F-06-2021 - Harvey Oyer Park (Precast Privacy Wall) (2010 N Federal Hwy., Boynton Beach, FL 33435)
RFQ NO. 028-2511-20/RW PRE-QUALIFICATION OF CONTRACTORS FOR MINOR CONSTRUCTION SERVICES - BID FORM

ITEM	DESCRIPTION	QTY	UNIT	Grand Total
	Supply all labor, material, tools, equipment, hardware, supplies, and supervision per the following scope, (Job Site to picked up and clean for the duration of the project). Perform all work in a professional and courteous manner. Protect any city property for the duration of the project. Contractor is responsible for maintaining a safe and secure work area. ***ALL PRODUCT SPECS SHALL BE SUBMITTED FOR APPROVAL.***	1	LS	
	Install new precast wall per attached pdf plans.			
	DUMPSTER: Contractor must use a City of Boynton Beach Dumpster and is responsible for all fees, delivery and pick-up , call (561)-742-6200 to schedule.			
	CONTRACTOR SHALL ADHERE TO ALL CITY OF BOYNTON BEACH CONSTRUCTION TIMES AND NOISE ORDINANCES.			
	Precast Wall Installation			
	Prepare Site with any necessary safety measures			
	Removeand dispose of all existing vegetation on south side of property line-any vegetation in conflict with or within 3' ft of the proposed wall location			
	Grade as per survey, elevations - **Provide Survey for Property Line Staking**			
	Compact and Test (LRB 98% min.) at all column footer locations			
	Construct concrete footer locations			
	Take concrete cylinders every 50 cy or each days production for all in situ placed concrete			
	Install Precast columns and wall sections (Center line of wall shall be 2'-3" offset from Property line)			
	Prep , prime & Paint Precast Wall -both sides (2 coats - **"MAB5106-" Windridge**")			
	NOTES:			
	Provide all QA/QC reports from Precast Plant Mfr			
	Provide all density and cylinder compressive reports for job site concrete			
	Provide mill certs for all rebar used in footings			
	Layout wall as per plan to avoid FPL poles and sewer MH existing locations			
	Site Restorations Plan			
	Remove all trash and debris			
	Restore all Soded areas			

Grand Total Bid Price (in words)

Name of Firm Submitting Bid Proposal

Name of Person Submitting Bid Proposal

Name of Person Submitting Bid Proposal

(SIGNATURE)

Date:

REPORT OF
GEOTECHNICAL EXPLORATION

PROPOSED NORTHERN PERIMETER SITE WALL
HARVEY E. OYER JR. PARK
2010 NORTH FEDERAL HIGHWAY
BOYNTON BEACH, FLORIDA

FOR

CITY OF BOYNTON BEACH
PUBLIC WORKS/ENGINEERING
P.O. BOX 310
BOYNTON BEACH, FLORIDA 33435

PREPARED BY

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

ORDER NO. 1565.18

APRIL 2020

Nutting Engineers
of Florida Inc. | Established 1967
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Geotechnical & Construction Materials
Engineering, Testing, & Inspection
Environmental Services

Offices throughout the state of Florida

www.nuttingengineers.com info@nuttingengineers.com

April 6, 2020

Ms. Paola Mendoza
City of Boynton Beach
Public Works/Engineering
P.O. Box 310
Boynton Beach, Florida 33435
Phone: 561-742-6266 Email: mendozap@bbfl.us

Subject: Report of Geotechnical Exploration
Proposed Northern Perimeter Site Wall
Harvey E. Oyer Jr. Park
2010 North Federal Highway
Boynton Beach, Florida

Dear Ms. Mendoza:

Nutting Engineers of Florida, Inc. (NE), has performed a Geotechnical Exploration for the proposed perimeter site wall at the above referenced site in Boynton Beach, Florida. This exploration was performed in accordance with the written authorization to proceed provided by the City of Boynton Beach (PO No. 200980) dated March 23, 2020. This evaluation was performed to develop information regarding subsurface conditions at specific test locations which along with proposed construction information provided was used to develop opinions regarding earthwork procedures and foundations for support of the proposed construction. This report presents our findings and recommendations based upon the information examined at the time of this evaluation.

PROJECT INFORMATION

We understand that plans include the construction of a new precast concrete site wall along the northern end of the park's property line (east to west). The wall will be approximately 1,100 linear feet long and will be eight feet high. The precast concrete panels will be 20-feet long and supported upon either approximately five-foot deep column post embedment or individual column foundations. We were provided plans for the new construction. It is anticipated that the new wall will be constructed upon a shallow foundation system, similar to structures within the immediate area.

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

1310 Neptune Drive • Boynton Beach, Florida 33426 • (561) 736-4900 • Fax (561) 737-9975
Broward (954) 941-8700 • Port St. Lucie (772) 408-1050 • Miami Dade (305) 624-0060

GENERAL SUBSURFACE CONDITIONS

Soil Survey Maps

As part of the geotechnical exploration, we have reviewed available Soil Conservation Service (SCS) survey maps for Palm Beach County. These SCS maps provide qualitative information about potential general shallow soil conditions in the project vicinity. This information was derived from approximately 6 ft. deep manual auger borings, aerial photo and surface feature interpretation at some point in the past (mid 1980's to early 1970's). The SCS data may or may not reflect actual current site conditions. As indicated in the Palm Beach County Soil Survey Map the soils at this site consist of Myakka sand. This series can be described as nearly level, poorly drained, deep, sandy soil that has a dark colored layer, weakly cemented with organic matter, above a depth of 30 inches. It is in broad, flatwoods in the eastern part of the survey area. These soils were naturally formed in deep sandy marine sediment. We note that the maximum depth of the survey is six feet.

