09/23/2010 09:09 AM

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