

## WASTEWATER PUMP STATION NO.10 AND BELLE ISLES WATER BOOSTER PUMP STATION

NOTES:

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C-02	PROPOSED BYPASS

<b>2 - MECHANICAL</b>	
M-01	EXISTING CONDITIONS
M-02	PROPOSED MECHANICAL DEMOLIT
M-03	PROPOSED MECHANICAL PLAN & SECTI

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SWPPP-01	SWPPP- GENERAL NOTES
SWPPP-03	SWPPP

<b>3 - ARCHITECTURAL</b>	
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A-001	LOCATION & SITE PLAN
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A-004	DEMOLITION PLAN
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H-4	ELECTRICAL GENERATOR BUILDING HVAC DEMOLITION
H-5	ELECTRICAL GENERATOR BUILDING PROPOSED HVAC
H-6	HVAC EQUIPMENT SCHEDULES
H-7	HVAC STANDARD DETAILS
H-8	HVAC STANDARD DETAILS

**SCOPE OF WORK**

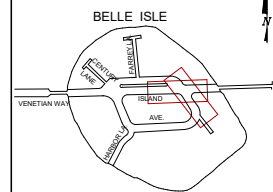
**PUMP STATION NO. 10 (WITHIN BUILDING ENCLOSURE)**

1. REMOVE EXISTING LOUVERS.
2. CUT SLAB PROJECTIONS AT LOUVER AREA AS INDICATED IN DRAWINGS.
3. REMOVE EXISTING GENERATOR.
4. ADD TEMPORARY GENERATOR
5. REMOVE EXISTING RAILING AND HANDRAIL AT STAIR AS INDICATED IN DRAWINGS.
6. PROVIDE AND INSTALL NEW GENERATOR.
7. PROVIDE AND INSTALL NEW LOUVERS.
8. PROVIDE AND INSTALL NEW RAILINGS AND HANDRAILS AT STAIR.
9. PROVIDE DEMOLITION PLANS.
10. REMOVE EXISTING FUEL TANK & PIPING & FURNISH AND INSTALL NEW TANK.

**WATER BOOSTER PUMP STATION (AT GRADE AND BELOW GRADE)**

1. REMOVE EXISTING ACCESS METAL HATCH.
2. REPAIR AND WATERPROOF EXISTING SLABS.
3. NEW LIGHTWEIGHT CONCRETE TOPPING SLAB WITH WATERPROOFING AT EXISTING BELOW GRADE CONCRETE SLAB.
4. PROVIDE NEW STEEL ACCESS HATCH.
5. WATERPROOFING AT GRADE SLAB & BELOW GRADE SLAB, ALL WALLS, CEILING, AND ALL PENETRATIONS.
6. PROVIDE NEW MECHANICAL EQUIPMENT AND METAL SUPPORTS ABOVE FLOOD ELEVATION LEVEL.
7. PROVIDE DEMOLITION PLANS.
8. REMOVE EXISTING SUMP PUMP & FURNISH AND INSTALL NEW PUMP WITH ALARM SYSTEM.

KEY PLAN (NOT TO SCALE):



P.E. SEAL:

**90% SUBMITTAL - NOT FOR CONSTRUCTION**

**MIAMI BEACH**  
PUBLIC WORKS DEPARTMENT  
1700 CONVENTION CENTER DRIVE, MIAMI BEACH, FL 33139

CITY MANAGER: ERIC CARPENTER  
DIRECTOR: JAY J. FINK, P.E.  
CITY ENGINEER: CRISTINA ORTEGA CASTINEIRAS, P.E.

NO.	DATE	REVISION	APPD. BY
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3000 SW 152ND AVE  
SUITE 200  
MIAMI, FL 33187  
TEL: 305-443-8888  
WWW.CESCONSULTANTS.COM  
CORPORATION OF  
FLORIDA REG. NO. 0011

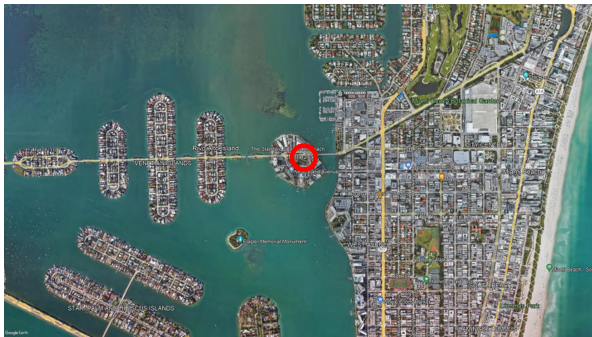
ENGINEER OF RECORD:  
**JOSE A. CARABALLO**  
PROFESSIONAL ENGINEER  
P.E. NO. 73064

ENGINEER OF RECORD:  
DESIGN ENGINEER:  
DRAWN BY:  
CHECKER:  
SCALE: AS NOTED

NEIGHBORHOOD: **BELLE ISLE**  
TITLE: **COVER**

File Name:  
Survey Reference:  
Field Book: N/A Page: N/A Work Order: N/A  
Date: 2025.05.07 Sheet:      of      Drawing: A-000

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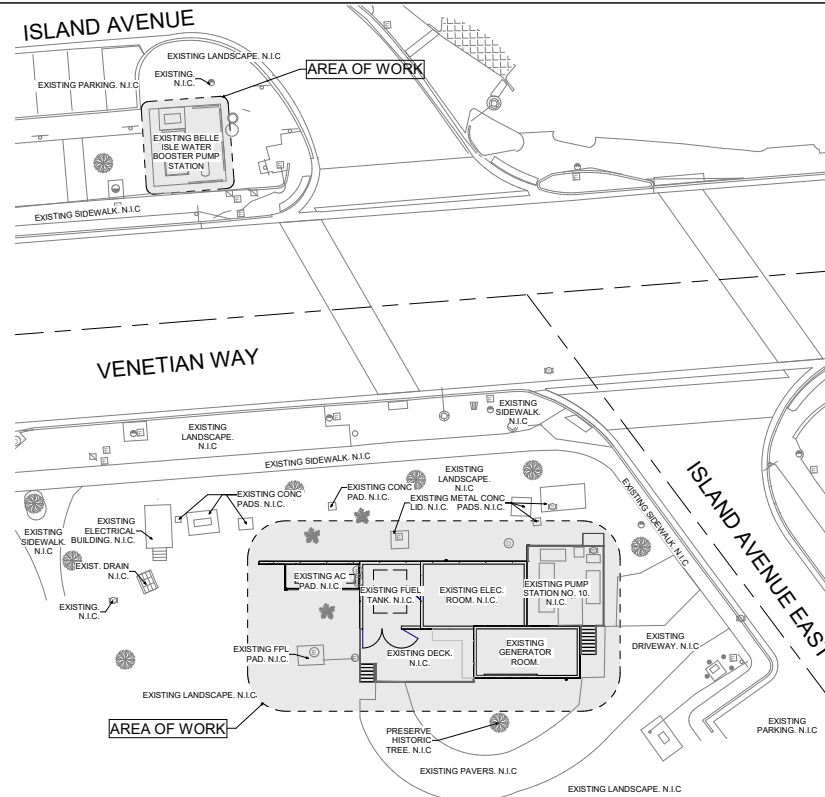
VICINITY MAP



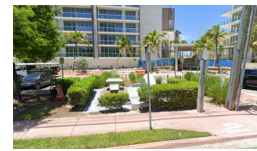
LOCATION



KEYMAP OF EXISTING CONDITIONS



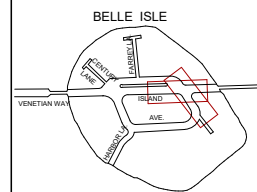
SITE PLAN



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NOTES:

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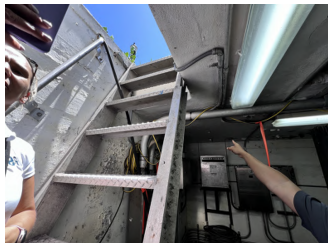
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DESIGN ENGINEER:  
DRAWN BY:  
CHECKER:  
SCALE: AS NOTED