Subsurface Exploration

NUTTING ENGINEERS OF FLORIDA, INC. performed five Standard Penetration Test (SPT) borings (ASTM D-1586) to depths of fifteen feet below land surface. The locations of the test borings are indicated on the boring location plan presented in the Appendix of this report. The boring locations were identified in the field using approximate methods; namely, a measuring wheel and available surface controls. As such the soil boring locations should be considered to be approximate.

We note that due to the potential for underground utilities at the test boring locations, the upper four feet of the soil was manually cleared. Because of this, the relative density of the upper four feet was not obtained.

Test Boring Results

In general, the soil boring locations recorded a surface layer of mixed brown/gray sand or sand and limestone fragments in the in the upper four feet, underlain by very loose to medium dense dark brown to brown sand to a depth of fifteen feet, the maximum depth explored. Please see the enclosed soil classification sheet in the Appendix of this report for additional important information regarding these descriptions, the field evaluation and other related information.

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

Groundwater Information

The immediate groundwater level was measured at the boring locations at the time of drilling. The groundwater level was encountered at a depth of two and a half to four and a half feet below the existing ground surface.

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

ANALYSIS AND RECOMMENDATIONS

Proposed Site Walls

The borings performed for this project suggest that the soils beneath the wall foundations may be prepared using conventional site preparation and compaction techniques as described herein. Once the site is successfully prepared in accordance with the recommendations presented in this report, the site may be developed with the proposed site wall foundations using a shallow foundation system designed for an allowable soil bearing pressure of 2,000 pounds per square foot. Once plans are finalized for the proposed construction, a copy should be provided to Nutting Engineers for review to determine whether additional details or changes to our recommendations are warranted. All work should be completed in accordance with applicable building codes, other regulations as appropriate, and good standard local practice.

We recommend that the footings be at minimum widths as required by the Florida Building Code, even though the soil bearing pressure may not be fully developed in all cases. We also recommend that if footings are developed, the bottom of footings be at least 12 inches below the lowest adjacent finished grade.

Settlement Analysis – Site Walls

We performed a settlement evaluation based upon a hypothetical improved soil profile following completion of the compaction using a moderately sized vibratory compactor for the construction. This method should improve the soils to provide an allowable bearing capacity of 2,000 pounds per square foot. It was estimated that upon proper completion, long-term total settlements should be on the order of less than approximately one inch. Differential settlements should be approximately one-half of the total settlement. Most of this settlement should occur upon the application of the dead load during construction.

Site Preparation – Site Walls (Where Footings are Developed)

Upon approval by the geotechnical engineer, the foundation area should be excavated and the footings formed.

The bottom of foundation excavations should be compacted after excavation to develop a minimum density requirement of 98 percent of the maximum modified Proctor dry density modified Proctor maximum dry density (ASTM D-1557), for a minimum depth of one foot below the bottom of the footing depth, as determined by field density compaction tests.

Site Preparation – Site Walls (Column Posts Embedded 4 to 5 Feet)

Once the column post locations have been augered and cleared, our office should be notified to verify that the auger-hole diameter is of sufficient size and depth per the construction documents to verify soil bearing pressure conformance. The installation of the post system should be monitored by a representative of Nutting Engineers on a full-time basis to verify that the engineering intent is accomplished.

GENERAL INFORMATION

Our client for this geotechnical evaluation was:

Ms. Paola Mendoza
City of Boynton Beach
Public Works/Engineering
P.O. Box 310
Boynton Beach, Florida 33435

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

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

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

Nutting Engineers of Florida, Inc. (NE), recommends that we be contracted to provide input to the design team and owner during the foundation and earthwork design process and that we review final foundation drawings and specifications to verify that our report recommendations and design intent have been properly implemented. NE shall also perform testing and inspections during the earthwork and foundation construction as recommended in this report. If NE is not engaged to perform these services as detailed herein, the Client agrees that NE shall bear no liability for the interpretation, implementation of our report, its recommendations and/or inspection and testing services as described in this report if implemented by others.

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

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

We appreciate the opportunity to be of service on this project. If we can be of any further assistance, or if you need additional information, please contact us at your convenience.

Sincerely,
NUTTING ENGINEERS OF FLORIDA, INC.

4/7/2020

Richard C. Wohlfarth, P.E.
Director of Engineering

Christopher E. Gworek, P.E. #69947
Senior Engineer

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

REP BOYNTON BEACH HARVEY OYER PARK PRECAST SITE WALL SHALLOW CEG

NUTTING ENGINEERS OF FLORIDA, INC. ESTABLISHED 1967	City of Boynton Beach **Harvey E. Oyer Jr. Park** 2010 N. Federal Highway Boynton Beach, Florida ORDER NO. 1565.18	APPROXIMATE TEST LOCATION PLAN	GEOTECHNICAL EXPLORATION	FIG. 1

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Boynton Beach, Fl., 33426
Telephone: 5617364900
Fax: 5617379975

BORING NUMBER B-1

PROJECT NUMBER 1565.18

CLIENT City of Boynton Beach **PROJECT NAME** Harvey E. Oyer Jr. Park

PROJECT LOCATION 2010 North Federal Highway, Boynton Beach, Florida

DATE STARTED 3/31/20 COMPLETED 3/31/20 SURFACE ELEVATION REFERENCE Approx. @ Road Crown

DRILLING METHOD Standard Penetration Boring GROUND WATER LEVELS:

LOGGED BY T. Lovett CHECKED BY C. Gworek ▽ AT TIME OF DRILLING 4.2 ft

APPROXIMATE LOCATION OF BORING **As located on site plan**

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲ 10 20 30 40 / PL MC LL 20 40 60 80 / □ FINES CONTENT (%) □ 20 40 60 80
0		TOPSOIL 4"				
		Lt. brown fine SAND and LIMESTONE fragments	AU 1			
			AU 2			
5		Lt. gray to brown fine SAND	SS 3	3-2-2-2	4	▲
			SS 4	2-3-5-8	8	▲
10			SS 5	4-7-8-8	15	▲
			SS 6	3-4-5-6	9	▲
15			SS 7	4-4-7-8	11	▲
		Bottom of hole at 15.0 feet.				

