19. STORMWATER MANAGEMENT

A. Describe the existing drainage patterns on-site, including any potential flooding and erosion problems.

The site is relatively flat and as such there is no discernible existing drainage pattern. The rain that falls within the boundaries of the property will seep through the soil until it is saturated. After saturation is complete, the site will flood vertically in proportion to the surrounding areas. There is no information that would indicate that the site in its present condition would experience flooding to a degree different than the surrounding areas. There is currently no perimeter berm or other feature to maintain the stormwater runoff from leaving the site.

B. Describe the drainage system, including any wetlands to be used as part of the system, and discuss the design criteria (including stage-storage/stage discharge assumption) to be used for the various elements. Provide typical cross-sections (showing dimensions, slopes and control elevations) for any proposed lakes or swales. Identify the control elevation for all drainage structures. Include information as to what design storm will be used for what portions of the system.

There are no wetlands on the property. The proposed drainage system will consist of French Drains, swales, and grease baffles with outfalls to the proposed lakes. The elevation of the roadways will be constructed at or above the Miami-Dade County Flood Criteria Elevation of +9 to 9.2 N.G.V.D. The finished floor elevations will be based on whichever of the following criteria is the highest; FIRM Map, the 100 year-3 day storm event stage and 12-inches above crown of road. The FIRM map for this area shows the project contains two Base Flood elevation criteria; the majority of the site lies within zone AH-9 and a small portion adjacent to SW 162nd Avenue lies within zone “X”. The drainage system for the local roads will be designed for a 5-year storm event and the drainage system for the arterial/collector roads will be designed for a 10-year storm event with a safety factor of 2 and 4 respectively. The project will be divided into two major basins. One is located north of the railroad tracks and the second one is the area south of the tracks.

The control water elevation (October Water Level Elevation) for the project is +7.75 N.G.V.D. based on Miami-Dade County Public Works Department Manual and a project two feet of sea level rise forecasted by NOAA for 2060. Lake slopes will be built as per the Miami-Dade County Public Works Department and Zoning department standards.

C. Indicate the total number of acres in each drainage area and specify the

acreage of any portions of drainage areas outside the site boundaries. Complete the following table for on-site drainage areas.

The following table summarizes the drainage areas:

Table 19-1
Stormwater Drainage Areas

Land Use	Impervious Surfaces (AC)	Building (AC)	Open Space (AC)	Total (AC)
Basin 1				
Single Family	76.18	43.8	51.42	171.4
Multi-Family	145.1	126.4	55.3	326.8
Mixed Use	51.1	15.7	5.6	72.4
Office	3.37	8.03	3.8	15.2
Industrial	43.9	22.0	7.3	73.2
School	7.0	5.0	8.0	20
Parks	8.40	5.6	42	56
Roads	79.65	0	8.85	88.5
Lakes	66	0	0	66
Farm	4.3	2.96	11.44	18.7
Lagoon/Water Park	8.8			8.8
Rail	10.32	0	6.88	17.2
Open Space			19.5	19.5
Totals	504.12	229.49	220.09	953.7

Source: Langan Engineers

D. Specify and compare the volume and quality of run-off from the site in its existing condition to the anticipated run-off at the end of each phase of development. (The parameters to be used to define "quality" and methodology should be agreed to by the regional planning council and other reviewing agencies at the pre-application conference state). Identify any changes in timing or pattern of water flows between pre- and post-development conditions. Indicate major points of discharge and ultimate receiving water body(ies). Indicate what provisions will be incorporated in the design of the drainage system including a summary description of any Best Management Practices to be utilized, to minimize any increase in run-off from the site and to minimize any degradation of water quality in the ultimate receiving body over that occurring in its pre-development state.

One of the elements of the proposed stormwater management system is a perimeter berm with a top of berm elevation at or above the 100 year-3day storm stage. This perimeter berm will contain the stormwater within the project site ("no offisite discharge"). This design is in excess of the standard requirement which is to contain the 25 year – 3 day storm event on site. Currently, the site has no means of keeping the stormwater runoff from leaving the site. The proposed French drain

system will be designed so that at a minimum, the first inch of runoff is treated before overflows are allowed to the lakes. The stormwater runoff will be further treated by the use of grass swales in the residential streets and grease baffles in parking areas. Currently, the site provided no treatment of the stormwater runoff. Refer to the Conceptual Stormwater Management Master Plan (CSWMMP) for the preliminary stormwater calculations.

E. Who will operate and maintain the drainage system after completion of the development?

All drainage systems within the Public right-of-ways will be owned and maintained by the Miami-Dade County Public Works Department. The Homeowners Association(s) (HOA) will own and maintain the drainage system located within private roads. The HOA will also own and maintain the lakes and outfall structures which are part of the overall stormwater management system.

Responses to Items F. – H., below, are provided as Review Agency Requirements Detailed in the Agreement to Delete Questions, Appendix A dated May 8, 2025

F. Fill requirements may raise the base level of the site, Applicant shall demonstrate that the stormwater runoff shall not affect properties or rights-of-way/infrastructure and be retained onsite.

The site will be designed to retain the 100 year 3 day storm event onsite though a network of exfiltration trenches and lakes. The site will be filled to the minimum fill elevations based on the current Miami-Dade County Flood Criteria at the time of permitting. Based on the current flood criteria and the flood plain compensation calculations the conceptual stormwater management system is sufficient to not impact negatively adjacent property, or rights-of-ways/infrastructure. Please refer to Appendix E of Attachment 19-1 – Conceptual Stormwater Management Master Plan (the ”CSWMMP”) for flood plain compensation calculations.

G. Applicant shall detail the data sources, methodologies, assumptions and analysis used to access the development program to regional drainage.

The CSWMMP utilizes accepted methodologies and data source for the conceptual stormwater design described in the Master Plan. The sources for the existing conditions include Miami-Dade County Average October Water Table Maps, Miami-Dade County Flood Criteria Maps, SFWMD ERP Applicant’s handbook for total rainfall depths, SCS Design Methodology to estimate total runoff volumes, Harper Methodology, as developed with FDEP for nutrient loading analysis, and FEMA Flood Maps. The proposed development is proposed to retain the required design storm onsite without any connections to future canals planned by Miami-Dade County.

H. Applicant shall detail the data sources, methodologies, assumptions, and analysis that should be used to assess whether its development program shall have adverse impacts to the Comprehensive Everglades Restoration Plan including the Southern Everglades Study.

A review of the available information indicated the Southern Everglades Study components does not include any property near the development site. The development program will not impact the Southern Everglades Study and conversely, the Southern Everglades Study will not impact the development program.

Attachment 19-1
Conceptual Stormwater Management Master Plan

22 August 2025

Yadira Werley
Lennar
730 NW 107th Avenue, 3rd Floor
Miami, FL 33172

Re: Conceptual Stormwater Management Master Plan
City Park
SW 136th Street and SW 162nd Avenue, Miami, Florida
Langan Project No.: 330090201

Dear Yadira:

The purpose of this letter is to describe the anticipated stormwater management system and the anticipated improvements required for the proposed development program for the City Park (Development). The development is generally located south of the SW 136th Street and north of SW 152nd Street between SW 162nd Avenue to the east and Krome Avenue to the west. Refer to **FIG-01** for the Overall Location Plan.

The Development consist of five major development areas known as the Village Core, Central Park, East Village, South Village and West Village.

PROPOSED DEVELOPMENT AREA

The proposed development is located outside the Urban Development Boundary (UDB), therefore the stormwater design shall be capable of retention of the 100-year 3-day storm event. The proposed development stormwater design will conceptually include exfiltration trenches and retention areas. These stormwater best management practices will be designed in accordance with the current Miami-Dade County and South Florida Water Management District requirements at the time they are permitted for construction. The design parameters and standards used for the proposed development can be found in **Appendix B.**

Existing Conditions

The site is relatively flat and as such there is no discernible existing drainage pattern. The rain that falls within the boundaries of the property will seep through the soil until it is saturated. After saturation is complete, the site will flood vertically in proportion to the surrounding areas. There is no information that would indicate that the site in its present condition would experience flooding to a degree different than the surrounding areas. There is currently no perimeter berm or other feature to maintain the stormwater runoff from leaving the site

Background

The current average October water table elevation in the project area is currently +5.0 NGVD29 according to Miami Dade County's "October Water Table and Miami Dade County Flood

Criteria" Map. Based on the projected 2 feet of sea level rise forecast for 2060, the projected groundwater elevation in this area will be approximately 7.0 feet NGVD29.

The 100-year flood elevation based on current FEMA FIRM the site is located within zone AH elevation 9 feet NGVD29.

Proposed Conditions

The proposed retention areas and exfiltration trenches will provide water quality treatment and retain the water quantity design storm per Miami-Dade County requirements prior to discharging into any proposed lakes. The development will include the appropriate amount of exfiltration trench keep to retain the 5 year 1 hour storm event so the 3.28-inch rainfall credit can be applied to the larger storm events. Additionally, a perimeter berm will be provided to retain the onsite runoff generated by the 100-year 3-day storm event.

The drainage system for the public rights-of-way will be designed for a 5-year storm event for local roads and the arterial/collector roads will be design for a 10-year storm event with a safety factor of two and four, respectively.

	Area
Building	229.49 Acres
Retention Area (Lake)	66.0 Acres
Pervious Area	220.09 Acres
Impervious Area	438.12 Acres
Total	953.70 Acres

Water Quantity

Preliminary stage storage calculations were completed for a conceptual development on the parcel and abutting right-of-way. This will maintain the 100-year 3-day storm event to a peak stage at a max elevation of 10.28-feet NGVD. The perimeter berm will be set at elevation of 10.30-feet NGVD +/- to retain the proposed improved areas. Please refer to **Appendix C** for the stage storage calculations.

Flood Plain Compensation

The proposed development was analyzed utilizing two separate methods for determining potential impacts to the existing floodplain.

In accordance with Miami-Dade County, the 100 year 3 day storm event peak stage shall be below the greater of the following three criteria.

- County Flood Criteria (CFC) plus 8" = 9.2' NGVD + 8" = 9.86' NGVD
- Crown of Road plus 8" (assumes COR one above CFC) = 10.2' NGVD + 8" = 10.86' NGVD
- FEMA Flood Plain Elevation = 9 NGVD

The anticipated peak stage during the 100 year 3 day storm event is 10.28' NGVD which is less than the County's maximum stage of 10.86' NGVD meeting the County criteria.

The proposed development was also analyzed utilizing the SFWMD Floodplain compensation method considering the site as an import/export methodology. The existing site is considered an exporter during 100 year storm event, and the site will retain the 100 year storm event onsite in the proposed condition, therefore, mitigating the floodplain encroachment.

An analysis on the post development nutrient loading analysis was completed for the development. The pre-development condition was analyzed as general agriculture and the post development is analyzed as single family and multi-family areas. There are areas of industrial and commercial land uses, however, the nutrient loading rates from those uses are lower than the loading rates from single family and multi-family uses. To simplify the conceptual model only multi-family and single family land use was applied to the entire development area. Detailed calculations will be submitted during the development of each development phase.

Water Quality

The proposed stormwater management system shall be comprised of a network of exfiltration trench which will provide the required water quality treatment. Refer to the water quality calculations in **Appendix D.**

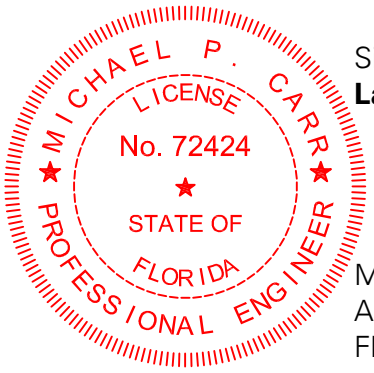
The exfiltration trench system, consisting of trenches 5-ft wide by 15-ft deep with a minimum 18-inch perforated pipe, has been designed to provide the required water quality treatment for the proposed improvements. The proposed exfiltration trench system will treat the first inch of runoff from the developed project, or the total runoff of 2.5 inches times the percentage of imperviousness, whichever is greater. The total length of exfiltration trench required for water quality treatment was calculated in accordance with the SFWMD Environmental Resources Permitting Manual, using a safety factor (SF) of two. The percolation rates utilized were obtained from a nearby existing development and shall be verified upon development of this project. The total anticipated length of exfiltration trench is 180,000 liner feet.

Operation and Maintenance Entity

Miami Dade County will own and operate the public roadways throughout the property and the remaining areas served by the overall drainage system will be owned and operated by the Homeowner's Association (HOA) or similar private entity.

This item has been digitally signed and sealed by Michael Carr, PE. on the date adjacent to the seal

Printed Copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.



Sincerely,
Langan Engineering and Environmental Services, LLC.

Michael Carr, PE, LEED AP
Associate Principal
Florida Professional Engineer Lic. No. 72424

Enclosure(s): Appendix A – Survey
Appendix B – Design Storms, Stormwater Parameters
Appendix C- Proposed and Existing Stage Storage Calculations
Appendix D- Exfiltration Trench Calculations
Appendix E – Flood Plain Compensation
Appendix F – FEMA Flood Maps
Appendix G – Nutrient Loading Analysis

FBPE Registry No. 6601
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APPENDIX A – SURVEY

LEGAL DESCRIPTION:

PARCEL "A"

THE WEST 1/2 OF THE EAST 1/2, OF THE WEST 1/2 OF SECTION 20, TOWNSHIP 55 SOUTH, RANGE 39 EAST, MIAMI–DADE COUNTY, FLORIDA. LESS A 100.00 FEET RIGHT–OF–WAY FOR THE SEABOARD AIRLINE RAILROAD, AS–BUILT AND IN PLACE LYING 50.00 FEET ON EITHER SIDE OF THE EXISTING RAILROAD TRACKS, AND LESS THE SOUTH 40.00 FEET FOR PUBLIC RIGHT–OF–WAY AND LESS THE FOLLOWING PARTICULARLY DESCRIBED PARCEL OF LAND FOR PUBLIC RIGHT–OF–WAY:

COMMENCE AT THE AGREED N.W. CORNER OF THE WEST 1/2 OF THE EAST 1/2 OF SECTION 20, TOWNSHIP 55 SOUTH, RANGE 39 EAST, THAT CERTAIN "AGREED FINAL JUDGEMENT" AS RECORDED IN OFFICIAL RECORDS BOOK 15074, AT PAGE 1044 OF THE PUBLIC RECORDS OF MIAMI–DADE COUNTY, FLORIDA. DATED JUNE 19, 1991; THENCE, N02°39'22"W, FOR 40.00 FEET; THENCE, S86°20'38"W, FOR 74.36 FEET TO THE BEGINNING OF A CURVE CONCAVE NORTHERLY, SAID CURVE HAS A 2,060.00 FEET; THENCE, WESTERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 11°09'38" FOR AN ARC DISTANCE OF 401.26 FEET TO A POINT OF TANGENCY; THENCE, N82°29'44"W, FOR 3.62 FEET TO THE POINT OF BEGINNING; THENCE, S02°10'36"E, FOR 81.13 FEET; THENCE, N82°30'06"W, 216.54 FEET TO THE BEGINNING OF A CURVE CONCAVE SOUTHERLY, SAID CURVE HAS A RADIUS OF 2,062.72 FEET; THENCE, WESTERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 9°24'03" FOR AN ARC DISTANCE OF 338.44 FEET; THENCE, S88°05'28"W, FOR 116.10 FEET; THENCE, N02°04'17"W, FOR 40.00 FEET; THENCE, N88°05'28"E, FOR 533.68 FEET; THENCE, S82°29'44"E, FOR 134.53 FEET TO THE POINT OF BEGINNING;

PARCEL "B"

THE WEST 1/2, OF THE EAST 1/2, OF THE EAST 1/2, OF THE S.W. 1/4 OF SECTION 20, TOWNSHIP 55 SOUTH, RANGE 39 EAST, MIAMI–DADE COUNTY, FLORIDA, LESS THE SOUTH 40 FEET FOR PUBLIC RIGHT–OF–WAY.

