

Volume II

OIG Consulting Engineer's Technical Report

And

Auditor's Financial Analysis

TECHNICAL REPORT

Neighborhood No. 13 Palm and Hibiscus
Islands Rights-of-Way Infrastructure
Improvements

Prepared for the



Office of the Inspector General, Miami Beach, Florida

October 2020

Prepared by

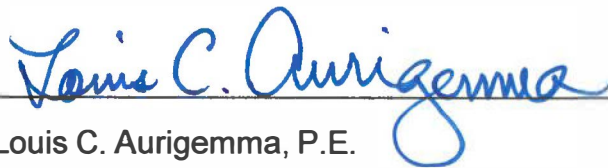
**Louis C. Aurigemma, P.E.
Independent Consulting Engineer
+1.954.303.4179
louaurigemma@yahoo.com**

October 2020

Prepared by

Louis C. Aurigemma, P.E.
Independent Consulting Engineer
+1.954.303.4179
louaurigemma@yahoo.com

I certify to the best of my knowledge and belief that the information contained in this Engineering Report is true and accurate. The independent opinions presented are based on my experience and engineering judgment during the review of the documents provided to me by the Miami Beach Office of the Inspector General.



Louis C. Aurigemma, P.E.

State of Florida Professional Engineer License 31896

February 5, 2021

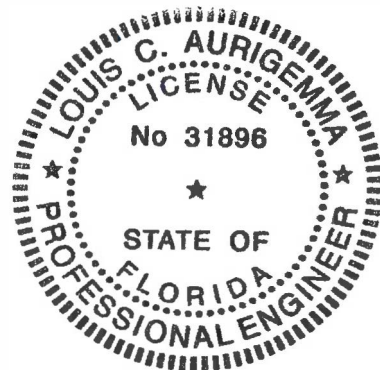


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II. Introduction

I was retained by the City of Miami Beach Office of Inspector General (OIG) to provide technical assistance in connection with an investigation of the Neighborhood No. 3 Palm and Hibiscus Islands Infrastructure Improvements (“the Project”) and the City’s application for environmental permits to build stormwater drainage systems that emptied into Biscayne Bay, a designated Official Florida Water subject to enhanced environmental protection. My review included, but was not limited to, the examination of documents, emails reports, engineering drawings, engineering calculations, City/Agency permits and photographs; and interviews of appropriate City staff and City Consultants/Contractors.

The specific purpose of this investigation was to identify the material events, actions and decisions during the planning, design, permitting and construction phases of the project that gave rise to two issues of concern to the Mayor, City Commission, and City Administration: (1) the enforcement actions taken by the Division of Environmental Resources Management (DERM), Miami-Dade County Department of Regulatory and Economic Resources (RER), regarding the City’s alleged unpermitted construction of yard drains on public and private property; (2) the Project’s frequent design changes, schedule delays, escalating costs and unfinished status.

It is important to set forth what this report does not address. This report does not address the merits of the many changes in design criteria and policy that the City of Miami Beach (“the City”) adopted between 2014 and 2018 in response to the effects of climate change and sea level rise. The report focuses on the engineering, project management, and contract administration issues that occurred during the City’s implementation of a major construction project in which the City applied the new criteria.

III. Professional qualifications

During a 40+ year career as a Civil Engineer, I have been responsible for the design and management of public works/utilities projects for municipalities and the administration and oversight of construction contracts. I have served on more than 100 technical evaluation committees for construction projects ranging from \$100,000 to \$750 million in value. I served as Executive Director of the City of Riviera Beach (FL) Utility Special District and City Engineer/Assistant Public Works Director in the City of Coral Springs (FL). In the private sector, I was Director of Civil Engineering for Keith and Schnars, P.A., Fort Lauderdale (FL) Consulting Engineering firm, primarily working on the design and construction management for water and wastewater projects for the City of Fort Lauderdale. I was also a Regional Manager for the Nielsen-Wurster Group, a construction claims consultant primarily working on Florida Department of Transportation (FDOT) engagements. In my current position as an independent consulting engineer, I have provided technical evaluation assistance to the Millennium Challenge Corporation (mcc.gov), an independent United States Government Foreign Aid Agency (US STATE Department); and performed Annual Bondholder Facilities Reports for the South Martin Regional Utility (SMRU)/Town of Jupiter Island, Florida (2016-2020). I am a licensed professional engineer in Florida, Connecticut, Georgia, Alabama, Tennessee and Texas, and a Life Member of the American Society of Civil Engineers (ASCE) and the American Public Works Association (APWA). I earned a Bachelor of Science Degree in Civil Engineering from the University of New Haven (CT).

IV. Report structure and limitations

The purpose of this report is to provide my professional opinions regarding the documents and testimony obtained by the OIG staff with respect to the planning, design and construction of the Neighborhood No. 13 Palm and Hibiscus Islands Right-of-Way Infrastructure Improvement Projects (“the Project”), and the administration of the City’s contract with Design-Build Firm (DBF), Lanzo Construction Co. Florida, (“Lanzo”). Additionally, the report contains my professional opinions regarding material issues of fact and the explanations and testimony provided by the responsible current and former City officials and staff, as well as those of the DBF-Lanzo and its engineering subconsultants, Wade Trim (WT) and Craig A. Smith & Associates. (CAS).

The opinions expressed in this report are my own. They are based on my knowledge, skills, and training as a licensed professional engineer and 40+ year public and private sector work history specializing in in the design and management of public works projects for municipalities and other governmental entities. The views expressed are based on sworn interviews of witnesses during the course of the OIG investigation and my examination of exhibits. In particular, I have carefully compared the Stormwater Drainage and Hardscape sections of the 100% Final Design Plans dated Feb. 22, 2016, signed and sealed by Engineer of Record Orlando A. Rubio, P.E. of Craig A. Smith & Associates (“the Rubio plans”) with the same sections contained in alternative 100% Final Design Plans dated May 18, 2016, signed and sealed by Wade Trim Engineers of Record Holly Kremers, P.E. (“Kremers plans”) and Carey Wright, P.E. and other pertinent technical documents.

The report is broken down into four distinct sections as follows:

Part 1: The City’s application for permits. This section of the report provides a summary of material events. It examines the City/DBF’s use of the Rubio plans to obtain permits from during 2016 and again in 2018. Also, the City/DBF’s concurrence of the Kremers plans to build an alternative stormwater drainage system designed to accommodate the connection of private yard drains.

Part 2: Background, chronology, significant events: This section contains excerpts of key exhibits that show the changes between the Rubio plans and Kremers plans that resulted in the 2016 installation of underground infrastructure and yard drains not shown on the Rubio plans; the installation of an additional secondary drainage system in 2017; and the City application for a second Class II permit from DERM in May 2018.

Part 3: Evaluation of explanations by the City and Wade Trim: This section contains an evaluation of the statements and explanations about the events and decisions made by current and former City officials and members of the Lanzo design team in sworn interviews or before the City Commission.

Part 4: Primary causes of the project's unfinished status: This section describes the two factors that in my professional opinion, and based on my evaluation of the exhibits and testimony, were the primary causes of the project's troubled history: the twin imperatives to accelerate work on the project and simultaneously incorporate the City's new design criteria to counter sea level rise.

V. Executive Summary

In 2016, the City used the Rubio plans to obtain a Class II permit from the Miami-Dade County Division of Environmental Resources Management (DERM) to construct a stormwater drainage system. Almost immediately after applying for the permit based on the Rubio plans, the City instructed DBF-Lanzo's consulting engineer, Wade Trim, (Holly Kremers, P.E.) to prepare alternative plans for a modified drainage system designed to connect to swale drainage and private yard drains.

During the six-month DERM permit review process, the City and DBF-Lanzo/Wade Trim proceeded on this parallel track with the understanding that after DERM issued a permit, the Rubio plans would be replaced by the WT/Kremers plans. After DERM issued the permit on May 27, 2016, the City/DBF did not use the Rubio plans, and the DBF-Lanzo began construction using the WT/Kremers plans. In 2018, the City applied for a second Class II permit for the project and succeeded in gaining approval without disclosing the WT/Kremers plans.

On May 27, 2018, DERM issued the second permit based on the Rubio plans and a certification from a Wade Trim Professional Engineer, Daniel Garcia, stating that "no significant changes" had been made to the previously submitted/approved Rubio 2016 stormwater drainage plans. In September 2018 a whistleblower alerted DERM to efforts to connect a private yard drain on Palm Island to the municipal stormwater drainage system. Pursuant to a DERM field inspection, it was discovered that unpermitted yard drains had been installed on public and private property in Palm Island West, resulting in the present enforcement action.

Pursuant to the DERM Class II Permit General Conditions, Section 31 states:

"If the engineer who provided certification pursuant to Section 24-48.2(I)(B)(2) or pursuant to Section 24-48.2(II)(A)(4) is discharged by the property owner or his agent, or if said engineer ceases to work on the proposed or approved work, all work by this permit shall immediately cease and shall not be resumed until a new engineer is obtained. The property owner shall also be required to obtain a new engineer who shall meet all the requirements of this permit."

The evidence shows that the City/DBF never disclosed the Kremers plans to DERM or notified the agency of its new drainage design. During this investigation, DERM engineers Maria Molina and Mayra deTorres testified that they believed they were deliberately misled by the City and its representatives. In my professional opinion, the evidence gathered during this investigation supports the testimony of the DERM engineers: they were misled and misled more than once.

In my opinion, the statement in the Garcia letter to DERM that “no significant changes” had been made to the Rubio plans was false and omitted facts that Mr. Garcia knew were material to the request from De Torres and material to DERM’s review of the City’s second permit application. The involvement of CIP staff in submitting the Garcia letter to DERM is consistent with other evidence that indicates the City and DBF-Lanzo/Wade Trim acted in concert on permitting matters.

By contract, it is the responsibility of the DBF-Lanzo to obtain all permits for the Project. Any modifications to the permit(s) required the DBF to adhere to the permit conditions from the permitting agencies for resubmittal of updated plans, specifications, calculations, etc. **Therefore, in my professional opinion, the DBF-Lanzo has constructed the stormwater drainage system in the Palm/Hibiscus Infrastructure Improvements Project without a valid SFWMD permit and DERM Class II Permits as the DBF-Lanzo did not comply with the respective conditions of the said permits.**

VI. Part 1: The City's application for permits Background, chronology, significant events

On Oct. 6, 2015, Assistant City Manager, Eric Carpenter, signed a DERM application for a Class II permit based on the Rubio plans and a technical report sent to DERM that described the City's use of design criteria to counter the effects of sea level rise, including a minimum crown-of-road elevation of 3.7 feet NAVD. The report explained the City's decision to waive the new criteria for roads in Palm Island West where it was "not possible" to raise the roads to 3.7 feet NAVD "due to the existing topography (garages and existing yard grades) encountered below the future design groundwater elevation of 2.7' NAVD" and said, "As such, North and South Coconut Lane road crown elevations will be no lower than 2.2' NAVD."

On Oct. 12th, the City notified the DBF-Lanzo/Wade Trim that it had decided to raise the minimum crown-of-road elevation for Palm Island West to 3.7 feet NAVD. This was a significant change that would require a complete revision of the Stormwater Drainage and Hardscape sections of the plans. City Engineer Bruce A. Mowry, PE, and other City staff recognized that the new elevation would result in the impoundment of stormwater on private lots lower than 3.7 NAVD. For that reason, the City authorized DBF-Lanzo/Wade Trim to begin designing an alternative drainage system that would accommodate connection with swale and yard drains.

A. The City use of the Rubio plans to apply for a Class II permit in 2016

Despite the change in criteria and development of alternative construction plans, the City continued with the permit application process based on Rubio's plans. DERM received the City permit application Nov. 4, 2015 based on the Rubio plans and drainage calculations. The same day, the City approved Wade Trim's conceptual designs for an alternative stormwater drainage that would accommodate connections to 12-inch yard drains installed on private property or in Rights-of-Way adjacent to the property line in front of each lot on Palm Island West. Between December 9, 2015 and May 9, 2016, the City approved successive iterations of the Kremers plans.