TEST NUTTING BOREHOLE 1-1565.18 CITY OF BOYNTON BEACH - HARVEY E. OYER JR. PARK 2010 N FEDERAL HIGHWAY BOYNTON BEACH.GPJ GINT US.GDT 4/3/20

Disclaimer Nutting Engineers of Florida, Inc. accepts no liability for the consequences of the independent interpretation of drilling logs by others.

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BORING NUMBER B-2

PROJECT NUMBER 1565.18

CLIENT City of Boynton Beach **PROJECT NAME** Harvey E. Oyer Jr. Park

PROJECT LOCATION 2010 North Federal Highway, Boynton Beach, Florida

DATE STARTED 3/31/20 COMPLETED 3/31/20 SURFACE ELEVATION REFERENCE Approx. @ Road Crown

DRILLING METHOD Standard Penetration Boring GROUND WATER LEVELS:

LOGGED BY T. Lovett CHECKED BY C. Gworek ▽ AT TIME OF DRILLING 3.5 ft

APPROXIMATE LOCATION OF BORING **As located on site plan**

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value
0		Gray fine SAND	AU 1		
			AU 2		
		▽ Lt. brown fine SAND			
5			SS 3	1-2-3-4	**5**
			SS 4	4-5-5-8	**10**
		Brown fine SAND			
			SS 5	3-4-5-6	**9**
10		Lt. brown fine SAND			
			SS 6	4-4-4-4	**8**
			SS 7	3-4-3-6	**7**
15		Bottom of hole at 15.0 feet.			

▲ SPT N VALUE ▲
10 20 30 40
PL MC LL
20 40 60 80
□ FINES CONTENT (%) □
20 40 60 80

TEST NUTTING BOREHOLE 1-1565.18 CITY OF BOYNTON BEACH - HARVEY E. OYER JR. PARK 2010 N FEDERAL HIGHWAY BOYNTON BEACH.GPJ GINT US.GDT 4/3/20

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BORING NUMBER B-3

PROJECT NUMBER 1565.18

CLIENT City of Boynton Beach

PROJECT NAME Harvey E. Oyer Jr. Park

PROJECT LOCATION 2010 North Federal Highway, Boynton Beach, Florida

DATE STARTED 3/31/20 COMPLETED 3/31/20

SURFACE ELEVATION REFERENCE Approx. @ Road Crown

DRILLING METHOD Standard Penetration Boring

GROUND WATER LEVELS:

LOGGED BY T. Lovett CHECKED BY C. Gworek

▽ AT TIME OF DRILLING 2.7 ft

APPROXIMATE LOCATION OF BORING **As located on site plan**

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value
0		Dk. gray to dk. brown fine SAND	AU 1		
		▽	AU 2		
5			SS 3	5-7-8-13	**15**
			SS 4	8-11-12-16	**23**
			SS 5	8-13-12-10	**25**
10		Brown fine SAND	SS 6	9-14-16-15	**30**
			SS 7	13-15-19-23	**34**
15		Bottom of hole at 15.0 feet.			

▲ SPT N VALUE ▲
10 20 30 40
PL MC LL
20 40 60 80
□ FINES CONTENT (%) □
20 40 60 80

TEST NUTTING BOREHOLE 1-1565.18 CITY OF BOYNTON BEACH - HARVEY E. OYER JR. PARK 2010 N FEDERAL HIGHWAY BOYNTON BEACH.GPJ GINT US.GDT 4/3/20

Disclaimer Nutting Engineers of Florida, Inc. accepts no liability for the consequences of the independent interpretation of drilling logs by others.

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BORING NUMBER B-4

PROJECT NUMBER 1565.18

CLIENT City of Boynton Beach **PROJECT NAME** Harvey E. Oyer Jr. Park

PROJECT LOCATION 2010 North Federal Highway, Boynton Beach, Florida

DATE STARTED 3/31/20 COMPLETED 3/31/20 SURFACE ELEVATION REFERENCE Approx. @ Road Crown

DRILLING METHOD Standard Penetration Boring GROUND WATER LEVELS:

LOGGED BY T. Lovett CHECKED BY C. Gworek ▽ AT TIME OF DRILLING 3.5 ft

APPROXIMATE LOCATION OF BORING **As located on site plan**

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲ 10 20 30 40 / PL MC LL 20 40 60 80 / □ FINES CONTENT (%) □ 20 40 60 80
0		TOPSOIL 6"				
		Dk. gray to dk. brown fine SAND	AU 1			
		▽	AU 2			
5			SS 3	2-3-3-6	**6**	▲
			SS 4	3-4-5-7	**9**	▲
10			SS 5	2-1-2-4	**3**	▲
		Brown fine SAND	SS 6	6-8-11-18	**19**	▲
15			SS 7	10-14-12-19	**26**	▲
		Bottom of hole at 15.0 feet.				

