

## COMMITTEE MEMORANDUM

TO: Members of the Land Use and Sustainability Committee

FROM: Jimmy L. Morales, City Manager

DATE: May 6, 2020

SUBJECT: **DISCUSSION REGARDING; SITING OF THE STORMWATER PUMP STATION AND ABOVE GROUND COMPONENTS FOR THE WEST AVENUE NEIGHBORHOOD PROJECT.**

The purpose of this Memorandum is to update the Land Use and Sustainability (LUSC) Committee on the West Avenue Phase II Improvement Project.

During the January 18, 2020, LUSC meeting, staff was asked to return with additional information pertaining to the West Avenue Neighborhood Improvement Project. Since the Committee has been unable to convene, please find below the information prepared for presentation to LUSC for your use and reference.

### **DERM Permitting Requirements**

This project is being designed to collect and manage storm water from the West Avenue neighborhood. One of the requirements to obtain a permit from the Miami-Dade County Regulatory and Economic Resources Department (DRER), to discharge stormwater into the bay (Class II), is the inclusion of sufficient water treatment capacity. The project team has held multiple discussions and meetings with DRER to discuss project approach and proposed water quality treatment components. DRER has emphasized that although projects were previously permitted using mechanical treatment, future projects would not be permitted without retaining the first inch and a half of rainfall runoff. This involves additional design and construction effort, beyond what was identified in the Design Criteria Package (DCP), and a significant cost increase of several million dollars.

On April 22, 2020, the Mayor and City Commission approved a Change Order No. 5 to the design-build contract, for the design of additional water quality treatment for the West Avenue Neighborhood Improvement Project.

### **Harmonization of Private Properties**

This project impacts 178 properties, which results in 192 areas that require harmonization. Of these areas, the project team has developed harmonization plans for all 192 locations in preparation for meetings with the property owners. The team has presented 16 properties with proposed plans and received feedback. Additionally, the team has presented and discussed the project at multiple community and neighborhood meetings, including the West Avenue Neighborhood Association, North of Fifth Neighborhood Association, individual building associations and other meetings organized by the community. Commencing in December of 2019, the team has held open house meetings at the Office of Capital Improvement Projects every Friday, where anyone from the community was welcome to meet with the team for information or to provide feedback. Additionally, representatives of the West Avenue Neighborhood Association have been meeting with the team on a bi-weekly basis. Generally, community members have

expressed a concern over the potential costs which could be incurred by private properties to restore or rebuild private improvements affected by the project.

The DCP directs the Design/Builder (DB) to replace driveways and walkways with matching asphalt or concrete. In prior projects, in cases where existing driveways have been constructed using different materials, such as pavers, tiles, stamped concrete, etc., the DB was directed to replace it with concrete only, or coordinate with the property owner to determine if the existing material can be salvaged and re-used at the owner's expense. In addition, there are several other features which may be impacted by the harmonization and the road raising including, but not limited to, fences, gates, fire connections, railings, and landscaping. In prior projects, the removal and re-installation, or modifications, to these components were to be done at the owner's expense.

### **Private Property Drainage**

In addition to the challenges posed by the required harmonization, certain properties will need to address additional drainage requirements. The City of Miami Beach operates a citywide stormwater management system that collects, conveys, and disposes of stormwater runoff from public rights of way. The primary function of this system is to facilitate travel along thoroughfares while maintaining a safe and livable condition for the City's residents and visitors. Recently, the City has undertaken a significant capital program that upgrades the system to account for sea level rise and climate change.

During the development of its capital program, the City consulted numerous subject matter experts (including the Urban Land Institute) and developed a holistic stormwater management strategy - one that attenuates flooding while mimicking nature's water cycle. In addition, the team and community members received confirmation of the project goals and valuable feedback from the West Avenue Resilience Accelerator, a partnership between 100 Resilient Cities and the Center for Resilient Cities and Landscapes at Columbia University. The strategy provides the framework for a sustainable approach to stormwater management. It includes the raising of roadways to minimize sunny day flooding and incorporates green infrastructure that replenishes the freshwater lens and mitigates the transport of excessive nutrient loads into Biscayne Bay.

Therefore, to ensure that stakeholder concerns are properly addressed when implementing this strategy, the City has resolved (Resolution No. 2019-30683) to develop a comprehensive drainage policy for low lying residential properties that aligns with the overall stormwater management strategy.