During the same period, the City conducted 100% milestone review of Rubio's plans. In a letter dated March 2, 2016 to CIP Senior Project Manager, Mark Tomcyk, PE; a Wade Trim Manager, Victor H. Herrera, PE, confirmed a plan to replace Rubio as Engineer of Record after permits were issued based on the Rubio plans and stated "As discussed, Wade Trim will be appropriating design documents from Craig A. Smith & Associates (CAS) for the Neighborhood 13 Palm and Hibiscus Islands Right-of-Way Infrastructure Improvements project once 100% submittal has been fully approved by the City of Miami Beach and relevant permits acquired from South Florida Water Management District and Miami-Dade RER." (**Exhibit 9**)

Chapter 61G15-27.001 of the Florida Administrative Code (FAC) identifies the "Procedures for a Successor Professional Engineer Adopting As Their Own the Work of Another Engineer". (**Exhibit 9A**) It seems that the intent of Mr. Herrera was that Wade Trim would obtain the CAS drawings per the Rules of the Florida Board of Professional Engineers, modify the drawings and calculations and submit the modified plans to the permitting agencies as a modification to the permits issued.

The City issued a Second Notice to Proceed (NTP #2), with an effective date of January 28, 2016, to the DBF for Phase 2 Services – Construction Work. The SFWMD issued 5-year Environmental Resource Permit No. 13-06125-P on May 5, 2016 and DERM issued a 2-year Class II permit 20150058 on May 27, 2016. Unfortunately, the modifications to the original stormwater plans and calculations were never submitted to the permitting agencies.

The DERM Class II General Conditions, Section 31, states as follows:

“If the engineer who provided certification pursuant to Section 24-48.2(I)(B)(2) or pursuant to Section 24-48.2(II)(A)(4) is discharged by the property owner or his agent, or if said engineer ceases to work on the proposed or approved work, all work by this permit shall immediately cease and shall not be resumed until a new engineer is obtained. The property owner shall also be required to obtain a new engineer who shall meet all the requirements of this permit.”

Focusing on the DERM Class II permit, it is my opinion that any major modifications to the permit would probably have had an immediate stop work order, thereby causing unknown construction delays and unknown additional costs.

B. City approves alternative plans for drainage system that accommodates yard drains

On May 18, 2016, Kremers and Wright completed work on the alternative plans. Consistent with Wade Trim’s plan and understanding with the City, however, Kremers and Wright did not immediately sign and seal the alternative plans. On May 27, 2016 DERM issued a Class II permit based on the Rubio plans. On June 10, 2016, Kremers signed and sealed the alternative stormwater drainage plans; Wright signed and sealed the alternative plans for the hardscape section. On June 10, 2016, Kremers signed and sealed the project’s alternative 100% Final Design plans.

On July 7, the City’s Public Works Department approved the Kremers plans. Thereafter DFB-Lanzo built the stormwater drainage system based on Kremers plans during 2016. During 2017, the City directed DBF-Lanzo/Wade Trim to design and construct a secondary drainage system that provided for additional 12-inch yard drains. The drawings for the new system extended over three pages of the stormwater drainage plans.

I analyzed the Lanzo **Primavera schedule** update of March 31, 2020 for completed Drainage and Roadway Construction activities during the DERM Class II permit No. 2015-0058 timeframe (Issue Date: May 27, 2016; Expiration Date: May 27, 2018). The focus in the table below is Palm Island: North/South Coconut Lanes and western Palm Avenue. My review of the entire schedule update indicates that all drainage construction on Palm/Hibiscus Islands was completed by January 31, 2018.

Palm Island

Zone 3 – North Coconut Lane

Zone 4 – South Coconut Lane

Zone 6 – west cul-de-sac

<u>Activities</u>	<u>Finish Date</u>
Z3PDR0030 Install Temporary Drainage	May 27, 2016
Z3PDR0060 Palm Avenue Drainage Installation	July 18, 2016
Z4PDR0060 Palm Avenue Drainage Installation	Nov. 8, 2016
Z4PDR0030 Install Temporary Drainage	Mar. 15, 2017
Z3PSR0060 Reconstruct Road Base	Nov. 30, 2017
Z3PSR0070 Paving 1 st Lift	Dec. 1, 2017
Z3PDR0070 North Coconut Lane Drainage	Jan. 12, 2018
Z3PSR0040 Sidewalks and Driveway	Nov. 24, 2017
Z4PDR0070 Palm Avenue 18+00 West Drainage Installation	Dec. 15, 2017
Z4PDR0080 South Coconut Lane Drainage Installation	Jan. 31, 2018

C. The City’s application for a Class II permit in 2018

During 2017, the City directed DBF-Lanzo to make significant changes and addition to the Kremers plans for the alternative drainage system. At the City’s direction, DBF-Lanzo/Wade Trim designed and constructed a secondary drainage system on Palm Island West that was connected to additional swale and yard drains. The drawings for this additional infrastructure extended across three pages of the stormwater plans.

Class II permits are issued for two years. In May 2018, the City submitted a second application for a permit due to an expiring first permit. This permit application was signed by Carpenter (again), representing the City as Applicant and Wade Trim Engineer of Record, Daniel Garcia, P.E., the successor to Kremers. The DERM application required the City to submit construction plans and drainage calculations based on those plans. However, CIP project manager/CIP Project Coordinator Olga Sanchez did not include the plans or drainage calculations. In lieu of the Kremers plans, the City staff submitted correspondence signed by Daniel Garcia, P.E. A DERM supervising engineer, Mayra De Torres, sent Sanchez an email asking that the project’s Engineer of Record certify that no significant changes had been made to the Rubio plans.

D. City tells DERM no significant changes were made to Rubio plans and obtains permit

On May 17, 2018, Garcia, as a Professional Engineer, signed a letter to DERM that said in part, “The purpose of this letter is to state that the original signed and sealed plans dated February 22, 2016 for Hibiscus Island and February 26, 2016 for Palm Island and drainage calculations dated October 2015 approved under CLII-20150058 have not had significant changes.” **(Exhibit 11)**

DERM accepted Garcia’s representations. On May 27, 2018, DERM Senior Professional Engineer Maria Molina approved a second Class II permit (200180038) in official correspondence addressed to Carpenter that said the permit had been approved “per signed and sealed plans by Orlando A. Rubio, P.E., from Craig A. Smith & Associates, dated February 19, 2016 and the letter from Daniel Garcia, P.E., from Wade Trim, Inc., dated May 17, 2018”.

As noted above, the DERM Class II Permit General Conditions, Section 31, is applicable:

“If the engineer who provided certification pursuant to Section 24-48.2(I)(B)(2) or pursuant to Section 24-48.2(II)(A)(4) is discharged by the property owner or his agent, or if said engineer ceases to work on the proposed or approved work, all work by this permit shall immediately cease and shall not be resumed until a new engineer is obtained. The property owner shall also be required to obtain a new engineer who shall meet all the requirements of this permit.”

The evidence shows that the City/DBF never disclosed the Kremers plans to DERM or notified the agency of its new drainage design. During this investigation, DERM engineers Molina and De Torres testified that they believe they were deliberately misled by the City and its representatives. In my professional opinion, the evidence gathered during this investigation supports the testimony of the DERM engineers: they were misled and misled more than once.

In my opinion, the statement in the Garcia letter to DERM that “no significant changes” had been made to the Rubio plans was false and omitted facts that Mr. Garcia knew were material to the request from deTorres and material to DERM’s review of the City’s second permit application. The involvement of CIP staff in submitting the Garcia letter to DERM is consistent with other evidence that indicates the City and DBF-Lanzo/Wade Trim acted in concert permitting matters.

By contract, it is the responsibility of the DBF-Lanzo to obtain all permits. Any modifications to the permit(s) required the DBF to adhere to the permit conditions from the permitting agencies for resubmittal of updated plans, specifications, calculations, etc.

Therefore, in my professional opinion, the DBF-Lanzo has constructed the stormwater drainage system in the Palm/Hibiscus Infrastructure Improvements Project without a valid SFWMD permit and DERM Class II Permits as the DBF-Lanzo did not comply with the respective conditions of the said permits.

VII. Part 2: Exhibits and observations

This section contains excerpts from exhibits with observations. For purposes of comparison, it begins sequential excerpts of pages from Feb. 26, 2016 100% Design Submittal (Rubio plans) submitted to DERM and the May 16, 2016 WT/Kremer's plans and related items. Subsequent exhibits related to the installation of a secondary drainage system in Palm Island West in 2017, plans for WT engineer Kremers replaced CAS Rubio after DERM granted a Class II permit based on Rubio's plans; and representations to DERM in 2018 by the City and WT engineer Daniel Garcia that no significant changes had been made to the original Rubio plans.

I analyzed the following sets of Palm Island plans:

The Rubio (CAS) Plans: Neighborhood 13 Palm Island Right-of-Way Infrastructure Improvements February 26, 2016 SM-1205-A 100% Design Submittal (pages 1-72) and Set #2 Neighborhood 13 Hibiscus Island (pages 73-155) signed and sealed by Engineer of Record (EOR) Orlando A. Rubio, P.E. Craig A. Smith & Associates; submitted to DERM with City of Miami Beach application for Class II permit issued May 27, 2016.

The Kremers (WT) Plans: Set #1 May 18, 2016 SM-2015A Neighborhood 13 Palm Island Right-of-Way Infrastructure Improvements; Signed and sealed by Holly Kremers P.E (Wade Trim Engineers) June 20, 2016; Hardscape page HS01-HS09 Signed & Sealed by Carey Wright. Stamped and Signed Public Works Department July 7, 2016 "for Stormwater only". Set #2 May 18, 2016 SM-2015-A Neighborhood 13 Hibiscus Island Right-of-Way Infrastructure Improvements. Signed and sealed by Holly Kremers June 16, 2016; Pages HS01-HS15) Signed and sealed by Carey Wright P.E. (Wade Trim Engineers) Stamped and signed by Public Works Department July 7, 2016 "for Stormwater only".

The Mullen (WT) As-Built Plans: Storm Drainage As Built plans signed and David Mullen, P. E. (Wade Trim Engineers) Dec. 13, 2019. Set #1 Neighborhood 13 Palm Island Stormwater Drainage As-Built Palm Island plans dated April 29, 2016 for Palm Island (pages 1-25) Set #2 Neighborhood 13 Hibiscus Island Stormwater Drainage As-Built (Undated) plans signed and sealed Nov. 27, 2019 by David Mullen, P.E. (December 13, 2019) submitted to DERM.

E. General observations

Comparisons of Palm Island plans were made between the February 2016 CAS drawings and the May 2016 WT drawings as identified in Exhibits 1 and 2 on the following pages. The storm drainage plans showed significant changes, mainly in the area of North and South Coconut Lanes on Palm Island. The WT storm drainage plans were advanced to show temporary/yard drains (and private drains by others) in the plans and typical cross sections. Rim/grate elevations also changed due to raising of the road elevations. The road elevations at North and South Coconut Lanes were raised approximately 12" on the WT plans, which created significant property harmonization problems.

Comparisons of WT Palm Island plans were made between the May 2016 WT drawings and the December 2019 WT storm water As-Built drawings. The said December 2019 WT storm As-Built plans incorporated the design changes recommended in the May 3, 2018 Drainage Report for Palm Island prepared by WT engineer, Daniel Garcia, P.E., but never permitted through Miami-Dade DERM.

The As-Built storm drainage plans had one major deviation: **the addition of secondary 24" drainage pipes on the south side of Palm Avenue west, draining towards the stormwater pump station and new 30" drainage pipes connecting the west cul-de-sac drainage eastward towards the stormwater pump station.** There were other minor modifications in the storm water drainage piping. Review of the roadway manhole rim elevations indicated the roadway was built in substantial conformance with the WT May 2016 plans.

Comparisons of Hibiscus Island plans were also analyzed between the February 2016 CAS drawings and the May 2016 WT drawings. The storm drainage plans were essentially the same, with minor changes in storm water drainage piping. The pipe diameters remained the same. The road elevations and roadway cross sections were essentially the same with only minor variances.