TEST NUTTING BOREHOLE 1-1565.18 CITY OF BOYNTON BEACH - HARVEY E. OYER JR. PARK 2010 N FEDERAL HIGHWAY BOYNTON BEACH.GPJ GINT US.GDT 4/3/20

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BORING NUMBER B-5

PROJECT NUMBER 1565.18

CLIENT City of Boynton Beach **PROJECT NAME** Harvey E. Oyer Jr. Park

PROJECT LOCATION 2010 North Federal Highway, Boynton Beach, Florida

DATE STARTED 3/31/20 COMPLETED 3/31/20 SURFACE ELEVATION REFERENCE Approx. @ Road Crown

DRILLING METHOD Standard Penetration Boring GROUND WATER LEVELS:

LOGGED BY T. Lovett CHECKED BY C. Gworek ▽ AT TIME OF DRILLING 3.5 ft

APPROXIMATE LOCATION OF BORING **As located on site plan**

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲ 10 20 30 40 / PL MC LL 20 40 60 80 / □ FINES CONTENT (%) □ 20 40 60 80
0		TOPSOIL 6"				
		Dk. gray to dk. brown fine SAND	AU 1			
		▽	AU 2			
5			SS 3	2-2-3-5	**5**	▲
		Brown fine SAND	SS 4	3-4-4-6	**8**	▲
			SS 5	3-2-1-3	**3**	▲
10			SS 6	5-7-10-14	**17**	▲
		Lt. brown fine SAND, little limestone				
			SS 7	7-9-12-17	**21**	▲
15		Bottom of hole at 15.0 feet.				

TEST NUTTING BOREHOLE 1-1565.18 CITY OF BOYNTON BEACH - HARVEY E. OYER JR. PARK 2010 N FEDERAL HIGHWAY BOYNTON BEACH.GPJ GINT US.GDT 4/3/20

LIMITATIONS OF LIABLILITY

WARRANTY

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

SUBSURFACE EXPLORATION

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

The soil boring log includes sampling information, description of the materials recovered, approximate depths of boundaries between soil and rock strata as encountered and immediate depth to water data. The log represents conditions recorded specifically at the location where and when the boring was made. Site conditions may vary through time as will subsurface conditions. The boundaries between different soil strata as encountered are indicated at specific depths; however, these depths are in fact approximate and dependent upon the frequency of sampling, nature and consistency of the respective strata. Substantial variation between soil borings may commonly exist in subsurface conditions. Water level readings are made at the time and under conditions stated on the boring logs. Water levels change with time, precipitation, canal level, local well drawdown and other factors. Water level data provided on soil boring logs shall not be relied upon for groundwater based design or construction considerations.

LABORATORY AND FIELD TESTS

Tests are performed in *general* accordance with specific ASTM Standards unless otherwise indicated. All criteria included in a given ASTM Standard are not always required and performed. Each test boring report indicates the measurements and data developed at each specific test location.

ANALYSIS AND RECOMMENDATIONS

The geotechnical report is prepared primarily to aid in the design of site work and structural foundations. Although the information in the report is expected to be sufficient for these purposes, it shall not be utilized to determine the cost of construction nor to stand alone as a construction specification. Contractors shall verify subsurface conditions as may be appropriate prior to undertaking subsurface work.

Report recommendations are based primarily on data from test borings made at the locations shown on the test boring reports. Soil variations commonly exist between boring locations. Such variations may not become evident until construction. Test pits sometimes provide valuable supplemental information that derived from soil borings. If variations are then noted, the geotechnical engineer shall be contacted in writing immediately so that field conditions can be examined and recommendations revised if necessary.

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

CONSTRUCTION OBSERVATION

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

SOIL AND ROCK CLASSIFICATION CRITERIA

SAND/SILT

N-VALUE (bpf)	RELATIVE DENSITY
0 – 4	Very Loose
5 – 10	Loose
11 – 29	Medium
30 – 49	Dense
>50	Very dense
100	Refusal

CLAY/SILTY CLAY

N-VALUE (bpf)	UNCONFINED COMP. STRENGTH (tsf)	CONSISTENCY
<2	<0.25	v. Soft
2 – 4	0.25 – 0.50	Soft
5 – 8	0.50 – 1.00	Medium
9 – 15	1.00 – 2.00	Stiff
16 – 30	2.00 – 4.00	v. Stiff
>30	>4.00	Hard

ROCK

N-VALUE (bpf)	RELATIVE HARDNESS	ROCK CHARACTERISTICS
N≥ 100	Hard to v. hard	Local rock formations vary in hardness from soft to very hard within short vertical and horizontal distances and often contain vertical solution holes of 3 to 36 inch diameter to varying depths and horizontal solution features. Rock may be brittle to split spoon impact, but more resistant to excavation.
25≤ N ≤ 100	Medium hard to hard	
5≤ N ≤ 25	Soft to medium hard	

PARTICLE SIZE

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

DESCRIPTION MODIFIERS

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

Major Divisions			Group Symbols	Typical names	Laboratory classification criteria
Coarse-grained soils (More than half of material is *larger* than No. 200 sieve size)	Gravels (More than half of coarse fraction is larger than No. 4 sieve size)	Clean gravels (Little or no fines)	GW	Well-graded gavels, gravel-sand mixtures, little or no fines	Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows: Less than five percent.....GW, GP, SW, SP More than 12 percent.....GM, GC, SM, SC 5 to 12 percent.....*Borderline* cases requiring dual systems**
			GP	Poorly graded gravels, gravel-sand mixtures, little or no fines	
		Gravels with fines (Appreciable amount of fines)	GW* d u	Silty gravels, gravel-sand-silt mixtures	
			GC	Clayey gravels, gravel-sand-clay mixtures	
	Sands (More than half of coarse fraction is smaller than No. 4 sieve size)	Clean sands (Little or no fines)	SW	Well-graded sands, gravelly sands, little or no fines	
			SP	Poorly graded sands, gravelly sands, little or no fines	
		Sands with fines (Appreciable amount of fines)	SM* d u	Silty sands, sand-silt mixtures	
			SC	Clayey sands, sand-clay mixtures	
Fine-grained soils (More than half of material is *smaller* than No. 200 sieve size)	Silts and clays (Liquid limit less than 50)		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity	
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy, clays, silty clays, lean clays	
			OL	Organic silts and organic silty clays of low plasticity	
	Silts and clays (Liquid limit greater than 50)		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts	
			CH	Inorganic clays or high plasticity, fat clays	
			OH	Organic clays of medium to high plasticity, organic silts	
	Highly organic soils		PT	Peat and other highly organic soils	

