SOLICITATION RESPONSE FORM

City of Doral ITB No. 2024-17 Trail Lighting Improvements on Greenway Trail (NW 50th Street)

Date Submitted	
Company Name	
Date of Entity Formation	
Entity Type (select one)	Corporation / Partnership / LLC / Other:
Corporate Address	
Office Location	
FEI/EIN No.	
Authorized Representative (Name and Title)	

- The undersigned Bidder/Proposer agrees, if this Bid is accepted by the City, to enter into an agreement with the City of Doral to perform and furnish all goods and/or services as specified or indicated in the Contract for the Price and within the timeframe indicated in this proposal and in accordance with the terms and conditions of the Contract.
- Bidder/Proposer accepts all of the terms and conditions of the Solicitation, including without limitation those dealing with the disposition of Bid Security. This Bid will remain subject to acceptance for 180 days after the day of Bid opening. Bidder/Proposer agrees to sign and submit the Contract with any applicable documents required by this ITB within ten days after the date of City's Notice of Award (If applicable).
- 3. By responding to this sealed Solicitation, the Bidder/Proposer makes all representations required by the Solicitation and further warrants and represents that Bidder/Proposer acknowledges that it has received and examined copies of the entire Solicitation documents including all of the following addenda:

 Addendum No.:
 Dated:
 Addendum No.:
 Dated:

 Addendum No.:
 Dated:
 Addendum No.:
 Dated:

 \Box Check here If no Addenda were issued.

- 4. Bidder/Proposer further warrants and represents that it has familiarized themselves with the nature and extent of the Contract, required goods and/or services, site, locality, and all local conditions and applicable laws and regulations that in any manner may affect cost, progress, performance, or furnishing of the Work.
- 5. Bidder/Proposer further warrants and represents that it has studied carefully all reports and drawings of subsurface conditions and drawings of physical conditions to the extent applicable to the Work, and has obtained and carefully studied (or assumes responsibility for obtaining and carefully studying) all information that pertains to the subsurface or physical conditions at the site or otherwise may affect the cost, progress, performance, or furnishing of the Work, and no additional examinations, investigations, explorations, tests, reports or similar information or data are or will be required by Bidder/Proposer for such purposes.

- Bidder/Proposer further warrants and represents that it has given the City written notice of all errors or discrepancies it has discovered in the Contract and the resolution thereof by the City is acceptable to Bidder/Proposer.
- 7. Bidder/Proposer further warrants and represents that this Bid/Proposal is genuine and not made in the interest of or on behalf of any other undisclosed person, firm or corporation; Bidder/Proposer has not directly or indirectly induced or solicited any other Bidder/Proposer to submit a false or sham Proposal; Bidder/Proposer has not solicited or induced any person, firm or corporation to refrain from submitting; and Bidder/Proposer has not sought by collusion to obtain for itself any advantage over any other Bidder/Proposer or over the City.
- 8. Bidder/Proposer understands that the quantities provided are only provided for proposal evaluation only. The actual quantities may be higher or lower than those in the proposal form.
- 9. Bidder/Proposer understands and agrees that the Contract Price is Unit Rate Contract to furnish and deliver all of the Work complete in place as such the Proposer shall furnish all labor, materials, equipment, tools superintendence, and services necessary to provide a complete Project.
- 10. Communications concerning this Proposal shall be addressed to:

Bidder/Proposer:	 	
Telephone:		
Email Address:		
Attention:	 	

11. The terms used in this response which are defined in the above-referenced Solicitation shall have the meanings assigned to them in such Solicitation.

STATEMENT

I understand that a "person" as defined in 287.133(1)(e), Florida Statutes, means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding Contract and which Bids or applies to Bid on Contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "persons" includes officers, directors, executives, partners, shareholders, employees, members, and agents active in management of the entity.

	SUBMITTED THIS DAY OF	, 2024.
Company Name:		
Company Address:		
Authorized Representative Signature:		

Item	Description	Unit	Qty.	Unit Price	Cost
101-1	MOBILIZATION	LS	1		
102-1	MAINTENANCE OF TRAFFIC	LS	1		
110-4-10	REMOVAL OF EXISTING CONCRETE	SY	27		
522-1	CONCRETE SIDEWALK AND DRIVEWAYS. 4" THICK	SY	27		
630-2-11	CONDUIT, FURNISH & INSTALL, OPEN TRENCH	LF	1239		
630-2-12	CONDUIT, FURNISH & INSTALL, DIRECTIONAL BORE	LF	1453		
635-2-11	PULL & SPLICE BOX, F&I, 13" X 24" COVER SIZE	EA	34		
715-1-12	LIGHTING CONDUCTORS, F&I, INSULATED, NO. 8 - 6	LF	252		
715-1-13	LIGHTING CONDUCTORS, F&I, INSULATED, NO. 4 - 2	LF	10167		
715-7-21	LOAD CENTER, REWORK, SECONDARY VOLTAGE	EA	1		
715-69- 000	LIGHT POLE COMPLETE, REMOVE POLE AND FOUNDATION	EA	18		
715-516- 114	LIGHT POLE COMPLETE, DIRECT BURIED, F&I, POLE TOP MOUNT, 14' Pole Manufacturer: Hapco Model: RTA14B5AD-BA	EA	50		
715-550- 000	LIGHT POLE COMPLETE, SOLAR POWERED, REMOVE	EA	49		

BID PRICE SHEET

TOTAL BASE BID:

Dedicated Allowance (2% of Base Bid) for PERMITTING:

Contingency (10% of Base Bid) for UNFORSEEN CONDITIONS:

TOTAL BID (Base Bid + Dedicated Allowance + Contingency):