NEIGHBORHOOD:  
**BELLE ISLE**  
TITLE:  
LOCATION & SITE PLAN

File Name:  
Survey Reference:  
Field Book: *N/A* Page: *N/A* Work Order: *N/A*  
Date: 2025.05.07 Sheet: *of* Drawing: *A-001*

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**WATER BOOSTER**

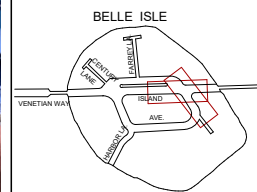


NOTES:

**PUMP STATION**



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1901 SW 154TH AVE  
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MIAMI, FL 33187  
TEL: 305-441-4833  
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ENGINEER OF RECORD:  
JOSE A. CARABALLO  
PROFESSIONAL ENGINEER  
P.E. NO. 73064

ENGINEER OF RECORD:  
DESIGN ENGINEER:  
DRAWN BY:  
CHECKER:  
SCALE: AS NOTED

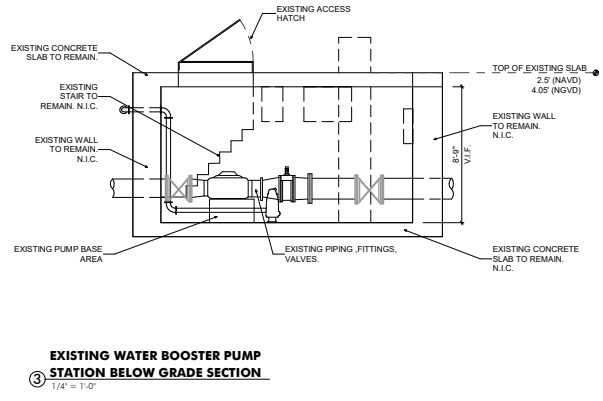
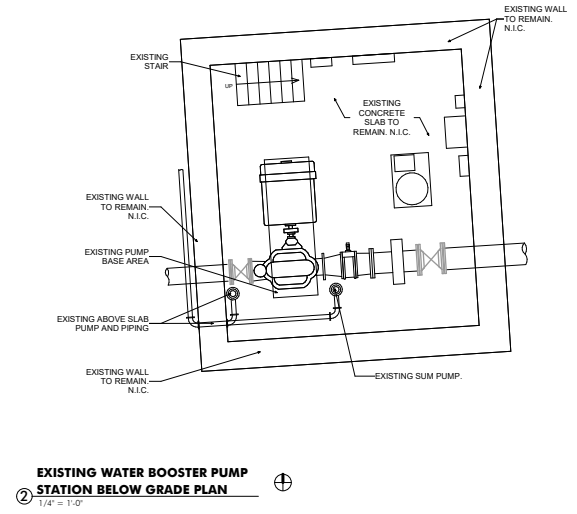
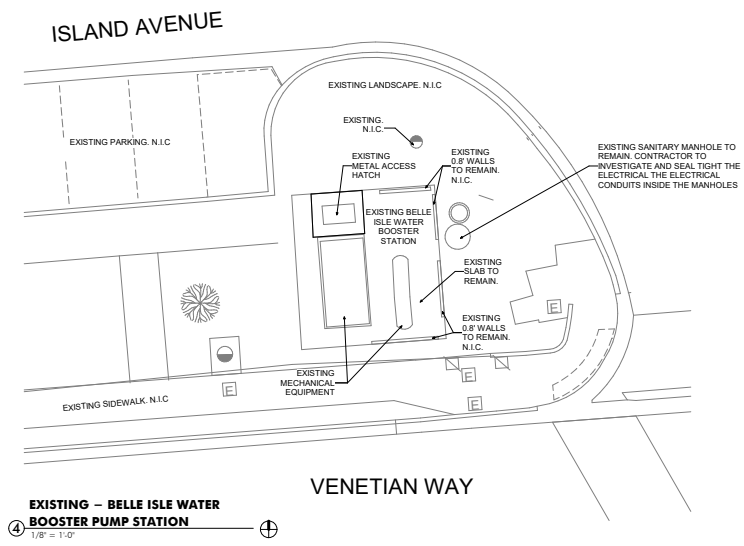
NEIGHBORHOOD:

BELLE ISLE

TITLE:  
EXISTING PICTURES

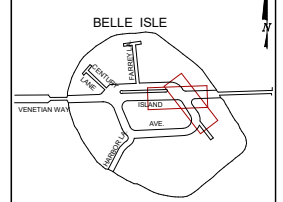
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Date: 2025.05.07 Sheet: of Drawing: A-002

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CITY ENGINEER: CRISTINA ORTEGA CASTINEIRAS, P.E.

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CONSULTANTS  
400 SW 14TH AVE  
SUITE 100  
MIAMI BEACH, FL 33139  
305-441-4833  
www.gesconsultants.com  
CORPORATE: 90%  
AUTHORIZATION: 90%  
9011

ENGINEER OF RECORD:  
JOSE A. CARABALLO  
PROFESSIONAL ENGINEER  
P.E. NO. 73064

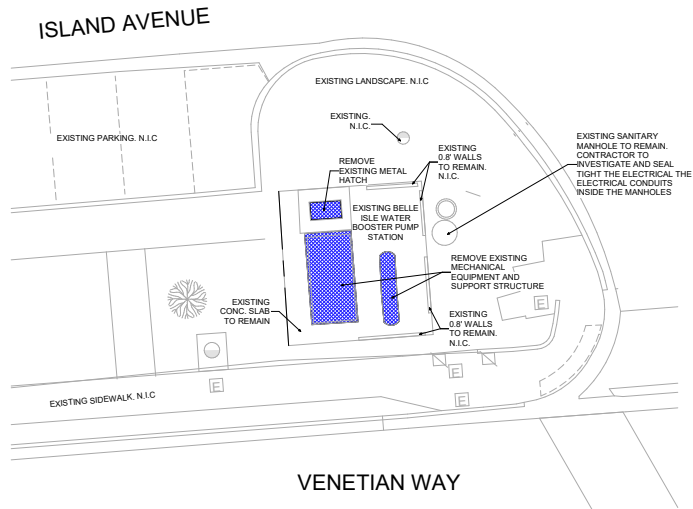
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SCALE: AS NOTED

NEIGHBORHOOD: **BELLE ISLE**

TITLE: **EXISTING WATER BOOSTER PUMP STATION**

File Name: \_\_\_\_\_  
Survey Reference: \_\_\_\_\_  
Field Book: N/A Page: N/A Work Order: N/A  
Date: 2025.05.07 Sheet: of Drawing: A-003

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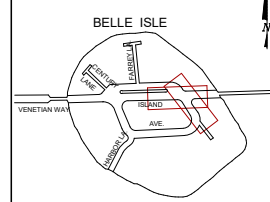
**DEMO PLAN - EXISTING BELLE ISLE WATER BOOSTER PUMP STATION**  
 ① 1/8" = 1'-0"