$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_z = \frac{(D_{30})^2}{D_{10} x D_{60}}$ *between* 1 and 3

Not meeting all gradation requirements for GW

Atterberg limits below "A" line or P.I. less than 4

Atterberg limits above "A" line with P.I. greater than 7

Above "A" line with P.I. between 4 and 7 are *borderline* cases requiring use of dual symbols.

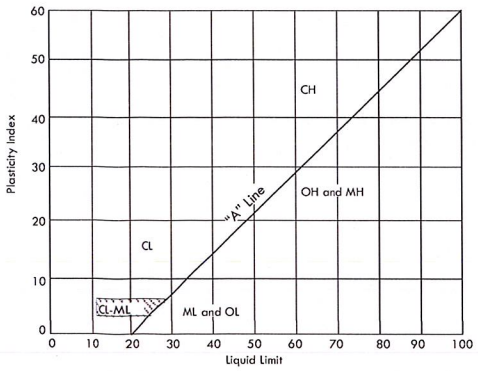
$C_u = \frac{D_{60}}{D_{10}}$ greater than 6; $C_z = \frac{(D_{30})^2}{D_{10} x D_{60}}$ *between* 1 and 3

Not meeting all gradation requirements for SW

Atterberg limits below "A" line or P.I. less than 4

Atterberg limits above "A" line with P.I. more than 7

Limits plotting in hatched zone with P.I. between 4 and 7 are *borderline* cases requiring use of dual system.



Plasticity Chart

Nutting Engineers of Florida Inc. | Established 1967
Your Project Is Our Commitment

SPECIFIC PURPOSE SURVEY

HARVEY E. OYER, JR. PARK

SECTION 15, TOWNSHIP 45 SOUTH, RANGE 43 EAST

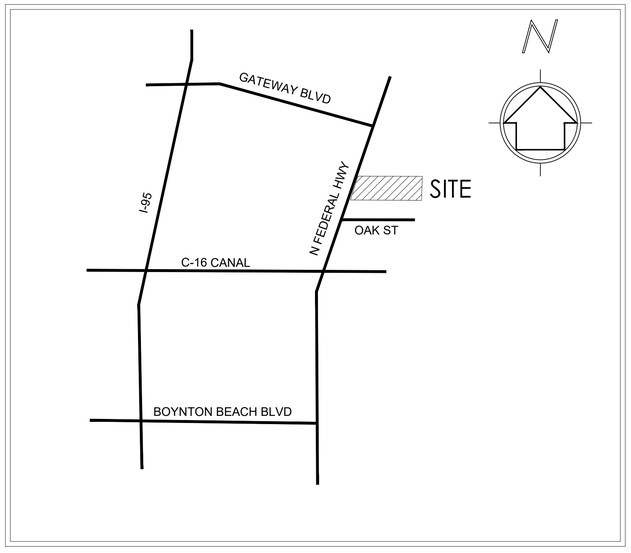
PALM BEACH COUNTY, FLORIDA

FOR THE BENEFIT OF:
CITY OF BOYNTON BEACH

LEGEND:

_ _ _ _ _ _ _	= Bottom of Bank
C	= Calculated
℄	= Center Line
— x — x —	= Chainlink Fence
	= Concrete
○☼	= Light Pole
	= Electrical Junction Box
ELEV.	= Elevation
x 0.00	= Existing Elevation (Ground shots to tenths only)
	= Flag Pole
	= Gate Valve (WV=Water Valve) (SV=Sewer Valve)
LB	= Licensed Surveying Business
NAD	= North American Datum
NAVD	= North American Vertical Datum
ORB	= Official Records Book
P	= Plat
PG.	= Page
PBCR	= Palm Beach County Records
PLS	= Professional Land Surveyor
PSM	= Professional Surveyor & Mapper
PB	= Plat Book
RPB	= Road Plat Book
R/W	= Right-of-Way
—☼— & —☼—	= Information Signs (IV=Irrigation Valve)
— — — — —	= Top of Bank
	= Wood Dock

LOCATION MAP



PROJECT LOCATED IN
SECTION 15 / TOWNSHIP 45 SOUTH / RANGE 43 EAST
PALM BEACH COUNTY, FLORIDA

SHEET INDEX

SURVEYOR NOTES

1. The last date of field survey was September 26, 2019.
2. This survey was prepared in accordance with the "Standards of Practice", as set forth by the Florida Board of Professional Surveyors and Mappers in rule 5j-17.050 through 5j-17.053, of the Florida Administrative Code.
3. This survey map and/or report or the copies thereof are not valid without the signature and the original raised seal or digital signature of a Florida licensed surveyor and mapper.
4. 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.
5. Elevations shown hereon are referenced to the North American Vertical Datum of 1988, as established by NGS benchmark 872 2706 J Tidal (PID# AD8075) a brass disk set top of storm catch basin, having a published elevation of 8.52'.
6. The features shown hereon are referenced to the Florida State Plane Coordinate System, East Zone, North American Datum of 1983, 2007 adjustment, as established using L-Net's base(s).
7. All distances shown hereon are in U.S. Survey Feet.
8. Aerial imagery shown hereon was obtained from Labins, and is shown for informational purposes. The imagery was acquired in 2017.
9. This survey delineates the boundary location according to the legal description, but does not determine ownership or property rights.
10. Underground improvements, if any, were not located except as shown.
11. Interior improvements, if any, were not located except as shown.
12. Symbols shown hereon are not to scale.
13. The survey was prepared for the purpose of locating existing improvements along the Northern property line .
14. The features shown hereon were acquired using RTK GPS; Trigonometric methods; and were verified through a redundancy of measurements for accuracy.
15.