NOTE 5% BID BOND MUST BE SEPARATELY SUBMITTED TO CITY CLERK'S OFFICE IN A SEALED ENVELOPE TITLED ITB NO. 2024-17 BEFORE THE SUBMISSION DEADLINE

ALTERNATE

ltem	Description	Unit	Qty.	Unit Price	Cost
	LIGHT POLE COMPLETE, DIRECT BURIED, F&I, POLE				
715-516-	TOP MOUNT, 14'	E۸	FO		
114	Pole: Artec	EA	50		
	Model: ARST-DB-04-19/14-D-T3-BK				

BIDDER QUALIFICATION STATEMENT

The Bidder's response to this questionnaire will be utilized as part of the City's evaluation to ensure that the Bidder meets, to the satisfaction of the City, the minimum requirements for participating in this Solicitation. **PROPOSER MUST PROVIDE DETAILS FULFILLING THE SOLICITATION'S MINIMUM QUALIFICATIONS. FAILURE TO DO SO** WILL RESULT IN A DETERMINATION OF NON-RESPONSIVENESS. ADDITIONAL PROJECTS MAY BE ADDED, AS NEEDED.

Bidder:	
License(s)*:	
No. of staff	No. of Staff to be assigned
Company wide	to project if awarded
*Identify which of t	he required licenses are held by bidder and attach to the bid submittal package.
	Lighting Improvement Project No. 1
Project Name:	
Location:	
Project Description:	
Budget/Cost:	Contract Dates:
Owner Name:	Reference Name:
Reference	Reference
Phone No.:	Email:
Project Name:	
Location:	
Project Description:	
Budget/Cost:	Contract Dates:
Owner Name:	Reference Name:
Reference Phone No.:	Reference Email:
	Lighting Improvement Project No. 3
Project Name:	
Location:	
Project Description:	
Budget/Cost:	Contract Dates:
Owner Name:	Reference Name:
Reference Phone No.:	Reference Email:

LIST OF PROPOSED SUBCONTRACTORS

BIDDER shall list all Proposed Subcontractors to be used on this project if they are awarded the contract.

SCOPE		SUBCONTRACTOR NAME, ADDRESS AND LICENSE #
	-	
	_	
	-	
	-	
	-	

If, prior to Notice of the Award, the City or the Contractor has reasonable objection to and refuses to accept any Subcontractor, Supplier, person or organization listed, the Contractor may, prior to Notice of Award, submit an acceptable substitute without an increase in their bid price.

BIDDER/PROPOSER AFFIDAVITS

Business Name:		
D.B.A.:	Federal I.D. No.:	
Business Address:		
City:	State:	Zip:

I, the undersigned affiant do swear and affirm that I am an authorized agent of the above-named business ("Bidder") and authorized to make the following statements and certifications on Bidder's behalf:

1. Ownership Disclosure

Pursuant to City Code Section 2-384, the above-named Bidder hereby discloses the following principals, individuals, or companies with five percent (5%) or greater ownership interest in Bidder (supplement as needed):

Name	Address	% Ownership

The above-named Bidder hereby discloses the following subcontractors (supplement as needed):

Name	Address	% Ownership

Bidder hereby recognizes and certifies that no elected official, board member, or employee of the City of Doral ("City") shall have a financial interest in any transactions or any compensation to be paid under or through any transactions between Bidder and City, and further, that no City employee, nor any elected or appointed officer (including City board members) of the City, nor any spouse, parent or child of such employee or elected or appointed officer of the City, may be a partner, officer, director or proprietor of Bidder, and further, that no such City employee or elected or appointed officer, or the spouse, parent or child of any of them, alone or in combination, may have a material interest in the Bidder. Material interest means direct or indirect ownership of more than 5% of the total assets or capital stock of the Bidder.

Any exception to these above-described restrictions must be expressly provided by applicable law or ordinance and be confirmed in writing by City. Further, Bidder recognizes that with respect to any transactions between Bidder and City, if any Bidder violates or is a party to a violation of the ethics ordinances or rules of the City, the provisions of Miami-Dade County Code Section 2-11.1, as applicable to City, or the provisions of Chapter 112, part III, Fla. Stat., the Code of Ethics for Public Officers and Employees, such Bidder may be disqualified from furnishing the goods or services for which the bid or proposal is submitted and may be further disqualified from submitting any future bids or proposals for goods or services to City. The term "Bidder," as used herein, include any person or entity making a proposal herein to City or providing goods or services to City.

ITB No. 2024-17

2. Public Entity Crimes

- 1. Bidder is familiar with and understands the provisions of Section 287.133, Florida Statutes
- 2. Bidder further understands that a person or affiliate who has been placed on the convicted Bidder list following a conviction for a public entity crime may not submit a bid, proposal, or reply on a contract to provide any goods or services to a public entity; may not submit a bid, proposal, or reply on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in s. 287.017 for CATEGORY TWO for a period of 36 months following the date of being placed on the convicted Bidder list.
- 3. Based on information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. (INDICATE WHICH STATEMENT APPLIES.)
 - Neither the entity submitting this sworn statement, nor any of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, nor any affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.
 - _____ The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.
 - The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989. However, there has been a subsequent proceeding before a Hearing Officer of the State of Florida, Division of Administrative Hearings and the Final Order entered by the Hearing Officer of the State of Florida, Division of Administrative Hearings and the Final Order entered by the Hearing Officer determined that it was not in the public interest to place the entity submitting this sworn statement on the convicted Bidder list. (Attach a copy of the final order.)

