MIAMI LAKES
Growing Beautifully

TOWN OF MIAMI LAKES
MEMORANDUM

To: Alex Rey Town, Manager

From: Andrea Agha, Procurement Manager

Subject: Award of a Contract for FDOT Beautification 77th Court Project, ITB No. 2017-09

Date: December 16, 2016

Recommendation

It is recommended that the Town Manager award a contract in the amount $137,000 to SFM Services, Inc. ("SFM"), who is the lowest responsive and responsible bidder for ITB No. 2017-09. The award amount includes SFM's Bid amount of $124,607.94 plus a contingency amount of $12,392 (approximately 10%) to cover unforeseen conditions. Funds are budgeted in the Capital Projects Fund.

Background

On November 14, 2016, the Town issued Invitation to Bid ("ITB") 2017-09 for FDOT Beautification 77th Court Project, with a closing date of December 5, 2016. The Scope of Work consists of furnishing all labor, materials, machinery, tools, means of transportation, supplies, equipment, and services necessary to furnish and install trees, landscaping, and an irrigation system at the project location, per the project plans, and in accordance with all applicable FDOT guidelines. Please see attached plans and proposed landscape material.

The Work includes delivery, installation grow-in period maintenance (for installed trees and landscaping), and initial irrigation testing and maintenance as applicable to the project. The warranty requires replacement of landscape installation that does not survive the one year warranty period.

The ITB was advertised in the Miami Daily Business Review, on DemandStar, on the Town's website, and in the Government Center Lobby. Procurement notified twenty five (25) Prospective Bidders of the solicitation by email and reached five hundred ninety seven (597) suppliers through DemandStar.

Prospective Bidders were required to possess a minimum of three (3) years of experience performing landscape and irrigation installation projects; provide verifiable client references demonstrating successful completion of at least three (3) landscape and irrigation installation projects with a total project amount of $100,000 or more performed within the last three (3)

years; be properly registered with the Florida Department of Agriculture and Consumer Services Division of plant industry; be a certified landscape contractor by the Florida nursery, growers, and landscape association; be a certified arborist by the International Society of Arboriculture; and be able to utilize the U.S. Department of Homeland Security's E-Verify system for employment verification.

On December 5, 2016, the Town held a bid opening and received three (3) bids from the following bidders:

1. SFM Services, Inc. for $124,607.94;
2. Arazoza Brothers Corporation for $150,000.00; and
3. VisualScape, Inc. for $160,220.00

In its due diligence review, Procurement determined that each bidder meets the minimum qualifications required in the ITB. Based on SFM being determined to be the lowest responsive and responsible bidder, Procurement recommends awarding contract 2017-09 to SFM Services, Inc.

Concur: _____

Alex Rey, Town Manager

MIAMI LAKES
Growing Beautifully

MAYOR:
MICHAEL PIZZI

TOWN COUNCIL:

VICE MAYOR	TIM DAUBERT
SEAT 1	NELSON RODRIGUEZ
SEAT 2	
SEAT 3	TONY LAMA
SEAT 4	FRANK MINGO
SEAT 5	MANNY CID
SEAT 6	CEASAR MESTRE
AT LARGE	

MAINTAINING AGENCY:
TONY LOPEZ
TOWN OF MIAMI LAKES
COMMUNITY AND LEISURE SERVICES
6601 MAIN STREET
MIAMI LAKES, FLORIDA 33016
305-364-6100

INDEX OF DRAWINGS:

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L-4 PLANT MATERIAL LIST
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IR-5 IRRIGATION NOTES AND SPECIFICATIONS
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E-2 ELECTRICAL RISER/MTG DETAIL & SCHED
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GOVERNING STANDARDS:
"GOVERNING STANDARDS AND SPECIFICATIONS: FLORIDA DEPARTMENT OF TRANSPORTATION, 2016-2017 DESIGN STANDARDS, AND THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION DATED JANUARY 2016, SECTION 580 LANDSCAPE INSTALLATION, AND ANY APPLICABLE UPDATES."

MAINTENANCE OF TRAFFIC/TRAFFIC CONTROL NOTE:
CONTRACTOR RESPONSIBLE FOR PREPARING AND PROVIDING TO THE TOWN FOR REVIEW A TRAFFIC CONTROL/MAINTENANCE OF TRAFFIC PLAN. CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE REQUIRED TOWN OF MIAMI LAKES AND FLORIDA DEPARTMENT OF TRANSPORTATION PERMITS WHICH INCLUDE BUT ARE NOT LIMITED TO LANE CLOSURE AND TRAFFIC MAINTENANCE. SEE T-1 FOR ADDITIONAL REQUIREMENTS.

SCOPE OF WORK:
THE WORK FOR SR 826 PROJECT CONSISTS OF IRRIGATION AND LANDSCAPE. THIS WORK INCLUDES BUT IS NOT LIMITED TO:
1. INSTALLATION OF AN IRRIGATION PUMP STATION
2. INSTALLATION OF AUTOMATED IRRIGATION SYSTEM
3. INSTALLATION OF BUBBLER TYPE IRRIGATION
4. INSTALLATION OF TREES
5. INSTALLATION OF PALMS
6. INSTALLATION OF SOD (FOR REPAIR OF DAMAGED AREAS)
7. INSTALLATION OF PUMP STATION ELECTRICAL SERVICE

TOWN OF MIAMI LAKES LEISURE AND COMMUNITY SERVICES

SR 826/NW 77TH COURT LANDSCAPE & IRRIGATION IMPROVEMENTS

SW $\frac{1}{4}$ SECTION 15-52-40

ISSUED FOR:
Town Review: January 25, 2016
FDOT Review: February 26, 2016
Town Review: June 06, 2016
Town Review: July 20, 2016

BERMELLO AJAMIL & PARTNERS • INC
Architecture • Engineering • Planning
Interior Design • Landscape Architecture
2601 South Bayshore Drive
Suite 1000
Miami, Florida 33133
(305) 859-2050
Fax (305) 860-3700

LANDSCAPE ARCHITECT'S CERTIFICATION

I HEREBY CERTIFY THAT THE ATTACHED PLANS AND DESIGN ARE IN SUBSTANTIAL COMPLIANCE WITH THE DESIGN STANDARDS AND CRITERIA IN EFFECT ON THIS DATE FOR THE STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION.

APPROVED BY: Kirk J. Olney

DATE: 7-28-16

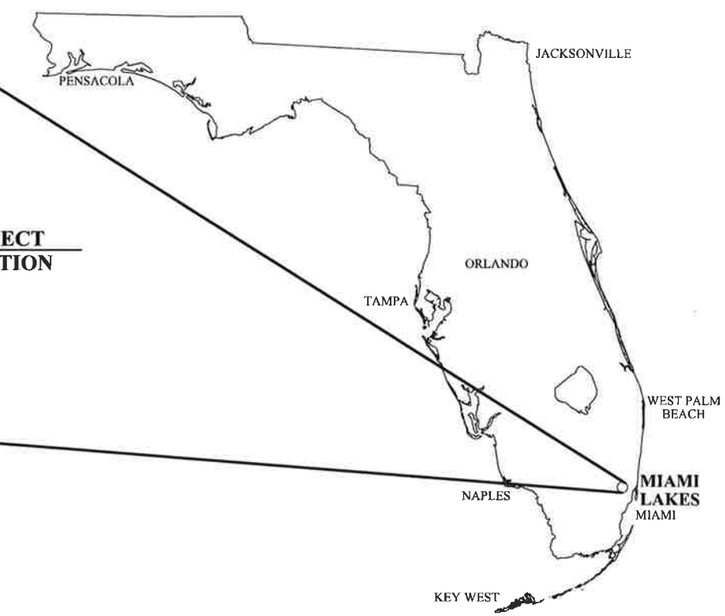
L.A. NO: FL NO. LA0001705

ASSUMED ROADWAY DESIGN SPEED: 40 mph

FINISH POINT-MILE POST: 16.595

START POINT-MILE POST: 16.382

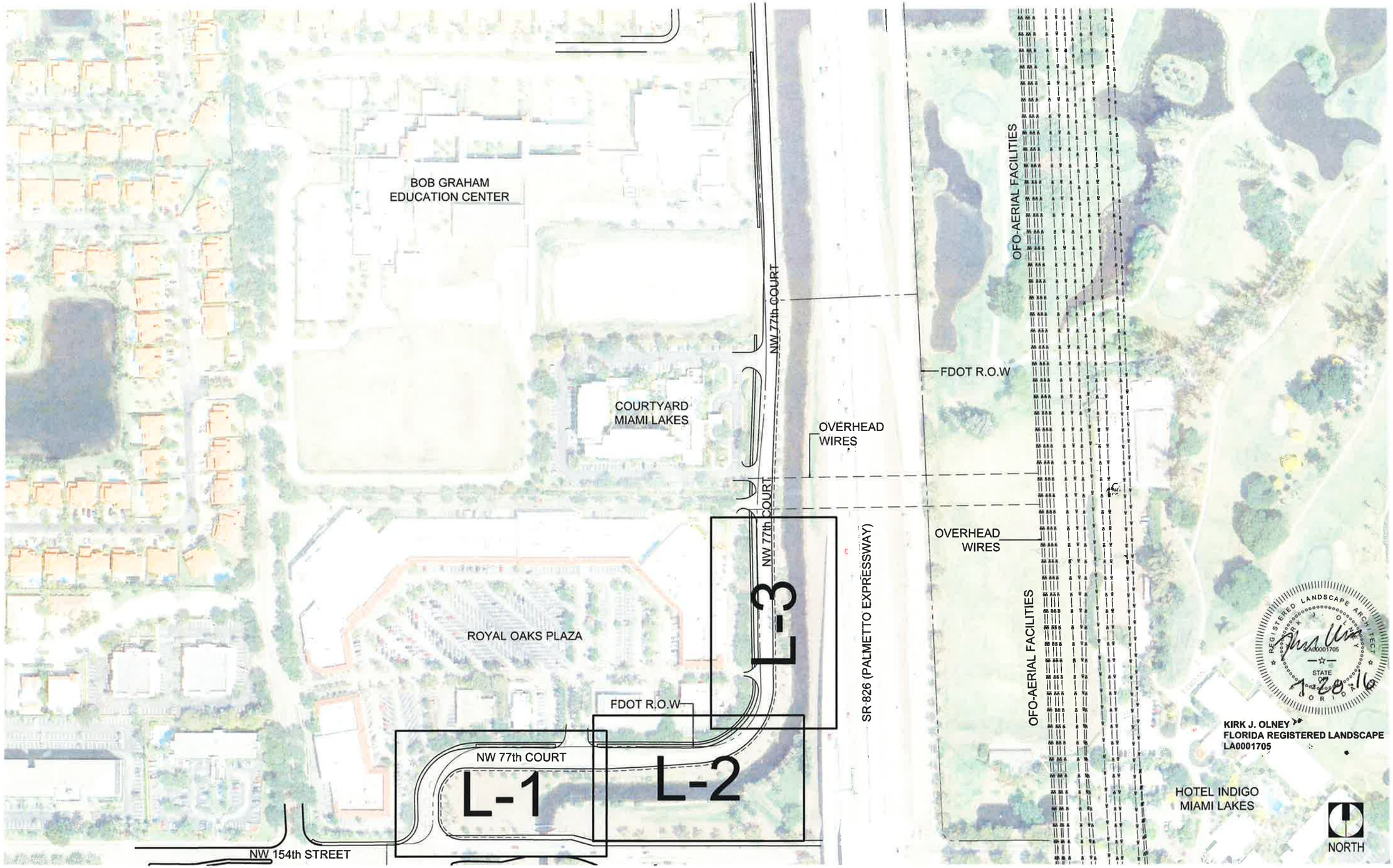
LOCATION MAP
N.T.S.