1. Exhibit 1 consists of two separate sheets. The first cover page is that of the CAS/Rubio plans that served as basis of Class II permit issued May 27, 2016. The second cover page is that of the WT/Kremers plans dated May 18, 2016 used by City to construct drainage system.

MIAMI BEACH

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LANZO
LANDSCAPE ARCHITECTURE
2500 Ponce de Leon Blvd. Suite 100
Coral Gables, FL 33134
305.442.1100
www.lanzolandscape.com

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2500 Ponce de Leon Blvd. Suite 100
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PROJECT LOCATION

LOCATION MAP

LOCATION OF PROJECT

SHEET	DRAWING	DESCRIPTION
1	0-1	GENEY SHEET & INDEX OF DRAWINGS
2	0-2	GENERAL NOTES
3	0-3	ABBREVIATIONS AND SYMBOL LEGEND
4	0-4	KEY SHEET
5-13	0-500	MAP OF EXISTING PARCELS SURVEY
14	0-500	DEMARCATION KEY SHEET
15	0-500	TOPGRAPHY PLAN
16-17	0-500	TYPICAL ROADWAY SECTIONS
18	0-500	PAVING, SECTIONS AND STANDARD STANDARD DETAILS
19	0-500	WATER MAIN PLAN AND PROFILE KEY SHEET
20-21	0-500	WATER MAIN GENERAL, PIPE AND FITTINGS
22-23	0-500	WATER MAIN STANDARD DETAILS
24	0-500	STORM WATER KEY SHEET
25-26	0-500	STORM WATER PLAN AND PROFILE
27-28	0-500	STORM WATER STANDARD DETAILS
29-30	0-500	STORM WATER PUMP STATION
31-32	0-500	STORM WATER PUMP STATION DETAILS
33	0-500	STORM WATER STRUCTURES (SEWER, GENERAL NOTES)
34	0-500	PUMP STATION STRUCTURES (SEWER) STRUCTURAL, GENERAL, PLAN AND SECTION
35	0-500	SEWER STRUCTURES (SEWER) STRUCTURAL, GENERAL, PLAN AND SECTION
36	0-500	ELECTRICAL NOTES, SYMBOLS AND ABBREVIATIONS
37	0-500	POWER PLUMBING KEY SHEET
38	0-500	POWER PLUMBING GENERAL, PLAN AND SECTION
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MIAMI BEACH

CAPITAL IMPROVEMENTS PROJECT OFFICE

NEIGHBORHOOD 13 PALM ISLAND
RIGHT-OF-WAY INFRASTRUCTURE IMPROVEMENTS
MAY 18, 2016 SM-2015A
FINAL DESIGN SUBMITTAL

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CITY OF MIAMI BEACH
MAYOR: PHILIP LEVINE
COMMISSIONERS: JOHN ELIZABETH ALEMAN
RICKY ARROLA
KRISTEN ROSEN GONZALEZ
MICHAEL GREGO
JOY MALAKOFF
MICKY STERNBERG

CITY MANAGER: JIMMY L. MORALES
CITY ATTORNEY: RAUL J. AGUILA
PUBLIC WORKS DIRECTOR: ERIC T. CARPENTER, P.E.
CITY ENGINEER: BRUCE A. MOWRY, Ph.D., P.E.
CIP DIRECTOR: DAVID MARTINEZ P.E.

LANZO
LANDSCAPE ARCHITECTURE
2500 Ponce de Leon Blvd. Suite 100
Coral Gables, FL 33134
305.442.1100
www.lanzolandscape.com

WADETRIM
2500 Ponce de Leon Blvd. Suite 100
Coral Gables, FL 33134
305.442.1100
www.wadetrims.com

CS CIVIL & SURVEYING
2500 Ponce de Leon Blvd. Suite 100
Coral Gables, FL 33134
305.442.1100
www.cs-engineers.com

savinomiller
2500 Ponce de Leon Blvd. Suite 100
Coral Gables, FL 33134
305.442.1100
www.savinomiller.com

PROJECT LOCATION

LOCATION MAP

LOCATION OF PROJECT

SHEET	DRAWING	DESCRIPTION
1	0-1	GENEY SHEET & INDEX OF DRAWINGS
2	0-2	GENERAL NOTES
3	0-3	ABBREVIATIONS AND SYMBOL LEGEND
4	0-4	KEY SHEET
5-13	0-500	MAP OF EXISTING PARCELS SURVEY
14	0-500	DEMARCATION KEY SHEET
15	0-500	TOPGRAPHY PLAN
16-17	0-500	TYPICAL ROADWAY SECTIONS
18	0-500	PAVING, SECTIONS AND STANDARD STANDARD DETAILS
19	0-500	WATER MAIN PLAN AND PROFILE KEY SHEET
20-21	0-500	WATER MAIN GENERAL, PIPE AND FITTINGS
22-23	0-500	WATER MAIN STANDARD DETAILS
24	0-500	STORM WATER KEY SHEET
25-26	0-500	STORM WATER PLAN AND PROFILE
27-28	0-500	STORM WATER STANDARD DETAILS
29-30	0-500	STORM WATER PUMP STATION
31-32	0-500	STORM WATER PUMP STATION DETAILS
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50' outside 37.5' inside

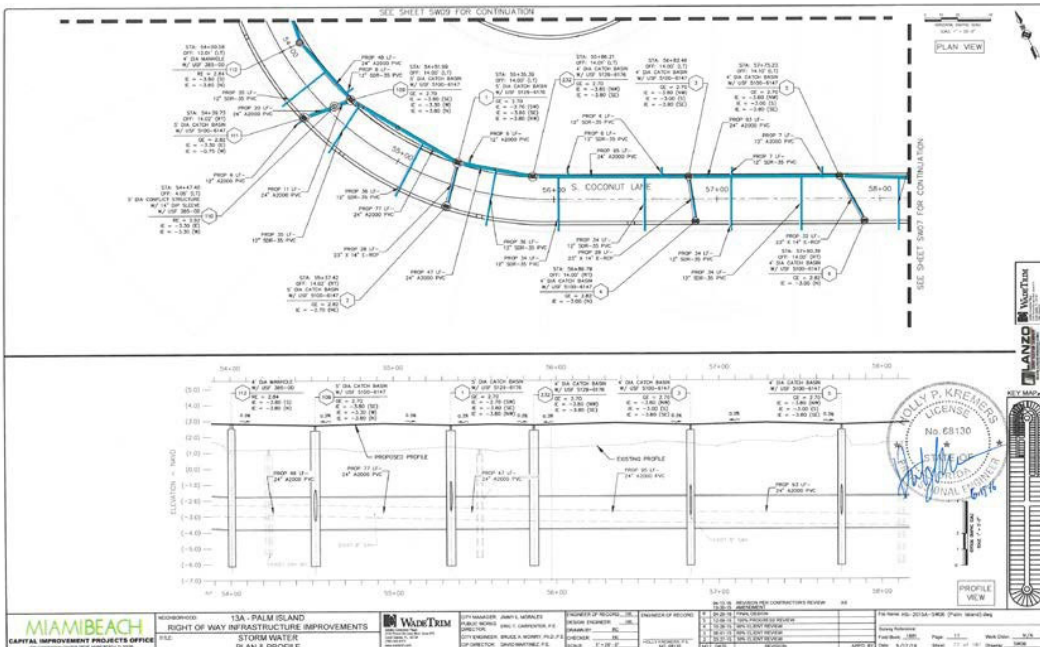
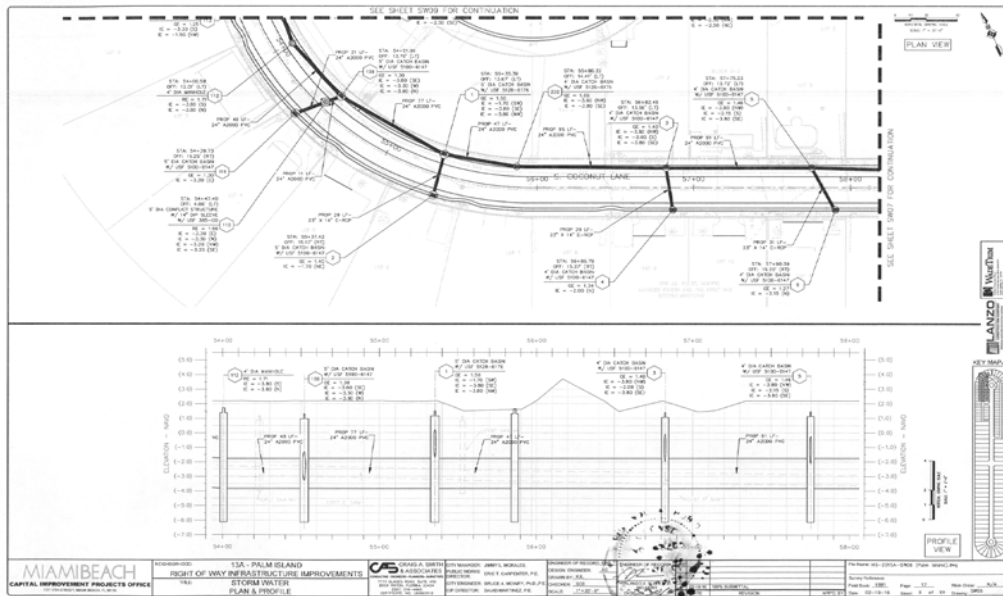
Do paving

City of Miami Beach
Public Works Department
Approved: [Signature] Not Approved: [Signature]
By: [Signature] Date: 7/16/16
Comments: [Signature] for stormwater only

MIAMI BEACH
No. 68130
OFFICIAL SEAL

2. Exhibit 2 consists of two separate sheets. Page SW06 from Rubio plans is a drawing of the stormwater drainage system for South Coconut Lane. Page SW06 from Kremers plans showing the stormwater drainage system with additional lateral pipes that extend to the front of each lot.

Exhibit 2



4. **Exhibit 4 (4 pages) Request for Information #035 “Private Property Drainage Water Accommodation” dated Oct. 30, 2015 and attachments that included as attachments WT drawings for Coconut Lane Tie-ins to yard drains installed in private lots or in ROW adjacent to property line and subsequent email from former City Engineer Bruce A. Mowry, P.E., also dated Oct. 30, 2015, approving proposed design.**

Exhibit 4

REQUEST FOR INFORMATION

PROJECT NAME: Neighborhood #13, Palm & Hibiscus Islands PROJECT No. F-430
 RFI No. 035 Request for Information Date: October 30, 2015
 TO: Jeff Crews, PE - Stantec, Olga Sanchez – Miami Beach CIP
 FROM: Bob Beaty, PE, Lanzo

REFERENCES:

PLAN No. Sections SPEC SECTION: _____ SHOP DRAWING: _____

INFORMATION REQUESTED: Private Property Drainage Water Accommodation

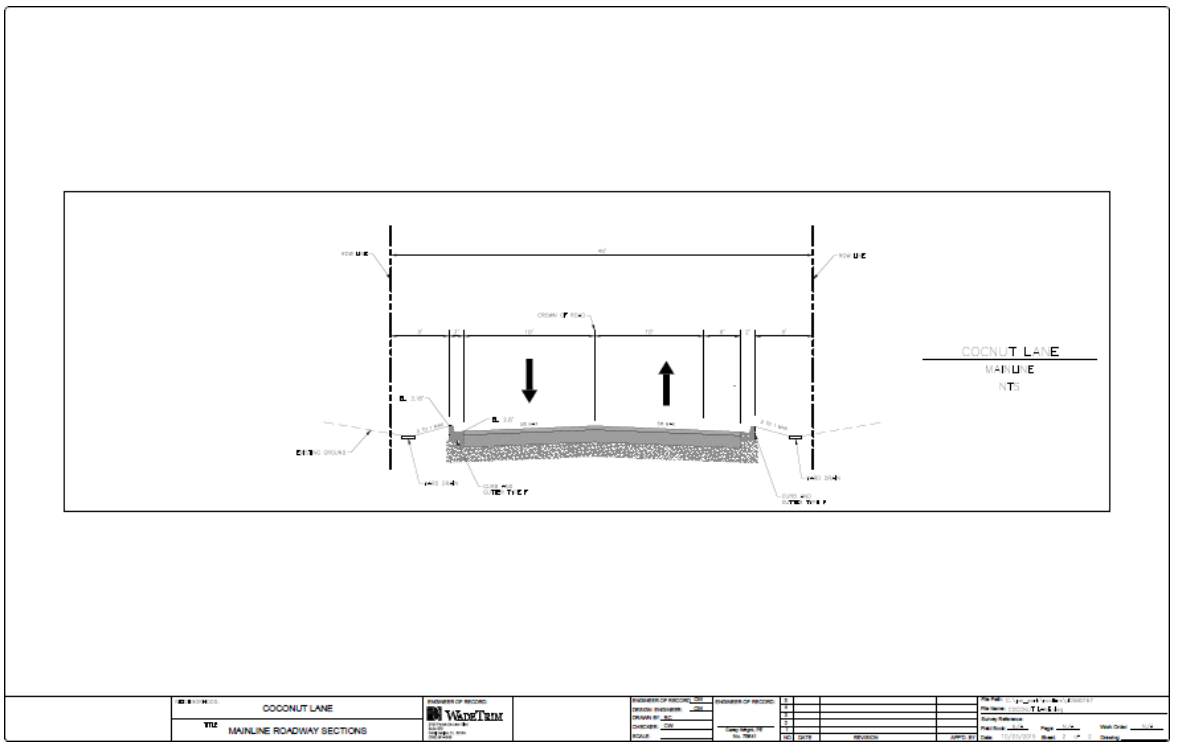
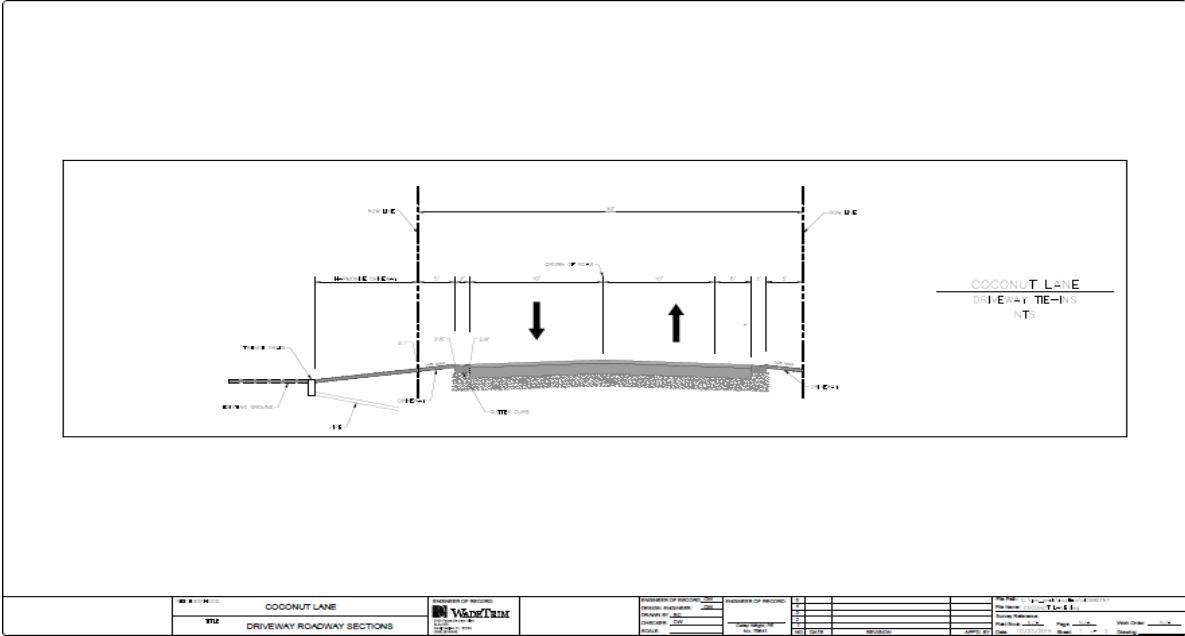
The attached section for elevating roadways provides drainage accommodation for Private Surface Water Runoff. I understand from discussions that this drainage system should be “Capped” at the Right-of-Way for future connection by the Private Property Owner. This future connection will include a check valve on the private property side to ensure City drainage water does not “Back-up” onto private property.

Future Connection will be installed “By Others”.

Please confirm this expectation.



REPLY: _____ TITLE: Project Manager



McGee, James

From: Mowry, Bruce
Sent: Friday, October 30, 2015 3:39 PM
To: 'Crews, Jeff'
Cc: Tomczyk, Mark; Sanchez, Olga; Egemba, Eugene; Buell, Roger
Subject: RE: ACTION REQ'D - ROW Palm & Hibiscus Island Enhancement - Private Property Drainage Water Accommodation

Jeff,
The City agrees with the connection to be made as described in the RFI.
Thanks,
Bruce

MIAMIBEACH

Bruce A. Mowry, Ph.D., P.E.

City Engineer

1700 Convention Center Drive, Miami Beach, FL 33139
Tel: 305-873-7080 ext. 8565 / Cell: 786-750-8941
BruceMowry@MiamiBeachFL.gov

We are committed to providing excellent public service and safety to all who live, work and play in our vibrant, tropical, historic community

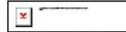
From: Crews, Jeff [<mailto:jeff.crews@stantec.com>]
Sent: Friday, October 30, 2015 2:48 PM
To: Mowry, Bruce
Cc: Tomczyk, Mark; Sanchez, Olga
Subject: FW: ACTION REQ'D - ROW Palm & Hibiscus Island Enhancement - Private Property Drainage Water Accommodation

Bruce can you please provide a response to the RFI below so that we can appropriately communicate the directive to the design-build team

Thank you

Jeffrey Crews, PE

Senior Associate
Stantec
21301 Powerline Road Suite 311 Boca Raton FL 33433-2305
Phone: 561-487-3379 ext 235
Cell: 954-804-2713
Fax: 561-487-3466
jeff.crews@stantec.com



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Please consider the environment before printing this email.

From: Bob Beaty via e-Builder [<mailto:bounces@e-builder.net>]
Sent: Friday, October 30, 2015 2:01 PM
To: Crews, Jeff
Subject: ACTION REQ'D - ROW Palm & Hibiscus Island Enhancement - Private Property Drainage Water Accommodation

5. Exhibit 5 Excerpt from Kremers plans (page G03) Construction Sequencing Notes stating lateral pipes under road and yard drains “shall be temporary drainage...during construction.”

Exhibit 5

- NURSERY.
5. UPON REMOVAL OF TREES TO BE RELOCATED WITHIN A GIVEN SECTION OF A WORK AREA (BEGINNING WITH AREA 1), CONTRACTOR SHALL BEGIN CONSTRUCTION OF PHASE "B" AS SHOWN ON CONSTRUCTION PHASING AND MOT SCHEMATICS, INCLUDING CONSTRUCTION OF DRAINAGE STRUCTURES AND PIPES, ETC.
 - A. PORTIONS OF STORM WATER DRAINAGE PIPES CROSSING UNDER THE ROADWAYS SHALL BE TEMPORARY. DRAINAGE SHALL BE PROVIDED THROUGHOUT THE PROJECT TO ENSURE MINIMUM SERVICE TO PREVENT FLOODING DURING CONSTRUCTION. DURING PHASE "B" CONSTRUCTION, CONTRACTOR SHALL PROVIDE TEMPORARY CONNECTION(S) FROM THE NEW DRAINAGE STRUCTURES / PIPE TO EXISTING STORM WATER DRAINAGE SYSTEM AND / OR PROVIDE GAPS IN NEW CURB AND GUTTER AT EXISTING LOW POINTS, AS DIRECTED BY THE ENGINEER. IN THE FIELD. TEMPORARY PAVEMENT SHALL BE USED BEFORE MOVING TO THE NEXT ZONE AND TRENCHES WILL NOT REMAIN UNCOVERED FOR MORE THAN 14 DAYS. PROPER DUST CONTROL AND STORM WATER POLLUTION PREVENTION BMP'S SHALL BE USED.
 - B. DURING INSTALLATION OF PORTIONS OF DRAINAGE PIPE CROSSING UNDER THE ROADS, IT MAY BE NECESSARY TO REDUCE TRAFFIC TO ONE LANE; IN SUCH CASES THE CONTRACTOR SHALL PROPERLY MAINTAIN TRAFFIC REGULATED BY FLAG MEN AND ADEQUATE SIGNAGE.
 - C. ALL EXISTING AND NEW INLETS SHALL BE COVERED WITH FILTER CLOTH THAT WILL BE MAINTAINED AND CLEANED ON A DAILY BASIS. THE CONTRACTOR SHALL PROVIDE TEMPORARY DRAINAGE AS NEEDED TO MAINTAIN THE CURRENT FLOOD PROTECTION AT MINIMUM THROUGHOUT CONSTRUCTION.
 - D. ONCE THE STORM WATER DRAINAGE PORTION OF PHASE "B" IS COMPLETED WITHIN A GIVEN SECTION OF AN AREA, DRAINAGE CONSTRUCTION CREWS SHALL WORK ON DRAINAGE CONSTRUCTION SEQUENTIALLY (WORK AREA 1, 2, 3, 4), UNTIL ALL PHASES ARE CONSTRUCTED AND THE COMMENCEMENT OF PHASE "C".
 6. THE CONTRACTOR SHALL BEGIN CONSTRUCTION OF PHASE "C" WITHIN THE SAME ZONE AS SHOWN CONSTRUCTION PHASING AND MOT SCHEMATICS, INCLUDING CONSTRUCTION OF CURB AND GUTTER, DRIVEWAY CURBS, SIDEWALK, UTILITY DUCT BANK (FPL, AT&T ATLANTIC

6. Exhibit 6 is cover of City’s Technical Report submitted to DERM with permit application in October 2015 with CAS (Rubio) as the Engineer of Record.

Craig A. Smith & Associates

CITY OF MIAMI BEACH

**SFWMD/ACOE/FDEP JOINT
ENVIRONMENTAL RESOURCE PERMIT
APPLICATION
&
MIAMI-DADE COUNTY DRER CLASS II PERMIT
APPLICATION
FOR**

Neighborhood No. 13A: Palm and Hibiscus Islands
Right-of-Way Infrastructure Improvement Project

October 2015

CAS Project Nos. 14-1786

Prepared By:



Corporate Office:
7777 Glades Road, Suite 410
Boca Raton, FL 33434
561.314.4445
Fax 561.314.4457



Orlando A. Rubio, PE
FC Reg. 748265

Date

- 7. Exhibit 7 is excerpt from report, identified in Exhibit 6, explaining use of minimum crown-of-road elevation of 2.2 feet NAVD for North & South Coconut Lanes and Coconut Court. The design criteria elevation of 3.7 feet NAVD is “not possible” because first finished floor elevations are below “future design groundwater design basis 2.7 feet NAVD).**

Exhibit 7

- g. Roadways: CMB criteria requires that minimum road crowns are set at or above elevation 3.7' NAVD. For the Palm Island West System and primarily on North and South Coconut Lane, this was not possible due to the existing topography (garages and existing yard grades) encountered below the future design groundwater elevation of 2.7' NAVD (see Figures 2 and 3). The criteria posed significant driveway harmonization and resident accessibility issues which cannot be addressed at this time unless each affected lot undergoes full blown redevelopment. As such, North and South Coconut Lane road crown elevations will be no lower than 2.2' NAVD as allowed by CMB with edge of pavement grades matching existing elevations. As redevelopment occurs on the islands, either by choice or by the effects of climate change conditions, the CMB will require the redevelopment or new construction to comply with the intended criteria. This will allow the CMB to elevate the road and drainage rims/grates at a later date.