**DEMOLITION NOTES**

- CONTRACTOR SHALL SUBMIT A SCHEDULE INDICATING PROPOSED SEQUENCE OF OPERATIONS FOR SELECTIVE DEMOLITION WORK TO OWNER'S REPRESENTATIVE AND ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO START OF WORK. INCLUDING COORDINATION FOR SHUTOFF, CAPPING, AND CONTINUATION OF UTILITY SERVICES AS REQUIRED, TOGETHER WITH DETAILS FOR DUST CONTROL PROTECTION.
- DAMAGES: PROMPTLY REPAIR DAMAGES CAUSED TO ADJACENT FACILITIES BY DEMOLITION WORK.
- MAINTAIN EXISTING BUILDING SYSTEMS/UTILITIES INDICATED TO REMAIN IN SERVICE AND PROTECT THEM AGAINST DAMAGE DURING DEMOLITION OPERATIONS. MAINTAIN FIRE PROTECTION SERVICES DURING SELECTIVE DEMOLITION OPERATIONS.
- IF UNANTICIPATED MECHANICAL, ELECTRICAL, OR STRUCTURAL ELEMENTS THAT CONFLICT WITH INTENDED FUNCTION OR DESIGN ARE ENCOUNTERED, INVESTIGATE AND MEASURE BOTH NATURE AND EXTENT OF THE CONFLICT. SUBMIT REPORT TO OWNER'S REPRESENTATIVE IN WRITTEN, ACCURATE DETAIL. PENDING RECEIPT OF DIRECTIVE FROM OWNER'S REPRESENTATIVE, REARRANGE SELECTIVE DEMOLITION SCHEDULE AS NECESSARY TO CONTINUE OVERALL JOB PROGRESS WITHOUT UNDUE DELAY.
- REMOVE FROM THE PROJECT SITE ON A REGULAR BASIS ALL DEBRIS, RUBBISH AND OTHER MATERIALS RESULTING FROM DEMOLITION OPERATIONS. TRANSPORT AND LEGALLY DISPOSE OFF-SITE.
- ALL DEMOLISHED MATERIAL TO BE REMOVED DAILY FROM CONSTRUCTION AREA IN CLOSED CONTAINERS, OR CLOSED TRASH CHUTES TO DUMPSTER.
- ALL ITEMS NOT MARKED TO BE DEMOLISHED ARE EXISTING TO REMAIN. CONTRACTOR RESPONSIBLE FOR PRESERVING THE EXISTING CONDITIONS OF THESE ITEMS.
- WHERE EXISTING DOORS AND HARDWARE ARE IDENTIFIED TO BE REMOVED, COORDINATE WITH THE CITY FOR DISPOSITION OF THESE ITEMS.
- REFER TO ELECTRICAL, PLUMBING AND FIRE PROTECTION PLANS FOR ADDITIONAL DEMOLITION NOTES.

NOTES:

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ENGINEER OF RECORD:  
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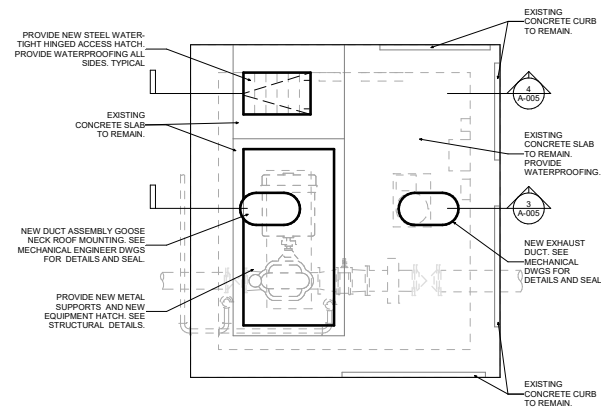
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 DESIGN ENGINEER: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 CHECKER: \_\_\_\_\_  
 SCALE: AS NOTED

NEIGHBORHOOD: BELLE ISLE

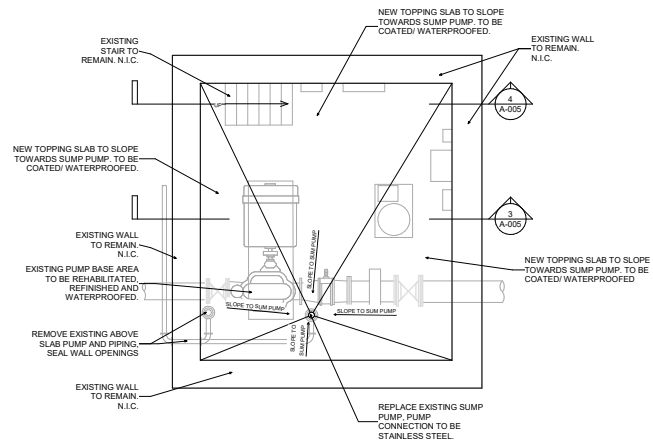
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File Name: \_\_\_\_\_  
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 Date: 2025.05.07 Sheet: \_\_\_\_\_ of \_\_\_\_\_ Drawing: A-004

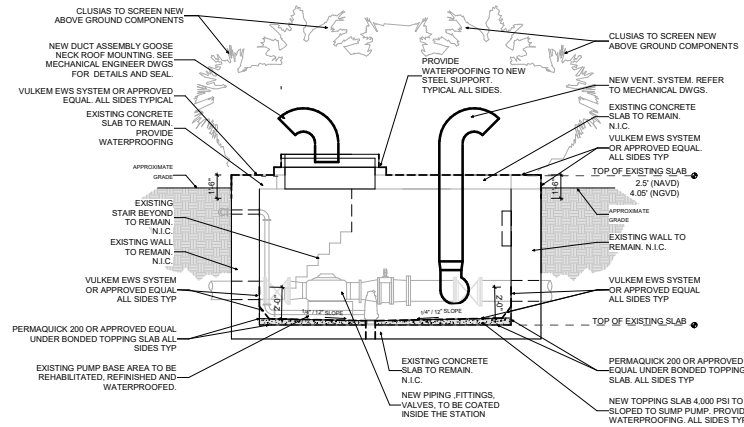
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**EXISTING WATER BOOSTER PUMP STATION - RENOVATION PLAN**  
 ④ 1/4" = 1'-0"

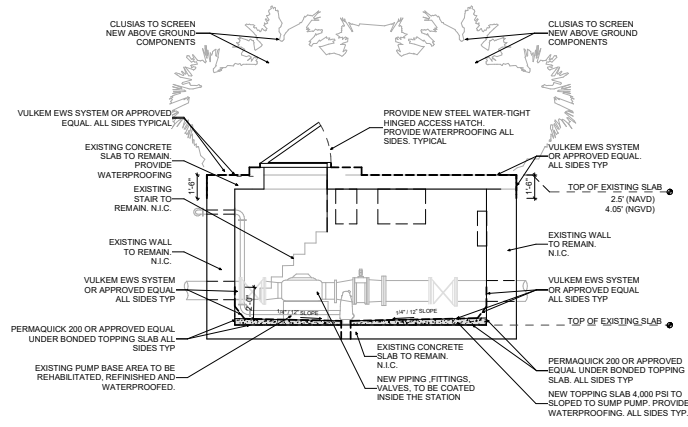


**EXISTING WATER BOOSTER PUMP STATION BELOW GRADE RENOVATION PLAN**  
 ② 1/4" = 1'-0"



**EXISTING WATER BOOSTER PUMP STATION BELOW GRADE RENOVATION THROUGH VENTS**  
 ① 1/4" = 1'-0"

NOTE: BASE FLOOD ELEVATION - AE 7 NAVD

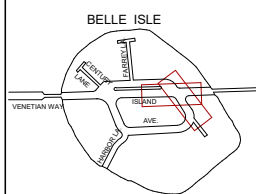


**EXISTING WATER BOOSTER PUMP STATION BELOW GRADE RENOVATION THROUGH VENTS**  
 ③ 1/4" = 1'-0"

NOTE: BASE FLOOD ELEVATION - AE 7 NAVD

NOTES:

KEY PLAN (NOT TO SCALE):



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 PUBLIC WORKS DEPARTMENT  
 1700 CONVENTION CENTER DRIVE, MIAMI BEACH, FL 33139

CITY MANAGER: ERIC CARPENTER  
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 CITY ENGINEER: CRISTINA ORTEGA CASTINEIRAS, P.E.

NO.	DATE	REVISION	APPD. BY
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**GES**  
 CONSULTANTS

PROF. OF ARCH. AND  
 REGISTERED. P.E., FL. 35077  
 1000 N.W. 107th AVE., SUITE 100  
 MIAMI, FL 33187  
 WWW.GESCONSULTANTS.COM  
 AUTHORIZATION NO. 9811

ENGINEER OF RECORD:  
 JOSE A. CARABALLO  
 PROFESSIONAL ENGINEER  
 P.E. NO. 73064

ENGINEER OF RECORD:  
 DESIGN ENGINEER:  
 DRAWN BY:  
 CHECKER:  
 SCALE: AS NOTED.