The proposed administrative policy for residential/commercial property runoff and public drainage infrastructure, will endeavor to minimize the flood risk of residential properties while preserving a holistic stormwater management strategy. In order to accomplish this, the policy will promote the percolation of water via greenspaces and limits the use of direct connection to those properties, residential or commercial, that satisfy the stipulated conditions. Additionally, the policy will provide relief to vulnerable habitable spaces while allowing for water to stage in non-habitable areas.

### **Frequently Asked Questions (FAQ) Document**

In an effort to address concerns and questions raised by members of the community, the project team has drafted a Frequently Asked Questions (FAQ) informational flyer but cannot finalize this information until the drainage and harmonization policies are

completed and implemented as referenced above. These policies will direct the further development of this project.

Upon resolution of the harmonization and drainage policies, the project team is prepared to publish the informational flyer addressing frequently asked questions.

### **Siting of the Stormwater Pump Station and Above Ground Components**

During the March 2017 City Commission meeting, the Ric-Man Construction FL, Inc. (RCMF) design build team was awarded the contract for the West Avenue project.

The DCP and accompanying conceptual drawings provided the details of performance, location, capacity, and key elements of the Pump Station. For example, the stipulated required elevations of the electrical panels were 8.44 NAVD minimum and the DCP required screening of the control panels with an aesthetically pleasing enclosure. However, pursuant to the Urban Land Institute (ULI) recommendations and the City's overall resilience effort, the project scope was expanded to include additional elements. These elements were comprised of green infrastructure, stormwater system upgrades to meet a 10-year storm level of service, street-end enhancements for the neighborhood, auxiliary power generators, and increased water quality treatment capacity. The scope expansion resulted in a 120,000 gpm stormwater pump station with corresponding above ground control panels, a 1,250 kW auxiliary power generator and a FPL vault.

To better understand the site comparisons and selection criteria, it is important to clarify the composition of the above ground components. These are grouped into three main systems: pump station controls (approx. 30.5' L x 20.5' W x 13' H); auxiliary power generator (approx. 34' L x 14' W x 15' H); and a FPL Vault (approx. 34' L x 20' W x 13.1' H) (Exhibit A). The pump station controls house all the control and electrical panels required to operate the pump station. The generator provides auxiliary back up power for the pump station in the event of a power outage. Finally, the FPL vault houses the transformers and switchgear required by FPL in order to connect the pump station to their infrastructure and meet the power demands of the system.

During the course of the development of the project, eleven alternatives were analyzed for the location of the pump station, outfall, and above ground equipment, including the generator. These alternatives are illustrated in the attached map (Exhibit B) and summarized below. However, after careful review of all available options, and in accordance with the recommendation of the engineer of record (Exhibit C), the pump station at the Lincoln Road street end with the above ground components located at the median between Lincoln Court and Bay Road (Alternative 1) is the recommended alternative for the reasons listed below.

Alternative 1 – Pump Station at Lincoln Road street end with above ground structures at median between Bay Road and Lincoln Court (Exhibit D)

- Least intrusive to balconies
- Allows for additional green space at street end and improved streetscape from the pedestrian bridge to the waterfront (Exhibit E)
- The plant wall design with canopy cover concept that would create a living barrier to the roll-up to Lincoln Road roundabout or an architectural panel design similar to the pedestrian bridge on Collins Canal (Exhibit F). Both options would provide placemaking for the neighborhood

- At 200 feet from the pumps the location is a safe and efficient approach to maintenance and operation
- Allows for safe operation of pump station
- The Fire Department has provided clearance and there is no line of sight issues for vehicles
- The pump station access covers will be disguised within the promenade type atmosphere created in the roundabout
- There will be no obstructed views at the sea wall to the bay from the Lincoln Ct intersection facing west
- Sidewalks will be flush with the roadway from Bay Road to the roundabout and throughout Lincoln Court using pavers for the roadway and walkway areas
- Additional enhancements such as benches, sculptures, street art are possible
- Traffic calming west of Bay Road will occur enhancing the pedestrian experience and promoting a promenade environment for the residents

The following alternatives were evaluated and rejected for the reasons outlined below:

#### Alternative 1a – All components at Lincoln Road Roundabout

- Due to the upgrade in Lincoln Road Pump Station capacity and addition of a generator, views of the bay from the street end would be obstructed, in addition to significantly obstructing views for both buildings located at 1441 and 1450 Lincoln Road
- Conflict with the bay walk access
- Limits availability of street end for neighborhood placemaking as recommended by ULI