PARCEL "C"

THE EAST 1/2, OF THE EAST 1/2, OF THE EAST 1/2, OF THE S.W. 1/4 OF SECTION 20, TOWNSHIP 55 SOUTH, RANGE 39 EAST, MIAMI–DADE COUNTY, FLORIDA, LESS THE SOUTH 40.00 FEET AND THE EAST 35.00 FEET FOR PUBLIC RIGHT–OF–WAY, AND LESS AND EXCEPT THAT PARCEL TAKEN ON THE EAST SIDE AS PER CASE # 86–40255 RECORDED IN OFFICIAL RECORDS BOOK 15074 AT PAGE 1044 OF THE PUBLIC RECORDS OF MIAMI–DADE COUNTY, FLORIDA, SAID PARCEL DESCRIBED AS FOLLOWS:

THAT PORTION OF THE EAST 1/2, OF THE EAST 1/2, OF THE EAST 1/2, OF THE S.W. 1/4 OF SAID SECTION 20, LYING EAST OF THAT CERTAIN BOUNDARY AGREEMENT LINE IN CASE # 86–40255 RECORDED IN OFFICIAL RECORDS BOOK 15074, AT PAGE 1044 OF THE PUBLIC RECORDS OF MIAMI–DADE COUNTY, FLORIDA.

AND

LESS AND EXCEPT THE AREA BOUNDED BY LINES LYING 55.00 FEET NORTH OF AND PARALLEL TO THE SOUTH LINE OF THE SOUTHWEST 1/4 OF SECTION 20, TOWNSHIP 55 SOUTH, RANGE 39 EAST, AND 35.00 FEET WEST OF AND PARALLEL TO THE WEST LINE OF THE EAST 1/2 OF SAID SECTION 20, SAID AREA FORMING A QUADRANT OF A CIRCLE WITH A RADIUS OF 25.00 FEET, FOR CORNER RADIUS PUBLIC RIGHT–OF–WAY DEDICATION PURPOSES.

SUBJECT TO ANY DEDICATIONS, EASEMENTS, RESTRICTIONS, RESERVATION AND LIMITATIONS OF RECORDS.

PARCEL "D"

THE EAST 1/2, OF THE EAST 1/2, OF THE N.W. 1/4 OF SECTION 20, TOWNSHIP 55 SOUTH, RANGE 39 EAST, MIAMI–DADE COUNTY, FLORIDA, LYING SOUTH OF THE CENTERLINE OF A 100.00 FEET WIDE EASEMENT FOR THE SEABOARD COAST LINE RAILROAD COMPANY, AS RECORDED IN OFFICIAL RECORDS BOOK 4331, AT PAGE 282, AND OFFICIAL RECORDS BOOK 4371, AT PAGE 323, ALL OF THE PUBLIC RECORDS OF MIAMI–DADE COUNTY, FLORIDA. LESS THE EAST 35.00 FEET FOR PUBLIC RIGHT–OF–WAY, AND LESS AND EXCEPT THAT PARCEL TAKEN ON THE EAST SIDE AS PER CASE # 86–40255 RECORDED IN OFFICIAL RECORDS BOOK 15074, AT PAGE 1044 OF THE PUBLIC RECORDS OF MIAMI–DADE COUNTY, FLORIDA, SAID PARCEL DESCRIBED AS FOLLOWS:

THAT PORTION OF THE EAST 1/2, OF THE EAST 1/2, OF THE N.W. 1/4 OF SAID SECTION 20, LYING SOUTH OF THE CENTERLINE OF THE SAID 100.00 FEET WIDE EASEMENT FOR THE SEABOARD COAST LINE RAILROAD COMPANY AND LYING EAST OF THAT CERTAIN BOUNDARY AGREEMENT LINE IN CASE # 86–40255 RECORDED IN SAID OR BOOK 15074, AT PAGE 1044 OF THE PUBLIC RECORDS OF MIAMI–DADE COUNTY, FLORIDA.

SUBJECT TO ANY DEDICATIONS, EASEMENTS, RESTRICTIONS, RESERVATION AND LIMITATIONS OF RECORDS.

PARCEL "E"

THE EAST 1/2, OF THE EAST 1/2, OF THE N.W. 1/4 OF SECTION 20, TOWNSHIP 55 SOUTH, RANGE 39 EAST, MIAMI–DADE COUNTY, FLORIDA, LYING NORTH OF THE CENTERLINE OF A 100.00 FEET WIDE EASEMENT FOR THE SEABOARD COAST LINE RAILROAD COMPANY, AS RECORDED IN OFFICIAL RECORDS BOOK 4331, AT PAGE 282, AND OFFICIAL RECORDS BOOK 4371, AT PAGE 323, ALL OF THE PUBLIC RECORDS OF MIAMI–DADE COUNTY, FLORIDA. LESS AND EXCEPT THAT PARCEL TAKEN ON THE EAST SIDE AS PER CASE # 86–40255 RECORDED IN OFFICIAL RECORDS BOOK 15074, AT PAGE 1044 OF THE PUBLIC RECORDS OF MIAMI–DADE COUNTY, FLORIDA, SAID PARCEL DESCRIBED AS FOLLOWS:

THAT PORTION OF THE EAST 1/2, OF THE EAST 1/2, OF THE N.W. 1/4 OF SAID SECTION 20, LYING NORTH OF THE CENTERLINE OF THE SAID 100.00 FEET WIDE EASEMENT FOR THE SEABOARD COAST LINE RAILROAD COMPANY AND LYING EAST OF THAT CERTAIN BOUNDARY AGREEMENT LINE IN CASE # 86–40255 RECORDED IN SAID OR BOOK 15074, AT PAGE 1044 OF THE PUBLIC RECORDS OF MIAMI–DADE COUNTY, FLORIDA.

AND

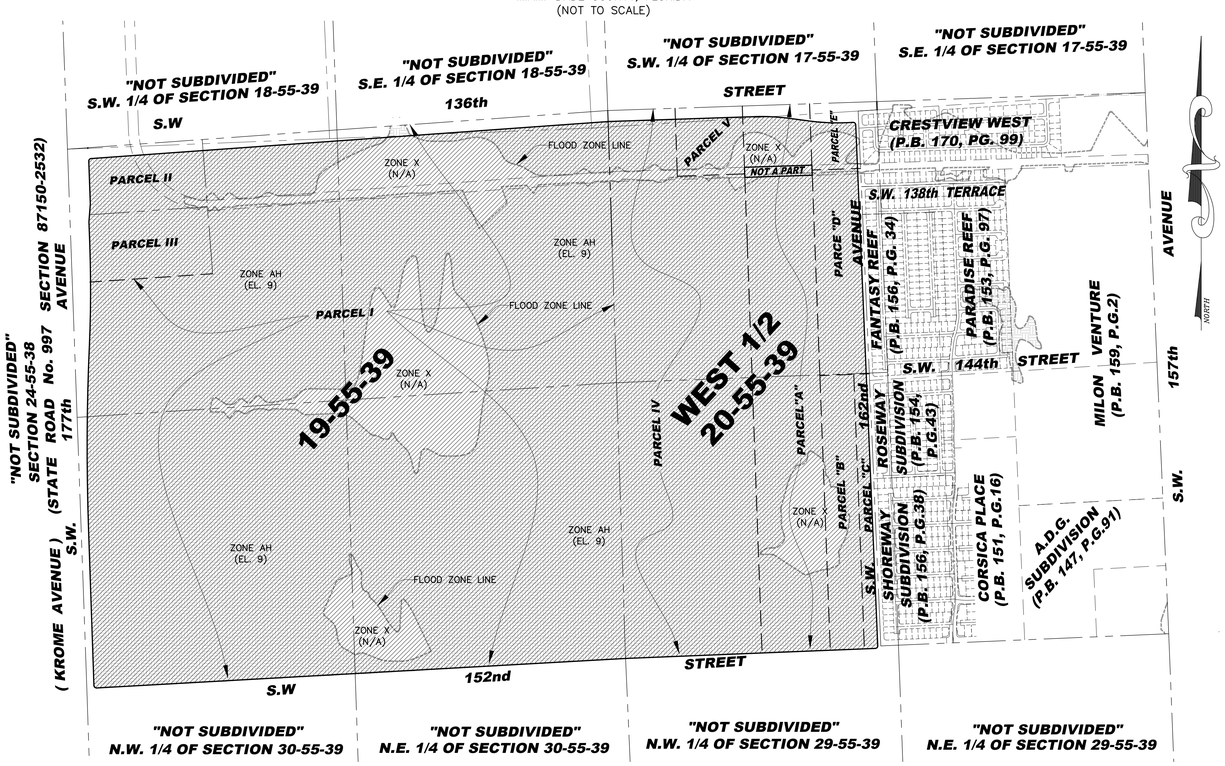
LESS THE FOLLOWING PARTICULARLY DESCRIBED PARCEL OF LAND FOR PUBLIC RIGHT–OF–WAY:

BEGIN AT THE AGREED N.W. CORNER OF THE WEST 1/2 OF THE EAST 1/2 OF SECTION 20, TOWNSHIP 55 SOUTH, RANGE 39 EAST, THAT CERTAIN "AGREED FINAL JUDGEMENT" AS RECORDED IN OFFICIAL RECORDS BOOK 15074, AT PAGE 1044 OF THE PUBLIC RECORDS OF MIAMI–DADE COUNTY, FLORIDA. DATED JUNE 19, 1991; THENCE, N86°20'38"E, FOR 187.96 FEET; THENCE, N02°16'54"W, FOR 40.01 FEET; THENCE, S86°20'38"W, FOR 263.28 FEET TO THE BEGINNING OF A CURVE CONCAVE NORTHERLY, SAID CURVE HAS A 2,060.00 FEET; THENCE, WESTERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 11°09'38" FOR AN ARC DISTANCE OF 401.26 FEET TO A POINT OF TANGENCY; THENCE, N82°29'44"W, FOR 3.62 FEET; THENCE, S02°10'36"E, FOR 81.13 FEET TO THE BEGINNING OF A NON–TANGENT CURVE CONCAVE NORTHERLY, SAID CURVE HAS A RADIUS OF 2,140.00 FEET, TO WHICH A RADIAL LINE BEARS S07°14'10"W; THENCE, EASTERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 11°14'05" FOR AN ARC DISTANCE OF 419.62 FEET TO A POINT OF REVERSE CURVATURE, SAID CURVE IS CONCAVE SOUTHWESTERLY AND HAS A RADIUS OF 25.00 FEET; THENCE, SOUTHEASTERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 91°34'36" FOR AN ARC DISTANCE OF 39.96 FEET TO A POINT OF TANGENCY; THENCE, S02°25'20"E, FOR 454.01 FEET; THENCE, N88°08'59"E, FOR 35.00 FEET; THENCE, N02°25'20"W, FOR 520.62 FEET TO THE POINT OF BEGINNING.

SUBJECT TO ANY DEDICATIONS, EASEMENTS, RESTRICTIONS, RESERVATION AND LIMITATIONS OF RECORDS.

LOCATION MAP

SECTIONS 19 & 20, TOWNSHIP 55 SOUTH, RANGE 39 EAST
MIAMI–DADE COUNTY, FLORIDA
(NOT TO SCALE)



PARCEL I

SECTION 19, TOWNSHIP 55 SOUTH, RANGE 39 EAST, LESS THE NORTHWEST QUARTER (NW 1/4) OF THE NORTHWEST QUARTER (NW 1/4) THEREOF AND ROAD RIGHT(S) OF WAY(S). MIAMI–DADE COUNTY, FLORIDA, LESS THE NORTH 35.00 FEET AND THE SOUTH 55.00 FEET FOR PUBLIC RIGHT–OF–WAY.

AND

LESS AND EXCEPT THE AREA BOUNDED BY LINES LYING 55.00 FEET NORTH OF AND PARALLEL TO THE SOUTH LINE OF SECTION 19, TOWNSHIP 55 SOUTH, RANGE 39 EAST, AND BY THE EXISTING RIGHT–OF–WAY LINE FOR KROME AVENUE, SAID LINE BEING COINCIDENT WITH THE WEST LINE OF SAID PARCEL I, AS SHOWN IN OFFICIAL RECORDS BOOK 29646, PAGE 3592 OF THE PUBLIC RECORDS OF MIAMI–DADE COUNTY, FLORIDA, SAID AREA FORMING A QUADRANT OF A CIRCLE WITH A RADIUS OF 25.00 FEET, FOR CORNER RADIUS PUBLIC RIGHT–OF–WAY DEDICATION PURPOSES.

PARCEL II

THE NORTH HALF (N 1/2) OF THE NORTHWEST QUARTER (NW 1/4) OF THE NORTHWEST QUARTER (NW 1/4) OF SECTION 19, TOWNSHIP 55 SOUTH, RANGE 39 EAST, LOCATED IN MIAMI–DADE COUNTY, FLORIDA, LESS THE NORTH 35.00 FEET FOR PUBLIC RIGHT–OF–WAY.

AND

LESS AND EXCEPT THE AREA BOUNDED BY THE EXISTING RIGHT–OF–WAY LINE FOR KROME AVENUE, SAID LINE BEING COINCIDENT WITH THE WEST LINE OF SAID PARCEL II, AS SHOWN IN OFFICIAL RECORDS BOOK 29646, PAGE 3592 OF THE PUBLIC RECORDS OF MIAMI–DADE COUNTY, FLORIDA, AND A LINE LYING 40.00 FEET SOUTH OF AND PARALLEL WITH THE NORTH LINE OF SECTION 19, TOWNSHIP 55 SOUTH, RANGE 39 EAST, SAID AREA FORMING A QUADRANT OF A CIRCLE WITH A RADIUS OF 25.00 FEET, FOR CORNER RADIUS PUBLIC RIGHT–OF–WAY DEDICATION PURPOSES.

PARCEL III

THE SOUTH HALF (S 1/2) OF THE NORTHWEST QUARTER (NW 1/4) OF THE NORTHWEST QUARTER (NW 1/4) OF SECTION 19, TOWNSHIP 55 SOUTH, RANGE 39 EAST. MIAMI–DADE COUNTY.