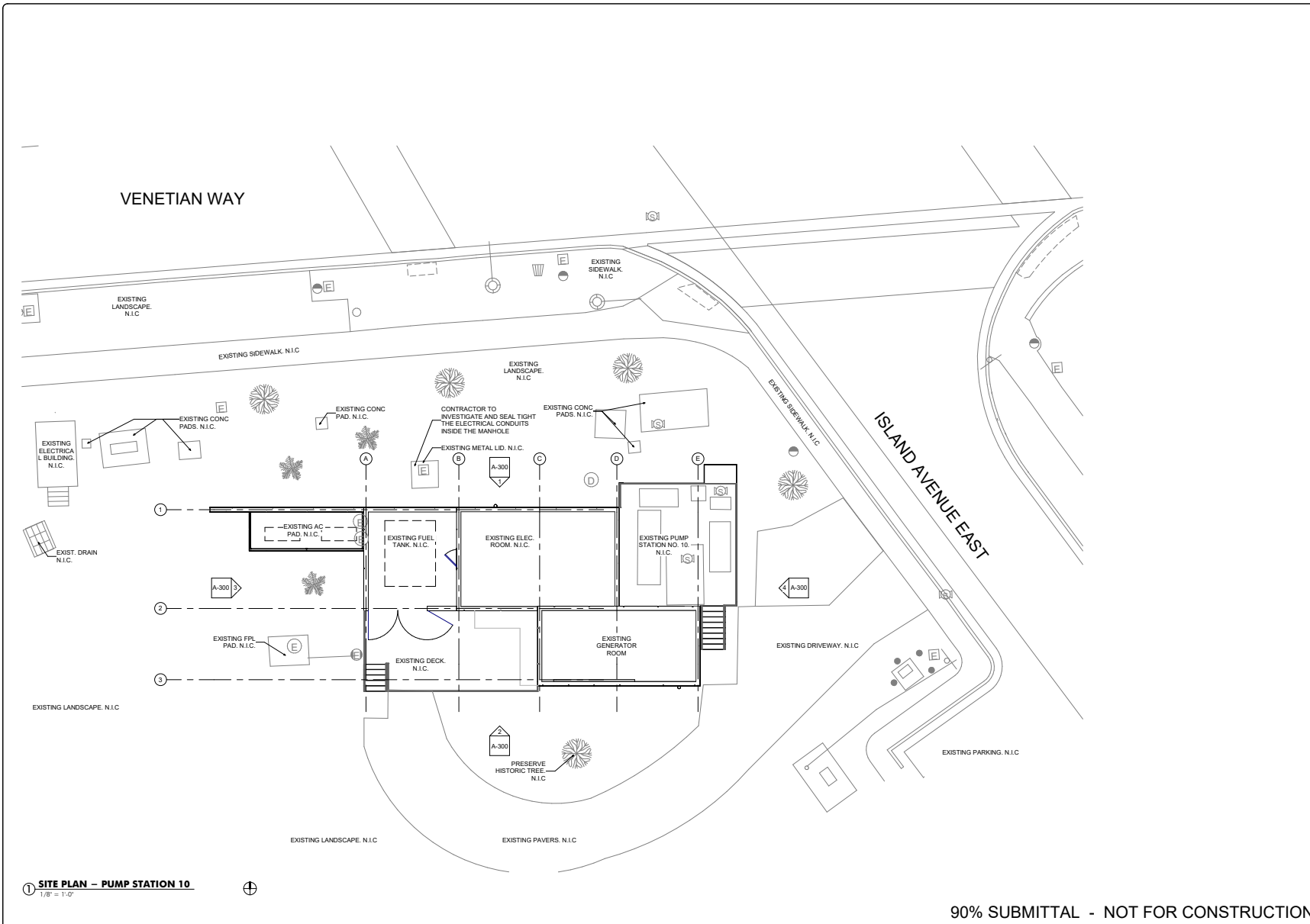
NEIGHBORHOOD:

BELLE ISLE

TITLE:  
 EXISTING WATER BOOSTER PUMP STATION  
 RENOVATION

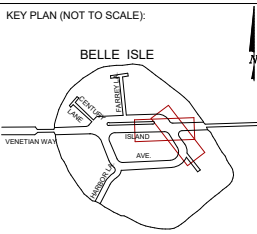
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 Date: 2025.05.07 Sheet: of Drawing: A-005

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① SITE PLAN - PUMP STATION 10  
1/8" = 1'-0"

NOTES:



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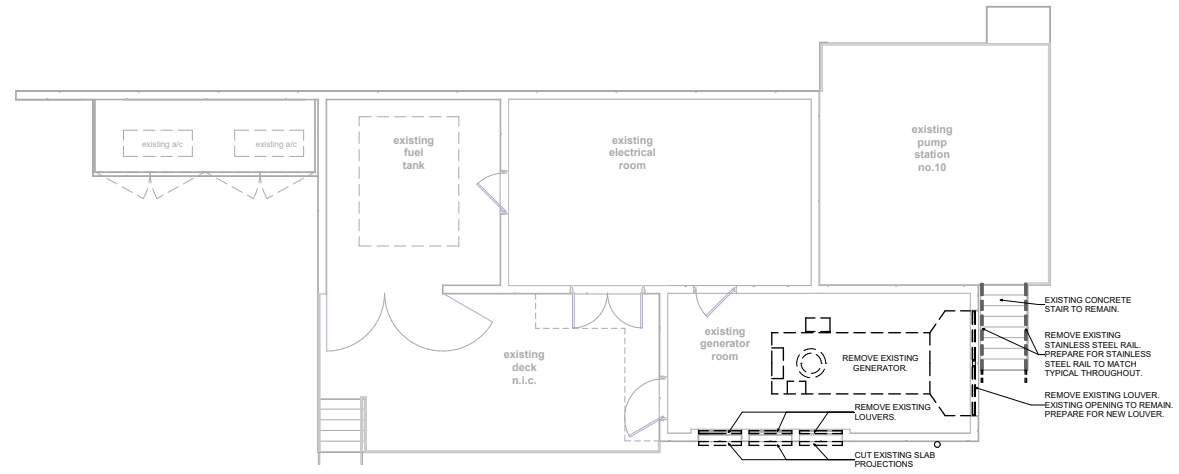
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CHECKER:  
SCALE: AS NOTED

NEIGHBORHOOD: BELLE ISLE  
TITLE: PUMP STATION NO. 10 - SITE PLAN

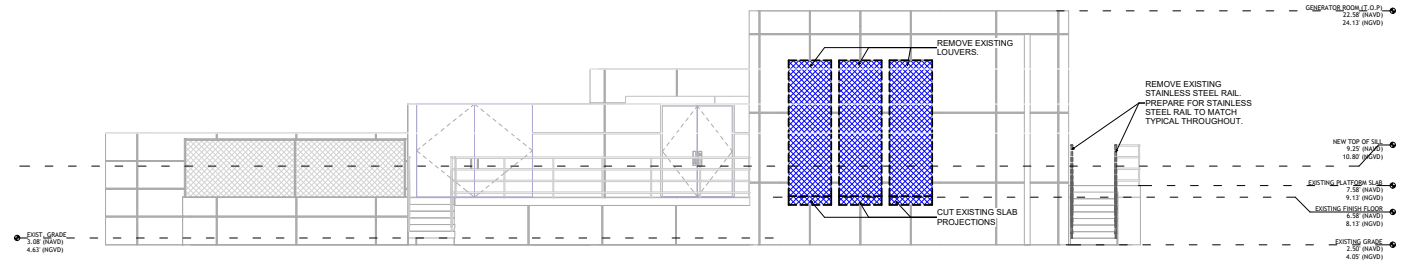
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Date: 2025.05.07 Sheet: of Drawing: A-008

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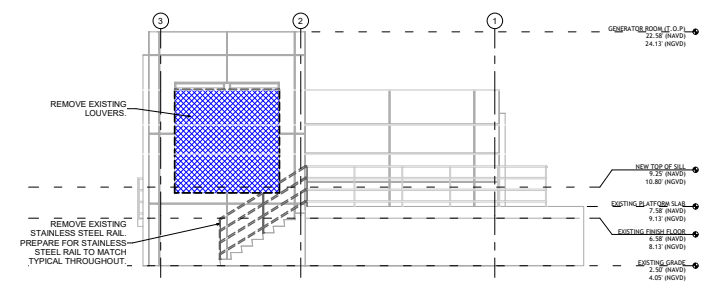
1 DEMOLITION PLAN  
3/16" = 1'-0"