#### Alternative 1b- Generator relocated behind 1450 Lincoln Road, in parking lot

- Requires easement within 1450 Lincoln Road
- Permitting w/ FPL problematic for duct bank on private property
- Loss of private parking spaces
- Control Platform and FPL Vault still interfering with 1441/1450 Lincoln Road balconies and bay view from street end

#### Alternative 1c- Generator relocated to Lincoln Road, in Front of Lincoln West Towers

- Loss of private parking spaces in the right of way
- More than 700 feet from Lincoln Road Pump Station- additional costs
- Control Platform and FPL Vault still interfering with 1441/1450 Lincoln Road balconies and bay view from street end

#### Alternative 1d- Median Concept at Alton/ Lincoln Road

- Greater than 1,000 feet from Lincoln Road pump station- presents safety, maintenance and operational issues
- Control panels may increase in size
- Additional safety disconnects and elevated platforms will be necessary at the roundabout
- Will require FDOT approval
- If approved by FDOT, will require major intersection modifications
- Loss of public parking spaces in commercial area
- Potential loss of sidewalk café seating areas

Alternative 2 -Full Relocation of Pump Station and All Above Ground Components to City Parking Lot P-24 at 1671 West Avenue (adjacent to post office) With Discharge at Lincoln Road Street End

- Loss of public parking
- Location identified for future stormwater projects
- Addition of force main system to dissipator at Lincoln Road roundabout
- FPL Power distribution changes requiring reengineering — added costs and delays to the project

Alternative 2a- Full Relocation of Pump Station and All Above Ground Components to City Parking Lot P-24 with Discharge at Dade Canal and 17th Street

- Reduction in overall pumping capacity — would require demolition of existing pump station at 17th Street
- Loss of public parking
- Addition of force main system to 17th Street dissipator
- FPL power distribution changes requiring reengineering — added costs and delays to the project

Alternative 3- Full Relocation of Pump Station, Control Panels and FPL Vault to 17th Street; Generator at P-24, 1671 West Avenue

- Reduction in overall pumping capacity — would require demolition of existing pump station at 17th Street
- 17th St pump station needs to connect to Flamingo drainage basin - future project
- Loss of public parking
- FPL power distribution changes requiring reengineering — added costs and delays to the project
- Space constraints will result in regular maintenance occurring within the roadway, causing impacts to traffic at West Avenue and 17th Street intersection

Alternative 3a- Full Relocation of Pump Station, Control Panels and Generator to 17th Street; FPL Vault at P-24, 1671 West Avenue - Drop Down Dissipator

- Reduction in overall pumping capacity — would require demolition of existing pump station at 17th Street
- 17th Street pump station needs to connect to Flamingo drainage basin- future project
- Loss of public parking
- FPL power distribution changes requiring reengineering — added costs and delays to the project
- Space constraints will result in regular maintenance occurring within the roadway, causing impacts to traffic at West Avenue and 17th Street intersection

Alternative 4- Full relocation of Pump Station and All Above Ground Components to Parking Lot P-23 at 1631 West Avenue

- Loss of Public parking
- Location identified for future stormwater projects
- Addition of force main system to dissipator at Lincoln Road roundabout
- FPL power distribution changes requiring reengineering — added costs and delays to the project

## Alternative 5- Full Relocation of Pump Station and All Above Ground Components to Bay Road Street End at Dade Canal

- Reduced right of way creates space constraints
- Will require utility relocations — above and below ground
- Building vehicular access to 1674 Bay Road affected due to its close proximity to the street end and proposed pump station components

The Administration will present these options to LUSC and request that they forward a resolution to the City Commission, accepting the siting for the Lincoln Road pump station, including above ground components, as described in Alternative 1 (Exhibit D).