LESS FROM ABOVE DESCRIBED PARCELS I, II AND III:

THAT PORTION OF S.W. 177TH AVENUE (KROME AVENUE/STATE ROAD NO. 997), LYING WEST OF THE EAST LINE OF THAT CERTAIN RIGHT–OF–WAY DEDICATION DESCRIBED IN OFFICIAL RECORDS BOOK 29646, PAGE 3592, OF THE PUBLIC RECORDS OF MIAMI–DADE COUNTY, FLORIDA;

COMMENCE AT THE SOUTH 1/4 CORNER OF SECTION 18 (THE SAME BEING NORTH 1/4 CORNER OF SECTION 19), TOWNSHIP 55 SOUTH, RANGE 39 EAST, MIAMI–DADE COUNTY, FLORIDA, BEING A 1 1/2" DIAMETER IRON PIPE, THENCE S85°54'31'W, ALONG THE SOUTH LINE OF THE SOUTHWEST 1/4 OF SAID SECTION 18 FOR A DISTANCE OF 2,472.81 FEET TO THE POINT OF BEGINNING OF THE HEREINAFTER DESCRIBED LINE; THENCE S02°05'46"E FOR 7.32 FEET; THENCE S02°03'00"E FOR 479.04 FEET; THENCE S04°19'23"W FOR 179.96 FEET; THENCE S02°03'27"E FOR 229.96 FEET TO THE POINT OF CURVATURE OF A CIRCULAR CURVE TO THE RIGHT HAVING A RADIUS OF 12,427.24 FEET AND A CENTRAL ANGLE OF 04°34'54", THENCE SOUTHERLY ALONG THE ARC OF SAID CURVE FOR AN ARC DISTANCE OF 993.76 FEET TO A POINT OF REVERSE CURVATURE OF A CIRCULAR CURVE TO THE LEFT HAVING A RADIUS OF 22,917.00 FEET AND A CENTRAL ANGLE OF 04°29'44", THENCE SOUTHERLY ALONG THE ARC OF SAID CURVE FOR AN ARC DISTANCE OF 1,798.08 FEET; THENCE S01°58'17"E FOR 1,635.46 FEET TO A POINT ON THE SOUTH LINE OF THE SOUTHWEST 1/4 OF THE AFORESAID SECTION 19, SAID POINT LYING 66.05 FEET EAST OF THE SOUTHWEST CORNER OF SAID SECTION 19.

PARCEL IV

THE WEST (W 1/2) OF THE WEST (W 1/2) OF SECTION 20, TOWNSHIP 55 SOUTH, RANGE 39 EAST, DADE COUNTY, FLORIDA, LESS THE NORTH 35.00 FEET FOR PUBLIC RIGHT–OF–WAY.

LESS AND EXCEPT:

THE NORTHEAST QUARTER (NE 1/4) OF THE NORTHWEST QUARTER (NW 1/4) OF THE NORTHWEST QUARTER (NW 1/4) OF SECTION 20, TOWNSHIP 55 SOUTH, RANGE 39 EAST, LYING AND BEING IN MIAMI–DADE COUNTY, FLORIDA.

PARCEL V

THE NORTHEAST QUARTER (NE 1/4) OF THE NORTHWEST QUARTER (NW 1/4) OF THE NORTHWEST QUARTER (NW 1/4 OF SECTION 20, TOWNSHIP 55 SOUTH, RANGE 39 EAST, LYING AND BEING IN MIAMI–DADE COUNTY, FLORIDA., LESS THE NORTH 35.00 FEET AND LESS THE SOUTH 55.00 FEET FOR PUBLIC RIGHT–OF–WAY.

ALL PARCELS DESCRIBED ABOVE CONTAIN A COMBINED TOTAL OF 40,610,138 SQUARE FEET, AND/OR, 932.28 ACRES, MORE OR LESS.

NOTE No. 1

THIS BOUNDARY SURVEY IS BASED UPON THAT CERTAIN FINAL JUDGMENT AS RECORDED IN OFFICIAL RECORDS BOOK 17179, AT PAGE 4377 OF THE PUBLIC RECORDS OF MIAMI–DADE COUNTY, FLORIDA.

THE LOCATION OF PROPERTY BOUNDARY LINES IN THIS TOWNSHIP MAP MAY BE SUBJECT TO OTHER FINAL JUDGMENTS, OR STIPULATED AGREEMENTS BETWEEN PARTIES IN INTEREST.

NOTE No. 2

REFER TO SCHWEBKE–SHISKIN & ASSOCIATES, INC. FILE No. SD–136 AJ. THIS SURVEY IS BASED UPON THAT CERTAIN "AGREED FINAL JUDGEMENT" AS RECORDED IN OFFICIAL RECORDS BOOK 15074, AT PAGE 1044 OF THE PUBLIC RECORDS OF MIAMI–DADE COUNTY, FLORIDA. DATED JUNE 19, 1991 AT 3:54 P.M.

SURVEYOR'S NOTES:

1) The herein captioned Property was surveyed and described based on the Legal Description Provided by Client.
2) This Certification is only for the lands as described. It is not a certification of Title, Zoning, Easements, or Freedom of Encumbrances. TITLE POLICY NOT REVIEWED.
3) There may be additional Restrictions not shown on this survey that may be found in the Public Records of Miami–Dade County, Examination TITLE POLICY NOT REVIEWED. will have to be made to determine recorded instruments, if any affecting this property.
4) Accuracy:
The expected use of the land, is "SUBURBAN/HIGH RISK COMMERCIAL", the minimum relative distance accuracy for this type of boundary survey is 1 foot in 7,500/10,000 feet, the accuracy obtained by measurement and calculation of a closed geometric figure was found to exceed this requirement, and conforms to the Standards of Practices set forth by the Florida Board of Land Surveyors and Mappers pursuant to Section 472.027, Florida Statutes.
5) Underground foundations and/or footings, if any, that may cross beyond the boundary lines of the subject property unto any other adjacent property are not shown hereon.
6) Not valid without the signature and the original raised seal of a Florida Licensed Surveyor and Mapper. Additions or deletions to survey maps or reports by other than the signing party or parties is prohibited without written consent of the signing party or parties.
7) Contact the appropriate authority prior to any design work on the herein described parcel for Building and Zoning information.
8) Underground utilities are not depicted hereon, contact the appropriate authority prior to any design work or construction on the property herein described. Surveyor shall be notified as to any deviation from utilities shown hereon.
9) NET Area of property: 40,610,138 S.F. or 932.28 Acres +/–
10) Ownership subject to OPINION OF TITLE.
11) Type of Survey: BOUNDARY SURVEY
12) North arrow direction and Bearings shown hereon are based on assumed value of N02°03'27"W, along the West line of the Section 20 Township 55 South, Range 39 East, of the Public Records of Miami–Dade County, Florida.
13) Elevations are based on: National Geodetic Vertical Datum, 1929.
14) Miami–Dade County Bench Mark Used: P–6602 Elev.: 8.53' (N.G.V.D.)
15) Bench Mark Location:
S.W. 144th Street ––– 156' South of Center Line
S.W. 162nd Avenue ––– 15' East of Center Line
Bench Mark is a PK Nail and Round Brass Washer in Concrete Pad for Fire Hydrant.
16) Property Address:
S.W. 152th. Street
S.W. 167th. Avenue
Miami, Florida 33193
17) Flood Zone: "AH"/"X"
Base Flood Elev.= 9.0'/N/A
AS PER FEMA Panel Number: 12086C0440L–12086C0439L–12086C0580L
Community Number: 120635 (MIAMI–DADE COUNTY)
Date: September 11, 2009.
18) This BOUNDARY SURVEY, has been prepared for the exclusive use of the entities named hereon. The Certificate does not extended to any unnamed party:

As to Parcel I, Parcel II, Parcel III, Parcel IV and Parcel V, to: Edward W. Easton as Trustee of the Krome Groves Land Trust under Agreement dated October 27, 2004, as Amended; Grove Bank & Trust; Krome Groves Investors LLC; Lennar Homes LLC; NPC Miami Real Estate LLC; Old Republic National Title Insurance Company; and Peckar & Abramson, P.C.; and their respective successors and assigns.

19) Field Book: A–430–51–64, S.N.D. Project No.: 04–103–5401
Data Collector File: KROME–G.CR5, KROMEGROVE.txt
20) This Map of Survey is intended to be displayed at a scales of One inch equals 60 feet (Sheets 2 & 3 of 4) and 250 feet (Sheet 4 of 4) or smaller.
21) Parcels I through V lies East of the Dedicated Right–of–way for Krome Avenue, also know as State Road 997.

SURVEYOR'S CERTIFICATE:

I Hereby Certify to the best of my knowledge and belief that this drawing is a true and correct representation of the BOUNDARY SURVEY of the real property described hereon.

I further certify that this survey was prepared in accordance with the applicable provisions of Chapter 5J–17.052 (Formerly 61G17–6), Florida Administrative Code, and conforms to the Standards of Practices set forth by the Florida Board of Land Surveyors and Mappers pursuant to Section 472.027, Florida Statutes.

FORD, ARMENTEROS & FERNANDEZ, INC., LB6557

Original Field Work Survey Date: May 25, 2005.
Revision Date: April 19, 2006 (UPDATE SURVEY)
Revision Date: October 22, 2021 (UPDATE SURVEY)
Revision Date: December 15th, 2021 (REVISED AS PER ATTORNEY'S COMMENTS)
Revision Date: July 7th, 2025 (UPDATE SURVEY)

BY: _____
Omar Armenteros, P.S.M., For The Firm
Professional Surveyor and Mapper, LS 3679
State of Florida.

FORD, ARMENTEROS & FERNANDEZ, INC
1950 N.W. 94th AVENUE, 2nd FLOOR
MIAMI, FLORIDA 33172
PH. (305) 477-6472
FAX (305) 470-2805

RECORD OF REVISION

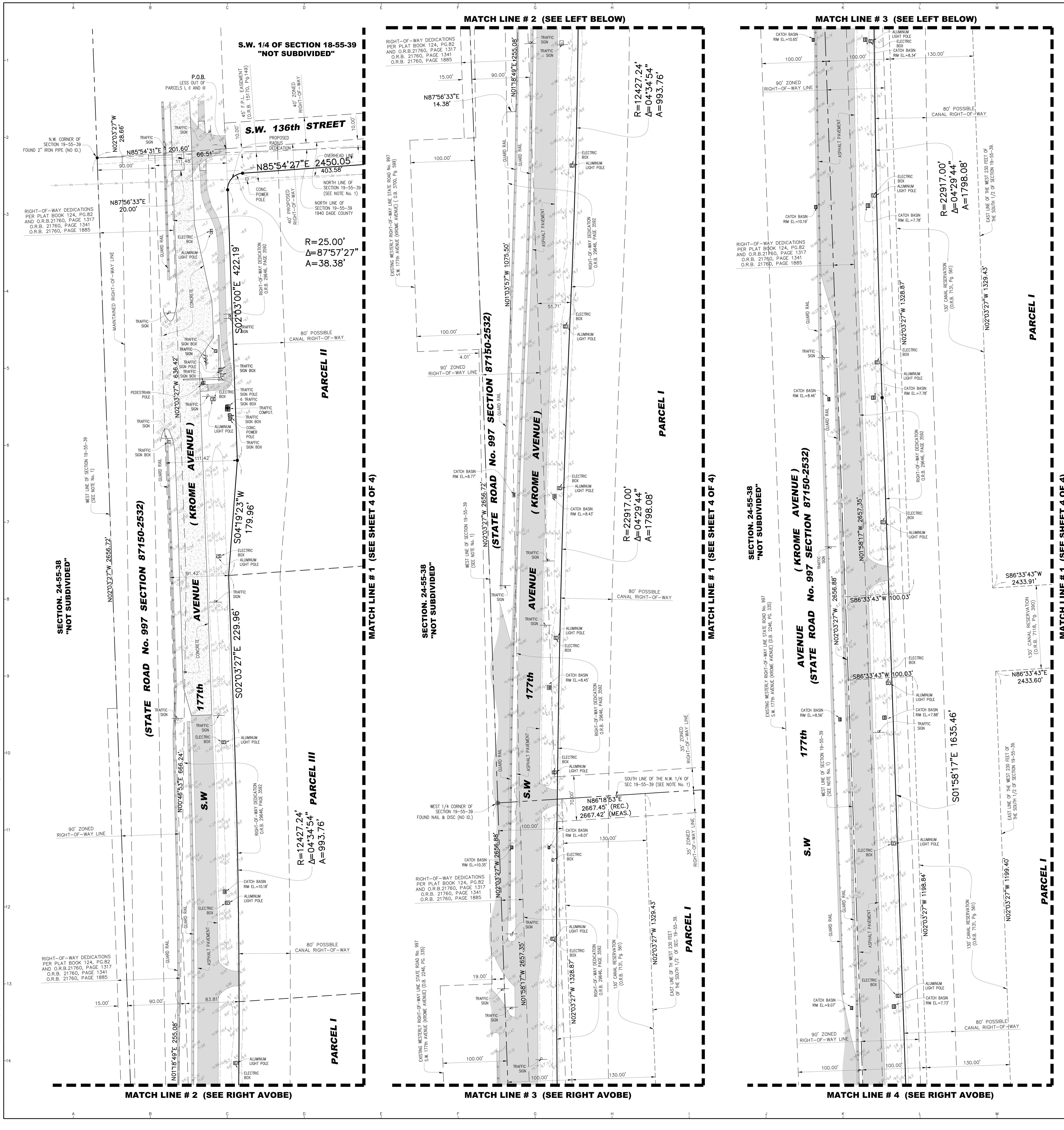
No.	DATE	DESCRIPTION	BY	APP.
1	04-19-06	UPDATE SURVEY	R.R.	O.A.
2	10-22-21	UPDATE SURVEY	E.D.	R.R.
3	12-15-21	REVISED AS PER ATTORNEY'S COMMENTS	R.R.	O.A.
4	07-07-25	UPDATE SURVEY	M.G.	D.R.