2 DEMOLITION - SOUTH ELEVATION  
3/16" = 1'-0"



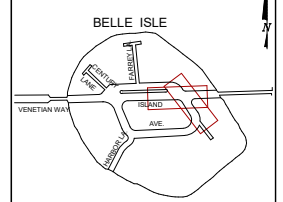
3 DEMOLITION - EAST ELEVATION  
3/16" = 1'-0"



NOTES:  
SECTION 3303  
DEMOLITION

- 3301 Construction documents.
- 3302 Construction documents and a schedule for demolition shall be submitted where required by the building official. Where such information is required, no work shall be done until such construction documents or schedule, as such, are approved.
- 3303 Protection of adjacent property.
- 3304 The work of demolishing any building shall not be commenced until protection is in place as required by the chapter.
- 3305 Water accumulation.
- 3306 Protection shall be made to prevent the accumulation of water or damage to any foundations on the premises or the adjoining property.
- 3307 All construction for safety connections shall be discontinued and repaired in accordance with the approved rules and the requirements of the applicable governing authority.
- 3308 The safety during demolition shall be during demolition shall comply with the applicable requirements of the code and the applicable provisions of the Florida Fire Prevention Code.
- 3309 Excavation and fill Excavation and fill for buildings and structures shall be constructed or protected so as not to endanger the property. Shores and cohes shall be removed from the wall to a depth of not less than 12 inches (305 mm) below the surface of the ground in the area to be occupied by the building. Wood forms that have been used in placing concrete, in the ground or on concrete foundations shall and the ground, shall be removed before a building is occupied or used for any purpose. Before completion, loose or casual wood shall be removed from direct contact with the ground under the building.
- 3310 1.1 Slope into ditches for pavement shall be not steeper than one unit vertical to two units horizontal (20 percent slope). Cut slopes for permanent excavations shall be not steeper than one unit vertical to two units horizontal (20 percent slope). Excavation from the breaking formation for cut slopes shall be permitted only upon the presentation of a soil investigation report acceptable to the building official.
- 3310 1.2 Surcharge for fill or other surcharge loads shall be placed adjacent to any building or structure unless such building or structure is capable of supporting the additional loads caused by the surcharge. Existing footings or foundations that can be affected by any excavation shall be underpinned adequately or otherwise protected against settlement and shall be protected against lateral movement.
- 3310 1.3 Footings on adjacent slopes For footings on adjacent slopes, see Chapter 10.
- 3310 1.4 Fill retaining foundations shall be used to support the foundations of any building or structure shall comply with Section 1804.6.
- 3305.1 Facilities required Sanitary facilities shall be provided during construction, remodeling or demolition activities in accordance with the Florida Building Code, Plumbing.
- 3306 Protection required Pedestrians shall be protected during construction, remodeling and demolition activities as required by the chapter and Table 3306.1. Signs shall be provided in direct protection traffic.
- 3306.2 Walkways A walkway shall be provided for pedestrian travel in front of every construction and demolition site unless the applicable governing authority authorizes the site work to be limited or closed. A walkway shall be provided for pedestrian travel that leads from a building entrance or exit of an occupied structure to a public way. Walkways shall be of sufficient width to accommodate the pedestrian traffic, but in no case shall be less than 4 feet (1219 mm) in width. Walkways shall be provided with a durable walking surface. Walkways shall be accessible in accordance with Chapter 11 and shall be designed to support all imposed loads and in no case shall the design live load be less than 100 pounds per square foot (4.79 kN/m²).
- 3307 Protection required Adjoining public and private property shall be protected from damage during construction, remodeling and demolition work. Protection shall be provided for footings, foundations, party walls, chimneys, skylights and roofs. Provisions shall be made to control water runoff and erosion during construction or demolition activities. The owner, contractor or contractor-in-charge shall provide written notice to the owner of adjoining buildings advising them that the excavation is to be made and that the adjoining buildings should be protected. Such notification shall be delivered not less than 10 days prior to the scheduled starting date of the excavation.
- 3307.2 Excavation retention systems. Where a retention system is used to provide support of an excavation for protection of adjacent structures, the system shall conform to the requirements in Section 3307.2.1 through 3307.2.3.
- 3307.2.1 Excavation retention system design. Excavation retention systems shall be designed by a registered design professional to provide vertical and lateral support.
- 3307.2.2 Excavation retention system monitoring. The retention system design shall include requirements for monitoring of the system and adjacent structures for horizontal and vertical movement.
- 3307.2.3 Retention system removal. Elements of the system shall only be removed or discontinued when adequate replacement supports are provided by the contractor. Removal or discontinuing shall be performed in such a manner that protects the adjacent property.

KEY PLAN (NOT TO SCALE):

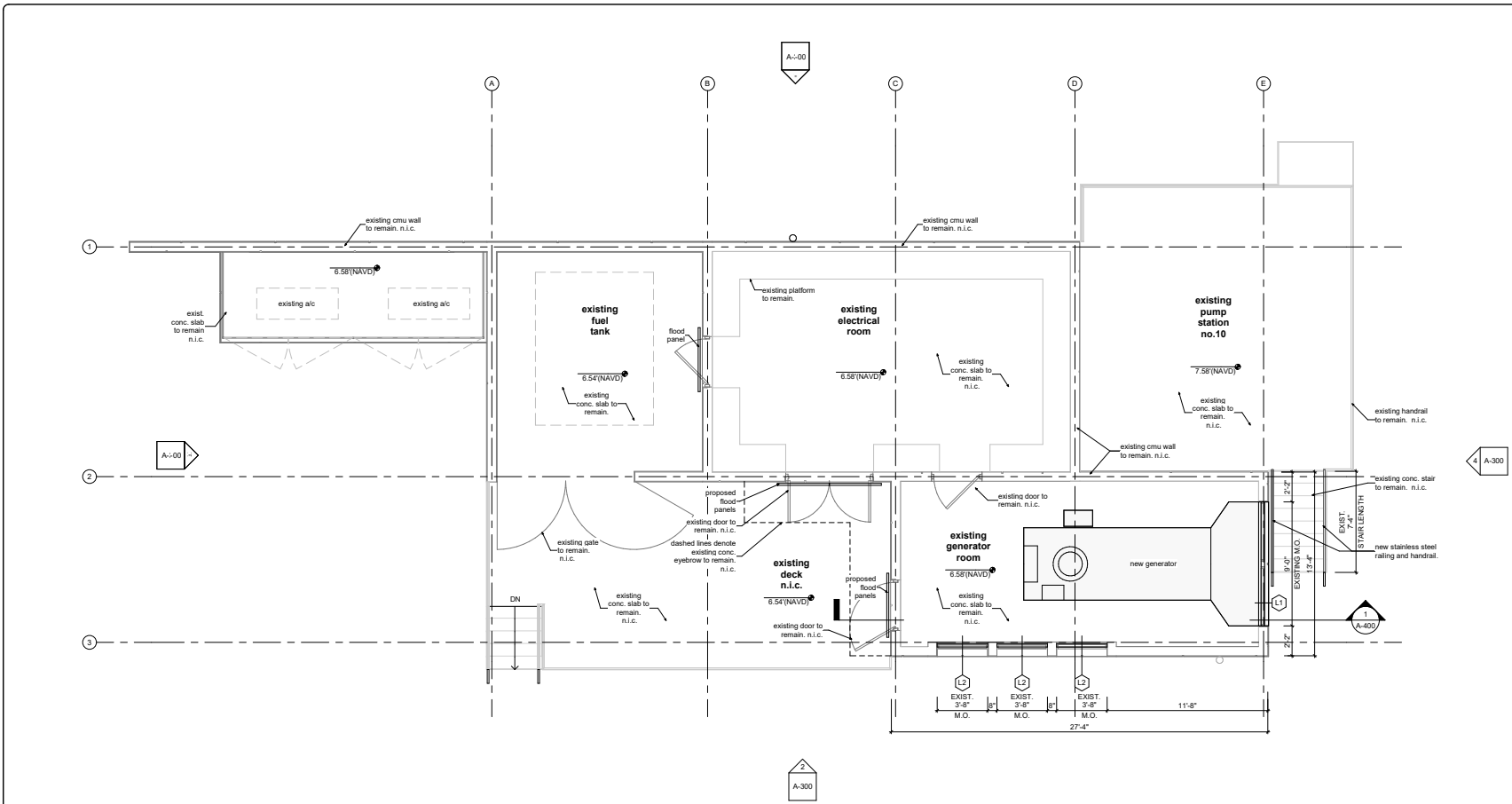


P.E. SEAL:

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<p><b>MIAMI BEACH</b> PUBLIC WORKS DEPARTMENT 1700 CONVENTION CENTER DRIVE, MIAMI BEACH, FL 33139</p>	CITY MANAGER: ERIC CARPENTER DIRECTOR: JAY J. FINK, P.E. CITY ENGINEER: CRISTINA ORTEGA CASTINEIRAS, P.E.	5 4 3 2 1	NO. DATE REVISION APPD. BY		4000 SW 143RD AVE SUITE 100 MIAMI, FL 33187 TEL: 305-442-4433 WWW.GESCONSULTANTS.COM CORPORATION: 07 AUTHORIZATION NO.: 9811	ENGINEER OF RECORD: JOSE A. CARABALLO PROFESSIONAL ENGINEER P.E. NO. 73064	ENGINEER OF RECORD: DESIGN ENGINEER: DRAWN BY: CHECKER: SCALE: AS NOTED	NEIGHBORHOOD: BELLE ISLE  TITLE: PUMP STATION NO. 10 - DEMOLITION	File Name: Survey Reference: Field Book: N/A Page: N/A Work Order: N/A Date: 2025.05.07 Sheet: of Drawing: A-007

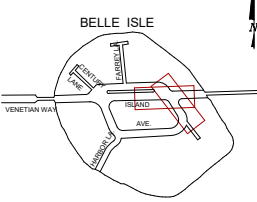
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1 FLOOR PLAN  
1/4" = 1'-0"

NOTES:

KEY PLAN (NOT TO SCALE):



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PUBLIC WORKS DEPARTMENT  
1700 CONVENTION CENTER DRIVE, MIAMI BEACH, FL 33139

CITY MANAGER: ERIC CARPENTER  
DIRECTOR: JAY J. FINK, P.E.  
CITY ENGINEER: CRISTINA ORTEGA CASTINEIRAS, P.E.

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ENGINEER OF RECORD:  
JOSE A. CARABALLO  
PROFESSIONAL ENGINEER  
P.E. NO. 73064

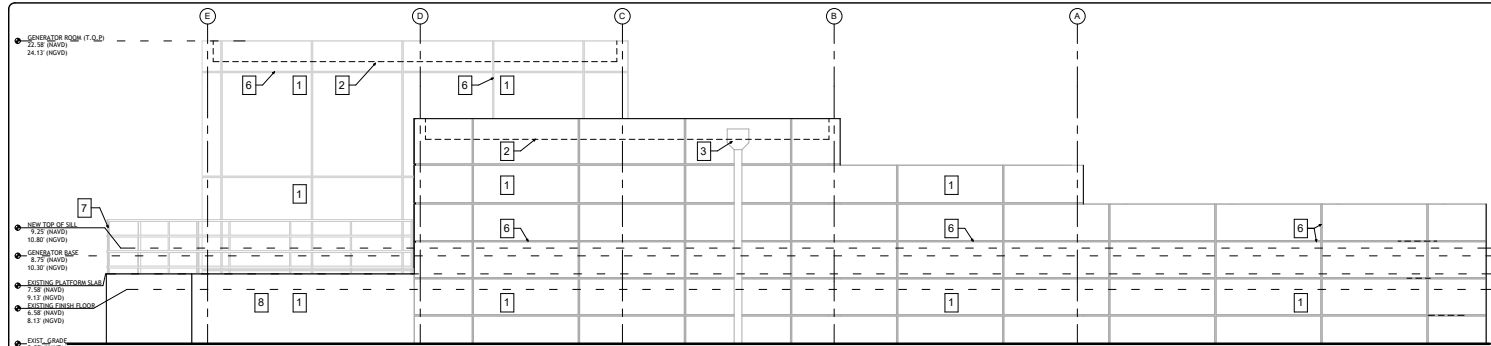
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DRAWN BY:  
CHECKER:  
SCALE: AS NOTED

NEIGHBORHOOD: BELLE ISLE

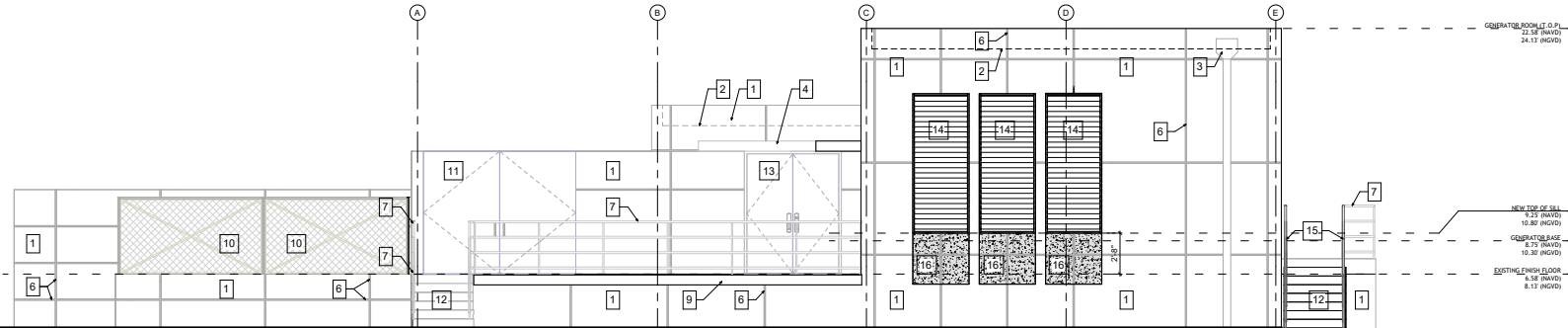
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Survey Reference:  
Field Book: N/A Page: N/A Work Order: N/A  
Date: 2025.05.07 Sheet: of Drawing: A-101

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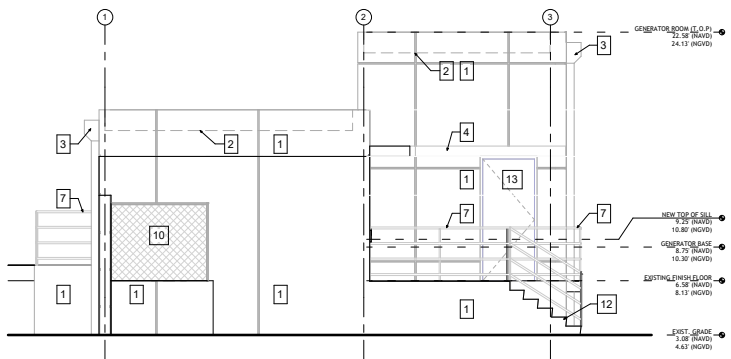