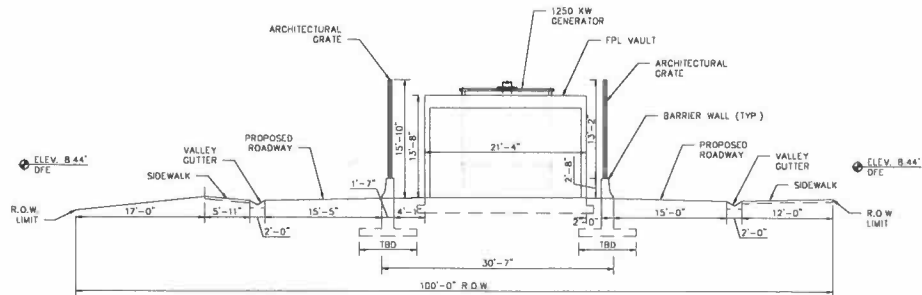
## **CONCLUSION**

1. The Administration has compiled policies defining the criteria under which private property inlets will be allowed to connect to the City's system, as well as the limits and responsibilities of harmonization work. The Administration is preparing an item to be presented at the LUSC which will clarify and affirm the City's harmonization and drainage policies for this project.
2. The Administration has directed staff to continue all public outreach efforts, including maintaining office hours and standing meetings. Upon resolution of the City's harmonization and drainage policies, the project team is prepared to update and publish the informational flyer addressing frequently asked questions.
3. Finally, the design build team has examined multiple site arrangements and locations for the pump station, equipment and generator for the Lincoln Road Pump Station. Staff will be seeking direction for the allocation of funding for the above-ground components, including beautification with the screening and additional landscaped area. The Administration is requesting for the LUSC to forward to the Commission, a recommendation to proceed with the design and installation of the pump station and associated above ground components as described in Alternative 1.

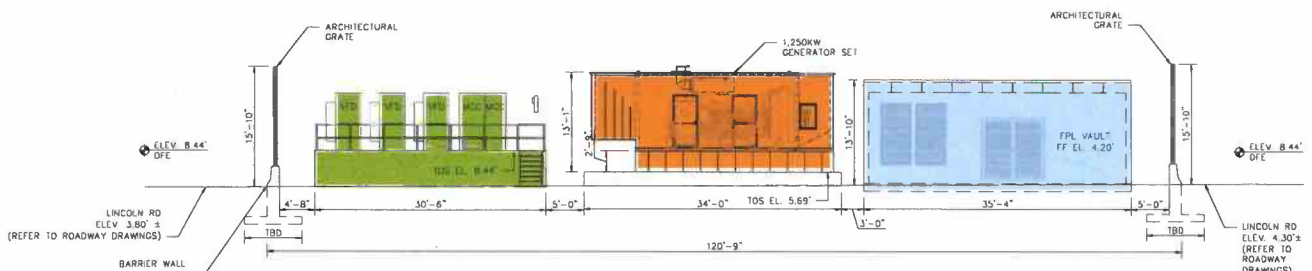
## **EXHIBITS**

Exhibit A- Elevation of above ground components  
Exhibit B- Map of evaluated pump station sites  
Exhibit C- Engineer of Record Recommendation  
Exhibit D- Alternative 1 pump station plan  
Exhibit E- Proposed street end improvements  
Exhibit F- Renderings of proposed screens

**EXHIBIT A**



**A SECTION**  
PS-C05 SCALE: 1"=8'



**B SECTION**  
PS-C05 SCALE: 1"=8'

**PERMIT SET**

**MIAMI BEACH**  
PUBLIC WORKS DEPARTMENT  
1700 CONVENTION CENTER DRIVE, MIAMI BEACH, FL 33138

**LINCOLN ROAD PUMP STATION**  
CIVIL SECTIONS

**ces**  
CONSULTANTS

CITY MANAGER JIMMY L. MORALES  
DIRECTOR ROY COLEY, P.E.  
CITY ENGINEER HEYSON PEREZ-JACOME, P.E.