- 8. Exhibits 8 (4 pages) is excerpt from Drainage Report prepared by WT Engineer of Record, Daniel Garcia, P.E., dated May 3, 2018, that show additional installations of secondary drainage pipes on Palm Avenue that connect to private yard drains. (Annotations and markups added for emphasis).

Exhibit 8

DRAINAGE REPORT
Palm Island

Wade Trim Job Number:
LNZ2003.01S

Prepared For:
CITY OF MIAMI BEACH



Submittal Date:
May 3, 2018

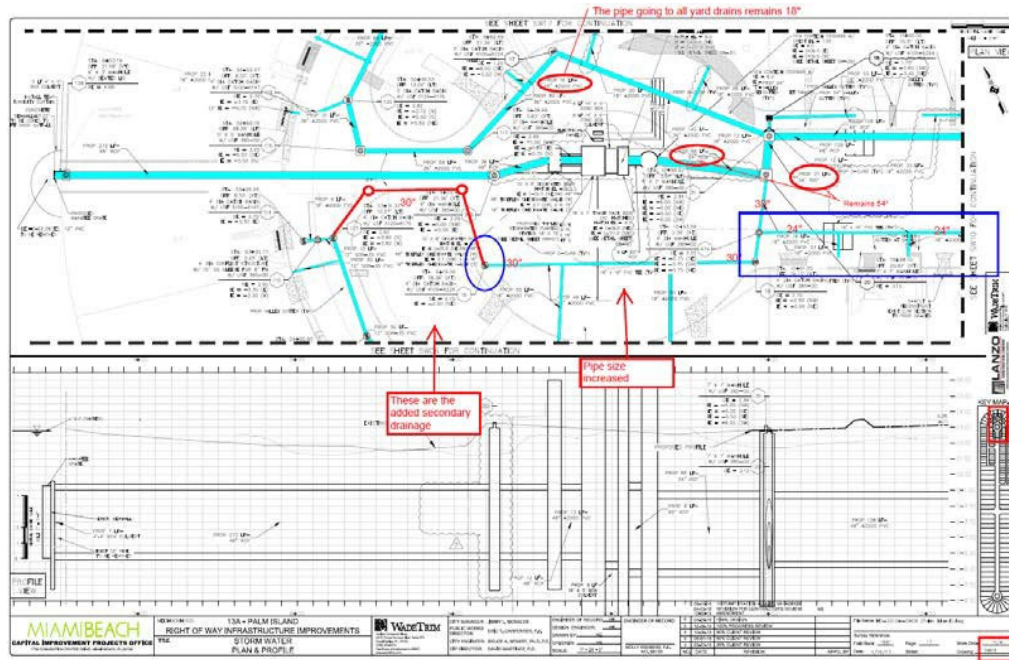
Prepared by:



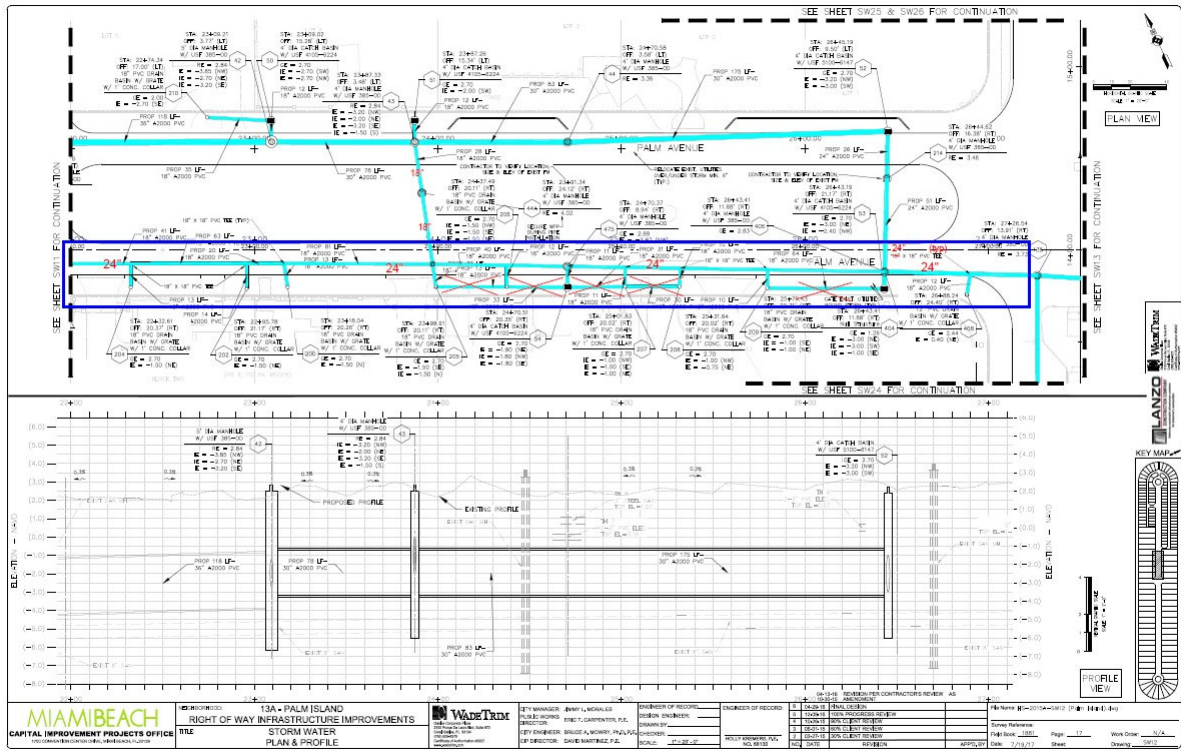
2100 Ponce de Leon Blvd, Suite 970
Coral Gables, FL 33134
Phone: (786) 361-1645

Engineer of Record:

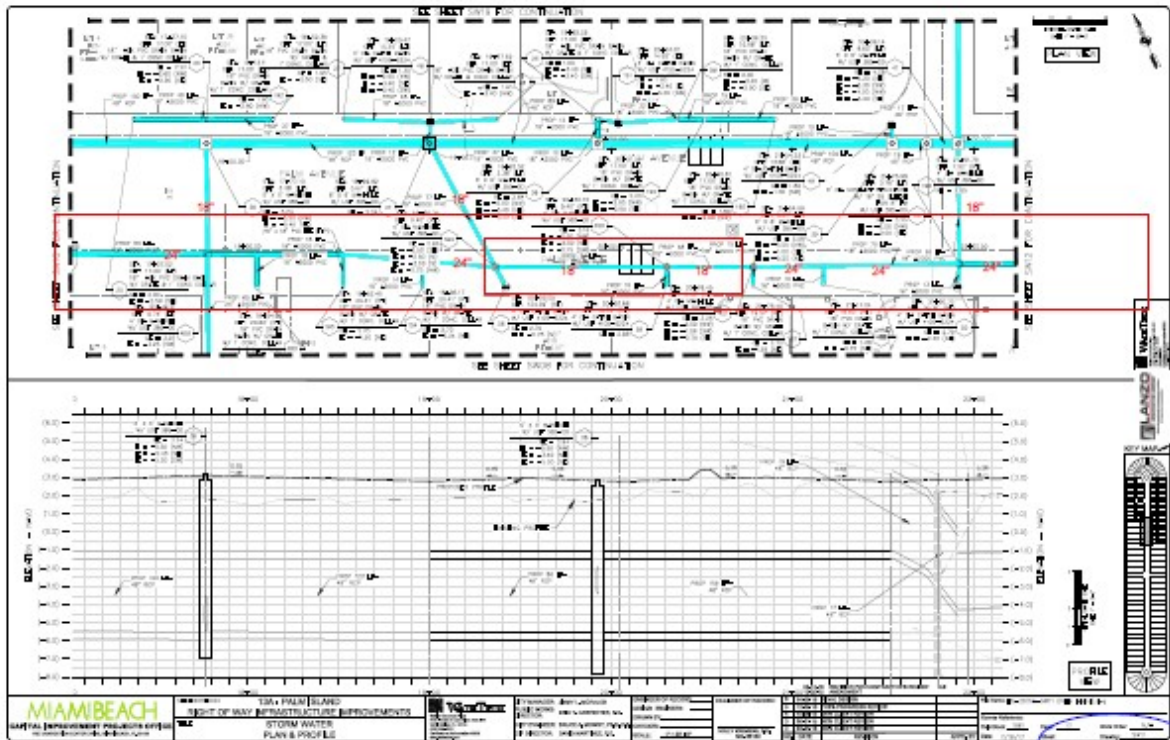
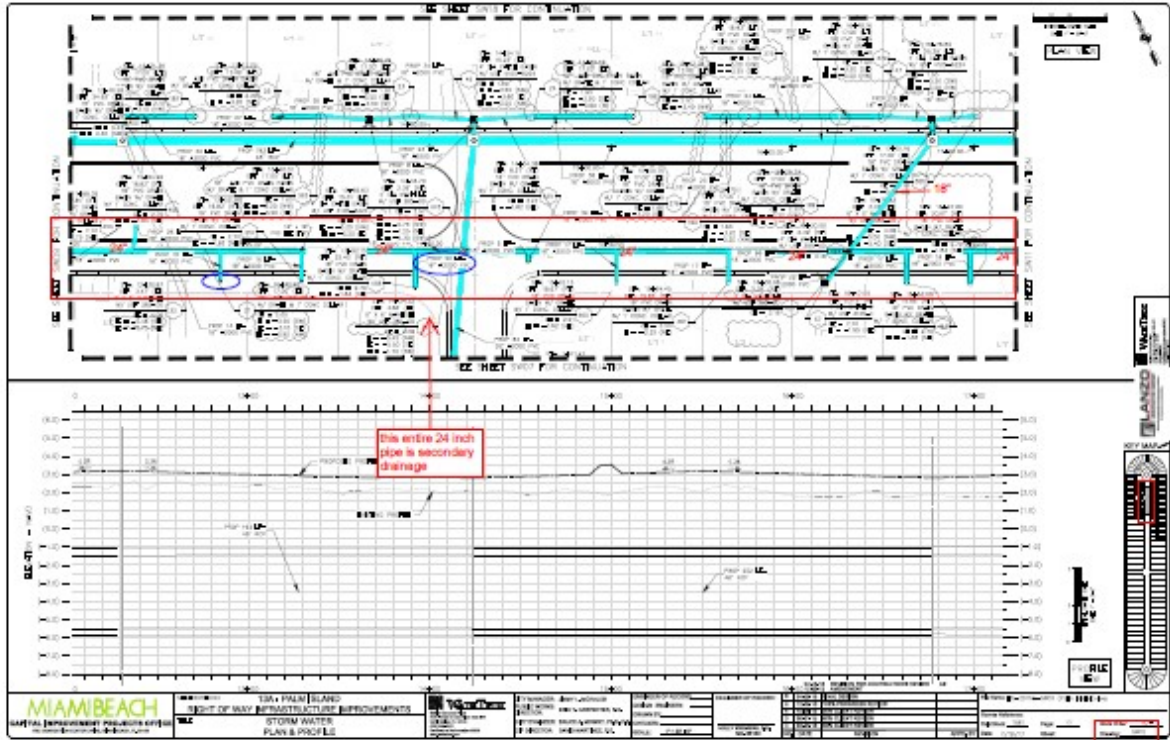
Daniel I. Garcia
P.E. No. 62299



TECHNICAL REPORT



<p>MIAMI BEACH CAPITAL IMPROVEMENT PROJECTS OFFICE</p>	<p>13A - PALM ISLAND RIGHT OF WAY INFRASTRUCTURE IMPROVEMENTS STORM WATER PLAN & PROFILE</p>	<p>WADE TRIM ENGINEER</p>	<p>PROJECT MANAGER: BENJAMIN L. HARRIS PUBLIC WORKS: NICOLE CAMPANELLA, P.E. PROJECT ENGINEER: BRUCE A. MORSE, P.E. PROJECT ENGINEER: DANIEL W. HARRIS, P.E.</p>	<p>ENGINEER OF RECORD: [Signature] PROJECT ENGINEER: [Signature] PROJECT ENGINEER: [Signature] PROJECT ENGINEER: [Signature] PROJECT ENGINEER: [Signature]</p>	<p>DATE: 02/28/2018 DATE: 03/08/2018 DATE: 03/08/2018 DATE: 03/08/2018 DATE: 03/08/2018</p>	<p>PROJECT NO: 15-004-0012 (P) - 13A (S) SHEET NO: 1881 PAGE: 17 WORK ORDER: 174 DATE: 7/19/17 SHEET: 1881</p>
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9. Exhibit 9 is correspondence dated from Wade Trim South Florida Manager to CIP Senior Project Manager explaining that “once 100% submittal has been fully approved by the City of Miami Beach and relevant permits acquired from South Florida Water Management District and Miami-Dade RER” WT would replace CAS as the Engineer of Record (*no record of the transfer is provided per Exhibit 9A - Chapter 61G15-27 of the Florida Administrative Code*).