**1 NORTH ELEVATION** NOTE: BASE FLOOD ELEVATION - AE 7 NAVD  
1/4" = 1'-0"

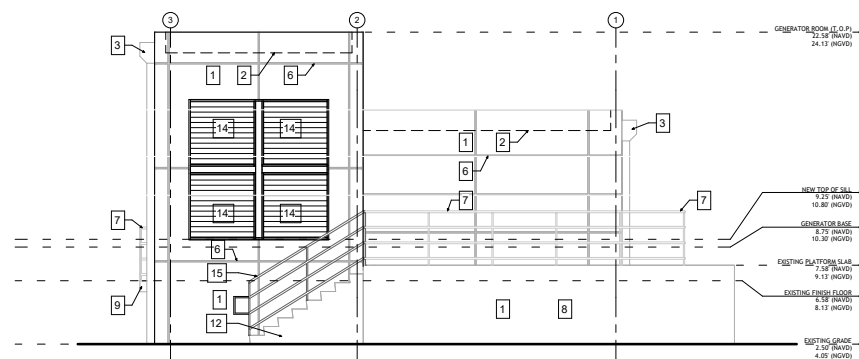


**2 SOUTH ELEVATION**  
1/4" = 1'-0"

NOTE: BASE FLOOD ELEVATION - AE 7 NAVD



**3 WEST ELEVATION** NOTE: BASE FLOOD ELEVATION - AE 7 NAVD  
1/4" = 1'-0"

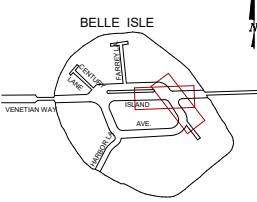


**4 EAST ELEVATION** NOTE: BASE FLOOD ELEVATION - AE 7 NAVD  
1/4" = 1'-0"

- KEYNOTES**
- Existing Wall w/ Stucco finish to remain, N.I.C.
  - Existing roof line beyond to remain, N.I.C.
  - Existing overflow scupper diverter head and downspout to remain, N.I.C.
  - Existing cantilever eyebrow to remain, N.I.C.
  - Not in use—
  - Existing Stucco control joints to remain, N.I.C.
  - Existing metal handrail to remain, N.I.C.
  - Existing pump station, N.I.C. Not in use.
  - Existing chain link fence w/ gate & top enclosure to remain, N.I.C.
  - Existing metal gate to remain, N.I.C.
  - Existing conc. steps to remain, N.I.C.
  - Existing door to remain, N.I.C.
  - New Lower color to match existing, V.I.F.
  - New Slab metal handrail to match existing.
  - 8" concrete with stucco and paint to match existing adjacent.

**NOTES:**

**KEY PLAN (NOT TO SCALE):**



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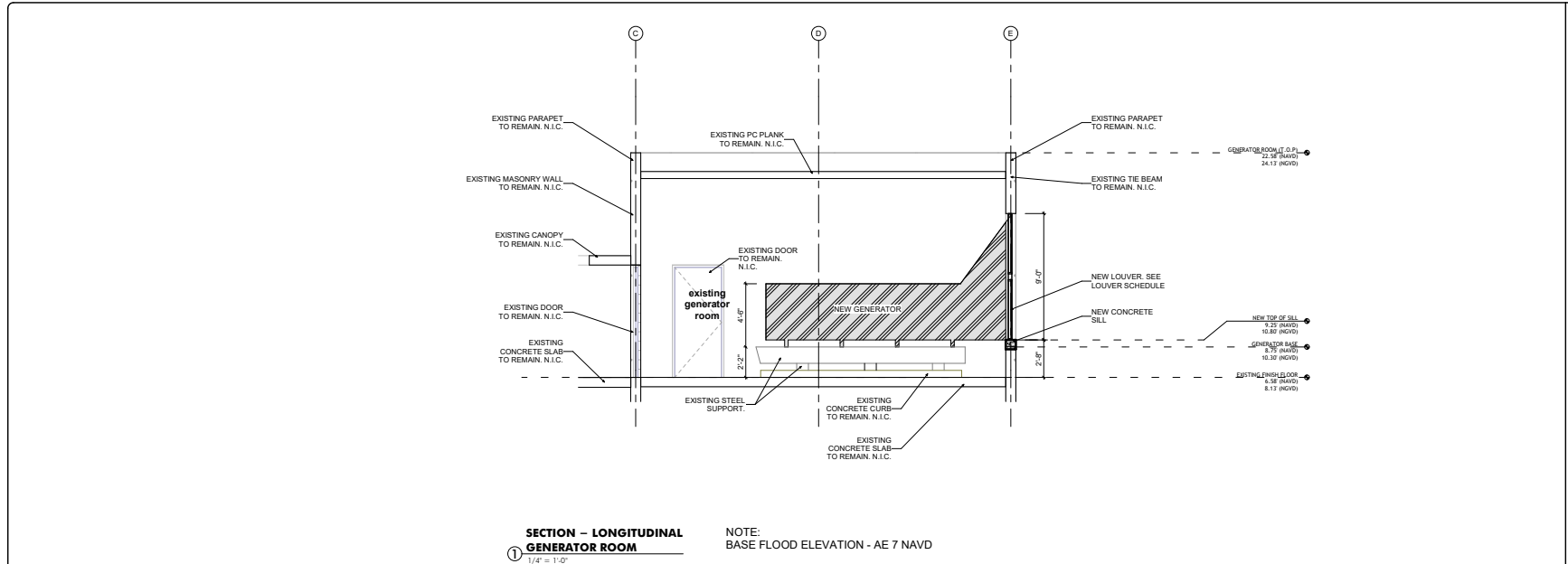
ENGINEER OF RECORD:  
JOSE A. CARABALLO  
PROFESSIONAL ENGINEER  
P.E. NO. 73064

ENGINEER OF RECORD:  
DESIGN ENGINEER:  
DRAWN BY:  
CHECKER:  
SCALE: AS NOTED

NEIGHBORHOOD: **BELLE ISLE**  
TITLE: **PUMP STATION NO. 10 - ELEVATIONS**

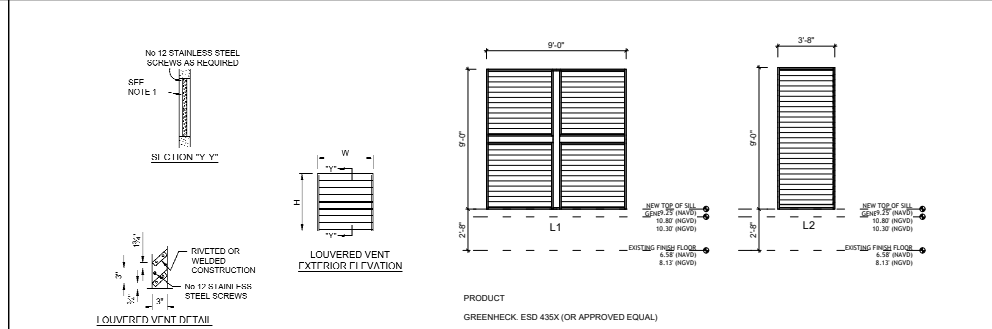
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Date: 2025.05.07 Sheet: *of* Drawing: *A-300*

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**SECTION - LONGITUDINAL GENERATOR ROOM**  
 1/4" = 1'-0"  
 NOTE: BASE FLOOD ELEVATION - AE 7 NAVD

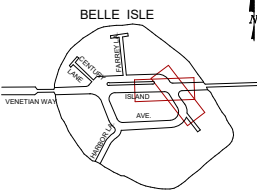
NOTES:



LOUVER SCHEDULE					
LOUVER NO.	SASH OPERATION	WIDTH	HEIGHT	FRAME MATERIAL	REMARKS
L1	FIXED	9'-0"	9'-0"	EXTRUDED ALUMINUM	REMOVE EXISTING LOUVER AND REPLACE WITH IMPACT RESISTANT LOUVER
L2	FIXED	3'-8"	9'-0"	EXTRUDED ALUMINUM	REMOVE EXISTING LOUVER AND REPLACE WITH IMPACT RESISTANT LOUVER

- LOUVER NOTES**
- LOUVERS SHALL BE FABRICATE WITH MINIMUM GAUGE NO 14 ALUMINUM OR NO 22 GALVANIZED STEEL, PAINTED AFTER FABRICATION.
  - ISOLATE ALUMINUM FROM CONCRETE AND OTHER METAL WITH SUITABLE INSULATING COMPOUND.
  - ADD A SUITABLE CENTER BRACE WHEN LOUVER VENT WIDTH IS GREATER THAN 3 FT.
  - LOUVERS SHALL INCLUDE AN AUTOMATIC CLOSING FIRE DAMPER THAT OPERATES IN RESPONSE TO A VAULT FIRE. DAMPERS SHALL PROVIDE MINIMUM 11 2 HOUR RATING. SEE ANSIIUL 555.

KEY PLAN (NOT TO SCALE):



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 PUBLIC WORKS DEPARTMENT  
 1700 CONVENTION CENTER DRIVE, MIAMI BEACH, FL 33139

CITY MANAGER: ERIC CARPENTER  
 DIRECTOR: JAY J. FINK, P.E.  
 CITY ENGINEER: CRISTINA ORTEGA CASTINEIRAS, P.E.