ENG. OF RECORD J.A.C.  
DESIGN ENGINEER J.T.  
DRAWN BY J.T.  
CHECKER J.R.  
SCALE AS NOTED

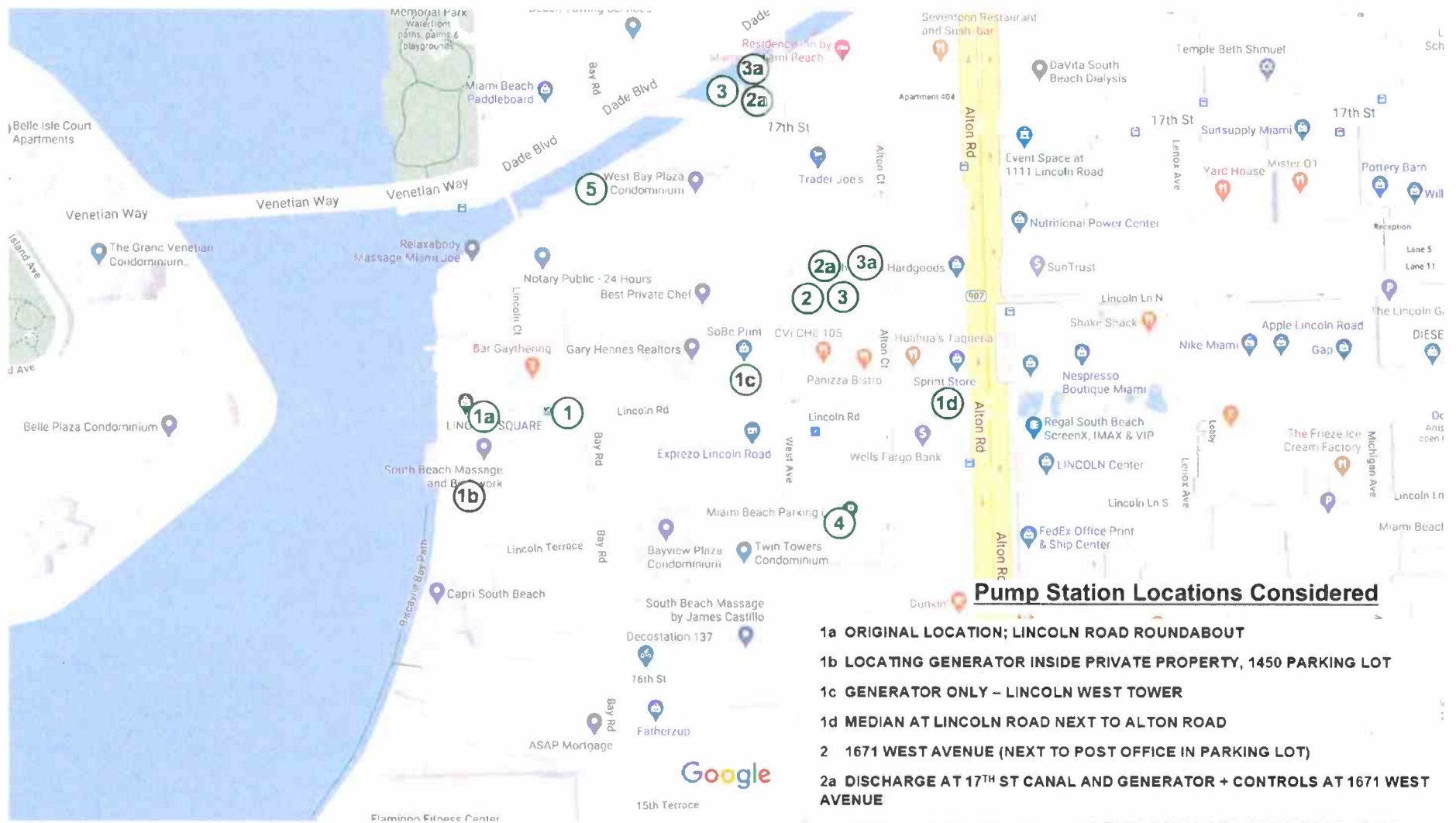
ENGINEER OF RECORD  
JOSE A. CARABALLA, P.E.  
FL REG. NO. 73084

NO.	DATE	REVISION
1	10/25/19	PERMIT SET
2	12/19/19	FOR SUBMITTAL REVIEW
3	12/19/19	FOR SUBMITTAL REVIEW
4	12/19/19	FOR SUBMITTAL REVIEW
5	12/19/19	FOR SUBMITTAL REVIEW

	File Name: PS-C06.dwg		
	Survey Reference		
	Field Book	Page	Work Order: 2019-091-18
APPRO. BY	Date: 10/25/19	Sheet	Drawing: PS-C06