March 2, 2016

Mark Tomczyk
 Senior Capital Improvement Projects Coordinator
 Office of Capital Improvements
 City of Miami Beach
 777 17th Street, Miami Beach, FL 33139

Re: City of Miami Beach, Florida
 Neighborhood 13 Palm and Hibiscus Islands Right-of-Way Infrastructure Improvements

Dear Mr. Tomczyk:

As discussed, Wade Trim will be appropriating design documents from Craig A. Smith & Associates (CAS) for the Neighborhood 13 Palm and Hibiscus Islands Right-of-Way Infrastructure Improvements project once 100% submittal has been fully approved by the City of Miami Beach and relevant permits acquired from South Florida Water Management District and Miami-Dade RER. CAS has been informed of our intent to appropriate design documents and will be duly notified in releasing responsibility of all their project documents. We respectfully request approval from the City for this transfer of responsibility.

Very truly yours,

Wade Trim, Inc.

Victor H. Herrera, PE
 South Florida Area Manager

cc: file

Wade Trim, Inc. 786.361.1645
 2100 Ponce de Leon Boulevard 888.499.9624
 Suite 970 786.361.1646 fax
 Coral Gables, FL 33134 www.wadetrim.com

CHAPTER 61G15-27**PROCEDURES FOR THE ADOPTION OF ANOTHER'S WORK**

61G15-27.001 Procedures for a Successor Professional Engineer Adopting As Their Own the Work of Another Engineer

61G15-27.001 Procedures for a Successor Professional Engineer Adopting As Their Own the Work of Another Engineer.

(1) A successor professional engineer seeking to reuse already sealed plans, prints, engineering specifications, and/or engineering calculations under the successor professional engineer's seal shall do so in compliance with Section 471.025(4), F.S. In other words, calculations, site visits, research and the like must be documented and producible upon demand. Plans, prints, engineering specifications, and/or engineering calculations need not be redrawn by the successor professional engineer; however, justification for such action must be available through well kept and complete documentation on the part of the successor professional engineer as to their having rethought and reworked the entire design process. A successor professional engineer must use their own title block, seal and signature and must remove the title block, seal and signature of the original professional engineer before reusing any sealed, prints, engineering specifications, and/or engineering calculations used for permitted works.

(2) Prior to sealing and signing such work a successor professional engineer shall be required to notify the original professional engineer, their successors, or assigns of the successor's intention to use or reuse the original professional engineer's work. Notification shall be by certified letter or other verifiable communication to the last known physical or electronic address of the original professional engineer.

(3) A professional engineer's reliance upon and legal use of another's engineering work, in the normal course of providing original service, is not reuse or adoption of such other engineer's work as contemplated by Section 471.025(4), F.S., and the professional engineer relying upon such work is not a "successor engineer" as used in that section. Such engineering work includes but is not limited to, geotechnical reports, soil investigation reports, legal surveys, and other works that may be sealed, but which are used to support the professional engineer's work and are not adopted as the professional engineer's original service or work product.

Rulemaking Authority 471.033(2) FS. Law Implemented 471.025(4), 471.033(1)(j), 471.005(6) FS. History—New 8-25-87, Amended 4-21-88, 8-3-88, Formerly 21H-27.001, Amended 8-8-18, 12-29-19.

10. Exhibit 10 is May 17, 2018 exchange of emails between DERM Engineer Mayra De Torres to CIP Project. De Torres asks that the City submit a statement from EOR certifying that no significant changes had been made to the Rubio plans that had served as the basis of Class II permit issued May 27, 2016. Sanchez transmits correspondence from Engineer of Record, Daniel Garcia.

Exhibit 10

McGee, James

From: OlgaSanchez@miamibeachfl.gov
Sent: Thursday, May 17, 2018 12:29 PM
To: Mayra.DeTorres@miamidade.gov
Cc: VictorS@Lanzo.org; Maria.Molina@miamidade.gov; PabloR@Lanzo.org
Subject: RE: Palm & Hibiscus Class II Drainage Construction Permit-Palm and Hibiscus Permit No. 20150058
Attachments: 20180517_MDRER permit renewal.pdf

Good afternoon Mayra,

Please see attached letter from EOR.

Also let me know when we can pay for the permit.

Thanks,

MIAMIBEACH

*Olga Sanchez, E.I., LEED AP, Capital Projects Coordinator
 CAPITAL IMPROVEMENT PROJECTS OFFICE
 1700 Convention Center Drive, Miami Beach, FL 33139
 Tel: 305.673.7071 / Fax: 786.673.7073 / Cell: 786.367.7253
 olgasanchez@miamibeachfl.gov
 We are committed to providing excellent public service and safety to all who live, work and play in our vibrant, tropical, historic community.*

From: De Torres, Mayra (RER) [mailto:Mayra.DeTorres@miamidade.gov]
Sent: Tuesday, May 15, 2018 4:03 PM
To: Sanchez, Olga
Cc: Victor Serrano; Molina, Maria, P.E. (RER); 'Pablo Riano'
Subject: RE: Palm & Hibiscus Class II Drainage Construction Permit-Palm and Hibiscus Permit No. 20150058

Good Afternoon Olga,

We need a certification from the Engineer of Record of the original permit to certify that not changes to the original signed and sealed plans dated _____ and drainage calculations dated _____ approved under CLII-20150058 have changed.

If you have any questions, please do not hesitate to contact me.

Mayra De Torres, Engineer II
 Department of Regulatory and Economic Resources
 Environmental Resources Management
 701 NW 1st Court, 6th Floor, Miami, Florida 33136
 (305) 372-6638 (305) 372-6489 fax
<http://www.miamidade.gov/economy>
 "Delivering Excellence Every Day"
 Please consider the environment before printing this email.

11. Exhibit 11 is WT correspondence dated May 17, 2018 that Sanchez emailed as attachment to DERM Engineer Mayra De Torres, wherein WT EOR Daniel Garcia stated that Rubio plans that had served as the basis of the first Class II permit, and Rubio plans and the drainage study calculations based on those plans, “had no had significant changes” during construction.

Exhibit 11



FL LC Reg. No. C000121

Wade Trim, Inc.
2100 Ponce de Leon Boulevard, Suite 940 • Coral Gables, FL 33134
786.361.1645 • www.wadetrim.com

May 17, 2018

Department of Regulatory and Economic Resources
Environmental Resources Management
701 NW 1st Court, 6th Floor
Miami, Florida 33136

Attention: Mayra De Torres, Engineer II

Re: City of Miami Beach Neighborhood 13A Infrastructure Improvements
Palm and Hibiscus Islands
Class II Permit Renewal (Permit No. CLII-20150058)

Dear Ms. De Torres:

The purpose of this letter is to state that the original signed and sealed plans dated February 22, 2016 for Hibiscus Island and February 26, 2016 for Palm Island and drainage calculations dated October 2015 approved under CLII-20150058 have not had significant changes.

The City of Miami Beach has recently revised the project’s stormwater design criteria, which we are currently evaluating. Should the new criteria result in any significant changes, as they relate to the original signed and sealed plans and drainage calculations, they will be reflected in the project permit certification documents.

Please do not hesitate in contacting me with any questions.

Very truly yours,

Wade Trim, Inc.

Daniel Garcia, PE
Project Manager

LNZ2003.02S

cc: Pablo Riano (Lanzo)

VIII. Part 3 Evaluation of explanations by the City and Wade Trim

This section addresses the responses and explanations that witnesses from the City, Lanzo, and Wade Trim provided during interviews with OIG and in statements to the City Commission. I was asked by OIG Special Agent Jim McGee to consider the testimony by Garcia that he did not intend to mislead DERM or conceal the Kremers plans from DERM, and testimony from both Garcia and Kremers that it was permissible to disclose the changes to the Rubio plans to DERM in As-Built plans at the end of the project. Garcia said this was always his intention. I was also asked to consider statements by Carpenter during a hearing of the City Commission on Oct. 30, 2017, wherein he said that “ultimately, it is a judgment call of DERM as to when is the most appropriate time to go through that modification process, because the vast majority of all Class II permits are modified at their closeout. Very seldom does anybody install a stormwater project that is exactly the same as what was designed and funded.”

In my professional opinion, Ms. Kremers and Mr. Carpenter misstated the disclosure obligations of a permittee and mischaracterized the Rubio plans. Carpenter twice signed DERM applications (as the Permittee/Owner) for a Class II permit wherein he affirmed that “I will apprise the Department of any changes to information provided in this application.” Carpenter also signed an application for an Environmental Resources Permit from the South Florida Water Management District (issued May 5, 2016) based on the Rubio plans. The state permit’s first general condition said the following: “All activities shall be implemented following the plans, specifications and performance criteria approved by this permit. Any deviations must be authorized in a permit modification in accordance with Rule 62-330.315, F.A.C. Any deviations that are not so authorized shall subject the permittee to enforcement action and revocation of the permit under Chapter 373, F.S. for the Palm and Hibiscus project.”

In my opinion, Carpenter also mischaracterized the practices of DERM and other regulatory agencies regarding the use of As-Built plans. DERM and other agencies do recognize that unforeseen circumstances occur during construction projects that require the general contractor to make minor adjustments in the field that differ from construction plans. For reasons of efficiency, permitting agencies typically allow the disclosure of minor changes in As-Built plans submitted at the end of a project. If the agency concludes that the changes are significant enough to warrant a modification of the permit, the original permit will be modified. As Carpenter said, in such instances “it is a judgment call of DERM” whether a permit needs to be modified.

However, this is not one of those instances. In this case, the evidence shows that the project’s owner (the City), the DBF-Lanzo and its subconsultant engineering firm (Wade Trim) seemed to knowingly engaged in a concerted effort during the DERM permit review process to develop an alternative set of construction plans to accommodate the connection of private yard drains. During 2016, Lanzo used the Kremers plans to construct dozens of 12-inch yard drains and an array of pipes to connect those drains to the stormwater main pipe.

During construction of the stormwater drainage system on Palm Island West, the City was in possession of a Class II permit for the Palm and Hibiscus project. However, the evidence shows that DERM unwittingly issued that permit based on plans to construct a different drainage system, one that was not designed to accommodate swale/private yard drains. In my opinion, the exhibits and testimony I reviewed support a conclusion that the City constructed a stormwater drainage system on Palm Island West without a valid permit.

F. Claim that unpermitted yard drains were a temporary condition

I was asked to consider the testimony of Kremers, Garcia, and other witnesses who contended that the 12-inch yard drains installed in the Rights-of-Way were a “temporary condition” to mitigate flooding of private lots during construction of the system and, further, that it was always their intention that these “temporary yard drains” would be capped and abandoned at the end of construction.

Given the totality of the evidence, it is my opinion that the designation of the 12-inch yard drains as “temporary yard drains” may have been mislabeled. Any temporary drains would be considered a means and method of construction by the contractor to keep the area as dry as possible where work was to be performed. Temporary drains for means and methods of construction are not typically shown on construction plans as they will have been removed before the completion of the stormwater drainage construction. Permanent drains can function as temporary drains, however, these permanent drains must be shown on the construction plans. There was no reason to obscure to the purpose of the yard drains and evade responsibility for failing to disclose the existence of these drains during the 2018 DERM application process. On this subject, I credit the testimony of Public Works Director, Roy Coley, who stated that the laterals and yard drains were always intended to be permanent installations and were approved for permanent use by the Public Works Department.