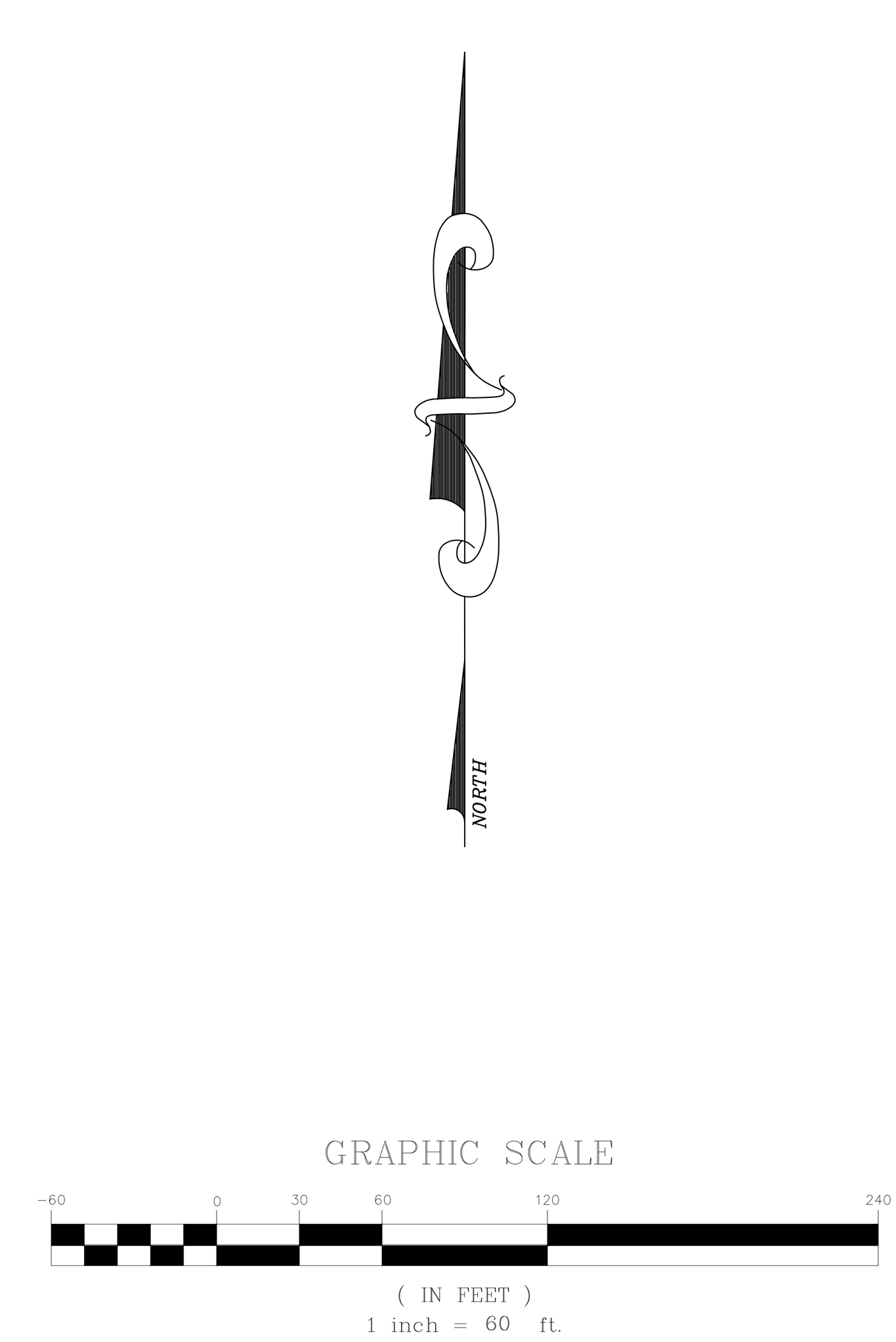
PARKLAND MASTER BOUNDARY SURVEY

TYPE OF PROJECT: BOUNDARY SURVEY
SHEET NAME: LEGAL DESCRIPTION, LOCATION MAP AND SURVEYOR'S NOTES.
CLIENT: LENNAR HOMES, LLC.
CLIENT ADDRESS: 730 N.W. 107th AVENUE MIAMI, FLORIDA 33172
PROJECT LOCATION: SECTIONS 19 & 20, TOWNSHIP 55 SOUTH, RANGE 39 EAST MIAMI-DADE COUNTY, FLORIDA

SCALE: AS SHOWN
DRAWN BY: R.R./E.D.
CHK. CHECKED BY:
QUALITY CONTROL:
DATE: JULY 7TH, 2025
PROJECT No.: 04-103-5401
SHEET: 1 OF 4 SHEETS

C:\Users\DROBR~1\AppData\Local\Temp\AcPublish_7156\04-103-5401 EDWARDS EASTON ROBERTIES 7-7-25 (NET SURVEY).dwg





SYMBOL LEGEND

ABBREVIATION	SYMBOL	DEFINITION
		ALUMINUM LIGHT POLE
		BELLSOUTH MANHOLE
		BELLSOUTH TELEPHONE BOX
		BENCHMARK
		CABLE BOX
		CATCH BASIN
C/L	C/L	CENTERLINE
		CLEAN OUT VALVE
CLR.		CLEAR
C.L.F.		CHAIN LINK FENCE
CONC.		CONCRETE
C.B.S.		CONCRETE BLOCK STRUCTURE
		CONCRETE LIGHT POLE
		CONCRETE POWER POLE
		CONTROL VALVE
		DRAINAGE MANHOLE
		DRILL HOLE
		DUAL POLE SIGN
		ELECTRIC BOX
		ELECTRIC METER
E.W.O.H.	OHL	ELECTRIC WIRE OVERHEAD
ELEV.	6.00	ELEVATION (EXISTING)
ELEV.	6.00	ELEVATION (PROPOSED)
F.F.		FINISHED FLOOR
		FIRE HYDRANT
		FIRE MAIN VALVE
		FLORIDA POWER AND LIGHT COMPANY MANHOLE
	FORCE	FORCE MAIN VALVE
FND.		FOUND
GAR.		GARAGE
		GAS MANHOLE
		GAS METER
		GAS VALVE
		GUARD POST
I.F.		IRON FENCE
I.P.		IRON PIPE
L.A. R/W		LIMITED ACCESS RIGHT OF WAY
	SMV	MAIN SEWER VALVE
		MAIL BOX
		MANHOLE
MEAS.		MEASURED
		MONUMENT
		NAIL
N. & D.		NAIL AND DISC
O/L		ON LINE
P.B.		PLAT BOOK
P.C.		POINT OF CURVATURE
P.C.P.		PERMANENT CONTROL POINT
PG.		PAGE
P/L		PROPERTY LINE
P.R.M.		PERMANENT REFERENCE MONUMENT
	R R	RAIL ROAD CROSSING SIGN
REC.		RECORDED INFORMATION
R/W		RIGHT OF WAY
SEC.		SECTION
		SECTION CORNER
		SEWER MANHOLE
		SIGN
	SP	SPRINKLER VALVE
		SQUARE CUT AND NAIL
		STORM MANHOLE
	LBX	STREET LIGHT BOX
		STREET SIGN
		TELEPHONE BOX
		TELEPHONE MANHOLE
		TRAFFIC SIGNAL
		TRAFFIC SIGNAL BOX
		VALVE
		WATER METER
	WV	WATER VALVE
		WELL
W.F.		WOOD FENCE
		WOOD POWER POLE
		ASPHALT
		BRICK
		CONCRETE
		TILE
	FPL	F.P.L. BOX

NOTE No. 1

THIS BOUNDARY SURVEY IS BASED UPON THAT CERTAIN FINAL JUDGMENT AS RECORDED IN OFFICIAL RECORDS BOOK 17179, AT PAGE 4377 OF THE PUBLIC RECORDS OF MIAMI-DADE COUNTY, FLORIDA.

THE LOCATION OF PROPERTY BOUNDARY LINES IN THIS TOWNSHIP MAP MAY BE SUBJECT TO OTHER FINAL JUDGMENTS, OR STIPULATED AGREEMENTS BETWEEN PARTIES IN INTEREST.

NOTE No. 2

REFER TO SCHWEBKE-SHISKIN & ASSOCIATES, INC. FILE No. SD-136 AJ. THIS SURVEY IS BASED UPON THAT CERTAIN "AGREED FINAL JUDGEMENT" AS RECORDED IN OFFICIAL RECORDS BOOK 15074, AT PAGE 1044 OF THE PUBLIC RECORDS OF MIAMI-DADE COUNTY, FLORIDA. DATED JUNE 19, 1991 AT 3:54 P.M.

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1950 N.W. 94th AVENUE, 2nd FLOOR
MIAMI, FLORIDA 33172
PH. (305) 477-6472
FAX (305) 470-2805

RECORD OF REVISION

No.	DATE	DESCRIPTION	BY	APP.
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4	07-07-25	UPDATE SURVEY	M.G.	D.R.

PARKLAND MASTER BOUNDARY SURVEY

TYPE OF PROJECT: BOUNDARY SURVEY
SHEET NAME: SKETCH OF SURVEY AND SYMBOL LEGEND
CLIENT: LENNAR HOMES, LLC.
CLIENT ADDRESS: 730 N.W. 107th AVENUE, MIAMI, FLORIDA 33172
PROJECT LOCATION: SECTIONS 19 & 20, TOWNSHIP 55 SOUTH, RANGE 39 EAST, MIAMI-DADE COUNTY, FLORIDA

SCALE: AS SHOWN
DRAWN BY: R.R./E.D.
DWG. CHECKED BY:
QUALITY CONTROL:
DATE: JULY 7TH, 2025
PROJECT No: 04-103-5401
SHEET: 2 OF 4 SHEETS

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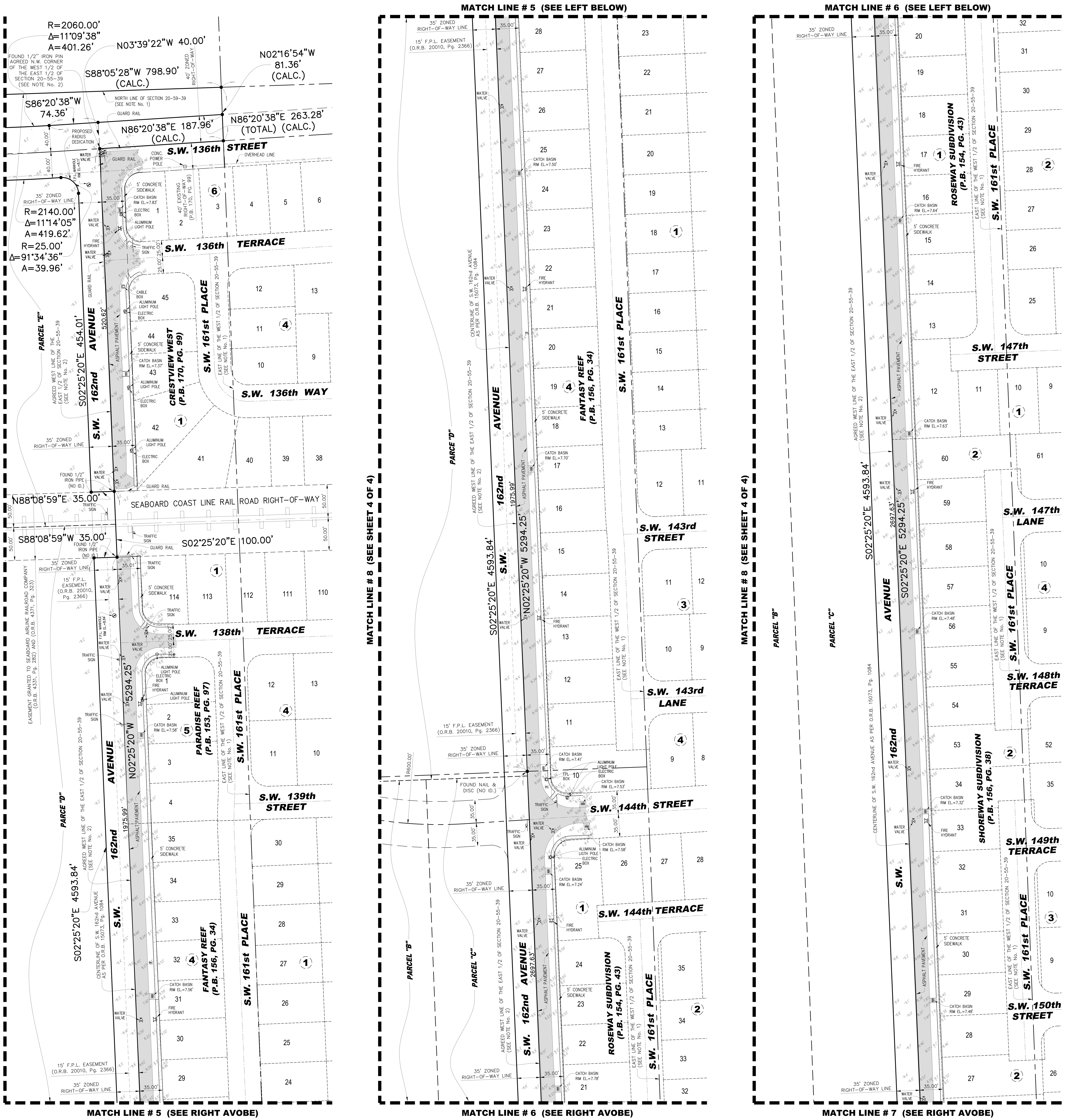