# EXHIBIT B



## Pump Station Locations Considered

- 1a ORIGINAL LOCATION; LINCOLN ROAD ROUNDABOUT**
- 1b LOCATING GENERATOR INSIDE PRIVATE PROPERTY, 1450 PARKING LOT**
- 1c GENERATOR ONLY – LINCOLN WEST TOWER**
- 1d MEDIAN AT LINCOLN ROAD NEXT TO ALTON ROAD**
- 2 1671 WEST AVENUE (NEXT TO POST OFFICE IN PARKING LOT)**
- 2a DISCHARGE AT 17<sup>TH</sup> ST CANAL AND GENERATOR + CONTROLS AT 1671 WEST AVENUE**
- 3 PUMP STATION +CONTROLS AT 17<sup>TH</sup> ST. CANAL AND GENERATOR AT 1671 WEST AVENUE**
- 3a PUMP STATION+CONTROLS AT 17<sup>TH</sup> ST. WITH DROP DOWN DISSIPATOR**
- 4 PUMP STATION+CONTROLS, GENERATOR AND FPL TRANSFORMER AT 1631 WEST AVENUE PARKING LOT**
- 5 PUMP STATION+CONTROLS, GENERATOR AND FPL TRANSFORMER AT BAY ROAD**





February 24, 2020

**Michael Fischer**  
**Chief Operating Officer**  
**RIC-MAN Construction Florida, Inc.**

**Attention: Mr. Michael Fischer**

**Re: Design / Build Services for West Avenue Improvements Phase II North of 14<sup>th</sup> Street**  
**2016-091-K8**  
**Feasibility Analysis; Median Concept for Electrical Equipment and Generator Location**

Mr. Fischer:

The City of Miami Beach (CMB) is in the process of implementing a substantial program to improve flood protection and reduce existing flooding conditions in the West Avenue neighborhood. A critical program implementation component is the design of a 120,000 GPM stormwater pump station and the associated electrical components. The pump station will be located at the west street end of Lincoln Road. The location of the electrical equipment has not been solidified. The RMCF Design-Build Team has attempted to identify several possible locations, and we have narrowed the search down to two (2) locations. This short description is to discuss the challenges of locating the electrical equipment in the median at the intersection of Alton Road and Lincoln Road.

The residents of Lincoln Road between the Lincoln Road street end and West Avenue have requested that we analyze the intersection of Alton Road and Lincoln Road as a possible location for the electrical equipment. Our design team has looked at this intersection in depth, and we have met with FDOT representatives in an attempt to understand the feasibility of this location. In order to install the electrical equipment within the median at the intersection of Alton Road and Lincoln Road, the entire intersection will require a complete reconstruction. Due to the width required for the equipment, we will need to perform the following improvements

- 1) Remove the majority, if not all, parking along Lincoln Road from Alton Road to West Avenue.
- 2) Demolish the entire intersection of Alton Road and Lincoln Road.
- 3) Move the traffic signals in order to set with the new alignment.
- 4) Re-align the pedestrian crosswalks on the east and west side of Alton Road.
- 5) Adjust the timing of the traffic lights at this intersection.

FDOT will not advise if these adjustments are allowed within their roadway without a complete and permissible design present for the evaluation.



**Possible Issues with this Design**

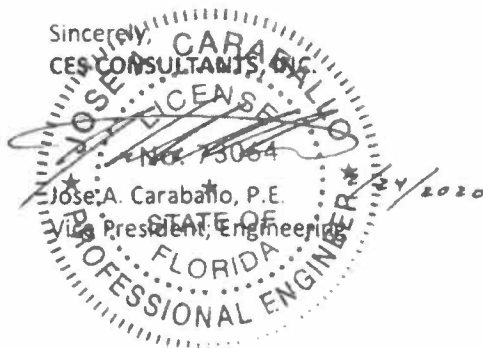
Due to the proximity of the existing buildings and the width of the existing roadway, there may be some minor issues with ADA accessibility. Additionally, the equipment is required to be at a certain height based on FEMA requirements. Since the intersection of Alton Road and Lincoln Road is approximately 2 feet lower than the intersection of Lincoln Road and Bay Road, We will need to increase the screen height by approximately 2 feet.

Finally, we have mentioned in many occasions setting the electrical equipment so far from the actual pump station may cause a health and safety issue with workers. The safest way to operate this station either in an emergency or during routine maintenance is by maintaining a close proximity between the electrical equipment and the pumps. This allows for operation by line of sight. As we increase the distance over 300 feet, it becomes more difficult and dangerous to operate. At over 1,000 feet, it will require specialty equipment, additional security features, such as pump disconnect switches at the street end, an increased number of workers per maintenance crew, and specialty training for all employees working on the maintenance of this pump station. CES as the Engineer of Record concludes that the location of the proposed Median between Lincoln Court and Bay Road is the most safe, efficient and cost effective location for this critical equipment and therefore highly recommends the City approve that location in lieu of the above detailed Alton Road option.