3. Compliance With Foreign Entity Laws

Applicant certifies as follows:

- a. Bidder is not owned by the government of a foreign country of concern, as defined in Section 287.138, Florida Statutes.
- b. The government of a foreign country of concern does not have a controlling interest in Bidder, as defined in Section 287.138, Florida Statutes.
- c. Bidder is not organized under the laws of a foreign country of concern, as defined in Section 287.138, Florida Statutes.
- d. Bidder does not have a principal place of business in a foreign country of concern, as defined in Section 287.138, Florida Statutes.
- e. Bidder is not on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in Iran Terrorism Sectors List, created pursuant to s. 215.473.
- f. Bidder is not engaged in business operations in Cuba or Syria.
- g. Bidder is not participating in a boycott of Israel, and is not on the Scrutinized Companies that Boycott Israel list in accordance with the requirements of Sections 287.135 and F.S. 215.473, Florida Statutes

4. Disability, Nondiscrimination, and Equal Employment Opportunity

Applicant certifies that Bidder is in compliance with and agrees to continue to comply with, and ensure that any subcontractor, or third party contractor under any and all contracts with the City of Doral complies with all applicable requirements of the laws listed below including, but not limited to, those provisions pertaining to employment, provision of programs and services, transportation, communications, access to facilities, renovations, and new construction.

- The American with Disabilities Act of 1990 (ADA), Pub. L. 101-336, 104 Stat 327, 42 USC 1210112213 and 47 USC Sections 225 and 661 including Title I, Employment; Title II, Public Services; Title III, Public Accommodations and Services Operated by Private entities; Title IV, Telecommunications; and Title V, Miscellaneous Provisions.
- The Florida Americans with Disabilities Accessibility Implementation Act of 1993, Section 553.501 553.513, Florida Statutes.
- The Rehabilitation Act of 1973, 229 USC Section 794.
- The Federal Transit Act, as amended 49 USC Section 1612.
- The Fair Housing Act as amended 42 USC Section 3601-3631

5. Conformance with OSHA Standards

Applicant certifies and agrees that Applicant has the sole responsibility for compliance with all the requirements of the Federal Occupational Safety and Health Act of 1970, and all State and local safety and health regulations, and in the event the City engages Bidder, Bidder agrees to indemnify and hold harmless the City of Doral, against any and all liability, claims, damages losses and expenses the City may incur due to the failure of itself or any of its subcontractors to comply with such act or regulation in the performance of the contract.

6. E-Verify Program Affidavit

Affiant certifies the following:

- a. Affiant is familiar with and understands the provisions of Section 448.095, Florida Statutes and 48 CFR 52.222-54 and has sufficient knowledge of the personnel practices of the Bidder to execute this Declaration on behalf of the Bidder.
- b. Bidder has registered with and utilizes the federal work authorization program commonly known as E-Verify or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in F.S. 448.095, which prohibits the employment, contracting or sub-contracting with an unauthorized alien.
- c. Bidder does not knowingly employ Affiants or retain in its employ a person whose immigration status makes them ineligible to work for the Bidder.
- d. Bidder has verified that any subcontractors utilized to deliver goods or services to the City through the Contractor's contract with the City use the E-Verify system and do not knowingly employ persons whose immigration status makes them ineligible to work for the subcontractor. The undersigned further confirms that it has obtained all necessary affidavits from its subcontractors, if applicable, in compliance with F.S. 448.095, and that such affidavits shall be provided to the City upon request.
- e. Failure to comply with the requirements of F.S. 448.095 may result in termination of the Bidder's contract(s) with the City of Doral.

7. No Contingency Affidavit

Affiant certifies the following:

a. Neither Bidder nor any principal, employee, agent, representative or family member has promised to pay, and Bidder has not and will not pay, a fee the amount of which is contingent upon the City of Doral awarding a contract.

ITB No. 2024-17

- b. Bidder warrants that neither it, nor any principal, employee, agent, or representative has procured, or attempted to procure, a contract with the City of Doral in violation of any of the provisions of the Miami- Dade County conflict of interest and code of ethics ordinances.
- c. Bidder acknowledges that a violation of this warranty may result in the termination of any contracts and forfeiture of funds paid, or to be paid, to the Bidder if awarded a contract.

8. Copeland Anti-Kickback Affidavit

Affiant certifies that no portion of any sums will be paid to any employees of the City of Doral, its elected officials, or its consultants, as a commission, kickback, reward or gift, directly or indirectly by Bidder or any member of Bidder's firm or by any officer of the corporation in exchange for business with the City of Doral.

9. Non-Collusion Affidavit

I, the undersigned affiant, swear or affirm that:

- a. Affiant is fully informed respecting the preparation and contents of the attached Bid/Proposal by Contractor and of all pertinent circumstances respecting such Bid/Proposal.
- b. Such Bid/Proposal is genuine and is not a collusive or sham Bid/Proposal.
- c. Neither the said Contractor nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including Affiant, have in any way colluded, conspired, connived or agreed, directly or indirectly, with any other firm or person to submit a collusive or sham Bid/Proposal in connection with the Work for which the attached Bid/Proposal has been submitted; or to refrain from bidding in connection with such Work; or have in any manner, directly or indirectly, sought by agreement or collusion, or communication, or conference with any firm or person to fix any overhead, profit, or cost elements of the Bid/Proposal or of any other person submitting a response to the solicitation, or to fix any overhead, profit, or cost elements of the guoted price(s) or the quoted price(s) of any other bidding/proposing person, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against the City or any person interested in the proposed Work.
- d. The price(s) quoted in the attached Bid/Proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Contractor or any other of its agents, representatives, owners, employees or parties in interest, including this Affiant.