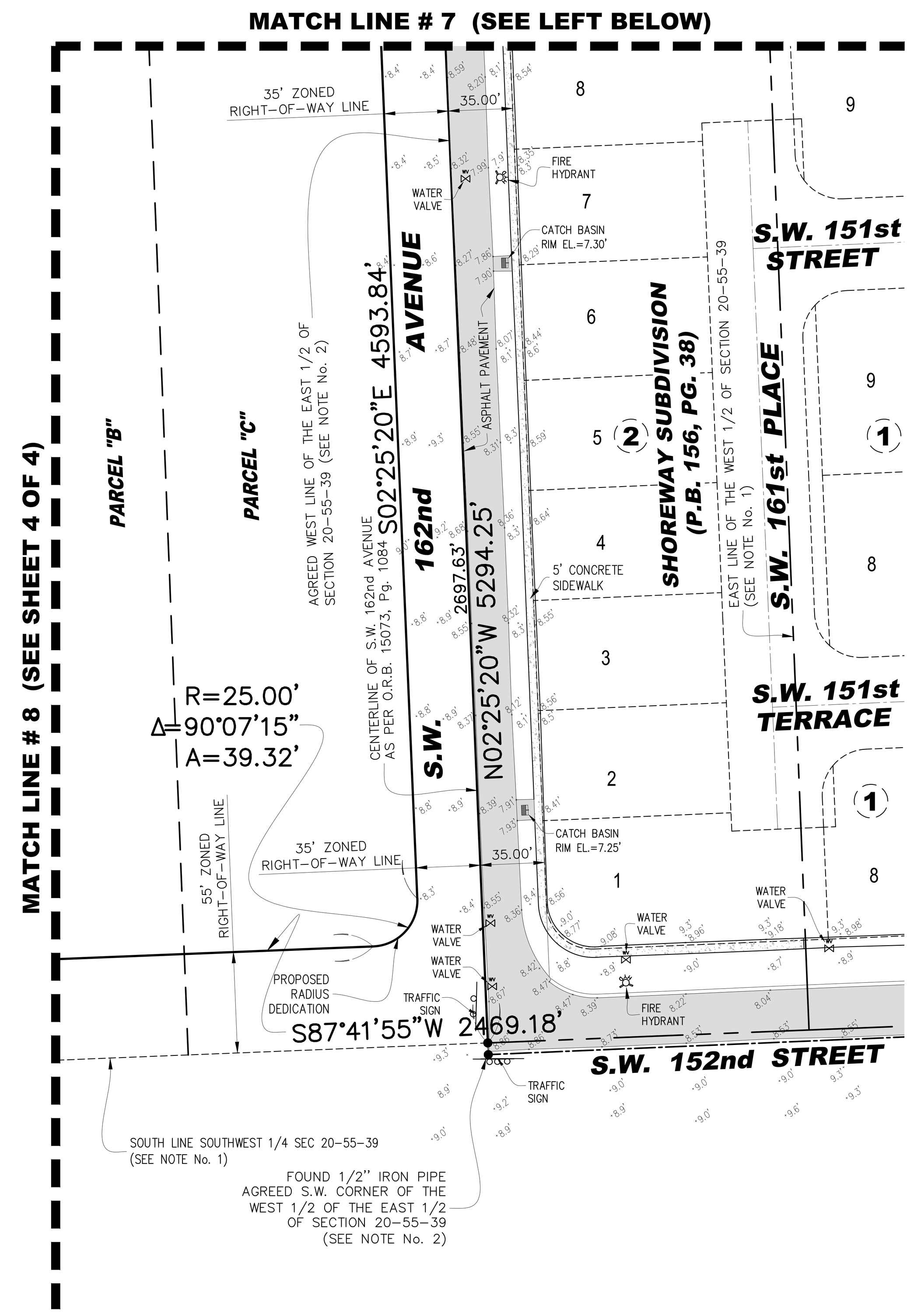

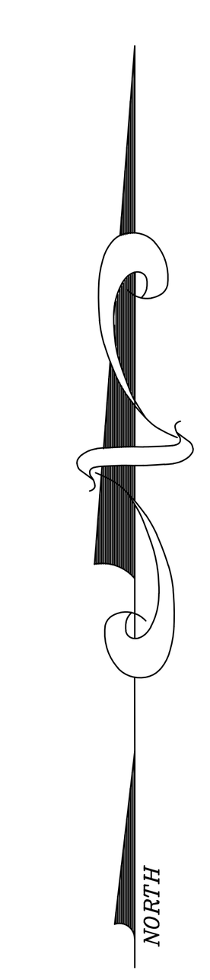

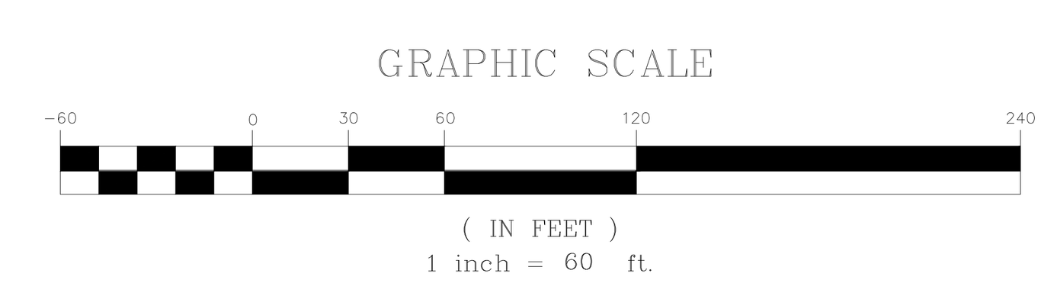

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		BELLSOUTH MANHOLE
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		BENCHMARK
		CABLE BOX
		CATCH BASIN
C/L	C/L	CENTERLINE
		CLEAN OUT VALVE
CLR.		CLEAR
C.L.F.		CHAIN LINK FENCE
CONC.		CONCRETE
C.B.S.		CONCRETE BLOCK STRUCTURE
		CONCRETE LIGHT POLE
		CONCRETE POWER POLE
		CONTROL VALVE
		DRAINAGE MANHOLE
		DRILL HOLE
		DUAL POLE SIGN
		ELECTRIC BOX
		ELECTRIC METER
E.W.O.H.	OHL	ELECTRIC WIRE OVERHEAD
ELEV.	6.00	ELEVATION (EXISTING)
ELEV.	6.00	ELEVATION (PROPOSED)
F.F.		FINISHED FLOOR
		FIRE HYDRANT
		FIRE MAIN VALVE
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	FORCE	FORCE MAIN VALVE
FND.		FOUND
GAR.		GARAGE
		GAS MANHOLE
		GAS METER
		GAS VALVE
		GUARD POST
I.F.		IRON FENCE
I.P.		IRON PIPE
L.A. R/W		LIMITED ACCESS RIGHT OF WAY
	SMV	MAIN SEWER VALVE
		MAIL BOX
		MANHOLE
MEAS.		MEASURED
		MONUMENT
		NAIL
N. & D.		NAIL AND DISC
O/L		ON LINE
P.B.		PLAT BOOK
P.C.		POINT OF CURVATURE
P.C.P.		PERMANENT CONTROL POINT
PG.		PAGE
P/L		PROPERTY LINE
P.R.M.		PERMANENT REFERENCE MONUMENT
	R/R	RAIL ROAD CROSSING SIGN
REC.		RECORDED INFORMATION
R/W		RIGHT OF WAY
SEC.		SECTION
		SECTION CORNER
		SEWER MANHOLE
		SIGN
	SP	SPRINKLER VALVE
		SQUARE CUT AND NAIL
		STORM MANHOLE
	LBX	STREET LIGHT BOX
		STREET SIGN
		TELEPHONE BOX
		TELEPHONE MANHOLE
		TRAFFIC SIGNAL
		TRAFFIC SIGNAL BOX
		VALVE
		WATER METER
	WV	WATER VALVE
		WELL
W.F.		WOOD FENCE
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		ASPHALT
		BRICK
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RECORD OF REVISION

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3	12-15-21	REVISED AS PER ATTORNEY'S COMMENTS 12-15-2021	R.R.	O.A.
4	07-07-25	UPDATE SURVEY	M.G.	D.R.

PARKLAND MASTER BOUNDARY SURVEY

TYPE OF PROJECT: BOUNDARY SURVEY

SHEET NAME: SKETCH OF SURVEY AND SYMBOL LEGEND

CLIENT: LENNAR HOMES, LLC.

CLIENT ADDRESS: 730 N.W. 107th AVENUE MIAMI, FLORIDA 33172

PROJECT LOCATION: SECTIONS 19 & 20, TOWNSHIP 55 SOUTH, RANGE 39 EAST MIAMI-DADE COUNTY, FLORIDA

SCALE: AS SHOWN

DRAWN BY: R.R./E.D.

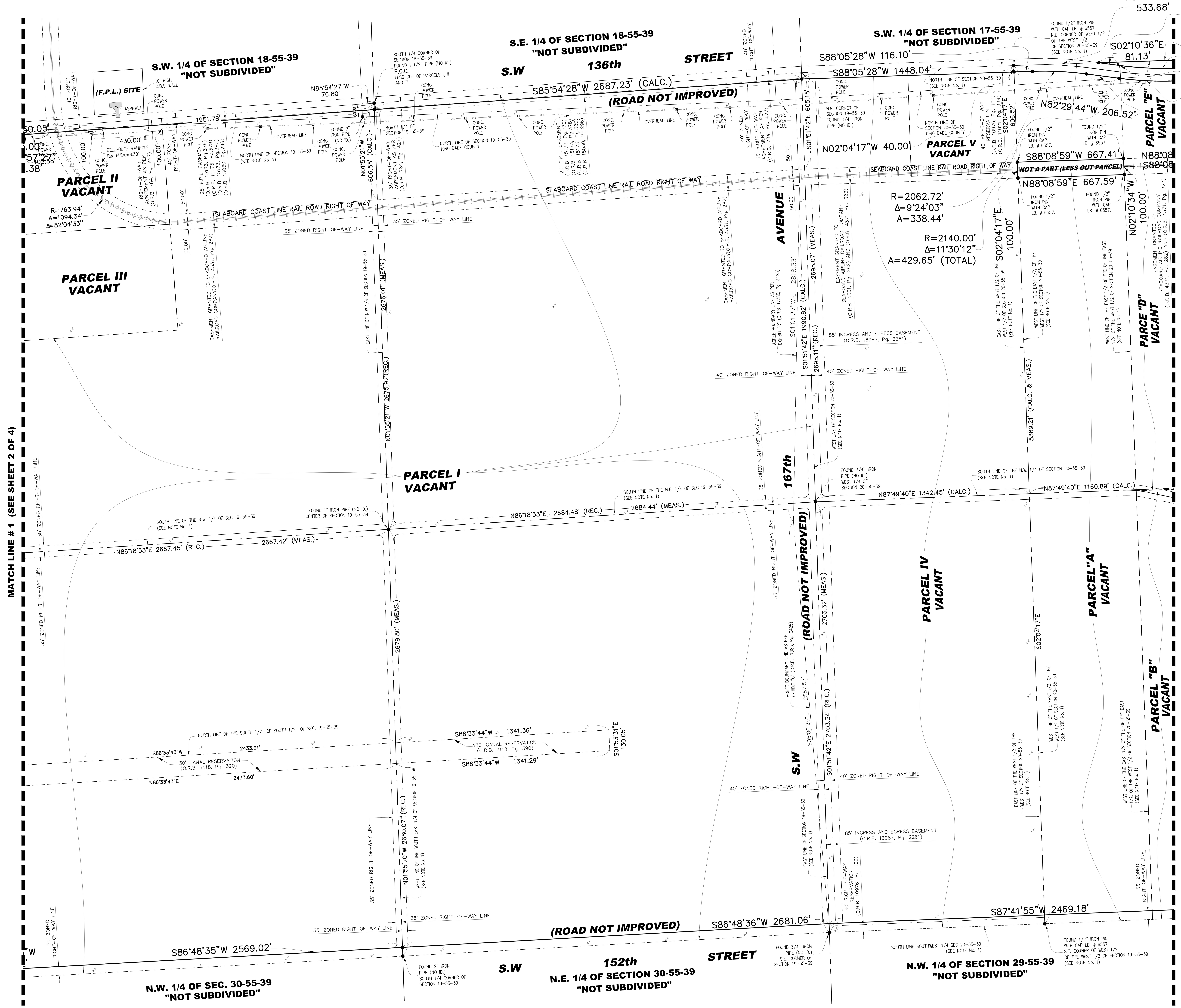
DWG. CHECKED BY:

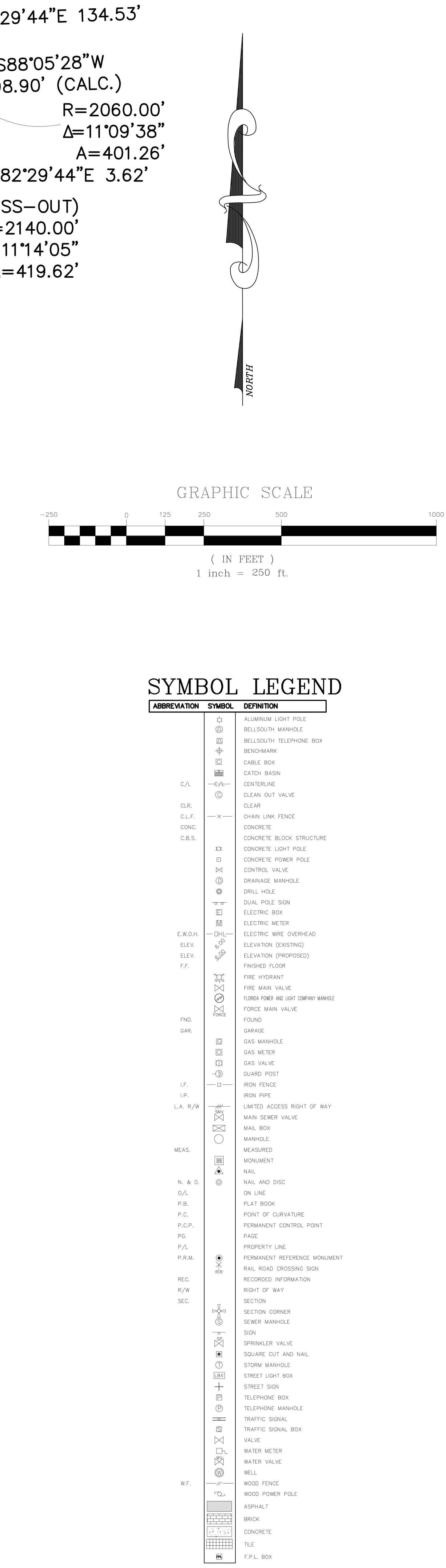
QUALITY CONTROL:

DATE: JULY 7TH, 2025

PROJECT No: 04-103-5401

SHEET: 3 OF 4 SHEETS





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PARKLAND MASTER BOUNDARY SURVEY

TYPE OF PROJECT: BOUNDARY SURVEY
SHEET NAME: SKETCH OF SURVEY AND SYMBOL LEGEND
CLIENT: LENNAR HOMES, LLC.
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PROJECT LOCATION: SECTIONS 19 & 20, TOWNSHIP 55 SOUTH, RANGE 39 EAST MIAMI-DADE COUNTY, FLORIDA

SCALE: AS SHOWN
DRAWN BY: R.R./E.D.
DWG. CHECKED BY:
QUALITY CONTROL:
DATE: JULY 7TH, 2025
PROJECT No. 04-103-5401
SHEET: 4 of 4 SHEETS

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APPENDIX B – DESIGN STORM, STORMWATER PARAMETERS

NOTES TO USERS

p is for use in administering the National Flood Insurance Program. It t necessarily identify all areas subject to flooding, particularly from local sources of small size. The **community map repository** should be d for possible updated or additional flood hazard information.

n more detailed information in areas where **Base Flood Elevations** and/or **floodways** have been determined, users are encouraged to consult d Profiles and Floodway Data and/or Summary of Stillwater Elevations ontained within the Flood Insurance Study (FIS) report that accompanies M. Users should be aware that BFEs shown on the FIRM represent whole-foot elevations. These BFEs are intended for flood insurance urposes only and should not be used as the sole source of flood n information. Accordingly, flood elevation data presented in the FIS should be utilized in conjunction with the FIRM for purposes of tion and/or floodplain management.