PROJECT LOCATION

Call 48 hours before you dig in Florida
It's the Law!
1-800-432-4770
FP&L (305) 347-3900
Sunshine State One Call of Florida, Inc.

REPRODUCTION:
ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN REDUCED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCANNED DATA.



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FLORIDA HIGHWAY BEAUTIFICATION COUNCIL GRANT APPLICATION

REVISIONS No. 1			REVISIONS No. 2				NAME	DATE
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DESIGNED BY:	KJO	1/25/16
06-01-16	KJO	FDOT COMMENTS				CHECKED BY:	RPH	1/25/16
						SUPERVISED BY:	RPH	

SR 826/NW 77th COURT
LANDSCAPE & IRRIGATION
IMPROVEMENTS

TOWN OF MIAMI LAKES, FLORIDA
COMMUNITY AND LEISURE
SERVICES

APPROVED BY: DATE:

MIAMI LAKES
Growing Beautiful

DRAWING TITLE: KEY SHEET

SHEET NO. K-1

SCALE: N.T.S.

DATE: JULY 20, 2016

GENERAL TRAFFIC CONTROL NOTES:

1. TRAFFIC CONTROLS SHALL BE IN ACCORDANCE WITH THE FOLLOWING: CURRENT PROJECT PLANS, THE 2016 EDITION OF THE FLORIDA D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS, THE 2016 EDITION OF FLORIDA D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AND THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.). DATED REVISIONS 1 & 2 MAY 2012.

2. THE CONTRACTOR SHALL ESTABLISH TRAFFIC CONTROL IN ACCORDANCE WITH THE F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARD INDEX NO. 611 SHEET 1 AND 2.

3. REGULATORY SPEED ESTABLISHED DURING CONSTRUCTION SHALL BE THE POSTED SPEED.

4. IF A LANE CLOSURE IS REQUIRED, ALTHOUGH IT IS NOT ANTICIPATED, BY CONTRACTOR ACTIVITY, THE CONTRACTOR SHALL PREPARE A TRAFFIC CONTROL PLAN, SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER, IN ACCORDANCE WITH FLORIDA D.O.T. DESIGN STANDARD INDEX 600 SERIES, FOR APPROVAL BY FDOT.

5. CONTRACTOR SHALL COORDINATE HIS CONSTRUCTION ACTIVITIES AND THOSE OF HIS SUBCONTRACTOR WITH CONSTUCTION ON NEARBY STATE ROADS.

6. AT THE DISCRETION OF THE ENGINEER, IF A LANE CLOSURE CAUSES EXTENDED CONGESTION OR DELAY, THE CONTRACTOR SHALL BE DIRECTED TO REOPEN THE CLOSED LANE(S) UNTIL SUCH TIME THAT TRAFFIC FLOW HAS RETURNED TO AN ACCEPTABLE LEVEL.

7. THE TRAFFIC AND TRAVEL WAYS SHALL NOT BE ALTERED BY THE CONTRACTOR TO CREATE A WORK ZONE UNTIL ALL LABOR AND MATERIAL ARE AVAILABLE FOR THE CONSTRUCTION IN THAT AREA.

PEDESTRIAN, BICYCLE, AND WHEELCHAIR NOTES:

1. AT THE END OF EACH WORK DAY OR WHENEVER THE WORK ZONE BECOMES INACTIVE, ANY DROP OFF ADJACENT TO THE PEDESTRIAN, BICYCLE OR WHEELCHAIR TRAVEL PATHS SHALL BE BACKFILLED FLUSH WITH THE TRAVEL PATH OR SHALL BE PROTECTED WITH BARRICADES, TEMPORARY BARRIER WALL, OR APPROVED HANDRAIL. COST TO BE INCLUDED IN LUMP SUM BID OF THE PROJECT.

2. THROUGHOUT THE PROJECT LIMITS, PEDESTRIAN, BICYCLE AND WHEELCHAIR TRAFFIC SHALL BE MAINTAINED ON AT LEAST ONE SIDE OF THE PROJECT AT ALL TIMES. THE TRAVEL PATH SHALL BE A MINIMUM OF FIVE (5) FEET WIDE WITH A SMOOTH AND WATERPROOF SURFACE THAT IS NOT SLICK AND IT SHOULD BE RAMPED AS NECESSARY FOR CONTINUITY. COST TO BE INCLUDED IN LUMP SUM BID OF THE PROJECT.

3. PEDESTRIAN, BICYCLE, AND WHEELCHAIR TRAFFIC SHALL BE GUIDED AND MAINTAINED USING APPROVED WARNING LIGHTS, SIGNING, AND CHANNELIZATION DEVICES. SUCH CONTROL DEVICES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARD INDEX NO. 660. ADA REQUIREMENTS MUST BE MAINTAINED.

REFERENCES

LANDSCAPE DETAILS- CONTRACTOR TO INSTALL PLANT MATERIAL PER FDOT INDEX 544 DETAIL SHEET (2016).

INDEX 544 LANDSCAPE

INDICES 600-660 TRAFFIC CONTROL PLANS

FDOT GENERAL LANDSCAPE NOTES:

1. THERE SHALL BE NO STOCKPILING OF DEBRIS WITHIN FDOT RIGHT-OF-WAY. DEBRIS SHALL BE REMOVED DAILY.
2. CONTRACTOR IS TO COMPLY WITH TOWN OF MIAMI LAKES WHEN CONCERNED WITH WORK HOUR RESTRICTIONS. M-F 8AM-5PM.
3. ALL TRAFFIC CONTROL SIGNAGE SHALL BE REPLACED TO PRE-PROJECT CONDITIONS. LANDSCAPE SHALL NOT INTERFERE WITH VISIBILITY OF SIGNS.
4. PLANS SHALL BE SUBMITTED TO MIAMI-DADE ENGINEERING 30 DAYS PRIOR TO COMMENCEMENT OF WORK FOR SIGNAL SYSTEM INTERCONNECT LOCATION VERIFICATION.
5. ALL AREAS DISTURBED BY HEAVY EQUIPMENT MOBILIZATION (TIRE TRACKS, TRENCHING, BURROW, ETC.) WITHIN FDOT'S SWALE AREAS SHALL BE RESTORED TO ORIGINAL OR BEFORE CONDITIONS. THIS INCLUDES AND NOT LIMITED TO SOD REPLACEMENT AND SOIL SCARIFICATION TO RECOVER PERCOLATION FOLLOWING CONSTRUCTION.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS, FEES, ETC. TO PERFORM WORK.

IRRIGATION AND WATERING NOTES:

1. PROJECT WILL INCLUDE TWO BUBBLERS ON ALL PROPOSED PALMS AND TREES. WATER SOURCE WILL BE FROM A PUMP STATION DRAWING FROM ADJACENT CANAL.

GENERAL LANDSCAPE NOTES:

1. CONTRACTOR SHALL GUARANTEE THAT ALL PLANT MATERIAL WILL SURVIVE FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE.
2. CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE AND WATERING OF PLANT MATERIAL UNTIL FINAL ACCEPTANCE. CONTRACTOR SHALL PROVIDE EACH NEW TREE OR PALM WITH 45 GALLONS OF WATER DAILY UNTIL IRRIGATION SYSTEM IS FULLY OPERATIONAL. AT A MINIMUM CONTRACTOR SHALL MAINTAIN THE SOIL MOISTURE AT FIELD CAPACITY. FIELD CAPACITY WILL BE DETERMINED FROM A 12" INCH DEEP EXCAVATION WHERE THE SOIL MUST HOLD TOGETHER AND FORM A HAND CLUMP.
3. CONTRACTOR SHALL SUBMIT WRITTEN MAINTENANCE PLAN FOR ESTABLISHMENT PERIOD (FROM PLANTING TO FINAL ACCEPTANCE) INCLUDING WATERING SCHEDULE, TEMPORARY IRRIGATION, FERTILIZATION SCHEDULE, PRUNING ETC. TO OWNER'S REPRESENTATIVE.
4. LOCATION OF ALL UTILITIES AND BASE INFORMATION IS APPROXIMATE. CONTRACTOR SHALL CONTACT THE APPROPRIATE UTILITY COMPANIES AND FDOT OPERATIONS AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF WORK WITHIN FDOT RIGHT OF WAY SO THAT REPRESENTATIVES OF SAID UTILITIES MAY CHECK FOR CONFLICTS AND/OR BE PRESENT TO IDENTIFY KNOWN UTILITIES WITHIN THE PROJECT LIMITS PRIOR TO INITIATING INSTALLATION OF WORK. CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO REPAIR OR REPLACE ANY DAMAGE COMMITTED TO EXISTING ELEMENTS ABOVE OR BELOW GROUND TO ITS ORIGINAL CONDITION AND TO THE SATISFACTION OF THE TOWN.
5. NO UTILITIES WILL BE ADJUSTED. CONTRACTOR SHALL FIELD ADJUST LOCATION OF PLANT MATERIAL AS NECESSARY TO AVOID DAMAGE TO EXISTING UNDERGROUND UTILITIES AND/OR EXISTING ABOVE GROUND ELEMENTS. ALL CHANGES REQUIRED SHALL BE COORDINATED WITH THE TOWN. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL ABOVE AND BELOW GROUND UTILITIES PRIOR TO COMMENCEMENT OF WORK.
6. CONTRACTOR SHALL FIELD STAKE THE LOCATION OF ALL PLANT MATERIAL PRIOR TO INITIATING INSTALLATION FOR THE REVIEW AND APPROVAL OF THE TOWN.
7. AS DIRECTED BY THE TOWN, CONTRACTOR SHALL SOLELY CLEAN THE WORK AREAS AT THE END OF EACH WORKING DAY. RUBBISH AND DEBRIS SHALL BE COLLECTED AND DISPOSED OF AS DIRECTED DAILY. ALL MATERIALS, PRODUCTS, AND EQUIPMENT SHALL BE STORED IN AN ORGANIZED FASHION.
8. ALL PLANT MATERIAL SHALL BE IN FULL AND STRICT ACCORDANCE WITH FLORIDA NO. 1 GRADE, ACCORDING TO THE LATEST EDITION OF "FLORIDA GRADES AND STANDARDS FOR NURSERY PLANTS" PUBLISHED BY THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES.
9. CONTRACTOR SHALL REPLACE SOD/BACKFILL IN ALL AREAS WHERE EXISTING VEGETATION IS REMOVED OR RELOCATED, WHERE EXISTING LAWN AREAS ARE DAMAGED BY HIS WORK, AND WHERE NEW VEGETATION IS INSTALLED (UNLESS OTHERWISE NOTED IN PLANS) WITH SAME GRASS SPECIES TO THE SATISFACTION OF THE TOWN. CONTRACTOR SHALL BE RESPONSIBLE FOR FINISH GRADING ALL SUCH AREAS TO BLEND BOTH ELEVATIONS AND SOD INTO EXISTING SURROUNDING LAWN AREAS.
10. THE CONTRACTOR SHALL PROVIDE UNIT PRICES AS REQUESTED WHICH INCLUDE THE TOTAL COST OF THE WORK INCLUDING BUT NOT LIMITED TO ANY AND ALL COSTS FOR EQUIPMENT, MATERIAL, PRODUCTS, OVERHEAD, PROFIT, GUARANTEES, LABOR, INSTALLATION, ETC. TO PROVIDE A COMPLETE JOB AS OUTLINED ON THE DRAWINGS AND IN THE TECHNICAL SPECIFICATIONS.
11. ALL MATERIALS, PRODUCTS, AND EQUIPMENT SHALL BE STORED IN AN ORGANIZED FASHION AS DIRECTED BY THE TOWN OR TOWN'S REPRESENTATIVE.
12. CONTRACTOR SHALL PROTECT EXISTING VEGETATION TO REMAIN PER TREE PROTECTION DETAIL IN FDOT INDEX 544.
13. CONTRACTOR AND EMPLOYEE VEHICLE PARKING SHALL BE COORDINATED WITH THE TOWN. SHUTTLING OF EMPLOYEES TO THE PROJECT AREA(S) SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL NOT DISRUPT OR CONFLICT IN ANY WAY WITH RESIDENCE AND/OR TRAFFIC.
14. THE CONTRACTOR SHALL TAKE WHATEVER MEANS THAT MAY BE NECESSARY TO FULLY UNDERSTAND ALL THE ACCESS ROUTES, CONSTRUCTION SCHEDULES, AND SECURITY CLEARANCES IN ORDER TO PROVIDE A COMPLETE AND FINISHED PROJECT ON SCHEDULE.
15. ALL TREE CALIPER SIZES NOTED ARE MINIMUM. INCREASE SIZE IF NECESSARY TO PROVIDE PLANT SIZE AND SPECIFICATIONS.
16. CONTRACTOR SHALL MULCH ALL NEW PLANT MATERIAL THROUGHOUT AND COMPLETELY PER FDOT SPECIFICATIONS.
17. ANY SUBSTITUTIONS IN SIZE AND/OR PLANT MATERIAL MUST BE APPROVED BY THE TOWN OF MIAMI LAKES.
18. CONTRACTOR SHALL VERIFY PROPER DRAINAGE OF ALL PLANT PITS PRIOR TO INSTALLATION AT A RATE OF ½" WATER IN 15 MINUTES. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING COMPACTED SOIL UNTIL DRAINAGE CRITERIA IS MET.