10. Drug Free Workplace Program

Bidder, in accordance with Florida statute 287.087 hereby certifies that the Bidder does all of the following:

- a. Publishes a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.
- b. Informs Employees about the dangers of drug abuse in the workplace, the business' policy of maintaining drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.
- c. Gives each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in subsection (a).
- d. In the statement specified in subsection (a), notifies the employees that, as a conditions of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.
- e. Imposes a sanction on, or require the satisfactory participation in, a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted. ITB No. 2024-17

- f. Makes a good faith effort to continue to maintain a drug-free workplace through implementation of this section.
 - □ Select here if Not Applicable

11. Cone of Silence Certification

Affiant certifies and that Affiant has read and understands the Cone of Silence" requirements set forth in this Solicitation and further certify that neither I, nor any agent or representative of the Company has violated this provision.

BIDDER AFFIRMATION

I, the undersigned affiant, being first duly sworn as an authorized agent of the below-named Bidder, does hereby affirm and attest under penalty of perjury as the proposed Bidder for City of Doral that the certifications and statements provided above on behalf of Bidder are true to the best of affiant's knowledge and belief and that Bidder is compliant with all requirements outlined in these City of Doral Affidavits. Bidder acknowledges it is required to comply with and keep current all statements sworn to in the above affidavits and will notify the City of Doral immediately if any of the statements attested hereto are no longer valid.

Bidder Name	Date Signed
Affiant Signature	Affiant Name & Title (Printed)
STATE OF COUNTY OF	
The foregoing instrument was affirmed, subscribed, and s 20 by means of \Box physical presence or \Box online nota	sworn to before me this day of, wrization, by
who is personally known to me or who produced the follow	wing identification:

[Notary Seal]

Notary Public for the State of ______ My commission expires: ______

CONFLICT OF INTEREST DISCLOSURE

Business Name:		
D.B.A.:	Federal I.D. No.:	
Business Address:		
City:	_ State:	Zip:

Please note that all business entities interested in or conducting business with the City are subject to comply with the City of Doral's conflict of interest policies as stated within the certification section below. If a vendor has a relationship with a City of Doral official or employee, an immediate family member of a City of Doral official or employee, the vendor shall disclose the information required below.

- 1. No City official or employee or City employee's immediate family member has an ownership interest in vendor's company or is deriving personal financial gain from this contract.
- 2. No retired or separated City official or employee who has been retired or separated from the City for less than one (1) year has an ownership interest in vendor's Company.
- 3. No City employee is contemporaneously employed or prospectively to be employed with the vendor.
- 4. Vendor hereby declares it has not and will not provide gifts or hospitality of any dollar value or any other gratuities to any City employee or elected official to obtain or maintain a contract.

Conflict of Interest Disclosure*		
Name of City of Doral employees, elected officials, or immediate family members with whom there may be a potential conflict of interest:	 () Relationship to employee () Interest in vendor's company () Other (please describe below) 	

*Disclosing a potential conflict of interest does not automatically disqualify vendors. In the event vendors do not disclose potential conflicts of interest and they are detected by the City, vendor will be exempt from doing business with the City.

I certify that this Conflict-of-Interest Disclosure has been examined by me and that its contents are true and correct to my knowledge and belief and I have the authority to so certify on behalf of the				
Vendor by my signature below:				
Signature of Authorized Representative	Date	Printed Name of Authorized Representative		

CERTIFICATE OF AUTHORITY

(IF CORPORATION OR LLC)

I HEREBY CERTIFY that at a meeting of the Board of Directors of, a
corporation organized and existing under the laws of the State of, held on the day o
, a resolution was duly passed and adopted authorizing (Name) as
(Title) of the corporation/company to execute agreements on behalf of the
corporation/company and providing that their execution thereof, attested by the secretary of the
corporation/company, shall be the official act and deed of the corporation/company. I further certify that said
resolution remains in full force and effect.
IN WITNESS WHEREOF, I have hereunto set my hand this day of, 20
Secretary Signature:
Print Name:
STATE OFCOUNTY OF
The foregoing instrument was affirmed, subscribed, and sworn to before me this day of,

20____ by means of \Box physical presence or \Box online notarization, by ______ who is personally known to me or who produced the following identification: ______.

[Notary Seal]

Notary Public for the State of ______ My commission expires: ______

CERTIFICATE OF AUTHORITY

(IF PARTNERSHIP)

EREBY CERTIFY that at a meeting of the Board of Directors of,
tnership organized and existing under the laws of the State of, held on theda
,, a resolution was duly passed and adopted authorizing (Nam
(Title) of the partnership to execute agreements on behalf of the partnership ar
vides that their execution thereof, attested by a partner, shall be the official act and deed of the partnershi
rther certify that said partnership agreement remains in full force and effect.
WITNESS WHEREOF, I have hereunto set my hand this, day of, 20 Inther Signature:
ATE OF
foregoing instrument was affirmed, subscribed, and sworn to before me this day of,
by means of \Box physical presence or \Box online notarization, by b is personally known to me or who produced the following identification:
[Notary Seal]

Notary Public for the State of ______ My commission expires: ______

CERTIFICATE OF AUTHORITY

(IF JOINT VENTURE)

Joint ventures must submit a joint venture agreement indicating that the person signing this Agreement is authorized to sign documents on behalf of the joint venture. If there is no joint venture agreement, each member of the joint venture must sign this Agreement and submit the appropriate Certificate of Authority (corporate, partnership, or individual).

TRENCH SAFETY FORM

Bidder acknowledges that the Florida Trench Safety Act, Section 553.60 et seq, Fla. Stat. which became effective October 1, 1990, shall be in effect during the period of construction of the Project. The Bidder by signing and submitting the Bid is, in writing, assuring that it will perform any trench excavation in accordance with applicable trench safety standards. The Bidder further identifies the following separate item of cost of compliance with the applicable trench safety standards as well as the method of compliance:

Method of Compliance

<u>Cost</u>

Total: \$_____

Bidder acknowledges that this cost is included in the applicable items of the Bid and in the Total Base Bid. Failure to complete the above may result in the bid being declared non-responsive.