Base Flood Elevations shown on this map apply only landward of onal Geodetic Vertical Datum of 1929 (NGVD 29). Users of this FIRM e aware that coastal flood elevations are also provided in the Summary of Elevation table in the Flood Insurance Study report for this jurisdiction. s shown in the Summary of Stillwater Elevation table should be used for ion and/or floodplain management purposes when they are higher than tions shown on this FIRM.

es of the **floodways** were computed at cross sections and interpolated cross sections. The floodways were based on hydraulic considerations ard to requirements of the National Flood Insurance Program. Floodway nd other pertinent floodway data are provided in the Flood Insurance port for this jurisdiction.

areas not in Special Flood Hazard Areas may be protected by **flood structures**. Refer to Section 2.4 "Flood Protection Measures" of the surance Study report for information on flood control structures for this sn.

ection used in the preparation of this map was Florida State Plane east PSZONE 0901). The **horizontal datum** was NAD 83, GRS80 spheroid. es in datum, spheroid, projection or State Plane zones used in the n of FIRMs for adjacent jurisdictions may result in slight positional es in map features across jurisdiction boundaries. These differences do t the accuracy of this FIRM.

evations on this map are referenced to the National Geodetic Vertical f 1929. These flood elevations must be compared to structure and elevations referenced to the same **vertical datum**. For information g conversion between the National Geodetic Vertical Datum of 1929 North American Vertical Datum of 1988, visit the National Geodetic website at http://www.ngs.noaa.gov or contact the National Geodetic t the following address:

rmation Services
/NGS12
Geodetic Survey
, #9202
st-West Highway
ring, Maryland 20910-3282
3-3242

n current elevation, description, and/or location information for **bench** shown on this map, please contact the Information Services Branch National Geodetic Survey at **(301) 713-3242**, or visit its website at w.ngs.noaa.gov.

p information shown on this FIRM was provided in digital format by the ade County Information Technology Department. These data were at a scale of 1:3,600 from digital orthophotography dated 2001. al base map information was provided by the Cities of Aventura, Coral and Homestead, the Town of Cutler Bay, and Miami-Dade County.

o reflects more detailed and up-to-date **stream channel configurations** se shown on the previous FIRM for this jurisdiction. The floodplains and s that were transferred from the previous FIRM may have been adjusted m to these new stream channel configurations. As a result, the Flood and Floodway Data tables in the Flood Insurance Study Report (which authoritative hydraulic data) may reflect stream channel distances that m what is shown on this map.

te limits shown on this map are based on the best data available at the ublication. Because changes due to annexations or de-annexations may urred after this map was published, map users should contact appropriate ity officials to verify current corporate limit locations.

efer to the separately printed **Map Index** for an overview map of the showing the layout of map panels; community map repository addresses; sting of Communities table containing National Flood Insurance Program r each community as well as a listing of the panels on which each ity is located.

the **FEMA Map Service Center** at 1-800-358-9616 for information on products associated with this FIRM. Available products may include y issued Letters of Map Change, a Flood Insurance Study report, and/or rsions of this map. The FEMA Map Service Center may also be reached 1-800-358-9620 and its website at http://msc.fema.gov.

ve **questions about this map** or questions concerning the National Flood e Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or FEMA website at http://www.fema.gov.

LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUND BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood th 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard An area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazar Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the wate elevation of the 1% annual chance flood.

- **ZONE A** No Base Flood Elevations determined.
- **ZONE AE** Base Flood Elevations determined.
- **ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Bas Elevations determined.
- **ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); depths determined. For areas of alluvial fan flooding, velocit determined.
- **ZONE AR** Special Flood Hazard Area formerly protected from the 1% annua flood by a flood control system that was subsequently decertified. indicates that the former flood control system is being restored to protection from the 1% annual chance or greater flood.
- **ZONE A99** Area to be protected from 1% annual chance flood by a Fede protection system under construction; no Base Flood El determined.
- **ZONE V** Coastal flood zone with velocity hazard (wave action); no Bas Elevations determined.
- **ZONE VE** Coastal flood zone with velocity hazard (wave action); Bas Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be k of encroachment so that the 1% annual chance flood can be carried without substantial i in flood heights.

OTHER FLOOD AREAS

- **ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance fl average depths of less than 1 foot or with drainage areas le 1 square mile; and areas protected by levees from 1% annual chanc

OTHER AREAS

- **ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
- **ZONE D** Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Area

- Floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area zon boundary dividing Special Flood Hazard Areas of differe Flood Elevations, flood depths or flood velocities.
- 513 Base Flood Elevation line and value; elevation in feet*
- (EL 987) Base Flood Elevation value where uniform within zone; e in feet*

* Referenced to the National Geodetic Vertical Datum of 1929

- A-A Cross section Line
- 23-23 Transect line
- 87°07'45", 32°22'30" Geographic coordinates referenced to the North Am Datum of 1983 (NAD 83), Western Hemisphere
- 3976000mN 1000-meter Universal Transverse Mercator grid values, zo 17
- 600000 FT 5000-foot grid ticks: Florida State Plane coordinate syste East zone (FIPSZONE 0901), Transverse Mercator projec
- DX5510 × Bench mark (see explanation in Notes to Users section o FIRM panel)
- ●M1.5 River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
January 20, 1993

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
March 2, 1994 - May 16, 1994 - July 17, 1995 - for description of revision, see Notice to User page in the Flood Insurance Study report.
September 11, 2009 - to reflect revised shoreline, to incorporate previously issued Letters of Map Revision, to update corporate limits, to add and change Base Flood Elevations, to chang zone designations, to add roads and road names, to add and change Special Flood Hazard A and to reflect updated topographic information

For community map revision history prior to countywide mapping, refer to the Com Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your In agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET
150 0 150 300 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0439L

FIRM
FLOOD INSURANCE RATE

MIAMI-DADE COUNTY, FLORIDA
AND INCORPORATED AREAS

PANEL 439 OF 1031

(SEE MAP INDEX FOR FIRM PANEL LA

CONTAINS:

COMMUNITY	NUMBER	PANEL
MIAMI - DADE COUNTY	120635	0439

Notice to User: The **Map Number** shown belo used when placing map orders; the **Communi** shown above should be used on insurance applica subject community.

MAP NU
120866

MAP RE
SEPTEMBER 1

Federal Emergency Management

NOTES TO USERS

p is for use in administering the National Flood Insurance Program . It
t necessarily identify all areas subject to flooding, particularly from local
sources of small size. The **community map repository** should be
d for possible updated or additional flood hazard information.

n more detailed information in areas where **Base Flood Elevations**
nd/or **floodways** have been determined, users are encouraged to consult
d Profiles and Floodway Data and/or Summary of Stillwater Elevations
ntained within the Flood Insurance Study (FIS) report that accompanies
M. Users should be aware that BFEs shown on the FIRM represent
whole-foot elevations. These BFEs are intended for flood insurance
urposes only and should not be used as the sole source of flood
n information. Accordingly, flood elevation data presented in the FIS
hould be utilized in conjunction with the FIRM for purposes of
tion and/or floodplain management.

Base Flood Elevations shown on this map apply only landward of
onal Geodetic Vertical Datum of 1929 (NGVD 29). Users of this FIRM
e aware that coastal flood elevations are also provided in the Summary of
Elevation table in the Flood Insurance Study report for this jurisdiction.
s shown in the Summary of Stillwater Elevation table should be used for
ion and/or floodplain management purposes when they are higher than
tions shown on this FIRM.

es of the **floodways** were computed at cross sections and interpolated
cross sections. The floodways were based on hydraulic considerations
ard to requirements of the National Flood Insurance Program. Floodway
nd other pertinent floodway data are provided in the Flood Insurance
ort for this jurisdiction.

reas not in Special Flood Hazard Areas may be protected by **flood**
structures. Refer to Section 2.4 "Flood Protection Measures" of the
surance Study report for information on flood control structures for this
n.

ection used in the preparation of this map was Florida State Plane east
PSZONE 0901). The **horizontal datum** was NAD 83, GRS80 spheroid.
es in datum, spheroid, projection or State Plane zones used in the
n of FIRMs for adjacent jurisdictions may result in slight positional
es in map features across jurisdiction boundaries. These differences do
the accuracy of this FIRM.

evations on this map are referenced to the National Geodetic Vertical
f 1929. These flood elevations must be compared to structure and
levations referenced to the same **vertical datum**. For information
g conversion between the National Geodetic Vertical Datum of 1929
North American Vertical Datum of 1988, visit the National Geodetic
website at http://www.ngs.noaa.gov or contact the National Geodetic
t the following address:

rmation Services
VNGS12
Geodetic Survey
#9202
t-West Highway
ring, Maryland 20910-3282
3-3242

n current elevation, description, and/or location information for **bench**
shown on this map, please contact the Information Services Branch
National Geodetic Survey at **(301) 713-3242**, or visit its website at
w.ngs.noaa.gov.

p information shown on this FIRM was provided in digital format by the
ade County Information Technology Department. These data were
at a scale of 1:3,600 from digital orthophotography dated 2001.
l base map information was provided by the Cities of Aventura, Coral
and Homestead, the Town of Cutler Bay, and Miami-Dade County.

o reflects more detailed and up-to-date **stream channel configurations**
se shown on the previous FIRM for this jurisdiction. The floodplains and
s that were transferred from the previous FIRM may have been adjusted
m to these new stream channel configurations. As a result, the Flood
and Floodway Data tables in the Flood Insurance Study Report (which
authoritative hydraulic data) may reflect stream channel distances that
n what is shown on this map.

te limits shown on this map are based on the best data available at the
ublication. Because changes due to annexations or de-annexations may
urred after this map was published, map users should contact appropriate
ty officials to verify current corporate limit locations.

efer to the separately printed **Map Index** for an overview map of the
howing the layout of map panels; community map repository addresses;
sting of Communities table containing National Flood Insurance Program
r each community as well as a listing of the panels on which each
ty is located.

the **FEMA Map Service Center** at 1-800-358-9616 for information on
products associated with this FIRM. Available products may include
y issued Letters of Map Change, a Flood Insurance Study report, and/or
rsions of this map. The FEMA Map Service Center may also be reached
1-800-358-9620 and its website at http://msc.fema.gov.

ve questions about this map or questions concerning the National Flood
e Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or
FEMA website at http://www.fema.gov.

LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUND
BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood th
1% chance of being equaled or exceeded in any given year. The Special Flood Hazard An
area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazar
Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the wate
elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Bas
Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain);
depths determined. For areas of alluvial fan flooding, velocit
determined.

ZONE AR Special Flood Hazard Area formerly protected from the 1% annua
flood by a flood control system that was subsequently decertified.
indicates that the former flood control system is being restored to
protection from the 1% annual chance or greater flood.

ZONE A99 Area to be protected from 1% annual chance flood by a Fede
protection system under construction; no Base Flood El
determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no Bas
Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Bas
Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be k
of encroachment so that the 1% annual chance flood can be carried without substantial i
in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flo
average depths of less than 1 foot or with drainage areas le
1 square mile; and areas protected by levees from 1% annual chanc

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Area

Floodplain boundary

Floodway boundary

Zone D boundary

CBRS and OPA boundary

Boundary dividing Special Flood Hazard Area zon
boundary dividing Special Flood Hazard Areas of differe
Flood Elevations, flood depths or flood velocities.

513 Base Flood Elevation line and value; elevation in feet*

(EL 987) Base Flood Elevation value where uniform within zone; e
in feet*

* Referenced to the National Geodetic Vertical Datum of 1929

Cross section Line

Transect line

87°07'45", 32°22'30" Geographic coordinates referenced to the North Am
Datum of 1983 (NAD 83), Western Hemisphere

9776000mN 1000-meter Universal Transverse Mercator grid values, zo
17

600000 FT 5000-foot grid ticks: Florida State Plane coordinate syste
East zone (FIPSZONE 0901), Transverse Mercator projec

DX5510 × Bench mark (see explanation in Notes to Users section o
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M1.5 River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
January 20, 1993

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
March 2, 1994 - May 16, 1994 - July 17, 1995 - for description of revision, see Notice to User
page in the Flood Insurance Study report.
September 11, 2009 - to add and change Base Flood Elevations, to change zone designation
add roads and road names, to add and change Special Flood Hazard Areas, to reflect update
topographic information, to update corporate limits, to reflect revised shoreline, and to
incorporate previously issued Letters of Map Revision

For community map revision history prior to countywide mapping, refer to the Comm
Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Ins
agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
300 0 300 600 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0440L

FIRM
FLOOD INSURANCE RATE

MIAMI-DADE COUNTY
FLORIDA
AND INCORPORATED AREAS

PANEL 440 OF 1031
(SEE MAP INDEX FOR FIRM PANEL LA

CONTAINS:

COMMUNITY	NUMBER	PANEL
MIAMI - DADE COUNTY	120635	0440

Notice to User: The **Map Number** shown below
used when placing map orders; the **Communit**
shown above should be used on insurance applica
subject community.

MAP NU
12086

MAP RE
SEPTEMBER 1

Federal Emergency Management

APPENDIX C – PROPOSED AND EXISTING STAGE STORAGE CALCULATIONS

Langan Engineering and Environmental Services

15150 NW 79th Court, Suite 200
Miami Lakes, FL 33016
(786) 264-7200

Date:	**June 16, 2025**
Project Name:	**City Park**
Project Number:	**330090201**
Prepared By:	**MPC**

SURFACE WATER MANAGEMENT CALCULATIONS (S.F.W.M.D. CRITERIA)

I. GIVEN:

A. ACREAGE:

1	Lake Area =	0.00	ac.		
2	Lake Bank Area =	0.00	ac.		
3	Building =	0.00	ac.		
4	Impervious	0.00	ac.		
5	Pervious Area	953.70	ac.	Imp	0.00
6	N/A		ac.		
7	N/A		ac.		
6	**Total =**	**953.70**	**ac.**		

B. OTHER:

1. The current zoning on the property is

II. DESIGN CRITERIA:

A. WATER QUALITY CRITERIA:

Quality standards shall be provided during a 3 year, 1 hour storm event for one of the following three combinations:

1. If a wet detention system, then whichever is the greater of the following:
   a. The first inch of runoff from the entire project site.
   b. The amount of 2.5 inches times the percent impervious for the project site.

2. If a dry detention system, then 75% of the volume required for the wet detention system.

3. If a retention system, then 50% of the volume required.

Also, the following shall apply:

4. If the property is zoned "Commercial", at least 0.5 inches of retention or dry detention pre-treatment will be required.