REGISTERED LANDSCAPE ARCHITECT
KIRK J. OLNEY
LA0001705
STATE OF FLORIDA

KIRK J. OLNEY
FLORIDA REGISTERED LANDSCAPE
LA0001705

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FLORIDA HIGHWAY BEAUTIFICATION COUNCIL GRANT APPLICATION

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06-01-16	KJO	FDOT COMMENTS				SUPERVISED BY:	RPH	

SR 826/NW 77th COURT
LANDSCAPE & IRRIGATION
IMPROVEMENTS

TOWN OF MIAMI LAKES, FLORIDA
COMMUNITY AND LEISURE SERVICES

APPROVED BY: DATE:

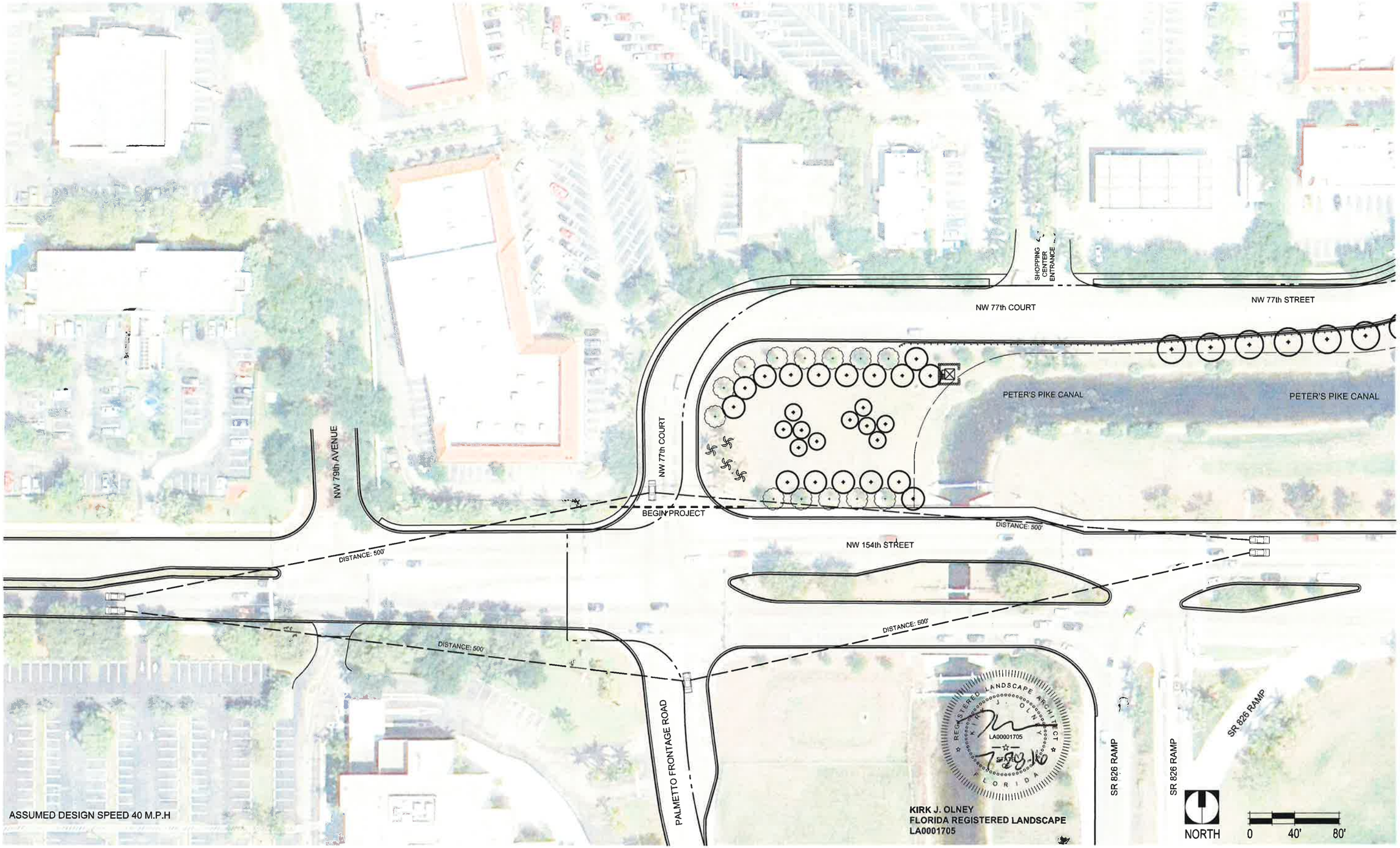
MIAMI LAKES
Growing Beautifully

DRAWING TITLE: REFERENCES AND NOTES

SHEET NO. N-1

SCALE: N/A

DATE: JULY 20, 2016



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TOWN OF MIAMI LAKES, FLORIDA
COMMUNITY AND LEISURE
SERVICES

APPROVED BY: DATE:

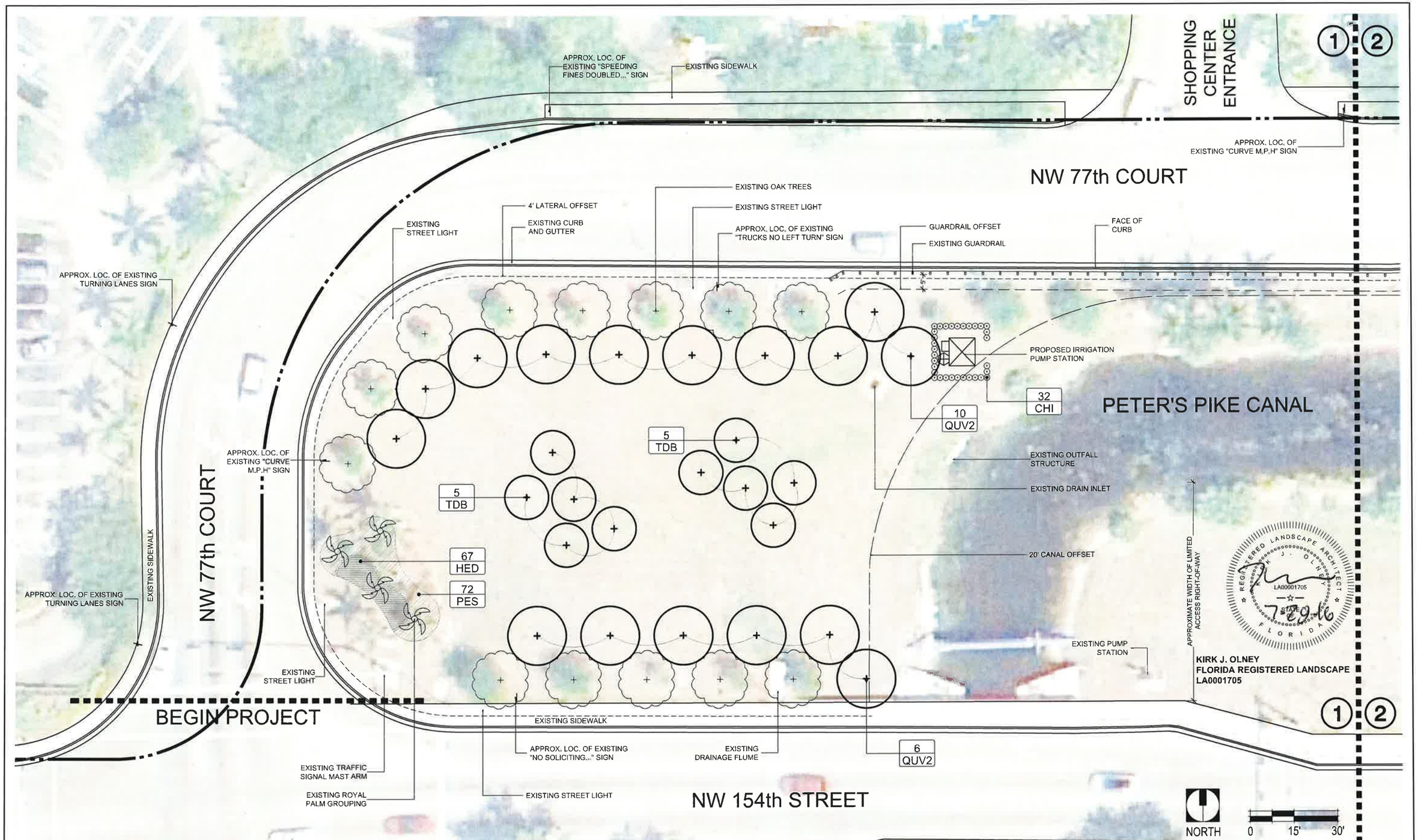
MIAMI LAKES
Growing Beautifully

DRAWING TITLE:
SIGHT DISTANCE
DIAGRAM

SHEET NO.
L-0

SCALE: 1" = 30'-0"

DATE: JULY 20, 2016



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SR 826/NW 77th COURT
LANDSCAPE & IRRIGATION IMPROVEMENTS

TOWN OF MIAMI LAKES, FLORIDA
COMMUNITY AND LEISURE SERVICES

APPROVED BY: DATE:

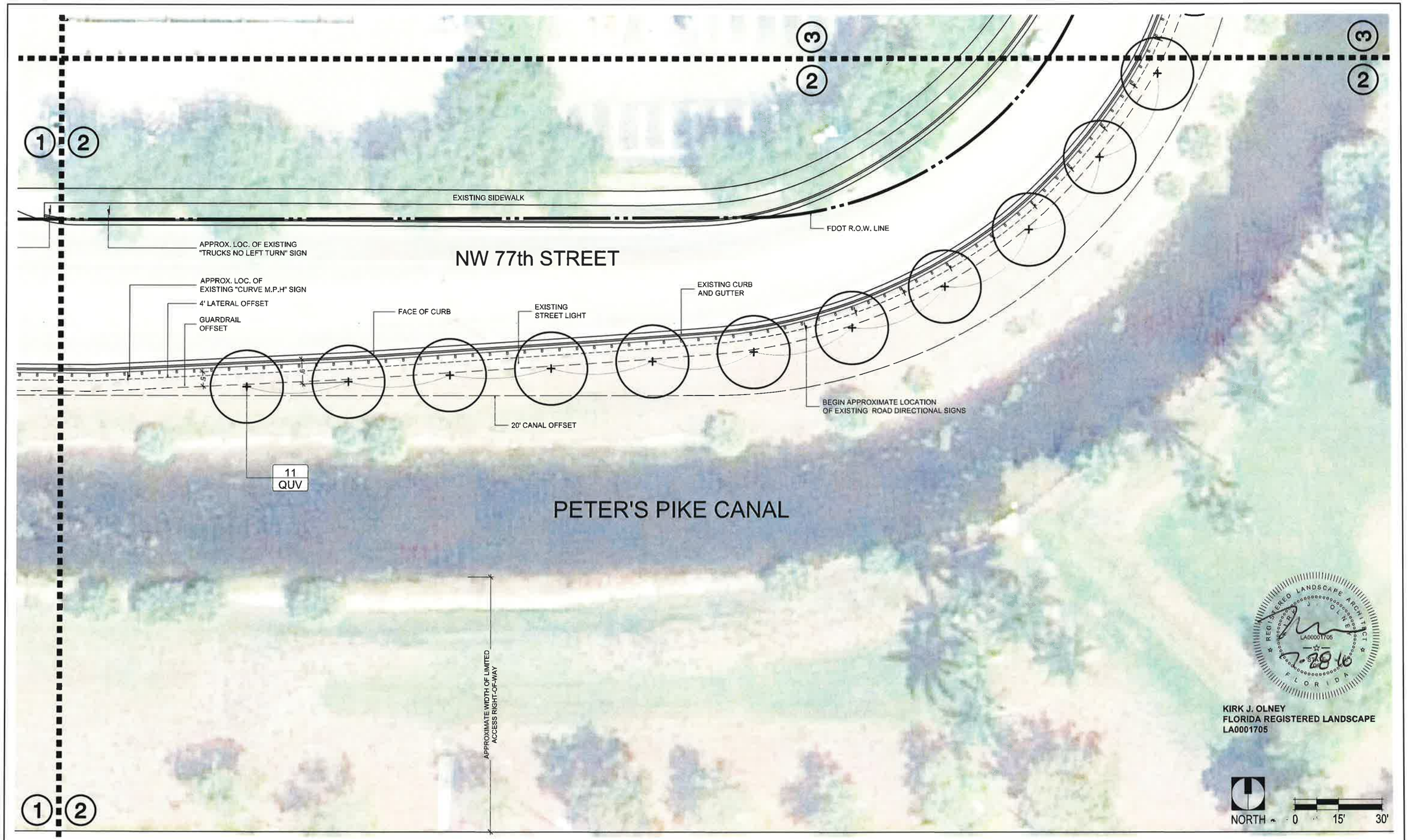
MIAMI LAKES
Growing Beautifully

DRAWING TITLE: LANDSCAPE PLAN

SHEET NO. L-1

SCALE: 1" = 30'-0"

DATE: JULY 20, 2016



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IMPROVEMENTS

TOWN OF MIAMI LAKES, FLORIDA
COMMUNITY AND LEISURE SERVICES

APPROVED BY: DATE:

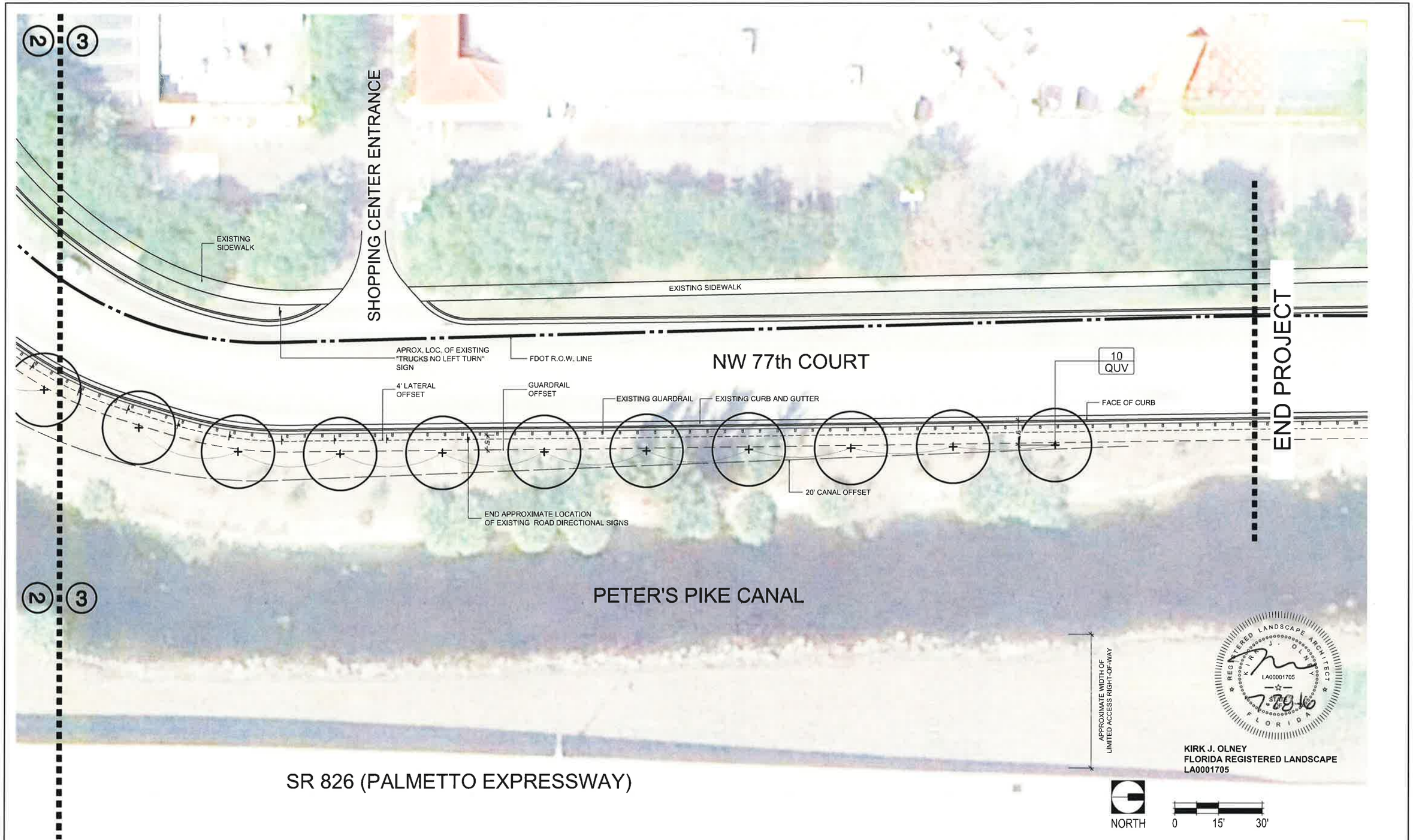
MIAMI LAKES
Growing Beautifully

DRAWING TITLE: LANDSCAPE PLAN

SHEET NO. L-2

SCALE: 1" = 30'-0"

DATE: JULY 20, 2016



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TOWN OF MIAMI LAKES, FLORIDA
COMMUNITY AND LEISURE SERVICES

APPROVED BY: DATE:

MIAMI LAKES
Growing Beautifully

DRAWING TITLE: LANDSCAPE PLAN

SHEET NO. L-3

SCALE: 1" = 30'-0"

DATE: JULY 20, 2016

SYMBOL	QUANTITY	SCIENTIFIC NAME	COMMON NAME	INSTALLATION SPECIFICATIONS						TYPICAL MATURE SIZE			NATIVE	DROUGHT TOLERANCE	WIND TOLERANCE
				HEIGHT	SPREAD	CALIPER @ 6" ABOVE FINISH GRADE	CLEAR TRUNK	ROOT BALL	SPACING	HEIGHT	SPREAD	TRUNK DIAMETER			
CANOPY TREES															
TDB	10	Taxodium distichum	Bald Cypress	13' to 14'	6' to 7'	4"	4'-6"	100 gallon	As Shown	35' to 40'	20" to 30"	30"	Yes	High	Moderate to high
QUV	21	Quercus virginiana 'High Rise'	Live Oak	15' to 16'	7' to 8'	4"	5'	B & B	As Shown	60' to 80'	60' to 120'	36" to 54"	Yes	High	Moderate to high
QUV2	16	Quercus virginiana	Live Oak	22'	15'	6"	8'	B & B	As Shown	60' to 80'	60' to 120'	36" to 54"	Yes	High	Moderate to high
SHRUBS & GROUNDCOVER															
CHI	32	Chrysobalanus icaco 'Rep Tip'	Red Tip Cocoplum	30"	20"	N/A	N/A	5 gallon	As Shown	15'	20'	N/A	Yes	High	High
HED	67	Pennisetum setaceum 'Rubrum'	Purple Fountain Grass	24"	24"	N/A	N/A	5 gallon	As Shown	6'	4'	N/A	Yes	High	High
PES	72	Helianthus debilis	Beach Sunflower	12"	12"	N/A	N/A	3 gallon	As Shown	4'	4'	N/A	Yes	High	High
ORGANIC MULCH															
N/A	3	CY	Malaleuca Mulch	APPLIED IN 3' DIAMETER RING AROUND EACH TREE: 3" DEEP; DO NOT MULCH ON TOP OF ROOT BALL											

KIRK J. OLNEY
FLORIDA REGISTERED LANDSCAPE
LA0001705

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						CHECKED BY:	RPH	1/25/16
06-01-16	KJO	FDOT COMMENTS				SUPERVISED BY:	RPH	

SR 826/NW 77th COURT
LANDSCAPE & IRRIGATION
IMPROVEMENTS

TOWN OF MIAMI LAKES, FLORIDA
COMMUNITY AND LEISURE SERVICES

APPROVED BY: DATE:

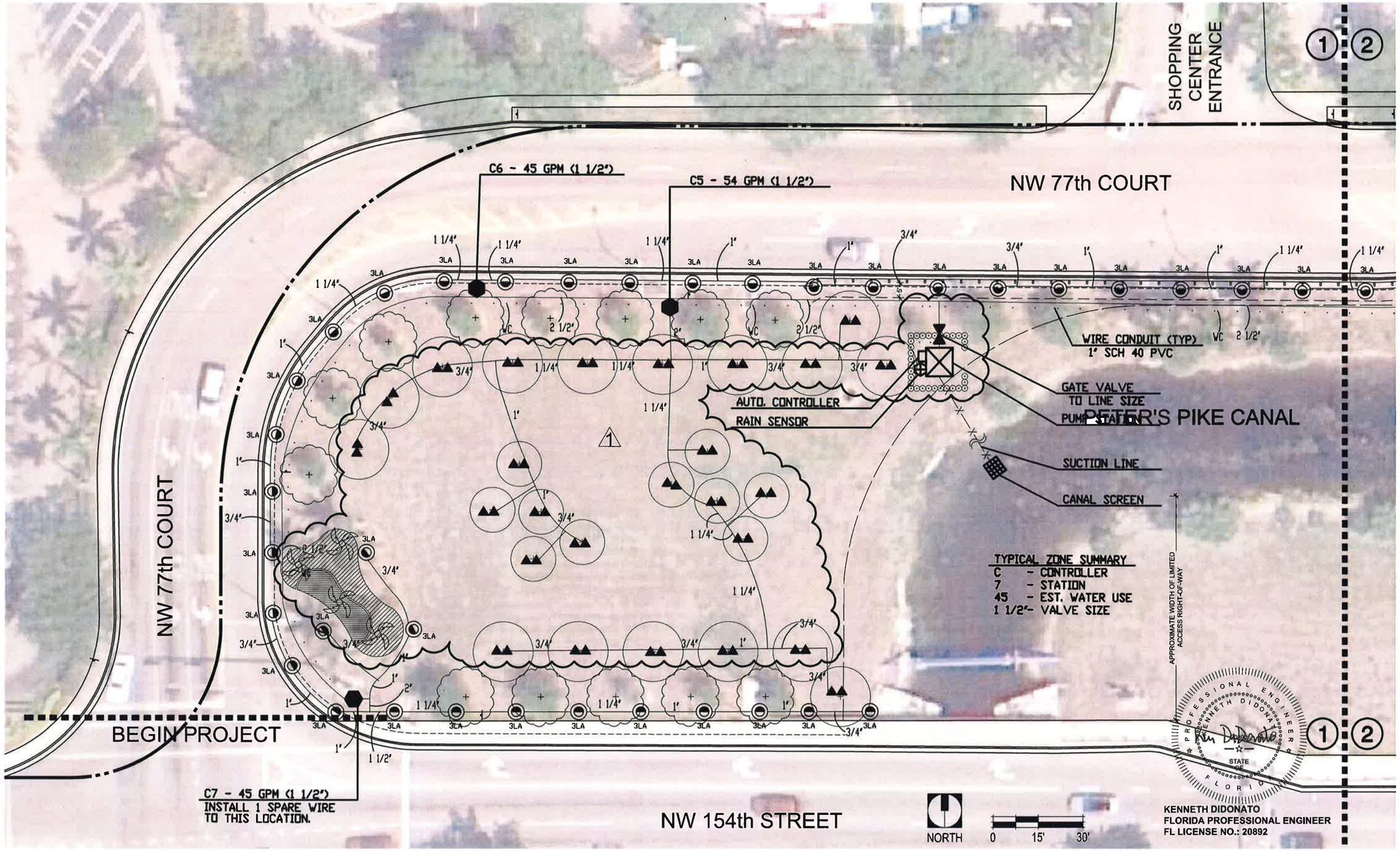
MIAMI LAKES
Growing Beautifully

DRAWING TITLE: PLANT MATERIAL LIST

SHEET NO. L-4

SCALE: AS NOTED

DATE: JULY 20, 2016



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Miami, Florida 33133
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FLORIDA HIGHWAY BEAUTIFICATION COUNCIL GRANT APPLICATION

REVISIONS No. 1			REVISIONS No. 2				NAME	DATE
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DESIGNED BY:	KD	2/17/16
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06-01-16	KJO	FDOT COMMENTS				SUPERVISED BY:	KD	

SR 826/NW 77th COURT
LANDSCAPE & IRRIGATION
IMPROVEMENTS

TOWN OF MIAMI LAKES, FLORIDA
COMMUNITY AND LEISURE SERVICES

APPROVED BY: DATE:

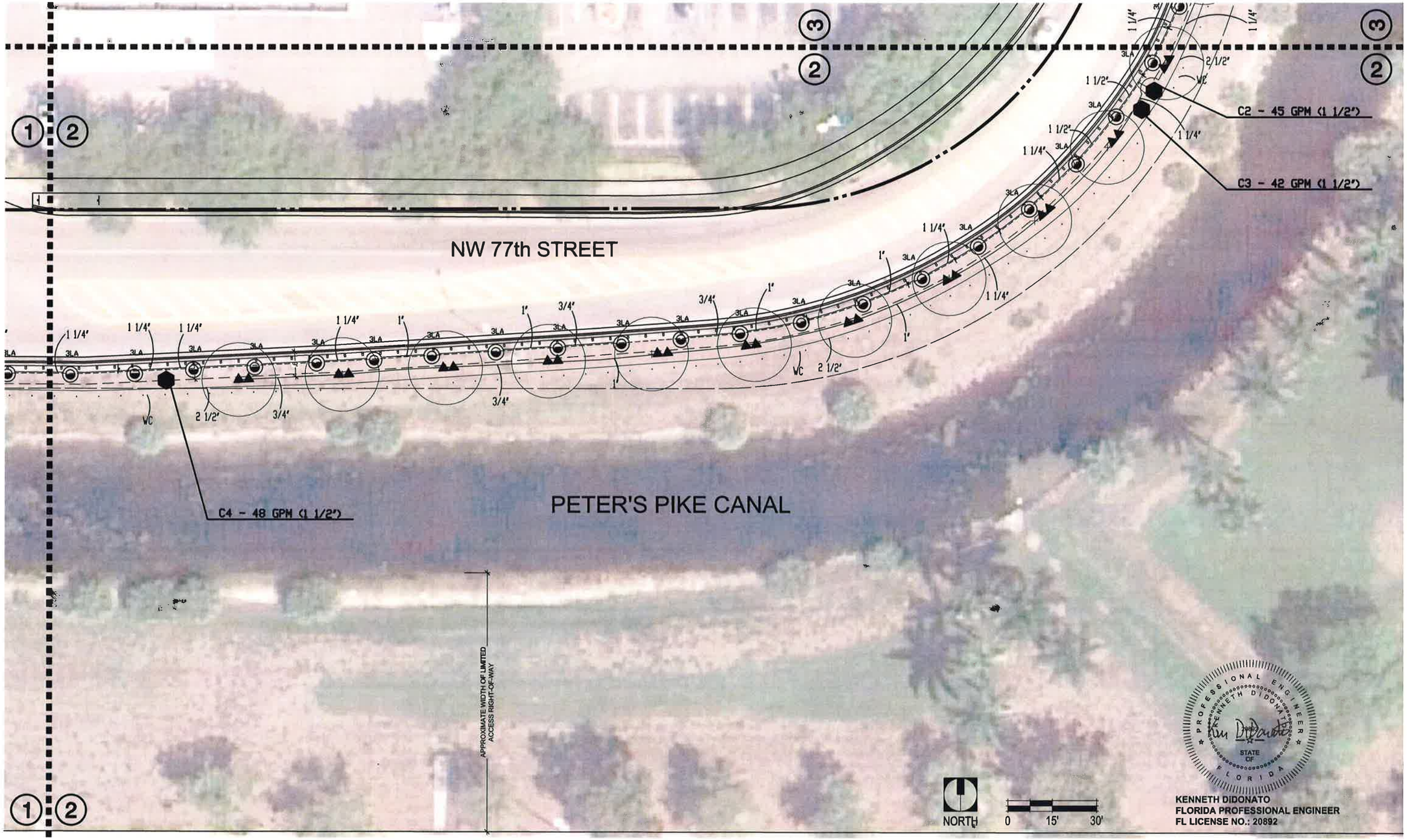
MIAMI LAKES
Growing Beautifully

DRAWING TITLE: IRRIGATION PLAN

SHEET NO. IR-1

SCALE: 1" = 30'-0"

DATE: JULY 20, 2016



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SR 826/NW 77th COURT
LANDSCAPE & IRRIGATION
IMPROVEMENTS

TOWN OF MIAMI LAKES, FLORIDA
COMMUNITY AND LEISURE SERVICES

APPROVED BY: DATE:

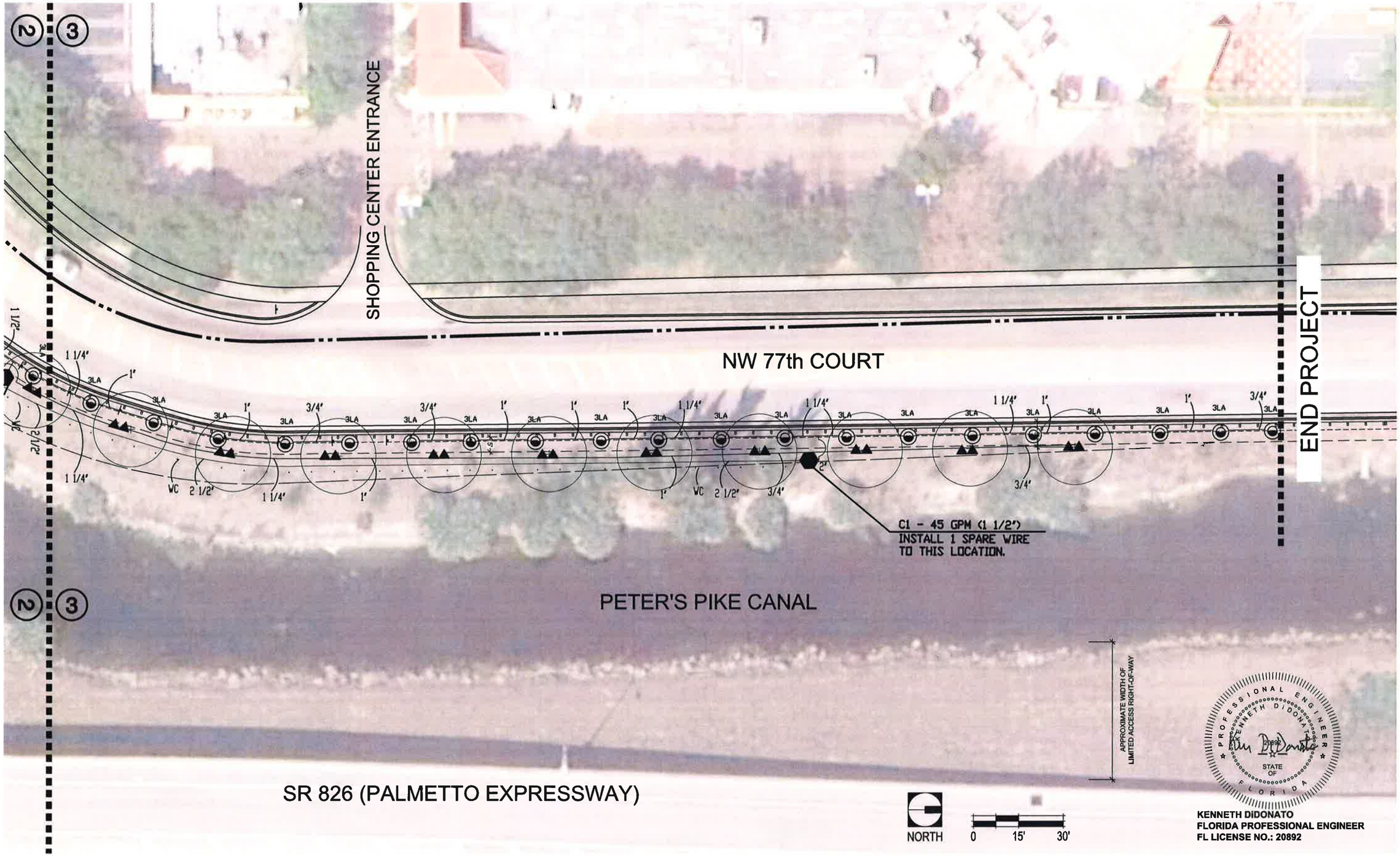
MIAMI LAKES
Growing Beautifully

DRAWING TITLE: IRRIGATION PLAN

SHEET NO. IR-2

SCALE: 1" = 30'-0"

DATE: JULY 20, 2016



KENNETH DIDONATO
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FLORIDA HIGHWAY BEAUTIFICATION COUNCIL GRANT APPLICATION							NAME	DATE
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DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	CHECKED BY:	KD	2/17/16
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SR 826/NW 77th COURT
LANDSCAPE & IRRIGATION
IMPROVEMENTS

TOWN OF MIAMI LAKES, FLORIDA
COMMUNITY AND LEISURE
SERVICES

APPROVED BY: DATE:

MIAMI LAKES
Growing Beautifully

DRAWING TITLE: IRRIGATION PLAN

SCALE: 1" = 30'-0"

SHEET NO. IR-3

DATE: JULY 20, 2016

LEGEND

SYMBOL	MODEL NO.	DESCRIPTION	* EST. QUANTITY
▲	1404	RAIN BIRD FLOOD BUBBLER	96
3LA	5006-PC-3LA	RAIN BIRD 6" POP-UP ROTOR	76
⬢	150 PEB	RAIN BIRD 1 1/2" SOLENOID VALVE	07
"C"	ESPLXBASIC	RAIN BIRD AUTOMATIC CONTROLLER	01
RS	RDS-BEX	RAIN BIRD RAIN SENSOR	01
NOT SHOWN		PAIGE THHN WIRE	
		#12AWG COMMON	1,300 LF
		#14AWG CONTROL	4,200 LF
NOT SHOWN		SCH 40 GALVANIZED STEEL	AS REQUIRED
		SCH 40 PVC	
—•••—		MAIN LINE	1,300 LF
—x—x—		SUCTION LINE	AS REQUIRED
———		LATERALS	AS REQUIRED
NOT SHOWN		PVC FITTINGS	AS REQUIRED
• • • • •		WIRE CONDUIT	1,300 LF
→⋈←		GATE VALVE (TO LINE SIZE)	01
⬢, ⋈		VALVE BOX	08
"C"		GROUNDING LOCATION	01
▦		CANAL SCREEN	01
⊠		PUMP STATION	01

NOTES: ABOVE QUANTITIES ARE FOR COMPARISON ONLY.
CONTRACTOR SHALL VERIFY PRIOR TO SUBMITTING BID.