If you have any additional questions or require additional clarification, please do not hesitate to contact us.

Sincerely,

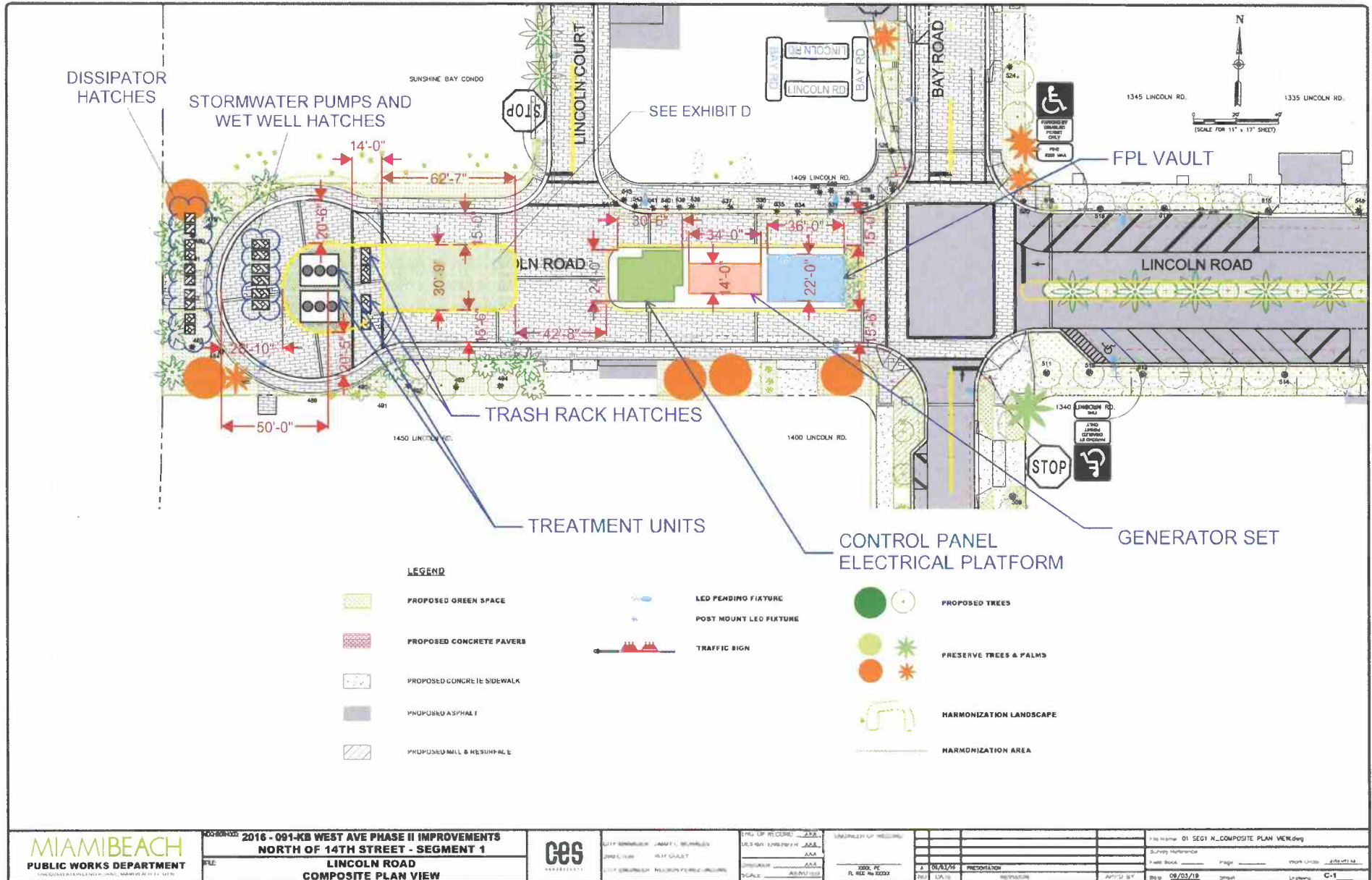
JOSE A. CARABALLO  
CES CONSULTANTS, INC.