5. Any detention system shall be designed to discharge no more than 0.5 inches of the detained volume per day.

B. WATER QUANTITY CRITERIA:

1. DESIGN EVENTS AND RAINFALL AMOUNTS:

a. Design Event for Equipment FFE

Frequency:	100	year	
Duration:	24	hour	
Amount:		inches	

b. Design Event for Minimum Road Elevation (if not specified by Local District Criteria):

Frequency:	5	year	
Duration:	24	day	
Amount:	6.50	inches	

c. Design Event for Minimum Discharge Elevation:

Frequency:	25	year	
Duration:	3	day	
Amount:	9.22	inches	3.28 credit

d. Design Event for Finish Floor Elevation

Frequency:	100	year	
Duration:	3	day	
Amount:	13.72	inches	3.28 credit

2. ADDITIONAL DESIGN INFORMATION:

a. Design Water / Control Elevation: 7.00 NGVD
(Note: Proposed minimum road elevation must be at least 2 feet above the wet season water table or control elevation.)

b. Drainage Basin / Canal Number:

C. 2.476

STAGE ELEVATION INFORMATION:

Item:	Description:	S type	Length ft.	Area ac.	Low ft.	High ft.	I %	C %	Total Area %
1	Lake Area	V		0.00			100	100	0.00
2	Lake Area	L							0.00
3		V							0.00
4	Impervious	L		0.00			100	100	0.00
5		V							
6	Park	L		953.70	7.40	9.40	0	50	1.00
7	N/A	L							0.00
8		V							
9		L							0.00
10									
11	Building =	V		0.00			100	100	0.00
E	Seepage and Evapotranspiration								
	Total:			**953.700**	**7.40**	**9.40**	**0.00**	**50.00**	**1.0**

* Abbreviations:
S = Storage; (V = Vertical Storage & L = Linear Storage)
I = Impervious
C = Compaction; (Use the following compaction factors: 0%, 50%, 100%)
T = Exfiltration Trench

D. SCS CURVE NUMBER AND SOIL STORAGE CALCULATIONS:

1. Soil Moisture Storage Table:

Existing Soil Type: **2** **FLATWOODS**

Depth to Water Table ft.	Cumulative Water Storage (Pre.-Dev.) in.	Compacted Water Storage (Post 50%) in.	Compacted Water Storage (Post 100%) in.
1	0.76	0.67	0.57
2	2.50	2.19	1.88
3	5.40	4.73	4.05
4	9.00	7.88	6.75

2. Available Soil Storage Calculation:

Item:	Description:	Ave. Elev. ft.	S in.	P Area acres	Volume Stored ac-in
1	Lake Area	0.00	0.00	0.000	0.00
2	Lake Area	0.00	0.00	0.000	0.00
3	0	0.00	0.00	0.000	0.00
4	Impervious	0.00	0.00	0.000	0.00
5	0	0.00	0.00	0.000	0.00
6	Park	8.40	1.27	953.700	1215.01
7	N/A	0.00	0.00	0.000	0.00
8	0	0.00	0.00	0.000	0.00
9	0	0.00	0.00	0.000	0.00
10	0	0.00	0.00	0.000	0.00
11	Building =	0.00	0.00	0.000	0.00
	Total:	**8.40**	**1.27**	**953.700**	**1215.01**

* Abbreviations: S = Soil Storage
P = Pervious

3. Moisture Storage Calculation (S):
= Available soil storage / Total Site Area
= 1215.01 ac-in / 953.700 acres
= **1.27 inches**

4. SCS Curve Number Calculation (CN):
= 1000 / (S + 10)
= 1000 / (1.274 + 10)
= **89**

E. SURFACE STORAGE CALCULATIONS:

1. Stage vs. Storage Calculations:

Stage ft.	STORAGE (ac-ft) Item:	1 ac-ft	2 ac-ft	3 ac-ft	4 ac-ft	5 ac-ft	6 ac-ft	7 ac-ft	8 ac-ft	9 ac-ft	10 ac-ft	E ac-ft	**Total ac-ft**
7.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8.00		0.00	0.00	0.00	0.00	0.00	85.83	0.00	0.00	0.00	0.00	0.00	85.83
8.50		0.00	0.00	0.00	0.00	0.00	288.49	0.00	0.00	0.00	0.00	0.00	288.49
9.00		0.00	0.00	0.00	0.00	0.00	610.37	0.00	0.00	0.00	0.00	0.00	610.37
9.50		0.00	0.00	0.00	0.00	0.00	1049.07	0.00	0.00	0.00	0.00	0.00	1049.07
10.00		0.00	0.00	0.00	0.00	0.00	1525.92	0.00	0.00	0.00	0.00	0.00	1525.92
10.50		0.00	0.00	0.00	0.00	0.00	2002.77	0.00	0.00	0.00	0.00	0.00	2002.77
11.00		0.00	0.00	0.00	0.00	0.00	2479.62	0.00	0.00	0.00	0.00	0.00	2479.62
11.50		0.00	0.00	0.00	0.00	0.00	2956.47	0.00	0.00	0.00	0.00	0.00	2956.47
12.00		0.00	0.00	0.00	0.00	0.00	3433.32	0.00	0.00	0.00	0.00	0.00	3433.32
12.50		0.00	0.00	0.00	0.00	0.00	3910.17	0.00	0.00	0.00	0.00	0.00	3910.17
13.00		0.00	0.00	0.00	0.00	0.00	4387.02	0.00	0.00	0.00	0.00	0.00	4387.02
13.50		0.00	0.00	0.00	0.00	0.00	4863.87	0.00	0.00	0.00	0.00	0.00	4863.87
14.00		0.00	0.00	0.00	0.00	0.00	5340.72	0.00	0.00	0.00	0.00	0.00	5340.72
14.50		0.00	0.00	0.00	0.00	0.00	5817.57	0.00	0.00	0.00	0.00	0.00	5817.57
15.00		0.00	0.00	0.00	0.00	0.00	6294.42	0.00	0.00	0.00	0.00	0.00	6294.42
15.50		0.00	0.00	0.00	0.00	0.00	6771.27	0.00	0.00	0.00	0.00	0.00	6771.27
16.00		0.00	0.00	0.00	0.00	0.00	7248.12	0.00	0.00	0.00	0.00	0.00	7248.12
16.50		0.00	0.00	0.00	0.00	0.00	7724.97	0.00	0.00	0.00	0.00	0.00	7724.97
17.00		0.00	0.00	0.00	0.00	0.00	8201.82	0.00	0.00	0.00	0.00	0.00	8201.82

* Abbreviations: E = Exfiltration Trench

Langan Engineering and Environmental Services

15150 NW 79th Court, Suite 200
Miami Lakes, FL 33016
(786) 264-7200

Date:	**June 16, 2025**
Project Name:	**City Park**
Project Number:	**330090201**
Prepared By:	

SURFACE WATER MANAGEMENT CALCULATIONS (S.F.W.M.D. CRITERIA)

I. GIVEN:

A. ACREAGE:

1	Lake Area =	66.00	ac.
2	Lake Bank Area =	0.00	ac.
3	Building =	229.49	ac.
4	Impervious	438.12	ac.
5	Pervious Area	220.09	ac.
6	N/A		ac.
7	N/A		ac.
6	**Total =**	**953.70**	**ac.**

B. OTHER:

1. The current zoning on the property is

II. DESIGN CRITERIA:

A. WATER QUALITY CRITERIA:

Quality standards shall be provided during a 3 year, 1 hour storm event for one of the following three combinations:

1. If a wet detention system, then whichever is the greater of the following:
   a. The first inch of runoff from the entire project site.
   b. The amount of 2.5 inches times the percent impervious for the project site.

2. If a dry detention system, then 75% of the volume required for the wet detention system.

3. If a retention system, then 50% of the volume required.

Also, the following shall apply:

4. If the property is zoned "Commercial", at least 0.5 inches of retention or dry detention pre-treatment will be required.

5. Any detention system shall be designed to discharge no more than 0.5 inches of the detained volume per day.

B. WATER QUANTITY CRITERIA:

1. DESIGN EVENTS AND RAINFALL AMOUNTS:

a. Design Event for Equipment FFE

Frequency:	100	year	
Duration:	24	hour	
Amount:		inches	

b. Design Event for Minimum Road Elevation (if not specified by Local District Criteria):

Frequency:	5	year	
Duration:	24	day	
Amount:	6.50	inches	

c. Design Event for Minimum Discharge Elevation:

Frequency:	25	year	
Duration:	3	day	
Amount:	9.22	inches	3.28 credit

d. Design Event for Finish Floor Elevation

Frequency:	100	year	
Duration:	3	day	
Amount:	13.72	inches	3.28 credit

2. ADDITIONAL DESIGN INFORMATION:

a. Design Water / Control Elevation: 7.00 NGVD
(Note: Proposed minimum road elevation must be at least 2 feet above the wet season water table or control elevation.)

b. Drainage Basin / Canal Number:

C. 2.476

STAGE ELEVATION INFORMATION:

Item:	Description:	S type	Length ft.	Area ac.	Low ft.	High ft.	I %	C %	Total Area %
1	Lake Area	V		66.00	7.00	7.00	100	100	6.92
2	Lake Area	L							0.00
3		V							0.00
4	Impervious	L		438.12	8.50	10.00	100	100	45.94
5		V							
6	Park	L		220.09	8.00	9.00	0	50	23.08
7	N/A	L							0.00
8	Building =	V		229.49	10.50	10.50	100	100	24.06
9		L							0.00
10									
11									
E	Seepage and Evapotranspiration								
	Total:			**953.700**	**7.00**	**10.50**	**76.92**	**88.46**	**100.0**

* Abbreviations:
S = Storage; (V = Vertical Storage & L = Linear Storage)
I = Impervious
C = Compaction; (Use the following compaction factors: 0%, 50%, 100%)
T = Exfiltration Trench

D. SCS CURVE NUMBER AND SOIL STORAGE CALCULATIONS:

1. Soil Moisture Storage Table:

Existing Soil Type: **2** **FLATWOODS**

Depth to Water Table ft.	Cumulative Water Storage (Pre.-Dev.) in.	Compacted Water Storage (Post 50%) in.	Compacted Water Storage (Post 100%) in.
1	0.76	0.67	0.57
2	2.50	2.19	1.88
3	5.40	4.73	4.05
4	9.00	7.88	6.75

2. Available Soil Storage Calculation:

Item:	Description:	Ave. Elev. ft.	S in.	P Area acres	Volume Stored ac-in
1	Lake Area	7.00	0.00	0.000	0.00
2	Lake Area	0.00	0.00	0.000	0.00
3	0	0.00	0.00	0.000	0.00
4	Impervious	9.25	2.42	0.000	0.00
5	0	0.00	0.00	0.000	0.00
6	Park	8.50	1.43	220.090	313.90
7	N/A	0.00	0.00	0.000	0.00
8	Building =	10.50	5.40	0.000	0.00
9	0	0.00	0.00	0.000	0.00
10	0	0.00	0.00	0.000	0.00
11	0	0.00	0.00	0.000	0.00
Total:		**8.50**	**9.25**	**220.090**	**313.90**

* Abbreviations: S = Soil Storage
P = Pervious

3. Moisture Storage Calculation (S):
= Available soil storage / Total Site Area
= 313.90 ac-in / 953.700 acres
= **0.33 inches**

4. SCS Curve Number Calculation (CN):
= 1000 / (S + 10)
= 1000 / (0.329 + 10)
= **97**

E. SURFACE STORAGE CALCULATIONS:

1. Stage vs. Storage Calculations:

Stage ft.	STORAGE (ac-ft) Item:	1 ac-ft	2 ac-ft	3 ac-ft	4 ac-ft	5 ac-ft	6 ac-ft	7 ac-ft	8 ac-ft	9 ac-ft	10 ac-ft	E ac-ft	**Total ac-ft**
7.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8.00		66.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66.00
8.50		99.00	0.00	0.00	0.00	0.00	27.51	0.00	0.00	0.00	0.00	0.00	126.51
9.00		132.00	0.00	0.00	36.51	0.00	110.05	0.00	0.00	0.00	0.00	0.00	278.56
9.50		165.00	0.00	0.00	146.04	0.00	220.09	0.00	0.00	0.00	0.00	0.00	531.13
10.00		198.00	0.00	0.00	328.59	0.00	330.14	0.00	0.00	0.00	0.00	0.00	856.73
10.50		231.00	0.00	0.00	547.65	0.00	440.18	0.00	0.00	0.00	0.00	0.00	1218.83
11.00		264.00	0.00	0.00	766.71	0.00	550.23	0.00	114.75	0.00	0.00	0.00	1695.68
11.50		297.00	0.00	0.00	985.77	0.00	660.27	0.00	229.49	0.00	0.00	0.00	2172.53
12.00		330.00	0.00	0.00	1204.83	0.00	770.32	0.00	344.24	0.00	0.00	0.00	2649.38
12.50		363.00	0.00	0.00	1423.89	0.00	880.36	0.00	458.98	0.00	0.00	0.00	3126.23
13.00		396.00	0.00	0.00	1642.95	0.00	990.41	0.00	573.73	0.00	0.00	0.00	3603.08
13.50		429.00	0.00	0.00	1862.01	0.00	1100.45	0.00	688.47	0.00	0.00	0.00	4079.93
14.00		462.00	0.00	0.00	2081.07	0.00	1210.50	0.00	803.22	0.00	0.00	0.00	4556.78
14.50		495.00	0.00	0.00	2300.13	0.00	1320.54	0.00	917.96	0.00	0.00	0.00	5033.63
15.00		528.00	0.00	0.00	2519.19	0.00	1430.59	0.00	1032.71	0.00	0.00	0.00	5510.48
15.50		561.00	0.00	0.00	2738.25	0.00	1540.63	0.00	1147.45	0.00	0.00	0.00	5987.33
16.00		594.00	0.00	0.00	2957.31	0.00	1650.68	0.00	1262.20	0.00	0.00	0.00	6464.18
16.50		627.00	0.00	0.00	3176.37	0.00	1760.72	0.00	1376.94	0.00	0.00	0.00	6941.03
17.00		660.00	0.00	0.00	3395.43	0.00	1870.77	0.00	1491.69	0.00	0.00	0.00	7417.88

* Abbreviations: E = Exfiltration Trench

F. MINIMUM ELEVATION CALCULATIONS TO VERIFY FLOOD PLAIN ENCROACHMENT (ZERO DISCHARGE):

1. The rainfall amount for the 100-Year, 3-Day storm event:
   = **13.72 in.**

2. Compute inches of runoff, Q:
   = (P - (0.2 S)) ^2 / (P + (0.8 X S))
   = (13.72 in. - (0.2 X 0.33 in.)) ^2 / (13.72 in. + (0.8 X 0.33 in.))
   = **13.33 inches of runoff**

3. Compute volume of runoff:
   = (Inches of Runoff) X (Project Area)
   = 13.33 inches X 953.700 acres X (1 foot / 12 inches)
   = **1059.62 ac-ft of storage required (zero discharge)**
   =

4. From the stage vs storage curve, **1059.62** ac-ft corresponds to elevation **10.28** NGVD

G. MINIMUM DISCHARGE ELEVATION CALCULATIONS (ZERO DISCHARGE):

1. The rainfall amount for the 25-Year, 3-Day storm event:
   = **9.22 in.**

2. Compute inches of runoff, Q:
   = (P - (0.2 S)) ^2 / (P + (0.8 X S))
   = (9.22 in. - (0.2 X 0.33 in.)) ^2 / (9.22 in. + (0.8 X 0.33 in.))
   = **8.84 inches of runoff**

3. Compute volume of runoff:
   = (Inches of Runoff) X (Project Area)
   = 8.84 inches X 953.700 acres X (1 foot / 12 inches)
   = **702.28 ac-ft of storage required (zero discharge)**

4. From the stage vs storage curve, **702.28** ac-ft corresponds to elevation **9.76** NGVD

H. MINIMUM ROAD CROWN ELEVATION CALCULATIONS (ZERO DISCHARGE):

1. The rainfall amount for the 100-Year, 1-Day storm event:
   = **0.00 in.**

2. Compute inches of runoff, Q:
   = (P - (0.2 S)) ^2 / (P + (0.8 X S))
   = (0.00 in. - (0.2 X 0.33 in.)) ^2 / (0.00 in. + (0.8 X 0.33 in.))
   = **0.02 inches of runoff**

3. Compute volume of runoff:
   = (Inches of Runoff) X (Project Area)
   = 0.02 inches X 953.700 acres X (1 foot / 12 inches)
   = **1.31 ac-ft of storage required (zero discharge)**

4. From the stage vs storage curve, **1.31** ac-ft corresponds to elevation **7.02** NGVD

APPENDIX D – EXFILTRATOIN TRENCH CALCULATIONS

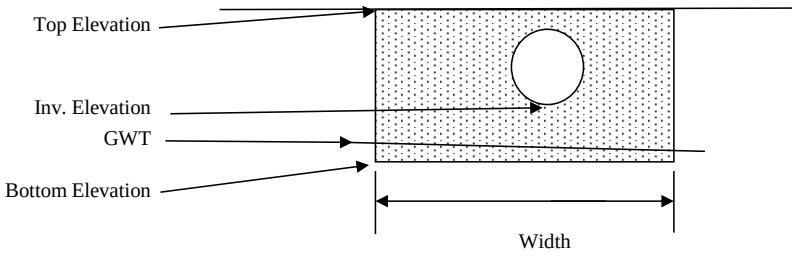
LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES

Preliminary Exfiltration Trench Calculations

WATER QUALITY CALCULATIONS

Total Drainage Area =	887.70	acres.	Total Drainage Area Less Lake		
Impervious Area =	667.61	acres.	(C =	0.90	)
Pervious Area =	220.09	acres.	(C =	0.30	)

Lowest Grnd. Elev. for Prop. Exfil. Trench =	8.50	ft. NGVD
Lowest Exist. Grate Elevation =	8.50	ft. NGVD



Proposed Exfiltration Trench:

Top Elevation =	7.00	ft. NGVD
GWT =	7.000	ft. NGVD
Pipe Diameter =	18	inches
Inv. Elevation =	7.00	ft. NGVD
Bottom Elevation =	-8.00	ft. NGVD
Width =	5.00	feet.
Weir Elevation =	n/a	ft. NGVD

Existing Exfiltration Trench:

Top Elevation =	n/a	ft. NGVD
GWT =	n/a	ft. NGVD
Pipe Diameter =	n/a	inches
Inv. Elevation =	n/a	ft. NGVD
Bottom Elevation =	n/a	ft. NGVD
Width =	n/a	feet.
Length =	n/a	feet.
Assumed Usage =	0	percent

Weighted k =	9.79E-04	cfs/sf-ft of head.
Safety Factor =	2	
DESIGN STORM FREQUENCY (YEARS):	5	
MINIMUM TIME OF CONCENTRATION (MINUTES):	10.00	

BASIN DESIGN INFORMATION per DERM

TOTAL DRAINAGE AREA =	**359.247**	hectares or	**887.700**	acres.
TOTAL IMPERVIOUS DRAINAGE AREA =	**270.178**	hectares or	**667.610**	acres.
IMPERVIOUS RUNOFF COEFFICIENT =	**0.90**			
TOTAL PERVIOUS DRAINAGE AREA =	**89.069**	hectares or	**220.090**	acres.
PERVIOUS RUNOFF COEFFICIENT =	**0.30**			
SUB-BASIN DRAINAGE AREA =	**359.247**	hectares or	**887.700**	acres.
SUB-BASIN IMPERVIOUS DRAINAGE AREA =	**270.178**	hectares or	**667.610**	acres.
IMPERVIOUS RUNOFF COEFFICIENT =	**0.90**			
SUB-BASIN PERVIOUS DRAINAGE AREA =	**89.069**	hectares or	**220.090**	acres.
PERVIOUS RUNOFF COEFFICIENT =	**0.30**			
SUB-BASIN TIME OF CONCENTRATION =	**10.00**	minutes		
DESIGN STORM FREQUENCY =	**5**	years		
SUB-BASIN TIME OF CONCENTRATION =	**10.00**	minutes		
SUB-BASIN TIME FOR FIRST INCH OF RUNOFF =	**14.03**	minutes		
REQUIRED WATER QUALITY TREATMENT TIME =	**24.03**	minutes		
V1" =	**1.94**	ac.-ft.		

WATER QUALITY CALCULATIONS

Water Qaulity Based on 1" Over the Entire Drainage Area =	**1.22**	ac-ft
Water Qaulity Based on 2.5" Over the Impervious Area =	**139.09**	ac-ft

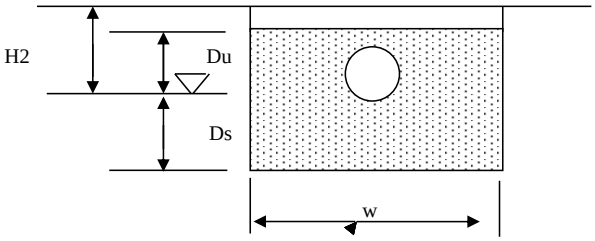
TREATMENT VOLUME REQUIRED (Greater of the two above):

Vtrmt =	**6,058,561**	**cu. ft.**
Vtrmt =	**139.09**	**ac.-ft.**

TYPICAL EXFILTRATION TRENCH DESIGN by SFWMD

L = SF x (Volume WQ + Volume Additional) / [k x (2 x H2 x Du - Du^2 + 2 x H2 x Ds) + (1.39 x 10^-4) x (W x Du + PS)]

Volume = Treatment Vol. - Capacity of Exist. Trench (ac-in)
k = Weighted Hyd. Conductivity (cfs/sf - ft)
H2 = Depth to the Water Table (ft)
W = Trench width (ft)
Du = Non-Saturated Trench Depth (ft)
Ds = Saturated Trench Depth (ft)
0 SF = Safety Factor
PS = Pipe Storage (ft.^3)



Capacity of Exist. Exfil. Trench =	**0.000**	ha-m or	**0.000**	ac.-ft.
Treatment Volume =	**17.163**	ha-m or	**139.09**	ac.-ft.
Volume =	**1669.025**	ac-in.		
k =	**9.79E-04**	cfs/sf-ft		
H2 =	**1.50**	ft.		
W =	**5.00**	ft.		
Du =	**0.00**	ft.		
Ds =	**15.00**	ft.		
SF =	**2.00**			

L Required = 75,350 feet

PROVIDED LENGTH = 182,000 feet

APPENDIX E – FLOOD PLAIN COMPENSATION

LANGAN

6/19/2025

City Park

FLOODPLAIN COMPENSATIONS CALCULATIONS

SURFACE WATERMANAGEMENT CALCULATIONS

I. Design Criteria:

1) SHWT: 7.00 ft. NGVD

2) Rainfall Amounts:

Design Events	SFWMD Rainfall Amounts*	
	24 Hour	72 Hour
100 Year Storm Event	12.00 inches	17.00 inches

*Rainfall data was obtained from the SFWMD rainfall maps Handbook Volume II

II. Pre-Development Runoff and Volume Calculations

1) Pre-Development Area Breakdown:

Description	Area (Ac.)	% of Area	From Elevation (ft.)	To Elevation (ft.)	C % (0%, 50%, 100%)
Building	0.00	0.00%			
Pervious	953.70	100.00%	7.40	9.30	0%
Impervious	0.00	0.00%			

Total Site Area: **953.70 Ac.***

*Area excludes the existing stadium building coverage which has a separate drainage system from the rest of the site

2) SCS Curve Number and Soil Storage Calculations:

A) Soil Moisture Storage table for Flatwoods (2) Soil Type:

Depth to Water Table (ft.)	Cumulative Moisture Storage (in.) C 0%	Cumulative Moisture Storage (in) C 50%	Cumulative Moisture Storage (in.) C 100%
1	0.60	0.53	0.45
2	2.50	2.19	1.88
3	5.40	4.73	4.05
4	9.00	7.88	6.75

C=Compaction

Note: Moisture Storage based on SFWMD Part III Section F. Water Storage, A. Ground Storage

B) Available Soil Storage Calculations:

Soil Storage Calculations:

Description	Area (Ac.) (A)	Avg. Elevation (ft.)	Depth to SHWT (ft.)	Moisture Storage (S)	Volume Stored (Ac-in) (V)*
Building	0.00	0.00			0.00
Pervious	953.70	8.35	1.35	7.88	7510.39
Impervious	0.00	0.00			0.00

*V=A x S

Total Volume Stored: **7510.39**

Moisture Storage Calculation (S):

= Available Storage / Total Site Area
= 7510.39 ac-in / 953.70 acres
= **7.88 inches**

SCS Curve Number Calculation (CN):

= 1000 / (S + 10)
= 1000 / (2.24 + 10)
= **56**

4) Site Pre-Development Runoff Volume and Sotrage Volume Calculations

A) SCS Runoff Volume Calculation:

$$= \frac{(P - 0.2\,S)^2}{(P + 0.8\,S)}$$

$$= \frac{(17 - 0.2\,(2.29))^2}{(17 + 0.8(2.29))}$$

= **10.21 inches**

Q= 14.53 in x 129.40 ac
= 9738.82 ac-in
811.57 ac-ft

B) Available Site Pre-development Storage:
Available Volume = **610.37 ac-ft***
This volume was calculated at elevation 9 ft-NGVD, which is the FEMA Base Flood Elevation at the site

C) Difference Between the Runoff Storage and Available Storage Volume
= **201.20 ac-ft**
The runoff volume is larger than the available storage, therefore the site is an exporter site.

The proposed development will retain the 100 year 3 day storm event, therefore, there will be no negative impact to the surrounding area.

APPENDIX F– NUTRIENT LOADING ANALYSIS

Complete Report (not including cost)

Project: City Park
Date: 7/29/2025 11:07:54 AM

Site and Catchment Information

Analysis: Net Improvement

Catchment Name	City Park
Rainfall Zone	Florida Zone 5
Annual Mean Rainfall	55.00

Pre-Condition Landuse Information

Landuse	Agricultural - General: TN=2.800 TP=0.487
Area (acres)	953.70
Rational Coefficient (0-1)	0.11
Non DCIA Curve Number	74.00
DCIA Percent (0-100)	0.00
Nitrogen EMC (mg/l)	2.800
Phosphorus EMC (mg/l)	0.487
Runoff Volume (ac-ft/yr)	500.931
Nitrogen Loading (kg/yr)	1,729.414
Phosphorus Loading (kg/yr)	300.794

Post-Condition Landuse Information

Landuse	Multi-Family: TN=2.320 TP=0.520
Area (acres)	953.70
Rational Coefficient (0-1)	0.47
Non DCIA Curve Number	77.00
DCIA Percent (0-100)	50.00
Wet Pond Area (ac)	66.00
Nitrogen EMC (mg/l)	2.320
Phosphorus EMC (mg/l)	0.520
Runoff Volume (ac-ft/yr)	1,917.136
Nitrogen Loading (kg/yr)	5,484.083
Phosphorus Loading (kg/yr)	1,229.191

Catchment Number: 1 Name: City Park

Project: City Park
Date: 7/29/2025

Multiple BMP in Series Design Parameters

BMP in Series Number: 1
BMP Type: Exfiltration

Pipe Span (in)	18.0
Pipe Rise (in)	18.0
Pipe Length (ft)	180,000.0
Trench Width (ft)	5.0
Trench Depth (ft)	15.0
Trench Length (ft)	180,000.0
Aggregate Void Ratio (fraction)	0.40
Storage Volume (Ac-ft)	128.35
Retention Depth (in over CA)	1.735

BMP in Series Number: 2
BMP Type: Wet Detention

Permanent Pool Volume (ac-ft)	792.000
Permanent Pool Volume (ac-ft) for 31 days residence	162.825
Annual Residence Time (days)	151
Littoral Zone Efficiency Credit	
Wetland Efficiency Credit	

BMP in Series Number: 3
BMP Type: None

BMP in Series Number: 4
BMP Type: None

Watershed Characteristics

Catchment Area (acres)	953.70
Contributing Area (acres)	887.700
Non-DCIA Curve Number	77.00
DCIA Percent	50.00
Rainfall Zone	Florida Zone 5
Rainfall (in)	55.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	68
Provided TN Treatment Efficiency (%)	88
Required TP Treatment Efficiency (%)	76
Provided TP Treatment Efficiency (%)	95

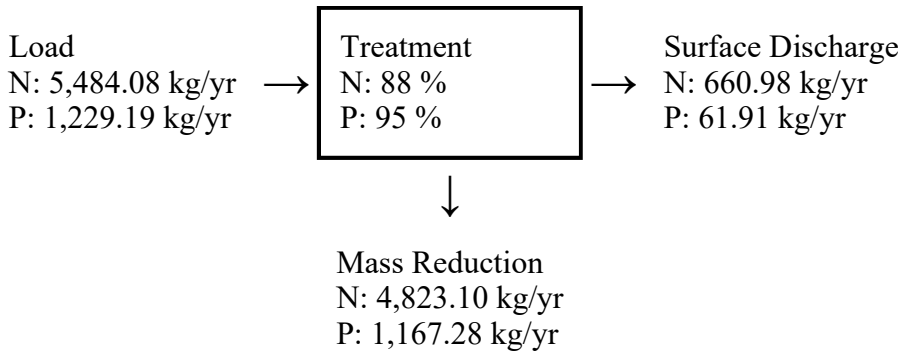
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

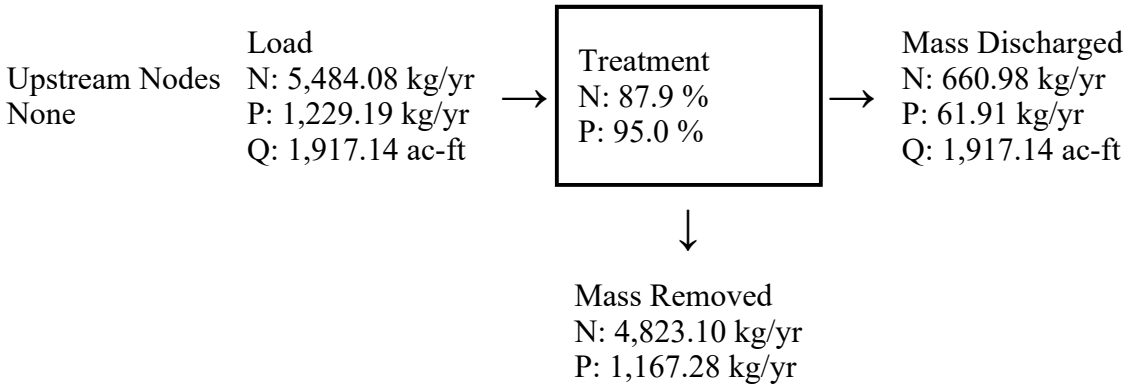
Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	4,650.583
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	1,042.372
TP Concentration (mg/L)	0.000

Load for Multiple BMP in Series



Load Diagram for Multiple BMP (As Used In Routing)



Summary Treatment Report Version: 2.0.1

Project: City Park

Date:7/29/2025

Analysis Type: Net Improvement
BMP Types:
Catchment 1 - Multiple BMP

Routing Summary
Catchment 1 Routed to Outlet

Total nitrogen target removal met? YES
Total phosphorus target removal met? YES

Summary Report

Nitrogen

Surface Water Discharge

Total N pre load	1729.41 kg/yr	
Total N post load	5484.08 kg/yr	
Target N load reduction	68 %	
Target N discharge load	1729.41 kg/yr	
Percent N load reduction	88 %	
Provided N discharge load	660.98 kg/yr	1457.46 lb/yr
Provided N load removed	4823.1 kg/yr	10634.94 lb/yr

Phosphorus

Surface Water Discharge

Total P pre load	300.79 kg/yr	
Total P post load	1229.19 kg/yr	
Target P load reduction	76 %	
Target P discharge load	300.79 kg/yr	
Percent P load reduction	95 %	
Provided P discharge load	61.91 kg/yr	136.52 lb/yr
Provided P load removed	1167.28 kg/yr	2573.84 lb/yr

From Pre-Condition Loads

Existing N Discharge	1729.41 (kg/yr)
Existing P Discharge	300.794 (kg/yr)