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ENGINEER OF RECORD:  
 JOSE A. CARABALLO  
 PROFESSIONAL ENGINEER  
 P.E. NO. 73064

ENGINEER OF RECORD:  
 DESIGN ENGINEER:  
 DRAWN BY:  
 CHECKER:  
 SCALE: AS NOTED

NEIGHBORHOOD:  
**BELLE ISLE**

TITLE:  
**PUMP STATION NO. 10 - SECTION & LOUVER SCHEDULE**

File Name:  
 Survey Reference:  
 Field Book: *N/A* Page: *N/A* Work Order: *N/A*  
 Date: 2025.05.07 Sheet: *of* Drawing: *A-400*

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**TECHNICAL DATA SHEET** **Permaquik® 200**  
Crystalline Waterproofing  
Capillary Waterproofing Formulation

**PRODUCT DESCRIPTION**

Permaquik® 200 Crystalline Waterproofing is a capillary waterproofing formulation of proprietary blends of chemicals, quartz sand, and cement. The chemicals contained in the crystalline waterproofing materials require the presence of moisture to set off a chemical reaction from within the matrix of the concrete. When combined with "free lime", these chemicals form long chained compounds, which crystallize and penetrate deeply into the capillaries of the concrete, eliminating the migration of water. Independent tests show penetration of up to 2" (51 mm) in 28 days.

The crystalline process is continuous as long as moisture is present in the concrete, significantly reducing the concrete's natural porosity by filling small voids and cracks caused by shrinkage. The concrete is still able to breathe as the crystalline does not create a vapor barrier. If no moisture is present, the crystals will lie dormant until moisture reappears and then will reactivate to seal the cause of the leakage. Permaquik 200 is applied as a slurry coat on vertical interior (CIP) concrete or (CMU) block structures to create a waterproofing barrier from within the substrate. It can be applied by "broadcasting" the dry powder onto horizontal concrete surfaces at the time of initial set and power - or hand - floating the powder to into the green concrete.

Once the reaction has taken place and the formulation has crystallized, these coatings are highly resistant to salts (chloride penetration), alkalis, and seawater. Because of the density of the crystalline chain, the concrete is able to withstand mildly acidic conditions to provide protection in wastewater treatment plants as well as superior protection against frost damage and may also be used in sealing the joint between new and existing concrete.

**BASIC USES**

Few products in the waterproofing industry offer the total protection to the concrete itself that Permaquik 200 provides. Where moisture is present, there is always the danger of damage not only to the concrete but also to the steel as well as interior finishes. No special below-grade protection is necessary.

Permaquik 200 is used for negative side waterproofing in conjunction with a positive side membrane. For positive side waterproofing, consult your local Tremco Sales Representative.

Permaquik 200 provides fast, economical waterproofing for foundation walls and floor slabs, suspended or in-ground pools, and protects against spalling due to oil, salt, and freeze/thaw action in parking garage floor applications.

**FEATURES & BENEFITS**

- When applied to inside surfaces, Permaquik 200 integrates and combines with the concrete from within, thus forming a barrier which cannot easily be damaged.
- The crystalline products tolerate water so there is no need to continually dry the surface before application, unlike most asphaltic, bitumen, or solvent based resin systems.

**AVAILABILITY**

Immediately available from your local Tremco Sales Representative or Tremco Distributor. For distributor locations, visit [www.tremcocealants.com](http://www.tremcocealants.com)

**COVERAGE RATES**

1.3 kg/M<sup>2</sup> or 0.4 lb/yd<sup>2</sup>  
200 ft<sup>2</sup> (18.6 M<sup>2</sup>) per pail in 2 passes  
Horizontal dry shake method: 1 kg/M<sup>2</sup> or 1.85 lb/yd<sup>2</sup>

**PACKAGING**

Permaquik 200: 55 lb (25 kg) packed in 5 gal (20-L) pails. Also available in drums.



**TECHNICAL DATA SHEET** **VULKEM EWS® WITH PUMA TECHNOLOGY**  
Waterproof Traffic Coating System  
Pedestrian System

**PRODUCT DESCRIPTION**

Vulkem® EWS with PUMA Technology is designed to have tenacious adhesion and extreme abrasion resistance. It can be walked on in one hour, which will minimize operation disruption. Vulkem Extreme Wearing System (EWS) is a waterproof traffic deck coating system that utilizes polyurethane-methacrylate (PUMA) technology. Vulkem EWS pedestrian system is composed of a primer (Tremco PUMA Primer or TREMPRIME VB Plus Primer), a base coat (Tremco PUMA BC or BC LM), and a top coat (Tremco PUMA TC). All system components, except TREMPRIME VB Plus, are cured using Tremco PUMA Initiator.

Tremco PUMA Primer is a polymethyl-methacrylate (PMMA), two-component primer for porous and non-porous substrates.

TREMPRIME VB Plus Primer is a two component, modified epoxy primer designed to seal concrete and reduce moisture vapor transmission on concrete slabs with elevated levels of moisture.

Tremco PUMA BC is a polyurethane-methacrylate (PUMA) base coat. Tremco PUMA BC bonds firmly to Tremco PUMA Primer. It retains its integrity even if substrate movement causes hair-line cracks of up to 1/16" (1.5 mm). If cut or damaged, Tremco PUMA BC will prevent water migration between itself and the substrate.

Tremco PUMA BC LM is a low-modulus version of Tremco PUMA BC waterproofing membrane that is used when dynamic movement and extreme service temperature ranges are anticipated.

Tremco PUMA TC is a polymethyl-methacrylate (PMMA) top coat. Interlaminar adhesion to Tremco PUMA BC is exceedingly strong. The top coat affords excellent abrasion resistance, UV stability and chemical resistance to complete the Vulkem EWS pedestrian system.

Tremco PUMA Initiator is a reactive catalyst in the form of a white powder used to cure all PUMA/PMMA resins.

**BASIC USES**

Vulkem EWS is a cold-applied traffic deck coating system designed for waterproofing concrete slabs and protecting occupied areas underneath from water damage. Additionally, the system will protect the concrete from the damaging effects of chloride, deicing salts, chemicals, gasoline, oils and anti-freeze. The Pedestrian System is ideal for stadiums, balconies, pedestrian walkways, roof terraces, mechanical rooms, recreation decks, and similar applications requiring a waterproof coating system.

**FEATURES & BENEFITS**

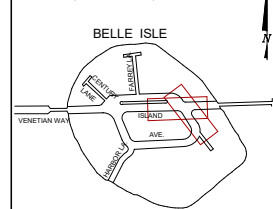
- PUMA technology delivers extreme durability while maintaining its crack-bridging characteristics, eliminating the need for reinforcing fabric.
- Rapid set-up times allow for quick overall installation, as well as the ability to open up to traffic one hour later.
- Can be applied at temperatures as low as 14°F (-10°C), which allows for continuation of projects in the colder months.
- Initiator adjustments allow for 30 to 45 min cure time between applications, even at temperatures below freezing.
- Extremely forgiving application allows users to apply additional coats long after the previous coat has cured.
- Unique chemistry allows for easy repair.
- Compatible with Tremco sealants, coatings and expansion joints, which is essential for tie-ins, detailing and penetrations.

**AVAILABILITY**

Immediately available from your local Tremco Sales Representative.

**NOTES:**

**KEY PLAN (NOT TO SCALE):**



P.E. SEAL:

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**MIAMI BEACH**

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1700 CONVENTION CENTER DRIVE, MIAMI BEACH, FL 33139

CITY MANAGER: ERIC CARPENTER  
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CITY ENGINEER: CRISTINA ORTEGA CASTINEIRAS, P.E.

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MIAMI, FL 33187  
305-441-4833  
[WWW.GESCONSULTANTS.COM](http://WWW.GESCONSULTANTS.COM)  
CORPORATION 30' AUTHORIZATION NO. 0011

ENGINEER OF RECORD:  
**JOSE A. CARABALLO**  
PROFESSIONAL ENGINEER  
P.E. NO. 73064

ENGINEER OF RECORD:  
DESIGN ENGINEER:  
DRAWN BY:  
CHECKER:  
SCALE: AS NOTED

NEIGHBORHOOD:

**BELLE ISLE**

TITLE:

**WATERPROOFING**

File Name:

Survey Reference:

Field Book: *N/A* Page: *N/A* Work Order: *N/A*

Date: 2025.05.07 Sheet: *of* Drawing: *A-800*

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