PREPARED BY:

WGI®

2035 Vista Parkway, West Palm Beach, FL 33411
Phone No. 866.909.2220 www.wginc.com
Cert No. 6091 - LB No. 7055

CONSULTANTS:

PROJECT TITLE:

SPECIFIC PURPOSE SURVEY
HARVEY E. OYER, JR. PARK
SECTION 15, TOWNSHIP 45 S, RANGE 43 E
PALM BEACH COUNTY, FLORIDA

SURVEYOR OF RECORD
ERIC R. MATTHEWS, PSM
PSM#6717

NO:	DATE:	DESCRIPTION:
1	2020-01-16	ADDED ADDITIONAL TOPO EAST

DRAWN DATE:	2019-10-01
DRAWN BY:	MS
CHECKED BY:	EM
FIELD	JC
FB/PG	794/7
PROJECT #:	2634.05

SPECIFIC PURPOSE SURVEY

SHEET #:	TOTAL SHEETS
1	3

SPECIFIC PURPOSE SURVEY

HARVEY E. OYER, JR. PARK

WGI®
2035 Vista Parkway, West Palm Beach, FL 33411
Phone No. 866.909.2220 www.wginc.com
Cert No. 6091 - LB No. 7055

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	1-16-20	ADDED ADDITIONAL TOPO EAST	MAS

CAD	2634DS-MOQ01.DWG
JOB NO.	2634.05
DRAWN BY	MS
CHECK BY	EM
DATE	9-30-2019

SURVEYOR OF RECORD
ERIC R. MATTHEWS
PSM# 6717

HARVEY E. OYER, JR. PARK
BOYNTON BEACH, FLORIDA
SECTION 15, TOWNSHIP 45 SOUTH, RANGE 43 EAST
AS PREPARED FOR
CITY OF BOYNTON BEACH

SHEET:
2 OF 3

SPECIFIC PURPOSE SURVEY

HARVEY E. OYER, JR. PARK

WGI®
2035 Vista Parkway, West Palm Beach, FL 33411
Phone No. 866.909.2220 www.wginc.com
Cert No. 6091 - LB No. 7055

REVISIONS			
NO.	DATE	DESCRIPTION	BY
1	1-16-20	ADDED ADDITIONAL TOPO EAST	MAS

CAD 263405MG01.DWG	
JOB NO.	2634.05
DRAWN BY	MS
CHECK BY	EM
DATE	9-30-2019

SURVEYOR OF RECORD
ERIC R. MATTHEWS
PSM# 6717

HARVEY E. OYER, JR. PARK
BOYNTON BEACH, FLORIDA
SECTION 15, TOWNSHIP 45 SOUTH, RANGE 43 EAST
AS PREPARED FOR
CITY OF BOYNTON BEACH

SHEET:
3 OF 3

HARVEY OYER JR PARK
PRECAST WALL PROJECT

VICINITY MAP

48 HOURS BEFORE DIGGING
BROWARD • PALM BEACH • INDIAN RIVER
ST LUCIE • MARTIN COUNTIES
CALL TOLL FREE
811
SUNSHINE STATE 1 CALL
UNDERGROUND UTILITIES
NOTIFICATION CENTER

NO.	DATE	REVISION DESCRIPTION	BY	NO.	DATE	REVISION DESCRIPTION	BY

HARVEY OYER JR PARK
PRECAST WALL PROJECT

CITY OF BOYNTON BEACH
DEPARTMENT OF PUBLIC WORKS/ENGINEERING DIVISION
100 East Ocean Avenue, Boynton Beach, Florida

NORTH

Title Sheet

DESIG. BY	PM	REF.		SCALE:	no scale	DATE	10-19-20
DRAWN BY	PM	FLD. BK.	PG.	PROJECT NO:		DRAWING NO.	
CHECKED BY	GD	CAD CODE:				SHEET	TB–1

THE WATERSEDGE
(PB 37, PG. 69, PBCR)

44.00'

N89°43'01"W
52.03'

10.0'

50'-1"

9.9'

0.43'

N00°16'59"E 50.95'

6' Concrete Wall

50'-11"

N07°54'43"E
51.40'

8.80
8.64
8.34
8.29

9.5'

9.1'

1.20'

9.0'

8.7'

9.1'

8.6'

8.7'

8.0'

7.3'

0.79'

1.36'

7.1'

7.5'

7.2'

6' Wood Fence

6.5'

9.31'

Property Line

5.9'

6.91
6.53
7.0'
7.12
7.3'
7.9'
7.5'
7.9'
7.1'
6.71
6.23
6.74
6.38
6.14
6.18
6.04
6.00
5.90
5.84
6.10
5.69
6.18
5.75
8.7'
8.4'
6.36
6.81
6.93
6.46
6.95
7.00
6.60

5.85
5.50
5.41'
5.29
5.72
5.30
5.70
5.67
5.28
5.64
5.26

Type " D" Curb
(Typ)

20' Wall panel
centered over
FPL Pole

2'x2' Conc
Column (Typ)