ZONE SUMMARY CHART

STA NO.	VALVE	SPRINKLER TYPE	VALVE SIZE	WATER DEMAND	RUN *TIME	WEEKLY USAGE
1	C1	ROTOR	1 1/2"	45 GPM	120 MIN/WK	5,400 GAL/WK
2	C2	ROTOR	1 1/2"	45 GPM	120 MIN/WK	5,400 GAL/WK
3	C3	BUBBLER	1 1/2"	42 GPM	23 MIN/WK	966 GAL/WK
4	C4	ROTOR	1 1/2"	48 GPM	120 MIN/WK	5,760 GAL/WK
5	C5	BUBBLER	1 1/2"	54 GPM	23 MIN/WK	1,242 GAL/WK
6	C6	ROTOR	1 1/2"	45 GPM	120 MIN/WK	5,400 GAL/WK
7	C7	ROTOR	1 1/2"	45 GPM	120 MIN/WK	5,400 GAL/WK
8-12	SPARE					
					646 MIN/WK	29,568 GAL/WK

*TO APPLY 1.5 IN/WK ON SOD AND 45 GAL/WK ON TREES.

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IMPROVEMENTS

TOWN OF MIAMI LAKES, FLORIDA
COMMUNITY AND LEISURE SERVICES

APPROVED BY: DATE:

MIAMI LAKES
Growing Beautifully

DRAWING TITLE: IRRIGATION LEGEND

SHEET NO. IR-4

SCALE: N/A

DATE: JULY 20, 2016

IRRIGATION NOTES & SPECIFICATIONS

AUTOMATIC IRRIGATION SYSTEM	
WATER DEMAND / ZONE	REFER TO PLAN
WATER SOURCE	CANAL
PRESSURE REQUIRED	50 PSI
PUMPING CAPACITY	50 GPM @ 115 FT.HD

GENERAL

IRRIGATION SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODES, CONTRACT DRAWINGS, CONTRACT SPECIFICATIONS, AND APPENDIX "F" OF THE FLORIDA BUILDING CODE.

IRRIGATION DESIGN BASED ON "LANDSCAPE PLAN" DATED JANUARY 25, 2016. CONTRACTOR SHALL REFER TO THIS PLAN TO COORDINATE SPRINKLER LOCATIONS AND PIPE ROUTING WITH NEW AND EXISTING PLANT LOCATIONS.

THIS PLAN SHALL BE USED AS A GUIDE ONLY. IRRIGATION SHALL BE INSTALLED TO MATCH ON SITE CONDITIONS AND TO OVERCOME THE INHERENT INACCURACIES THAT RESULT WHEN DESIGNING FROM BASE PLANS SCALED AT 1" = 30' .

THE SOURCE SHALL BE A PRE-FABRICATED PUMP STATION DRAWING WATER FROM A CANAL.

THIS IRRIGATION HAS BEEN DESIGNED AS A TYPICAL BLOCK VALVE TYPE USING RAIN BIRD SPRINKLERS, IN-LINE VALVES AND CONTROL SYSTEM. A RAIN SENSOR SHALL BE INSTALLED TO CONSERVE WATER.

IRRIGATION SHALL BE INSTALLED AND MAINTAINED TO MINIMIZE UNDESIRABLE OVERTHROW ONTO PAVEMENT, SIDEWALKS, AND BUILDINGS.

CONTRACTOR SHALL REFER TO THE PLANS FOR ADDITIONAL INFORMATION AND VISIT THE SITE TO BECOME FAMILIAR WITH SITE CONDITIONS.

TO ENSURE PROPER OPERATION, PUMPING CAPACITY, VALVE SIZES, ZONE CAPACITIES, SPRINKLER SPACING, PIPE AND WIRE SIZES, AND INSTALLATION NOTES AND DETAILS SHALL BE FOLLOWED AS SHOWN.

PIPING

PIPE ROUTING IS SCHEMATIC ONLY AND SHALL BE ADJUSTED FOR ON SITE CONDITIONS.

PIPE SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODES, SECTION "F" OF THE FLORIDA BUILDING CODE, AND PIPE MANUFACTURER'S INSTRUCTIONS.

PIPE ROUTED UNDER HARDSCAPED AREAS SHALL BE SLEEVED IN SCH 40 PVC. EACH SLEEVE SHALL BE: (1) BURIED TO A MINIMUM DEPTH OF 24", (2) TWO PIPE SIZES LARGER THAN CARRIER PIPE, AND (3) EXTENDED 3' BEYOND HARDSCAPED AREA ON EACH END. CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING SLEEVES.

PIPE INSTALLED ABOVE GRADE AT THE PUMP STATION SHALL BE SCH 40 GALVANIZED STEEL. ALL OTHER PIPE AND FITTINGS SHALL BE SCH 40 TYPE 1120 PVC.

PIPE SIZED TO LIMIT FLOW VELOCITIES TO 5 FEET/SECOND AND TO LIMIT FRICTION LOSS IN THE PIPING NETWORK.

PIPE SHALL BE INSTALLED AT SUFFICIENT DEPTH BELOW GROUND TO PROTECT IT FROM HAZARD SUCH AS VEHICULAR TRAFFIC OR ROUTINE OCCURRENCES WHICH OCCUR IN THE NORMAL USE AND MAINTENANCE OF THE PROPERTY. DEPTHS OF COVER SHALL MEET OR EXCEED SCS CODE 430-DD. REFER TO THE APPLICABLE DETAIL FOR ADDITIONAL INFORMATION.

BACKFILL SHALL BE OF SUITABLE MATERIAL, FREE OF ROCKS, STONES, AND OTHER DEBRIS THAT WOULD DAMAGE IRRIGATION SYSTEM COMPONENTS.

A GATE VALVE SHALL BE INSTALLED FOR ISOLATION. THIS VALVE SHALL BE TO LINE SIZE AND INSTALLED IN A VALVE BOX. POROUS MATERIAL SHALL BE INSTALLED PER BOX TO PROMOTE DRAINAGE.

SPRINKLER LOCATIONS ARE SCHEMATIC ONLY AND SHALL BE ADJUSTED FOR LANDSCAPING, FENCES, SITE LIGHTING, PREVAILING WIND, MOUNDING, ETC., TO ENSURE PROPER COVERAGE WITH MINIMAL UNDESIRABLE OVERTHROW. A PRIME OBJECTIVE SHALL BE TO ELIMINATE OVERTHROW ONTO PAVEMENT, AND SIDEWALKS.

BUBBLERS SHALL BE RAIN BIRD 1404 SERIES AND INSTALLED ON 1/2" SCH 40 PVC RISERS AT THE BASE OF TREES FOR LOW LEVEL WATERING. RISERS SHALL BE PAINTED FLAT BLACK TO BE LESS VISIBLE.

ROTOR SPRINKLERS SHALL BE RAIN BIRD 5000 SERIES 6" POP-UP TYPE WHICH SHALL BE INSTALLED ON FLEXIBLE SWING JOINTS CONSISTING OF THICKWALLED POLY PIPE AND 3/4" INSERT ELBOWS.

ADJUSTMENT FEATURES OF SPRINKLERS SPECIFIED SHALL BE UTILIZED TO ENSURE PROPER COVERAGE WITH MINIMAL UNDESIRABLE OVERTHROW. LOW ANGLE, FLAT SPRAY, AND ADJUSTABLE ARC NOZZLES SHALL BE USED TO MINIMIZE OVERTHROW.

SPRINKLERS LOCATED ADJACENT TO HARDSCAPED AREAS SHALL BE INSTALLED AWAY FROM HARDSCAPED AREAS TO MINIMIZE OVERTHROW AND THE CHANCE OF DAMAGE BY VEHICLES, PEDESTRIANS, AND LAWN MAINTENANCE PRESONNEL. AS A GENERAL RULE, 6" POP-UP ROTOR HEADS SHALL BE INSTALLED IN 6".

LOCATION OF PUMP STATION SHALL BE VERIFIED ON SITE.

PUMP STATION SHALL BE A PRE-FABRICATED TYPE WITH A CAPACITY OF 50 GPM @ 115 FT.HD BASIC COMPONENTS SHALL INCLUDE:

(1) A SELF PRIMING CENTRIFUGAL PUMP WITH THE CAPACITY NOTED.
(2) A 5 HP MOTOR SELECTED TO MATCH ON SITE ELECTRIC.
(3) UL LISTED CONTROL PANEL ASSEMBLY WITH TYPICAL PROTECTIVE CIRCUITRY.
(4) PUMP START RELAY
(5) ALUMINUM SKID
(6) ALUMINUM ENCLOSURE
(7) ISOLATION VALVE
(8) AUTOMATIC CONTROLLER
(9) RAIN SENSOR
(10) VARIABLE FREQUENCY DRIVE

STATION SHALL BE MANUFACTURED BY RAIN BIRD (MODEL# CLPOSVHASCI) OR APPROVED EQUAL. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL.

STATION SHALL BE MOUNTED ON A 6" THICK REINFORCED CONCRETE SLAB TO ACCOMMODATE THE STATION AND AUXILLARY EQUIPMENT.

THE WATER SOURCE SHALL BE A CANAL. SUCTION LINE SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTION. A CANAL SCREEN SHALL BE INSTALLED TO PREVENT THE INTAKE OF HARMFUL MATERIAL INTO THE SYSTEM.

CONTROL SYSTEM

CONTROL SYSTEM SHALL BE A RAIN BIRD ESP SERIES ELECTRIC TYPE. ONE 12 STATION CONTROLLER SHALL ACTIVATE 7 IN-LINE VALVES. A RAIN SENSOR SHALL BE INSTALLED.

CONTROLLER SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODES AND MANUFACTURER'S INSTRUCTIONS. PROPER GROUNDING EQUIPMENT SHALL BE PROVIDED.

CONTROLLER LOCATION SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE. THE CONTROLLER SHALL BE A COMPONENT OF THE PUMP STATION.

CONTROL LINES FROM AUTOMATIC CONTROLLER TO IN-LINE AUTOMATIC VALVES SHALL BE #14 AWG THHN TYPE WHICH SHALL BE: (1) INSTALLED IN ACCORDANCE WITH LOCAL CODES, (2) INSTALLED IN SCH 40 PVC WIRE CONDUIT, (3) BURIED TO A MINIMUM DEPTH OF 15", (4) COLORED CODED TO FACILITATE TROUBLESHOOTING, AND (5) SPLICED MOSTLY AT VALVE LOCATIONS. SPLICES SHALL BE MADE WATERPROOF USING APPROVED METHODS. SPARE WIRES SHALL BE ROUTED FROM EACH CONTROLLER IN ALL DIRECTIONS TO THE FARTHEST VALVES CONTROLLED.