The Bidder is, and the CITY and ENGINEER are not, responsible to review or assess Bidder's safety precautions, programs of costs, of the means, methods, techniques or technique adequacy, reasonableness of cost, sequences of procedures of any safety precaution, program or cost, including but not limited to, compliance with any and all requirements of Section 553.60 et. seq., Fla. Stat. cited as the "Trench Safety Act". Bidder is, and the CITY and ENGINEER are not, responsible to determine, if any safety or safety related standards apply to the Project, including but not limited to, the "Trench Safety Act".

Witness Signature	Bidder's Signature
Printed Name	Printed Name
Data	Tido
Date	The

Date

CONSTRUCTION CONTRACT

This Contract (the "Contract") is dated as of the day of 20 by and between the City of Doral (hereinafter called the "CITY") and ______ (hereinafter called "CONTRACTOR") located at: ______ CITY and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1 – WORK

1.1 Project/Work: CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents, which is hereinafter defined to mean this Contract, ITB No. 2024-17 Trail Lighting Improvements-Greenway Trail ("ITB"), and the various documents set forth in Article 8 below.

ARTICLE 2 – CITY'S REPRESENTATIVE, ARCHITECT AND ENGINEER

2.1 It is understood that the CITY will designate a representative for the Work. The CITY'S REPRESENTATIVE referred to in any of the Contract Documents designated herein is **Lazaro Quintero, Capital Improvements Division Chief**, at City of Doral Government Center, 8401 NW 53rd Terrace Doral, Florida 33166.

2.2 The CITY's ENGINEER referred to in any of the Contract Documents is hereby designated to be **Joseph M Calderon Torres, P.E.**, at H. W. Lochner, Inc., 8750 NW 36th Street-Suite #360, Doral, Florida 33178 for the design of Trail Lighting Improvements- Greenway Trail or such other individual designated by the City.

ARTICLE 3 – TERM

3.1 Contract Times. Contract Time will commence on the date the specified in the Notice to Proceed and shall continue for a period of **one hundred and twenty (120) calendar days**. The Work shall be completed and shall be ready for final payment in accordance with the Contract Documents within one hundred and twenty (120) calendar days after the date specified in the Notice to Proceed ("Final Completion"). No extension of time will be given unless previously provided by Change Order. Liquidated damages will be assessed for each calendar day for which completion of the Work is delayed as set forth in Section 3.4.

3.2 Term. This Contract shall not be effective until it is fully executed between the CITY and the CONTRACTOR. The term of the Contract shall be through the date of final payment unless terminated earlier pursuant to the ITB, or otherwise agreed upon between the parties.

3.3 Survival of Obligations. Any obligations by the CONTRACTOR, including but not limited to those set forth in the ITB, that would or could occur after the date of expiration or termination of the Contract shall survive the termination or expiration of the Contract.

3.4 Liquidated Damages. CITY and CONTRACTOR recognize that time is of the essence in this Contract and that the CITY will suffer financial loss if the Work is not completed within the contract times specified in Section 3.1 for the Work above, plus any approved extensions thereof allowed in accordance with the ITB. The CONTRACTOR also recognizes the delays, expense and difficulties involved in proving the actual loss suffered by CITY if the Work is not completed on time. Accordingly, instead of requiring any such proof, CITY and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty) CONTRACTOR shall pay CITY **\$1,665.00** for

each calendar day that expires after the time specified in Section 3.1 for Substantial Completion of the Work. After Final Completion, if CONTRACTOR shall neglect, refuse or fail to complete the remaining Work within the time specified in Section 3.1 for completion and readiness for final payment or any proper extension thereof granted by CITY, CONTRACTOR shall pay CITY **\$1,665.00** for each calendar day that expires after the time specified in Section 3.1 for completion and readiness for final payment.

3.5 Should the Final Completion and acceptance of Work, together with any modification or additions, be delayed beyond the time for performance set in Section 3.1 above because of lack of performance by the CONTRACTOR, it is understood and agreed that aside from any other liquidated damages, all actual additional costs or losses incurred by the CITY including, but not limited to, completion CONTRACTOR services, financing, professional services, unrealized revenue, will be the responsibility of the CONTRACTOR.

3.6 Monies due to the CITY under Sections 3.4 and 3.5 shall be deducted from any monies due the CONTRACTOR, or if no money is due or the amount due is insufficient to cover the amount charged the CONTRACTOR shall be liable for said amount.

ARTICLE 4 – CONTRACT PRICE

4.1 CITY shall pay CONTRACTOR for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amounts determined pursuant to this Article.

4.2 For all Unit Price Work, an amount equal to the sum of the established unit price for each separately identified item of Unit Price Work times the estimated quantity of that item as indicated on the Unit Price Bid Form Section 00410. Estimated quantities are not guaranteed, and determination of actual quantities and classification are to be made by ENGINEER as provided in the Contract Documents.

4.3 The CONTRACTOR agrees that all specific cash allowances are included in the above Contract Price and have been computed in accordance with the Contract Documents.