20' Wall Panel (TYP)

20' Wall panel
centered over
FPL Pole

S89°43'01"E 934.60'
to Mean High Water Line +/-

5.3'

4.9'

4.8'

5.12

4.4'

936'-6"

4.72

4.5'

Property Line

4.0'

4.64

4.5'

North Line Lot 11
SAM BROWN JR'S
SUBDIVISION
(PB 1, PG. 81, PBCR)

Asphalt Parking Lot

4.8'

4.3'

Note: Offset from Property line to Center Line of wall is 2'-3"

Match Line A-A

Match Line A-A

20' Wall panel
centered over
FPL Pole

20' Wall panel
centered over sanitary
sewer line

6'X0.75'
Concrete
Wall

Covered Pavilion

RIM ELEV.= 3.43'
CENTER FLOW LINE ELEV.= -2.88'

Begin Wall

End
Wall

Property Line

20' Wall Panel (TYP)

NIC
Chain link fence
See detail
(to be included in future)

8.21'
2.35'
13.23'
13.44'
24.06'
2.30'

3.7'
3.3'
2.9'
4.1
4.37
4.77
4.0'
3.4'
3.2'
2.4'
8.56
4.12
0.7'
0.9'
0.1'
0.0'
0.2'
2.3'
2.2'
2.1'
2.8'
3.3'
3.4'
1.7'
0.3'
0.8'

SAN

4.98
4.60
4.3'
4.29
4.29
4.2'
4.51
4.24
4.16
3.3'
3.7'
4.44
4.76
4.30
4.28
4.42
4.47
4.86
4.44
4.87
4.38
4.81
4.62
4.17
4.32
4.4'
4.29
3.97
4.19
3.84
3.9'
3.77
3.84
4.18
3.83
4.22
4.16
4.04
3.66
3.75
3.25
3.3'

Building
Water
Service

7.00'

CBS
Building

Dumpster Pad

4.47
4.24
4.16
4.24
4.0'
3.8'
3.5'
3.0'
2.9'
2.5'
2.79

Wood Dock

COAST GUARD SIGN

48 HOURS BEFORE DIGGING
BROWARD • PALM BEACH • INDIAN RIVER
ST LUCIE • MARTIN COUNTIES
CALL TOLL FREE
811
SUNSHINE STATE 1 CALL
UNDERGROUND UTILITIES
NOTIFICATION CENTER

NO.	DATE	REVISION DESCRIPTION	BY

NO.	DATE	REVISION DESCRIPTION	BY

HARVEY OYER JR PARK
PRECAST WALL PROJECT

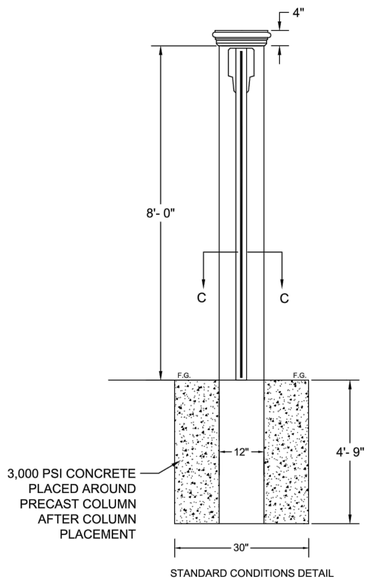
CITY OF BOYNTON BEACH
DEPARTMENT OF PUBLIC WORKS/ENGINEERING DIVISION
100 East Ocean Avenue, Boynton Beach, Florida

NORTH

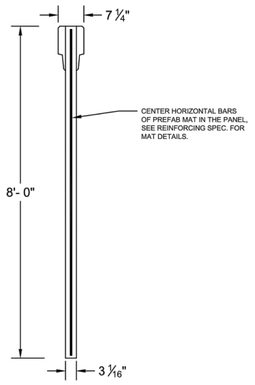
LAYOUT PLAN

DESIG. BY	PM	REF.		SCALE: 1" = 20'-0"	DATE 01-24-20
DRAWN BY	PM	FLD. BK.	PG.	PROJECT NO:	DRAWING NO.
CHECKED BY	GD	CAD CODE:			SHEET LP-1

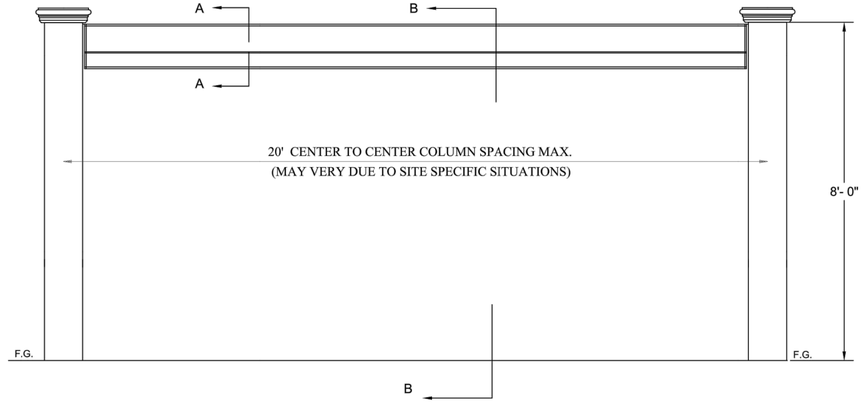
48 HOURS BEFORE DIGGING
BROWARD • PALM BEACH • INDIAN RIVER
ST LUCIE • MARTIN COUNTIES
CALL TOLL FREE
811
SUNSHINE STATE 1 CALL
UNDERGROUND UTILITIES
NOTIFICATION CENTER



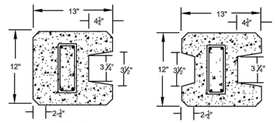
STANDARD CONDITIONS DETAIL



SECTION B-B
PANEL SECTION
N.T.S



WALL ELEVATION

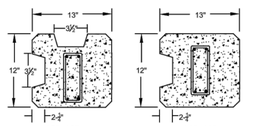


12"x13"
SECT. C-C END COL. R

12"x13"
SECT. C-C LINE COL.