AN INDIVIDUAL CONTROL WIRE SHALL BE ROUTED TO EACH VALVE AND VALVES WHICH OPERATE SIMULTANEOUSLY SHALL BE TEED TOGETHER AT THE CONTROLLER.

AUTOMATIC VALVE LOCATIONS ARE SCHEMATIC ONLY AND SHALL BE ADJUSTED FOR ON SITE CONDITIONS. EACH VALVE SHALL BE INSTALLED IN A VALVE BOX. A MINIMUM OF ONE CUBIC FOOT OF GRAVEL SHALL BE PROVIDED PER BOX TO PROMOTE DRAINAGE.

THE RAIN SENSOR SHALL BE A COMPONENT OF THE PUMP STATION.

TIMING AND PRECIPITATION

TIMING OF EACH STATION SHALL BE SET IN THE FIELD TO MATCH LOCAL REQUIREMENTS. REFER TO ZONE SUMMARY CHART FOR RECOMMENDED RUN TIMES TO APPLY 1.5 INCHES/WEEK ON SOD AND 45 GAL/WK ON TREES.

PROGRAMMING

SYSTEM SHALL BE PROGRAMMED TO OPERATE WITHIN THE GUIDELINES ESTABLISHED FOR PHASE II WATER RESTRICTIONS.

PROFESSIONAL ENGINEER
KENNETH DIDONATO
STATE OF FLORIDA

KENNETH DIDONATO
FLORIDA PROFESSIONAL ENGINEER
FL LICENSE NO.: 20892

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SR 826/NW 77th COURT
LANDSCAPE & IRRIGATION
IMPROVEMENTS

TOWN OF MIAMI LAKES, FLORIDA
COMMUNITY AND LEISURE SERVICES

APPROVED BY: DATE:

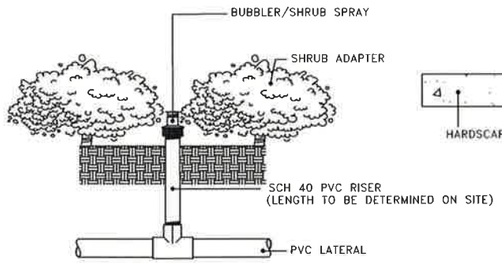
MIAMI LAKES
Growing Beautifully

DRAWING TITLE: IRRIGATION NOTES AND SPECIFICATIONS

SHEET NO. IR-5

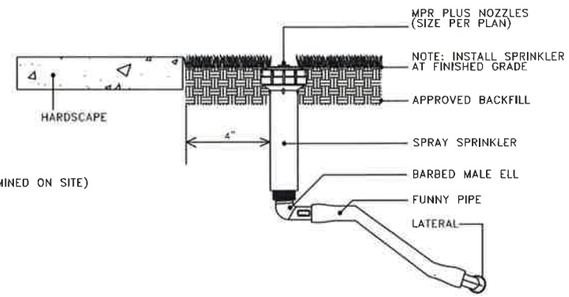
SCALE: N/A

DATE: JULY 20, 2016



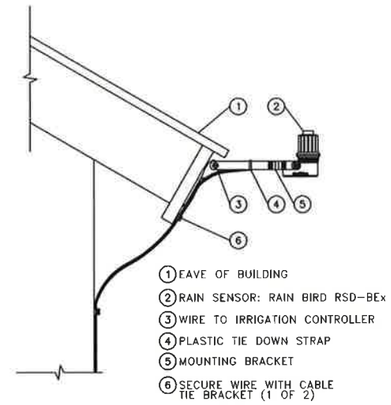
SPRINKLER DETAIL (NTS)

BUBBLER/SHRUB SPRAY INSTALLED AT THE BASE OF PLANTS FOR LOW LEVEL WATERING



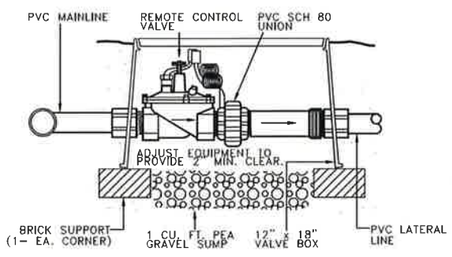
SPRINKLER DETAIL (NTS)

POP-UP SPRAY ON POLY PIPE SWING JOINT LOCATED IN SOD OR MULCH



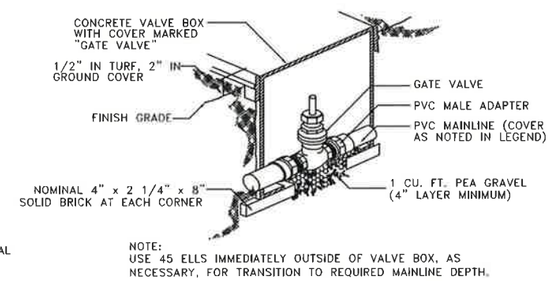
RAIN SENSOR RSD-BEx

NOT TO SCALE



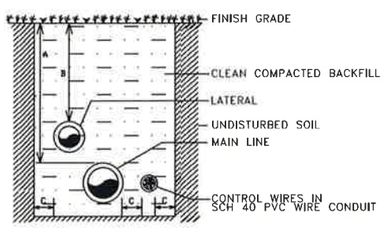
REMOTE CONTROL VALVE DETAIL

NOT TO SCALE



GATE VALVE DETAIL

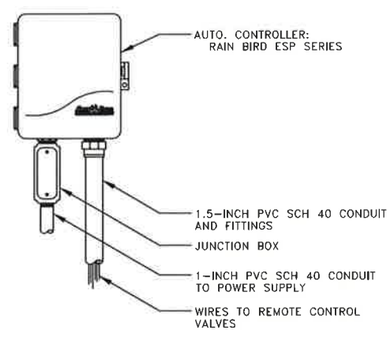
NOT TO SCALE



PIPE SIZE	DIMENSIONS		
	A	B	C
3/4" TO 2"	18"	12"	4"
2 1/2" AND 3"	18"	18"	4"
4" AND LARGER	24"		4"

TRENCHING DETAIL (NTS)

NON-TRAFFIC AREAS



ESP AUTOMATIC CONTROLLER

NOT TO SCALE

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SR 826/NW 77th COURT
LANDSCAPE & IRRIGATION IMPROVEMENTS

TOWN OF MIAMI LAKES, FLORIDA
COMMUNITY AND LEISURE SERVICES

APPROVED BY: DATE:

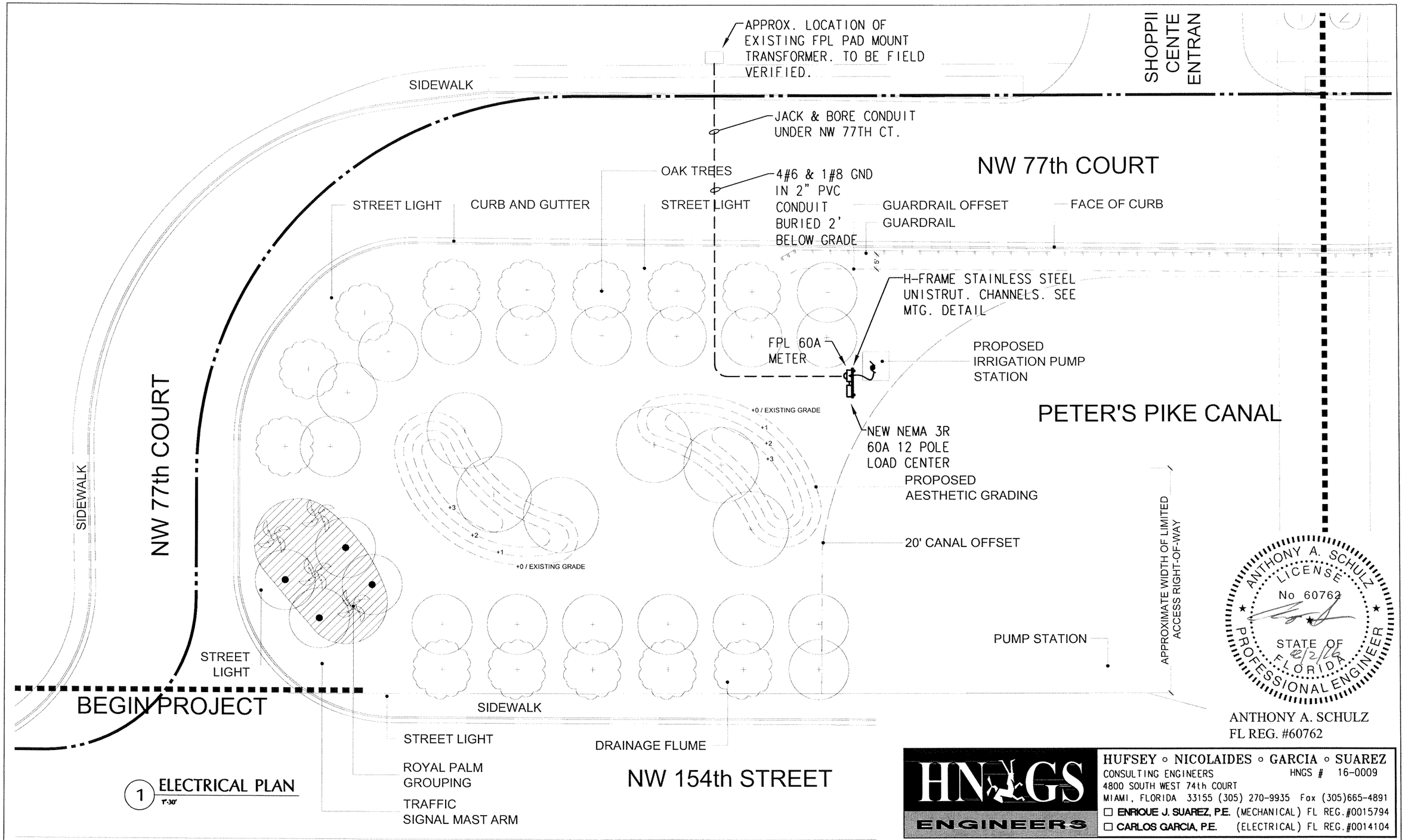
MIAMI LAKES Growing Beautifully

DRAWING TITLE: INSTALLATION DETAILS

SHEET NO. IR-6

SCALE: N.T.S.