4.4 A cost breakdown (schedule of values) shall be submitted to the Engineer by the CONTRACTOR for approval by the Engineer within seven days after notification of award of Contract. The schedule of values shall be used as the basis for making progress payments and for determining the cost of extra work where the extra work is an increase in the quantity of work included in the cost breakdown. The cost breakdown shall be complete, with each item of materials, equipment and supplies listed, together with the quantity and price thereof, the sum of which shall be equal to the aggregate sum prices bid for "materials, equipment and supplies". The breakdown shall include a separate column of figures which shall be the cost of installation of the above items, which cost shall include prorated share of bonds, insurance, overhead and profit. The sum of this second column of figures shall be equal to the aggregate sum prices bid for "all other costs incurred in completing the project". Any item(s), as determined by the City to be unbalanced, will not be acceptable.

4.5 The CONTRACTOR shall retain a copy of the cost breakdown in their files for reference purposes.

ARTICLE 5 – PAYMENT PROCEDURES

5.1 CONTRACTOR shall submit Applications for Payment in accordance with the ITB. Applications for Payment will be processed by CITY as provided in the ITB.

5.2 Progress Payments, Retainage. CITY shall make progress payments, deducting the amount from the Contract Price above, on the basis of CONTRACTOR'S Applications for Payment as recommended by the CITY'S REPRESENTATIVE, on or about the last day of each month during construction as provided herein. All such payments will be made in accordance with the schedule of values established in the ITB or, in the event there is no schedule of values, as provided in the ITB.

5.2.1 Commencing with Pay Requisition #2, no progress payment shall be made until CONTRACTOR delivers to the CITY (1) complete original partial releases of all liens and claims signed by all Subcontractors, materialmen, suppliers, and vendors, indicating amount of partial payment, on a City of Doral Release of Lien Form (Exhibit ____), and an affidavit that so far as the CONTRACTOR has knowledge or information, the releases include and cover all Materials and Work for which a lien or claim could be filed for work completed to date, or (2) an executed Consent of Surety, utilizing City of Doral "Consent of Surety for Payment" Form (Exhibit _____). CONTRACTOR shall also provide a partial release of lien as Prime CONTRACTOR utilizing City of Doral Form (Exhibit _____). CONTRACTOR shall also include red-line as-builts and an updated progress schedule.

5.3 The CONTRACTOR agrees that five percent (5%) of the amount due for Work as set forth in each Application for Payment shall be retained by CITY for each Progress Payment until Final Payment, as defined in the ITB.

5.3.1 Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated above, but, in each case, less the aggregate of payments previously made and less such amounts as CITY'S REPRESENTATIVE shall determine, or CITY may withhold, in accordance with the ITB.

5.4 The payment of any Application for Payment by CITY, including the Final Request, does not constitute approval or acceptance by CITY of any item of the Work in such Request for Payment, nor shall it be construed as a waiver of any of CITY's rights hereunder or at law or in equity.

5.5 The Final Application for Payment by CONTRACTOR shall not be made until the CONTRACTOR delivers to the CITY complete original releases of all liens and claims signed by all Subcontractors, materialmen, suppliers, and vendors on a City of Doral Release of lien Form (Exhibit _____), and an affidavit that so far as the CONTRACTOR has knowledge or information, the releases include and cover all Materials and Work for which a lien or claim could be filed. The CONTRACTOR shall also provide a final release of lien as Prime CONTRACTOR utilizing City of Doral Form (Exhibit _____). The CONTRACTOR may, if any Subcontractor, materialmen, supplier or vendor refuses to furnish the required Final Waiver of Lien, furnish a bond satisfactory to CITY to defend and indemnify CITY and any other property Owner, person or entity CITY may be required to indemnify against any lien or claim.

5.6 Final Payment. Upon final completion and acceptance of the Work in accordance with the ITB, CITY shall pay the remainder of the Contract Price and any retainage as recommended by the CITY'S REPRESENTATIVE.

ARTICLE 6 – INSURANCE/INDEMNIFICATION.

- 6.1 Insurance.
 - **6.1.1** The CONTRACTOR shall provide and maintain in force until all the Work to be performed under this Contract has been completed and accepted by City (or for such duration as is otherwise specified hereinafter), the insurance coverage set forth: in Exhibit _____ titled Insurance Requirements.
 - **6.1.2** The CONTRACTOR agrees that if any part of the Work under the Contract is sublet, they will require the Subcontractor(s) to carry insurance as required, and that they will require the Subcontractor(s) to furnish to them insurance certificates similar to those required by the CITY.
 - **6.1.3** If any insurance should be canceled or changed by the insurance company or should any insurance expire during the period of this contract, the CONTRACTOR shall be responsible for securing other acceptable insurance to provide the coverage specified in this section to maintain coverage during the life of this Contract.
 - **6.1.4** All deductibles must be declared by the CONTRACTOR and must be approved by the CITY. At the option of the CITY, either the CONTRACTOR shall eliminate or reduce such deductible, or the CONTRACTOR shall procure a Bond, in a form satisfactory to the CITY, covering the same. The CONTRACTOR is responsible for any and all deductibles, if applicable, following a loss.

6.2 Indemnification. The CONTRACTOR shall indemnify, defend and hold harmless the CITY, their officials, agents, employees, and volunteers as set forth in the Contract Documents.

ARTICLE 7 - CONTRACTOR'S REPRESENTATIONS.

In order to induce CITY to enter into this Contract, CONTRACTOR makes the following representations:

7.1 CONTRACTOR has examined and carefully studied the Contract Documents (including the Addenda) and the other related data identified in the Bidding Documents including "technical data."

7.2 CONTRACTOR has visited the site and become familiar with and is satisfied as to the general, local and site conditions that may affect cost, progress, performance or furnishing of the Work.