IX. Part 4: Factors the contributed to the project unfinished status.

The balance of this report provides additional observations about the factors that had an adverse impact during planning, design, and construction phases of the project and the administration of the City's progressive design-build contract with DBF-Lanzo. In my professional opinion, two related factors were the primary cause of the project's troubled history and unfinished status.

The first was the sustained and intense pressure that former Mayor Levine, the Mayor's Blue Ribbon Committee, and the Homeowners Association from Palm and Hibiscus Islands placed on City staff to accelerate their work on the project during the development of the project Design Criteria Package (DCP) and during the project's pre-construction design phase and the construction phase.

The second was the concurrent and also sustained pressure on City staff to incorporate the new design criteria into the project, specifically including the minimum grate elevation of 2.7 NAVD and the minimum crown-of-road elevation criteria of 3.7 feet NAVD. Accelerating work on a complex design-build construction project was a challenging and high risk assignment for the Capital Improvement Projects (CIP) staff, the Design Criteria Professional, and the design-build team DBF-Lanzo and its engineering consultants, Wade Trim, and Craig A. Smith & Associates. Incorporating the City's new design criteria into the Palm and Hibiscus project was a separate, distinct and equally challenging high-risk assignment.

Requiring that both of these complex tasks be accomplished simultaneously with the resources available to CIP was, in my judgement, an error. There is virtual certainty that the generation of engineering design changes and contract administration issues would be costly and complicated to mitigate. The City's decision at the end of the project's design phase to change the minimum crown-of-road criteria to 3.7 feet NAVD was a serious error of design management. It compounded the already intense pressure on CIP and Lanzo exponentially.

Below is a chronology of events leading to the City Commission approval of the Guaranteed Maximum Price (GMP):

- The City negotiated Phase 1 - Design and Pre-Construction Services with the DBF in the amount of \$599,464 approved on September 18, 2014 based on the original DCP in the RFQ.
- During the period from June 2013 and October 2014, the City's Stormwater Master Plan Consultant, AECOM, was contracted to review the DCP. City staff from the Public Works Department were also tasked to review the DCP to implement modifications as outlined in the Stormwater Master Plan.
- The City Commission adopted Resolution No. 2014-28852, (dated November 19, 2014) approving Amendment No. 1 with DBF-Lanzo in the amount of \$251,016 for additional design services associated with the adopted enhanced stormwater criteria.

- The City Commission adopted Resolution No. 2015-29178, (dated October 14, 2015) approving Amendment No. 2 with the DBF in the amount of \$73,240 for additional design services required to meet the revised City Landscape ordinance, comments from the Home Owners Association, and the changes in criteria from the City's Fire and Public Works Departments related to the placement of Florida Power and Light (FPL) transformers within the public rights-of-way.
- City CIP Staff contracted with Rib U.S. Cost to provide a 90% Construction Cost Estimate for the Palm and Hibiscus Islands Neighborhood Improvement Projects. The November 25, 2015 report estimated a base cost of \$31,008,940, which did not include the 7.5% design-build fee and owner's contingency fee.
- The Agreement between the City and Lanzo for Progressive Design Build Services, dated September 18, 2014, contained Article 4.3 Guaranteed Maximum Price (GMP) (Phase 2 Services), which described the acceptance/rejection procedures for the GMP. **The City had the option at this point to terminate the contract and re-examine the project. However, the City decided to proceed and accepted the DBF's GMP.**
- The City Commission adopted Resolution No. 2015-29643, (dated December 9, 2015) approving Amendment No. 3 with the DBF for a Guaranteed Maximum Price (GMP) of \$36,500,000 plus a \$2,000,000 City contingency for Phase 2 – Construction Services.
- The Office of Capital Improvement Projects (CIP) issued Notice to Proceed #2 to the DBF dated January 28, 2016 for the commencement of construction work (Phase 2). The DBF was given **540 days** to complete Phase 2, by July 22, 2017, as documented in the DCP.

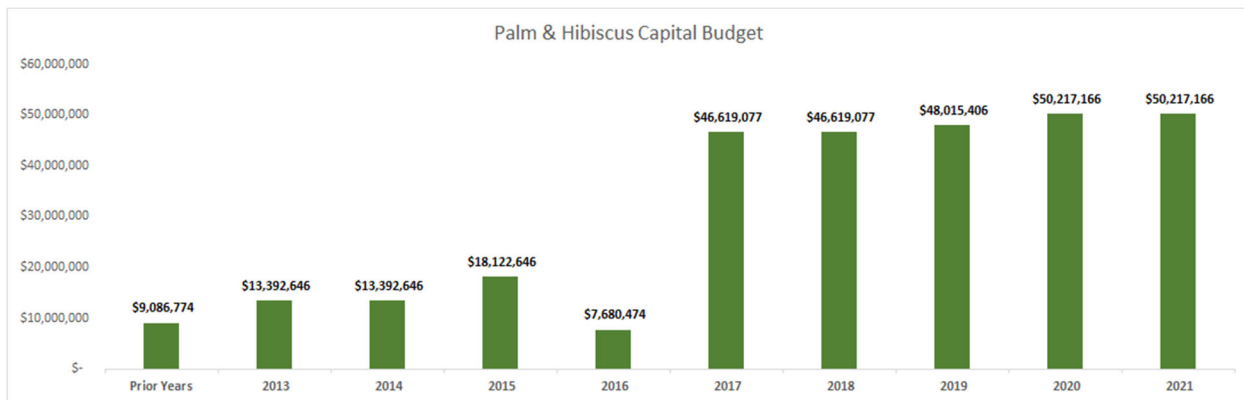
At that point, CIP was managing a fundamentally different project that required the DBF-Lanzo and its subconsultant engineer, Wade Trim, to design a modified stormwater drainage system. In my professional opinion, adopting that strategy was a fundamental error. Under pressure to begin construction, the City/DBF failed to consider that a modified stormwater drainage system design and change in the EOR may have caused DERM to stop the project for additional modified permit review time. After concluding that the King Tide phenomenon made it imperative that the minimum crown-of-road elevations for North and South Coconut Lanes and Coconut Court be raised by an additional 1.5 feet, the City should have stopped the project, refined the DCP, and issued a new solicitation. However, stopping or deferring the project was not a serious option due to the pressure placed on City staff.

Under pressure to begin construction, the City took a different path. At that point in time, the combined pressure to speed up their work and the imperative to embed the design criteria in the project's construction plans compelled the City/DBF-Lanzo to proceed with a design that the responsible City officials knew would cause flooding of homes on Palm Island West. The exhibits and testimony are replete with indicators of this pressure and the deleterious consequences that stemmed from the pressure City staff felt to continue the progress of this project.

That decision triggered a sequence of events and other decisions that set the stage for the actions previously described. It is important to note that the lack of communication and truthful exchanges with the permitting agencies exposed the City and DBF to scrutiny and significant additional costs in the construction of this project, which, as of the date of this report, is not completed.

Auditor's Financial Analysis

PALM AND HIBISCUS NEIGHBORHOOD IMPROVEMENT PROJECT'S CAPITAL BUDGET ESTIMATE INCREASED FROM \$9,086,774 TO \$50,217,166 MAINLY DUE TO DESIGN AND SCOPE CHANGES AFTER THE GUARANTEED MAXIMUM PRICE WAS ACCEPTED



The original intent of the project was completely different from the actual construction. The City requested changes during the design phase and the construction process that increased the project budget from \$9 million to a \$50 million-dollar project. Those changes included adding generators, increasing the roadway crowns generally to 3.7' NAVD, raising the Palm lower areas, Coconut Lane one-way redesign, re-design and relocation of drainage system to avoid Tree / Hedges Removal, lowering roadway elevations and additional secondary drainage on Hibiscus Island installation of underground sleeves and conduits design on Coconut Lane, permitting, construction and harmonization of additional private storm drains, among other changes. It seems that the City did not have a clear understanding of the scope of the project during the design phase prior to construction.

Over the years, Palm and Hibiscus had problems with the inadequate drainage infrastructure and low ground elevations that created a condition of moderate flooding in the area and contributed to deteriorated roadways.

The City made the decision to address these issues, and, on June 8, 2012, entered into an agreement with Stantec (formerly Corzo Castella Carballo Thompson Salman, PA or C3TS) to develop a Design Criteria Package (DCP) for the Right-of-Way Infrastructure Improvement for Neighborhood No.13 Palm & Hibiscus Islands and to evaluate compliance of the project construction.

The Mayor and City Commission at that time approved the issuance of Request for Qualifications (RFQ) No. 251- 2013TC on October 24, 2012, for Design/ Build Services for Neighborhood No. 13: Palm & Hibiscus Islands Right-of-Way Infrastructure

Improvement Project. The RFQ was issued on June 10, 2013, with an opening date of July 11, 2013, with the Design Criteria Package provided by Stantec dated June 14, 2013.

On September 18, 2014 the City of Miami Beach entered into an agreement with Lanzo Construction Co. Florida to perform design, and construction of the Palm & Hibiscus Islands Right of Way (ROW) Infrastructure Improvement Project under the progressive design- build methodology in the amount of \$599,464. The Design-Builder was to initiate the design period, encompassing the completion of the design to the level needed to define actual construction costs and begin construction activities in the field; collaborate with the City during the design process to ensure that design solutions reflect the most efficient construction means and methods and that the Project would meet the schedule, quality, permitting, and safety requirements; and procure long lead items, conduct field investigations, and early release construction packages; and once Design- Builder had advanced in the design to a sufficient level of detail to produce a reliable estimate with well- understood risks and contingencies, a cost of construction (Guaranteed Maximum Price) will be submitted by the Design- Builder to the City for its approval.

Soon after the City entered into an agreement with Lanzo Construction Co. the City passed (Resolution No. 2014-28852) on recommendation of the Mayor's Blue Ribbon Panel on Flooding and Sea Rise and the Flooding Mitigation Committee, as well as the City's Flooding Mitigation Consultant (AECOM) calling for design services for additional pump stations on both Palm and Hibiscus Islands, new surveying services, revisions to the 30% Design Drawings, increasing the road minimum elevation, and Design Review meetings with the Community; and pursuant to these required design modifications, the Design-Build Firm submitted a proposal for these additional services in the not-to exceed amount of \$251,016.

The contractor, Lanzo, hired Orlando Rubio from Craig A. Smith Associates to design the drainage system for "Neighborhood No.1 3A: Palm and Hibiscus Islands Right-of-Way Infrastructure Improvement Project" consisting of elevated roadways, where possible, installation of new potable water main systems, installation of stormwater collection systems with three stormwater pumping stations equipped with water quality treatment units and gravity bypass stormwater outfalls with dissipation structures discharging into Biscayne Bay within 25.53 acres of existing rights-of-way.

The technical report dated October 2015 submitted with the permit application stated that the City's criteria requires that minimum road crowns are set at or above elevation 3.7' NAVD; however, for the Palm Island West System and primarily on North and South Coconut Lane, this was not possible due to the existing topography encountered below the future design groundwater elevation of 2.7' NAVD. As such, North and South Coconut Lane road crown elevations would be no lower than 2.2' NAVD as allowed by CMB. The criteria posed significant driveway harmonization and resident accessibility issues, which could not be addressed at that time unless each affected lot underwent total or complete redevelopment. The City would then elevate the road and drainage

rims/grates in that area at a later time. However, after a king tides event on October 2015, Bruce Mowry the former City Engineer eliminated the relaxed 2.2' NAVD on the Coconut Lanes, triggering a chain of events that caused scope changes that substantially increased the project budget.

On October 14, 2015, the City Commission authorized the Mayor and the City Clerk to execute the Lanzo Construction Amendment No. 2 (Resolution No. 2015-29178) to incorporate additional design services required to meet the revised City landscape ordinance, comments from Home Owners Association (HOA), the City's Fire Department analysis, the City's Public Works Department (PWD) change in criteria relating to the placement of Florida Power and Light (FPL) transformers within the City Right-of-Way, and other design criteria clarifications. This amendment increased the contract price by a not-to-exceed sum of \$73,240.