DATE: JULY 20, 2016



1 ELECTRICAL PLAN
1"=30'

ANTHONY A. SCHULZ
FL REG. #60762

HNGS ENGINEERS

HUFSEY ◦ NICOLAIDES ◦ GARCIA ◦ SUAREZ
CONSULTING ENGINEERS HNGS # 16-0009
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MIAMI, FLORIDA 33155 (305) 270-9935 Fax (305)665-4891
☐ ENRIQUE J. SUAREZ, P.E. (MECHANICAL) FL REG.#0015794
☐ CARLOS GARCIA, P.E. (ELECTRICAL) FL REG.#0014104

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SR 826/NW 77th COURT LANDSCAPE & IRRIGATION IMPROVEMENTS

TOWN OF MIAMI LAKES, FLORIDA COMMUNITY AND LEISURE SERVICES

APPROVED BY: DATE:

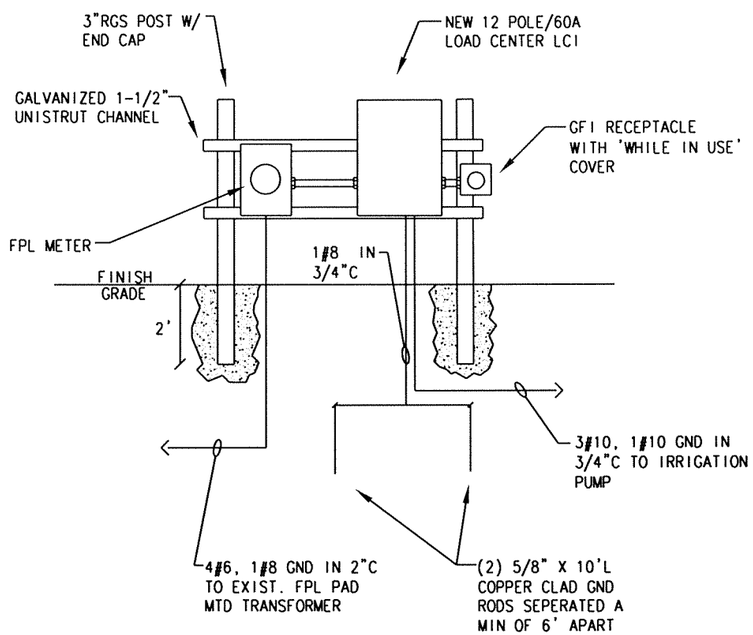
MIAMI LAKES Growing Beautifully

DRAWING TITLE: ELECTRICAL PLAN

SHEET NO. E-1

SCALE: 1" = 30'-0"

DATE: JULY 20, 2016



1 ELECTRICAL RISER / MTG DETAIL

N.T.S.

PANEL ' LC1 '

VOLTAGE: 120/208V, 3PH, 4W

MAIN: 3P-60A MCB

NEMA 3R

TYPE: SIEMENS

MOUNTING SURFACE

CIRCUIT DESIGNATION	POLE AMPS.	VOLT AMP. A	VOLT AMP. B	VOLT AMP. C	WIRE / COND. SIZE	#	#	WIRE / COND. SIZE	VOLT AMP. A	VOLT AMP. B	VOLT AMP. C	POLE AMPS.	CIRCUIT DESIGNATION
IRRIGATION	3	2100			3#10, 1#10(G)-3/4"C	1	2	2#12, 1#12(G) 1/2"C	180			1/20	RECEPTACLE
PUMP			2100			3	4	—		—		1/-	SPACE
5HP	30			2100		5	6				—		
SPACE	1/-	—			—	7	8		—				
			—			9	10			—			
				—		11	12				—		

PHASE A VA 2280

PHASE B VA 2100

PHASE C VA 2100

KVA CONNECTED 6.5

AMP CONNECTED 18 AMP

ANTHONY A. SCHULZ
LICENSE
No 60762
STATE OF FLORIDA
PROFESSIONAL ENGINEER
8/2/16

ANTHONY A. SCHULZ
FL REG. #60762

HNGS ENGINEERS

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REVISIONS No. 1			REVISIONS No. 2				NAME	DATE
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						CHECKED BY:	RPH	1/25/16
						SUPERVISED BY:	RPH	

SR 826/NW 77th COURT LANDSCAPE & IRRIGATION IMPROVEMENTS

TOWN OF MIAMI LAKES, FLORIDA COMMUNITY AND LEISURE SERVICES

APPROVED BY: DATE:

MIAMI LAKES Growing Beautiful

DRAWING TITLE: ELECTRICAL RISER / MTG DETAIL & SCHED

SHEET NO. E-2

SCALE:

DATE: JULY 20, 2016

GENERAL ELECTRICAL NOTES

1.a)ALL WORK SHALL BE IN ACCORDANCE WITH THE CURRENT ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE, FLORIDA BUILDING CODE AND OTHER APPLICABLE CODES AND STANDARDS.

1.b)IT IS THE CONTRACTORS RESPONSIBILITY TO BE FULLY COGNIZANT WITH ALL CODE SECTIONS AS THEY APPLY TO THE WORK/INSTALLATION AT HAND WHETHER OR NOT SHOWN ON THE DRAWINGS BUT REQUIRED BY CODE. IF ANY DISCREPANCY ARISES BETWEEN ANY DESIGN ISSUES AND CODE REQUIREMENTS, CONTRACTOR MUST ADHERE TO THE MOST STRINGENT APPROACH.

2.a) THE DRAWINGS ARE DIAGRAMMATIC AND DO NOT SHOW ALL OFFSETS, BENDS AND BOXES REQUIRED TO MAKE A COMPLETE NEAT INSTALLATION IN ACCORDANCE WITH N.E.C.

2.b) WHEN CONFLICTS ARISE IN LOCATIONS WIRING DEVICES, ELECTRICAL EQUIPMENT, DISCONNECTS, PANELBOARDS ETC. DUE TO FIELD CONDITION OR IMPROPER FIELD COORDINATION CONTRACTOR SHALL BRING IT TO THE A/E's ATTENTION AND AT NO EXTRA COST RELOCATE, AND OR EXTEND WITHIN A REASONABLE DISTANCE SUCH ITEM WHICH IS IN CONFLICT. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING LOCATION OF ALL COMPONENT PRIOR TO ROUGH-IN WITH ALL TRADES- NO EXTRAS WILL BE ALLOWED FOR FAILURE TO DO SO.

3. THE CONTRACTOR IS RESPONSIBLE FOR EVALUATING FIELD CONDITIONS BY VISITING THE SITE PRIOR TO COMMENCING/BIDDING WORK.

4. CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING ALL ELECTRICAL SYSTEM COMPONENTS SUCH AS LUMINAIRES, WIRING DEVICES, APPLIANCES, CONTROLS SHOWN ON THE ARCHITECTURAL OR MECHANICAL DRAWINGS.

5. THE CONTRACTOR SHALL SATISFACTORILY REPAIR/REPLACE EQUIPMENT OR PART OF STRUCTURE DAMAGED AS A RESULT OF HIS WORK. SURFACES AND FINISHED AREAS SHALL BE RESTORED TO MATCH ADJACENT AREAS.

6. ALL DEVICES INSTALLED OUTDOORS TO HAVE WEATHERPROOF COVERS.

7. WIRE SIZE SHALL BE #12 THHN/THWN UNLESS OTHERWISE NOTED ON PLANS. CONDUCTORS #6 AND LARGER SHALL BE THWN.

8. ALL CONDUCTORS SHALL BE COPPER.

9. ALL CONDUCTORS SHALL BE RUN IN CONDUIT (METALLIC TYPE). IF PVC SCHEDULE 40 IS USED FOR UNDERGROUND FEEDERS ONLY, AN EQUIPMENT GROUND CONDUCTOR SIZED IN ACCORDANCE WITH N.E.C. 250-122 MUST BE INSTALLED AND CONDUIT SIZE INCREASED AS REQUIRED.

10. ALL MATERIALS SHALL BE U. L. APPROVED.

11. NEW TYPEWRITTEN PANEL TALLY SHALL BE FURNISHED AFTER JOB IS COMPLETED REFLECTING ALL CHANGES AND ADDITIONS.

12. ALL BRANCH CIRCUITS SHALL BE PROPERLY PHASE BALANCED.

13. ALL WIRING DEVICES TO BE HEAVY DUTY SPECIFICATION GRADE WHILE IN USE COVER PLATES EQUAL TO HUBBELL HBL5362W.

14. ALL BRANCH CIRCUITS TO HAVE A GREEN EQUIPMENT GROUNDING CONDUCTOR SIZED AS PER N.E.C. 250.122.

15. FUSES SHALL BE DUAL ELEMENT, TIME DELAY TYPE UNLESS OTHERWISE NOTED.

16. RISERS ARE DIAGRAMMATIC ONLY. THEY DO NOT SHOW EVERY BEND REQUIRED FOR THE INSTALLATION.

17. THIS DRAWING IS A GUIDE FOR THE INSTALLATION OF ELECTRICAL SERVICE. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE TO PROVIDE A FUNCTIONING SYSTEM.

18. ALL CABLES SHALL BE RUN WITHOUT SPLICES EXCEPT OTHERWISE INDICATED.

19. ALL PULL AND JUNCTION BOXES SHALL BE ACCESSIBLE AT ALL TIMES.

20. EXACT POINT AND METHODS OF CONNECTION SHALL BE DETERMINED IN FIELD.

21. ALL WORK SHALL BE DONE IN A NEAT AND WORKMANLIKE MANNER.

22. ALL PANELBOARDS SHALL HAVE COPPER BUS AND BRANCH CIRCUIT BREAKERS SHALL BE OF THE BOLT-ON TYPE. PLUG-IN CIRCUIT BREAKERS WILL NOT BE ACCEPTED.

23. ALL RACEWAY ROUTED, INSULATED CONDUCTORS SYSTEM SHALL BE COLOR CODED AS FOLLOWS:

	120/208V SYSTEM
PHASE 'A'	BLACK
PHASE 'B'	RED
PHASE 'C'	BLUE
NEUTRAL	WHITE
GROUND	GREEN

24. ALL PULL BOXES, HAND HOLES AND MAN HOLES TO HAVE COVER PLATE BOLTED TO FRAME AND BONDED TO THE EQUIPMENT GROUND SYSTEM.

25. CONTRACTOR SHALL INCLUDE IN HIS BID ALL COSTS RELATED TO THE FBC WIND LOAD COMPLIANCE, THE CERTIFICATION OF THE EXTERIOR H-FRAME ASSEMBLIES BY A STRUCTURAL ENGINEER. IF REQUIRED BY LOCAL JURISDICTION.

26. ALL CONDUCTOR SPLICES IN EXTERIOR LOCATED JUNCTION/PULL BOXES EXPOSED TO THE WEATHER TO BE WEATHER SEALED BY USING AN APPROVED METHOD SUCH AS 3M SCOTCHLOCK CONNECTOR EPOXY SEALING PACKS OR SIMILAR.

27.a) WHEN THERE IS CONFLICT AS TO OPTIONS TO PERFORM A GIVEN TASK CONTRACTOR SHALL CHOOSE THE MOST COSTLY IN NATURE IN ORIGINAL BID.

27.b) WHEN ITEMS ARE REQUIRED BY LOCAL OR NATIONAL CODES CONTRACTOR SHALL INCLUDE THEM WHETHER SHOWN ON THE DRAWINGS OR NOT.

28.a) ALL 120/277V BRANCH CIRCUITS SHALL BE INSTALLED WITH INDIVIDUAL NEUTRAL CONDUCTORS PER PHASE UNLESS INSTALLED AS PER METHOD ON NOTE #59b.

28.b) IF MULTIWIRE BRANCH CIRCUITS (TWO OR THREE POLE BRANCH CIRCUITS SHARING A COMMON NEUTRAL CONDUCTOR) ARE INSTALLED AT CONTRACTOR'S OPTION, ALL UNGROUNDED CONDUCTORS SHALL BE SIMULTANEOUSLY DISCONNECTED BY PROVIDING 2 POLE OR 3 POLE CIRCUIT BREAKER OR SINGLE POLE BREAKERS WITH APPROVED HANDLE TIES AS REQUIRED PER N.E.C. 210.4.

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FLORIDA HIGHWAY BEAUTIFICATION COUNCIL GRANT APPLICATION

REVISIONS No. 1			REVISIONS No. 2				NAME	DATE
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DESIGNED BY:	KJO	1/25/16
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TOWN OF MIAMI LAKES, FLORIDA
COMMUNITY AND LEISURE SERVICES

APPROVED BY: DATE:

MIAMI LAKES
Growing Beautifully

DRAWING TITLE: GENERAL ELECTRICAL NOTES

SHEET NO. E-3

SCALE:

DATE: JULY 20, 2016