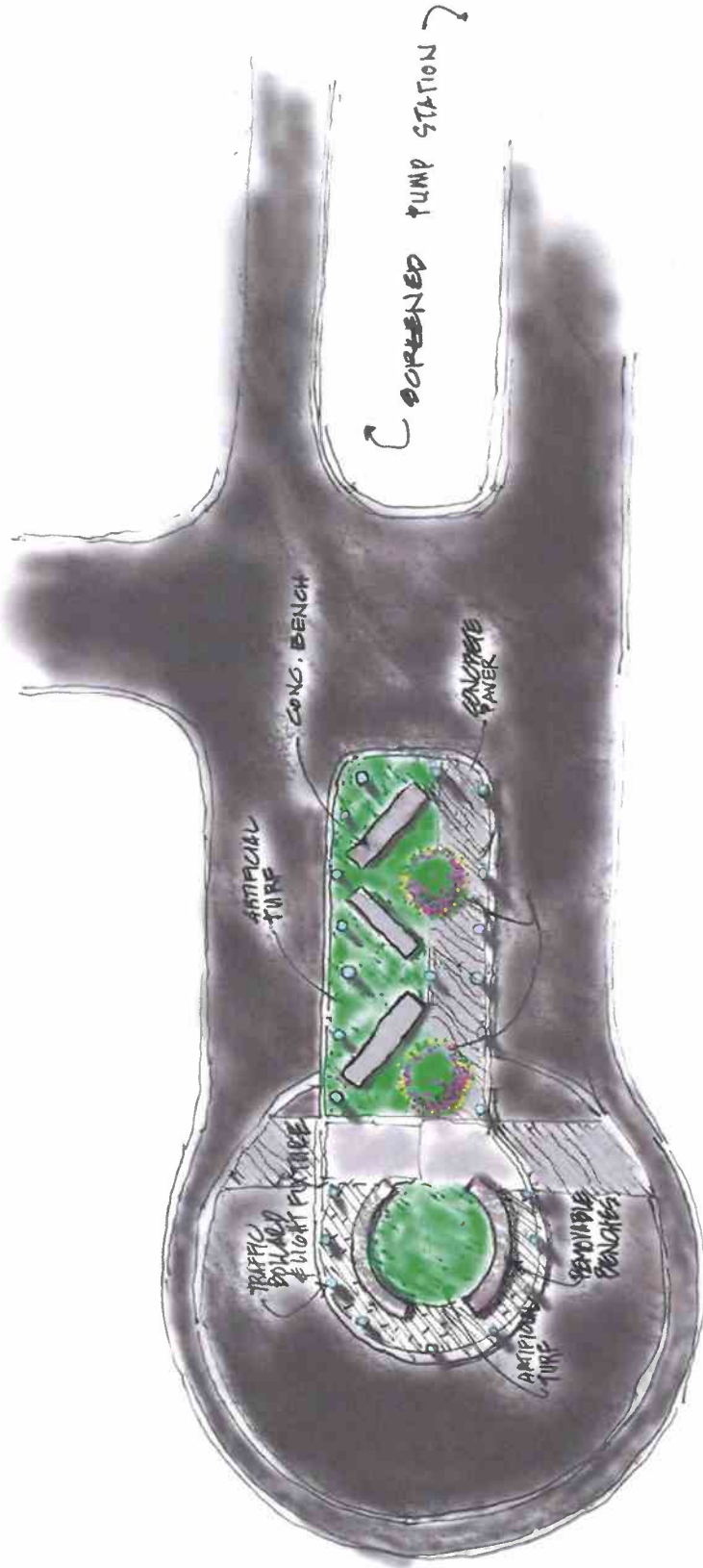


Jose A. Caraballo, P.E.

Vice President, Engineering

# EXHIBIT D





STREET END CONCEPT



WEST AVE PHASE II IMPROVEMENTS  
NORTH OF 14TH STREET



## STREET END CONCEPT SECTION

EXHIBIT F



LINCOLN ROAD FENCE ENCLOSURE

**PERMUY** Architecture



EXHIBIT F



LINCOLN ROAD FENCE ENCLOSURE

**PERMUY** Architecture

**MIAMI BEACH**  
PUBLIC WORKS DEPARTMENT  
1300 CONVENT ROAD, MIAMI BEACH, FL 33139

**WIC-MAN**  
CONSULTING, P.A., INC.  
MIAMI, FL 33139

**GCS**  
CONSULTANTS