7.3 CONTRACTOR is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress, performance and furnishing of the Work.

7.4 CONTRACTOR has made, or caused to be made, examinations, investigations, tests, or studies as necessary to determine surface and subsurface conditions at or on the site. CONTRACTOR acknowledges that CITY does not assume responsibility for the accuracy or

completeness of information and data shown or indicated in the Contract Documents with respect to underground facilities at or contiguous to the site. CONTRACTOR has obtained and carefully studied (or assumes responsibility for having done so) all such additional supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the site or otherwise which may affect cost, progress, performance or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto. CONTRACTOR does not consider that any additional examinations, investigations, explorations, tests, studies or data are necessary for the performance and furnishing of the Work at the Contract Price, within the Contract Times and in accordance with the other terms and conditions of the Contract Documents.

7.5 The CONTRACTOR is aware of the general nature of Work to be performed by CITY and others at the site that relates to the Work as indicated in the Contract Documents.

7.6 The CONTRACTOR has correlated the information known to CONTRACTOR, information and observations obtained from visits to the site, reports and drawings identified in the Contract Documents and all additional examinations, investigations, explorations, tests, studies and data with the Contract Documents.

7.7 The CONTRACTOR has given the CITY'S REPRESENTATIVE written notice of all conflicts, errors, ambiguities or discrepancies that CONTRACTOR has discovered in the Contract Documents and the written resolution thereof by the CITY'S REPRESENTATIVE is acceptable to CONTRACTOR, and the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

7.8 The CONTRACTOR warrants the following:

7.8.1 Anti-Discrimination: The CONTRACTOR agrees that it will not discriminate against any employees or applicants for employment or against persons for any other benefit or service under this Contract because of race, color, religion, sex, national origin, or physical or mental handicap where the handicap does not affect the ability of an individual to perform in a position of employment, and to abide by all federal and state laws regarding non-discrimination.

7.8.2 Anti-Kickback: The CONTRACTOR warrants that no person has been employed or retained to solicit or secure this Contract upon an agreement or understanding for a commission, percentage, brokerage or contingent fee, and that no employee or officer of the CITY or any other applicable federal or state agency, has any interest, financially or otherwise, in the Project. For breach or violation of this warranty, the CITY shall have the right to annul this Contract without liability or, in its discretion, to deduct from the Contract Price or consideration, the full amount of such commission, percentage, brokerage or contingent fee.

7.8.3 Licensing and Permits: The CONTRACTOR warrants that it shall have, prior to commencement of work under this Contract and at all times during said work, all required licenses and permits whether federal, state, County or City.

7.8.4 Public Entity Crime Statement: The CONTRACTOR warrants that it has not been placed on the convicted vendor list following a conviction for public entity crime, as specified in Section 00456, of the Instructions to Bidders.

ARTICLE 8 – CORRELATION, INTERPRETATION, AND INTENT OF CONTRACT DOCUMENTS.

8.1 All Contract Documents shall be interpreted in a manner consistent with each other, provided that if there are differing provisions on the same subject matter, the more stringent requirements shall apply

8.2 The Contract Documents listed below, which are listed in their order of precedence for the purpose of resolving conflicts, errors and discrepancies, by this reference shall become a part of the Contract as though physically attached as a part thereof:

- 8.2.1 Change Orders.
- 8.2.2 Field Orders.
- **8.2.3** Contract for Construction.
- 8.2.4 Exhibits to this Contract.
- **8.2.5** Any federal, state, county or City permits for the Project
- 8.2.6 Specifications and Drawings provided
- **8.2.7** Bid Documents, including but not limited to: Addendum, Invitation to Bid, Instructions to Bidders, Bid Form provided by CONTRACTOR, Notice of Award and Notice to Proceed.
- **8.2.8** Addenda subject matter takes the same precedence of the respective subject matter that it is modifying. Furthermore, each subsequent addendum takes precedence over previous addenda.
- **8.2.9** The documents listed above shall be incorporated into this Contract (except as expressly noted otherwise above).
- **8.2.10** There are no Contract Documents other than those listed above in this Article. The Contract Documents may only be amended, modified or supplemented as provided in the ITB.
- **8.2.11** The Contract Documents shall remain the property of the CITY. The CONTRACTOR shall have the right to keep one record set of the Contract Documents upon completion of the Project; provided; however, that in no event shall the CONTRACTOR use, or permit to be used, any or all of such Contract Documents on other projects without the City's prior written authorization.
- **8.2.12** The ITB discuss the bond and surety requirements of the CITY. This Contract does [x], does not [] require bonds. If the Contract does not require bonds, the references to bonds in the ITB do not apply to this Contract.

ARTICLE 9 – MISCELLANEOUS

9.1 Terms used in this Contract which are defined in the ITB will have the meanings indicated therein.

9.2 Except as otherwise provided in the Contract Documents with respect to Subcontractors, no assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party thereto without the written consent of the party sought to be bound; and, specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

9.3 CITY and CONTRACTOR each binds itself, its partners, successors, assigns and legal representatives to the other party hereto, its partners, successors, assigns and legal representatives in respect to all covenants, agreements and obligations contained in the Contract Documents.

9.4 Severability. Should any provision, paragraph, sentence, word, or phrase contained in this Contract be determined by a court of competent jurisdiction to be invalid, illegal, or otherwise unenforceable under the laws of the State of Florida, such provision, paragraph, sentence, word, or phrase shall be deemed modified to the extent necessary in order to conform with such laws or shall be deemed severable and this Contract, shall remain unmodified and in full force and effect.

9.5 Remedies. If and when any default of this Contract occurs, the CITY may avail itself of any legal or equitable remedies that may apply, including, but not limited to, actual damages and specific performance. Such remedies may be exercised in the sole discretion of the CITY. Nothing contained in this Contract shall limit the CITY from pursuing any legal or equitable remedies that may apply.