NOTE:
1-1/4"CLEAR COVER TO HOOP ON ALL POSTS

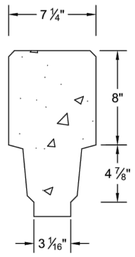
POST REINFORCEMENT REFER TO POST, STEEL AND HOOP FOR SIZE



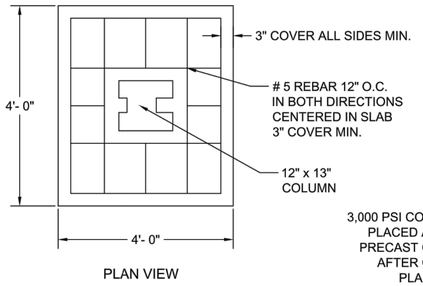
12"x13"
SECT. C-C CORNER COL.

12"x13"
SECT. C-C END COL. L

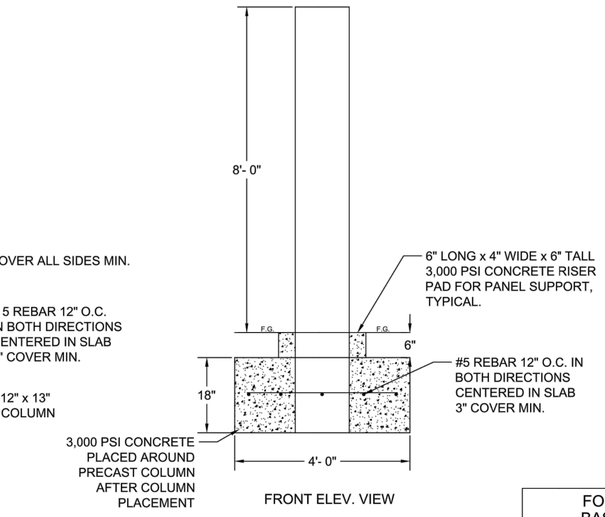
12" x 13" POST CAP



SECTION A-A
PANEL TOP DETAIL
N.T.S.



PLAN VIEW



FRONT ELEV. VIEW

SPREAD FOOTING DETAILS IF NEEDED.

NOTES:

1. PANELS = 7,000 PSI CONCRETE
2. COLUMNS AND CAPS = 4,000 PSI CONCRETE
3. FOUNDATIONS = 3,000 PSI CONCRETE
4. REINFORCING STEEL FOR PANELS TO BE ASTM A615 DEFORMED BARS MIN. 70,000 PSI, ALL OTHER STEEL TO BE 60,000 PSI
5. WIND LOAD DESIGN CONFORMS TO F.B.C. 2017 AND ASCE 7-10, FOR WIND LOAD OF 170 M.P.H. 3 SECOND GUST, EXPOSURE 'C', ASD DESIGN FOR A SOLID FENCE

PROJECT;

PRECAST WALL SYSTEMS INC.
1888 NW 22 COURT
POMPANO BEACH
FLORIDA 33069
PH 954-973-8488

FOUNDATION DEPTH SCHEDULE
BASED ON 30" DIA FOOTING, AND
SOIL BEARING CAP. OF 2000 P.S.F.

WALL HEIGHT	SOLID ROCK	DRY, UNDISTURBED MEDIUM DENSITY, SAND	SATURATED, UNDISTURBED MEDIUM, DENSITY SAND
8'-0"		4'-9"	

ALTERNATE FOOTING DIMENSIONS

REINFORCING STEEL SPECIFICATIONS

	COLUMN - REINFORCEMENT DETAILS			PANEL - MESH REINFORCEMENT SYSTEM		
WALL HEIGHT	POST SIZE	REINF.	HOOPS	MAT SIZE	VERTICAL STEEL	HORIZONTAL STEEL
8'-0"	12"x13"	4 - # 6 RE-BARS	3" ABOVE FTG. THEN 4-1/2" O.C. TO 2'-6" ABOVE FTG. THEN BAL. AT 18" O.C.	7'-8"x19'-0"	12" O.C. A.S. 0.110	4" O.C. A.S. 0.27

PRECAST WALL SYSTEMS, INC.
1888 NW 22ND COURT
POMPANO BEACH, FL 33069
954-973-8488

JAMES BUSHOUSE P.E.
PROFESSIONAL ENGINEER 20311
STATE OF FLORIDA
3300 NE 10TH TER.
POMPANO BEACH FLORIDA, 33064
954-956-2203

NOT VALID WITHOUT EMBOSSED SEAL

NO.	DATE	REVISION DESCRIPTION	BY	NO.	DATE	REVISION DESCRIPTION	BY

HARVEY OYER JR PARK
PRECAST WALL PROJECT

CITY OF BOYNTON BEACH
DEPARTMENT OF PUBLIC WORKS/ENGINEERING DIVISION
100 East Ocean Avenue, Boynton Beach, Florida

PRECAST WALL DETAILS

DESIG. BY	PM	REF.		SCALE: AS SHOWN	DATE 01-24-20
DRAWN BY	PM	FLD. BK.	PG.	PROJECT NO:	DRAWING NO.
CHECKED BY	GD	CAD CODE:			SHEET DT–1