At this point, Lanzo Construction had already billed the City \$923,720 on design services (Phase 1). The 90% design plans completed by Rubio were used as the basis to develop a guaranteed maximum price. If the City did not agree with the price, the manager would have the alternative to exercise the "off-ramp" provision of the Agreement, allowing the City to terminate Lanzo's services and seek alternate contractors to complete the Phase 2 construction services.

On December 9, 2015, the City Commission authorized the Mayor and the City Clerk to enter into further negotiations with Lanzo Construction Co. (Resolution No. 2015-29243) to execute guaranteed maximum price (GMP) Amendment No. 3 in the amount not to exceed \$35,000,000 plus a ten percent owner's project contingency, and 2,000,000 owners contingency for a grand total of \$38,500,000.

After the execution of the project Guaranteed Maximum Price (GMP), the Public Works Department requested the addition of 2,700 linear feet (LF) of 6" diameter ductile iron pipe and 9 gate valves to be installed in all side streets (courts) within Hibiscus Island. On July 21, 2016 **Change Order No.1**, was issued from the approved contingency funds in the amount of \$313,905.06 for the additional watermain installation and to supply and maintain temporary pumps to mitigate king tides on Palm and Hibiscus Islands.

On October 29, 2018, **Change Order No. 2**, was issued from the approved contingency funds in the amount of \$686,094.94, for additional services requested by the City, which included, force main replacement; additional water main drainage on Hibiscus Island; additional temporary pavement; Hurricane Irma impacts; associated general conditions and other miscellaneous work; credits related to scope of work reductions in street lighting, speed tables and road width reduction along North and South Coconut Lanes; and a time extension of four hundred and sixty-seven (467) calendar days.

Item	Change Order 2	Amount
RCO#3	Credit for Street light elimination	\$ (700,000.00)
RCO#4	Credit for road width reduction of Coconut Lanes	\$ (138,989.00)
RCO#5	Credit for Speed Tables Elimination	\$ (96,000.00)
RCO#6	Credit for Valley Gutter	\$ (4,856.40)
RCO#7	Additional Water Meters and Relocations	\$ 21,623.60
RCO#8	Fire Hydrant Relocation at 199 N. Coconut Lane	\$ 6,082.08
RCO#9	Fire Hydrant Relocation at 285 S. Hibiscus Dr.	\$ 5,564.20
RCO#10	Existing service Repair @ 39 Palm Avenue	\$ 4,788.81
RCO#11	Coconut Lane One-Way Redesign (Wade Trim)	\$ 92,080.39
RCO#12	Palm Island Force Main Repair	\$ 3,802.55
RCO#13	Palm Island King Tide Mitigation	\$ 4,820.67
RCO#14	Palm Island Force Main Replacement	\$ 56,894.96
RCO#15	Additional Water Main Valves	\$ 42,617.17
RCO#16	Clean and CCTV Existing Outfalls	\$ 24,645.00
RCO#17	Palm Ave. South Drainage Re-Design and Installation	\$ 465,343.62
RCO#18	Hibiscus Outfall Tree Accommodation	\$ 23,007.75
RCO#19	Hibiscus Island Additioanl Secondary Drainage/ Lowering Roads	\$ 197,055.36
RCO#20	Coconut Lane Underground Sleeves	\$ 157,172.40
RCO#21	Hibiscus Island Force Main Replacement	\$ 37,713.56
RCO#22	Hurricane Irma Impact	\$ 51,419.00
RCO#23	Additional General Conditions	\$ 431,309.22
Total Change Order #2		\$ <u>686,094.94</u>

The most significant changes included as part of Change Order No. 2 are the following:

1. RCO# 11 - Coconut Lane One-Way Redesign - After the construction plans were approved for the project, the Palm and Hibiscus Home Owners Association requested the conversion of the Coconut Lanes to a one-way roadway in order to accommodate the underground utilities equipment for the future franchise utility undergrounding of West Palm Island per Resolution No.2016-29643. In order to accommodate this request, the portion of the island had to be re-designed. This additional work includes additional design efforts. The impact to the schedule for this additional design effort is 70 days.
2. RCO#17- Palm Avenue South Re-Design and Relocation of Drainage System to Avoid Tree/Hedges Removal - The original project construction documents included the stormwater collection system along the south side of Palm Avenue to be installed in the swale area. The City of Miami Beach Commission voted on July 13, 2016, not to remove any tree/hedges located two or more feet behind the existing curb and gutter. The Design/Build Team re-designed and re-routed the storm water collection system to be constructed within the roadway and installed additional piping and drainage structures to accommodate the existing trees and hedges within the swales. This additional work includes the design,

labor and material associated with the shifting of the system to the roadway. The impact to the schedule for this additional work is 55 days.

3. RCO#19- Hibiscus Island Lowering Roadway Elevations and Additional Secondary Drainage - The original project construction documents for Hibiscus Island included the raising of the roadway at locations to an elevation higher than the 3.7' NAVD minimum City standards to minimize the restoration efforts and reduce the need for harmonization within private property. CIP requested that the Design/Build Team revise and re-design these affected areas. The new design included the lowering of the roadways and installing additional secondary drainage at these locations. This additional work includes the redesign of the hardscape plans, revision of the drainage modeling for Hibiscus Island, recalculation of the proposed swale grading, addition of collection structures in some areas, depiction of existing elevations, final design elevations and new proposed elevations. This additional work includes, re-design, labor and material associated with the lowering of the roadways and adding secondary drainage. The impact to the schedule for this additional work is 45 days.

4. RCO#20- Coconut Lane Underground Sleeves - The Homeowners Association informed the City about their future plans to underground the overhead utilities on the west side of Palm Island. In an effort to minimize the need of excavate the new constructed roadway CIP requested the installation of underground sleeves and conduits while building the North and South Coconut Lane streets. These sleeves were installed at strategic locations crossing the road from one side to the other in order to facilitate the future installation of FPL, ATT and ABB systems. This additional work includes labor and material associated with the installation of the underground sleeves. The impact to the schedule for this additional work is 35 days.

5. RCO #23- Additional general conditions (467 days x amount per day \$923.57 as per negotiated number).

General Conditions				
RCO No.	Work Description	Impact to Schedule (days)	Amount per Day	Total Amount
7	Additional Water Meters and Relocations	15	\$923.57	\$13,853.62
8	Fire Hydrant Relocation at 199 N. Coconut Lane	15	\$923.57	\$13,853.62
9	Fire Hydrant Relocation at 285 S. Hibiscus Dr.	15	\$923.57	\$13,853.62
10	Existing service Repair @ 39 Palm Avenue	12	\$923.57	\$11,082.89
11	Coconut Lane One-Way Redesign (Wade/Trim)	70	\$923.57	\$64,650.20
12	Palm Island Force Main Repair	15	\$923.57	\$13,853.62
13	Palm Island King Tide Mitigation	0	\$923.57	\$0.00
14	Palm Island Force Main Replacement	35	\$923.57	\$32,325.10
15	Additional Water Main Valves	20	\$923.57	\$18,471.49
16	Clean and CCTV Existing Outfalls	50	\$923.57	\$46,178.72
17	Palm Ave. South Drainage Re-Design and Installation	55	\$923.57	\$50,796.59
18	Hibiscus Outfall Tree Accommodation	15	\$923.57	\$13,853.62
19	Hibiscus Island Additional Secondary Drainage / Lowering Roads	45	\$923.57	\$41,560.85
20	Coconut Lane Underground Sleeves	35	\$923.57	\$32,325.10
21	Hibiscus Island Force Main Replacement	25	\$923.57	\$23,089.36
22	Hurricane Irma Impact	45	\$923.57	\$41,560.85
		467	Total	\$431,309.22

On December 26, 2018, **Amendment No. 4 (Change Order No. 3)**, was issued in the amount of \$1,900,000, for work associated with the design, permitting, installation, testing, start-up and certification of auxiliary power bi-fuel generator for the three (3) stormwater Pumps Stations.

On April 18, 2019, **Amendment No. 5 (Change Order No. 4)**, was issued in the amount of \$775,000 for costs associated with additional design, permitting and construction services including installation of a yard drain and connection to the City's drainage system, harmonization and restoration within the private property to its original or better condition as well as General Conditions Costs, General Allowance, Design Builders Fee and Specific Allowance for certain required tasks, which level of effort is unknown at this time.

On July 19, 2019, **Amendment No. 6 (Change Order No. 5)** was approved to include a credit in favor of the City in the amount of \$50,000 for the removal of a portion of landscaping scope not to be performed by Lanzo under this Agreement, the portion of landscape work also establishes a General Allowance in the amount of \$500,000 from the previously authorized Project contingency funds to be allocated towards future unforeseen tasks associated with the completion of this Project and as further set forth in the Agreement.

On September 11, 2019, pursuant to the additional scope required for the implementation of the new drainage directive (Resolution No. 2019-30683), the Mayor and the City Commission adopted Resolution No. 2019-30984 authorizing the City Manager to execute Amendment No. 7 in the amount of \$840,000 plus 84,000 City contingency for the design, permitting, construction and harmonization of additional private storm drain connections, inclusive of additional work on the previously approved properties, for a total of approximately 95 properties. This Amendment shall be subject and conditioned upon Mayor and City Commission's approval of the fiscal year 2020 Capital Budget pertaining to this project.

On September 24, 2019, **Amendment No. 7 (Change Order No. 6)** was approved in the amount of \$840,000 plus \$84,000 City contingency for additional scope required for the implementation of the new drainage directive, increasing the number of private drain connections and augmented the treatment requirements for previously approved properties for the design, permitting, construction and harmonization of additional private storm drain connections, inclusive of additional work on the previously approved properties, for a total of approximately 95 properties.

Lanzo Construction Co.	Date	Amount
Progressive Design & Build Agreement	18-Sep-14	\$ 599,464.00
Amendment #1	19-Nov-14	\$ 251,016.00
Amendment #2	14-Oct-15	\$ 73,240.00
Total Design Phase 1		\$ 923,720.00
		\$ 35,000,000.00
Amendment #3	14-Jan-16	\$ 1,500,000.00
Change Order No. 1	21-Jul-16	\$ 313,905.06
Change Order No. 2	30-Oct-18	\$ 686,094.94
Change Order No. 3		
Amendment #4	19-Dec-18	\$ 1,900,000.00
Change Order No. 4		
Amendment #5	25-Mar-19	\$ 775,000.00
Change Order 5		
Amendment #6	19-Jul-19	\$ (50,000.00)
Change Order 6		
Amendment #7	24-Sep-19	\$ 840,000.00
Total Construction Phase 2		\$ 40,965,000.00
Total Lanzo's Contract		\$ 41,888,720.00

Recommendations:

It is important that the Capital Improvement Projects office (CIP) implement aspects of best practices for managing projects, including the following recommendation intended to strengthen the City's ability to manage future projects and avoid the problems that drove up costs in Palm & Hibiscus project:

1. The City should have a better understanding of the intended project before starting the procurement process.
2. If the City's policies change, City staff should analyze and consider the impact (financial, design, time, etc.) of applying those changes to projects that are in the construction process already. The Commission could consider requiring the project manager to certify that any proposed change is essential to the success

of the project and provide realistic estimates of the estimated costs and impact on the project's schedule.

3. Making significant changes to a project's design criteria or construction plans after work has begun poses a significant risk to the success of a neighborhood infrastructure improvement project and should be avoided. To mitigate the risk of cost escalation caused by changes in a project's design criteria or construction plans the city can establish a formal mechanism to evaluate, document, and authorize any significant change that is proposed after a project's bid is issued.
4. The City could enhance its ability to provide oversight of CIP's capital improvement program by completing an annual Affordability Analysis based on current cost estimates and schedules for all stormwater drainage and neighborhood improvement projects. An Affordability Analysis would help decisionmakers determine if there is adequate funding to complete CIP's capital projects.