9.6 Access to Public Records. The CONTRACTOR shall comply with the applicable provisions of Chapter 119, Florida Statutes. The CITY shall have the right to immediately terminate this contract for the refusal by the CONTRACTOR to comply with Chapter 119, Florida Statutes. The CONTRACTOR shall retain all records associated with this Contract for a period of five (5) years from the date of Final Payment or Termination of this Contract.

9.7 Inspection and Audit. During the term of this Contract and for five (5) years from the date of Termination, the CONTRACTOR shall allow CITY representatives access during reasonable business hours to CONTRACTOR'S records related to this Contract for the purposes of inspection or audit of such records. If upon an audit of such records, the CITY determines the CONTRACTOR was paid for services not performed, upon receipt of written demand by the CITY, the CONTRACTOR shall remit such payments to the CITY.

9.8 Night work or weekend work may be required for various areas within the project limits. The CONTRACTOR is responsible for costs associated with all night work including but not limited to, inspector costs, police or flagmen costs, signage and MOT costs and all other costs associated with night or weekend work.

All connections to existing piping systems shall be made as shown or indicated on the Drawings after consultation, cooperation, and coordination with the Owner. Some such connections may have to be made during off-peak hours (late night, early morning, or weekend hours). The CONTRACTOR shall give a minimum of 72 hours' notice to the Owner when tie-ins with the existing plant utilities are required.

9.8.1 For weekend work, CONTRACTOR shall submit a written request to the CITY by the preceding Wednesday. A separate request is required for each week that the CONTRACTOR wishes to work on a weekend. For evening and holiday work, CONTRACTOR shall submit a written request to the CITY 3 days in advance. The CITY will provide inspection services for all overtime work requests and the CONTRACTOR shall pay for inspection services, no exceptions.

Similarly, holiday and other overtime work shall be requested a minimum of 36hours in advance and CITY will provide inspection for all overtime. **9.8.2** Exceptions to the hours and days of the week for work and other related limitations are allowed only for tie-ins during low flow periods / early morning hours, coatings that need to be applied during lower temperature times of the day and whenever the Documents specifically define that work shall be completed outside of the limitations for "normal" work hours, days, etc. Inspection for tie-ins during low flow/early morning and specialty coating application performed during nighttime will not be cause for extra inspection costs unless such work is remedial in nature as a result of defective work.

9.9 E-VERIFY. Section 448.095, Florida Statutes directs all public employers, including municipal governments, and private employer with 25 or more employees to verify the employment eligibility of all new employees through the U.S. Department of Homeland Security's E-Verify System, and further provides that a public entity may not enter into a contract unless each party to the contract registers with and uses the E-Verify system. Section 448.095, Florida Statutes further provides that if a Contractor enters into a contract with a subcontractor, the subcontractor must provide the Contractor with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien. In accordance with Section 448.095, Florida Statutes, CONTRACTOR, if it employs more than 25 employees, is required to verify employee eligibility using the E-Verify system for all existing and new employees hired by CONTRACTOR during the contract term. Further, CONTRACTOR must also require and maintain the statutorily required affidavit of its subcontractors. It is the responsibility of CONTRACTOR to ensure compliance with E-Verify requirements (as applicable). To enroll in E-Verify, employers should visit the E-Verify website (https://www.e-verify.gov/employers/enrolling-in-e-verify) and follow the instructions.

9.10 Prohibition Against Contracting with Scrutinized Companies. Pursuant to Florida Statutes Section 217.4725, the City is prohibited from contracting with any entity that is listed on the Scrutinized Companies that Boycott Israel List or that is engaged in the boycott of Israel is prohibited. By entering into this Agreement, CONTRACTOR is certifying that the company is not participating in a boycott of Israel. Any contract for goods or services of One Million Dollars (\$1,000,000) or more shall be terminated at the City's option if it is discovered that the entity submitted false documents of certification, is listed on the Scrutinized Companies with Activities in Sudan List, the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List or has been engaged in business operations in Cuba or Syria after July 1, 2018.

Any contract entered into or renewed after July 1, 2018 shall be terminated at the City's option if the company is listed on the Scrutinized Companies that Boycott Israel List or engaged in the boycott of Israel. By entering into this Agreement, CONTRACTOR is certifying that it does not participate in a boycott of Israel, is not on the scrutinized companies that Boycott Israel list, activities in Sudan List, in the Iran Petroleum Energy Secor list, and has not engaged in business operation is Cuba or Syria. Submitting a false certification shall be deemed a material breach of contract. The City shall provide notice, in writing, to the CONTRACTOR of the City's determination concerning the false certification. The CONTRACTOR shall have ninety (90) days following receipt of the notice to respond in writing and demonstrate that the determination was in error. If the CONTRACTOR does not demonstrate that the City's determination of false certification was made in error, then the City shall have the right to terminate the contract and seek civil remedies pursuant to Florida Statute Section 215.4725.

9.11 Counterparts. This contract may be signed in one or more counterparts, each of which when executed shall be deemed an original and together shall constitute one and the same instrument.

9.12 Notices. Whenever any party is required to give or deliver any notice to any other party, or desires to do so, such notices shall be sent via certified mail or hand delivery to:

FOR CITY:

City Manager City of Doral 8401 NW 53rd Terrace Doral, Florida 33166

WITH COPY TO:

City Attorney City of Doral 8401 NW 53rd Terrace Doral, Florida 33166

FOR CONTRACTOR:

9.13 WAIVER OF JURY TRIAL AND VENUE. The CITY and CONTRACTOR knowingly, irrevocably, voluntarily and intentionally waive any right either may have to a trial by jury in State and or Federal court proceedings in respect to any action, proceeding, lawsuit or counterclaim based upon the Contract, arising out of, under, or in connection with the Work, or any course of conduct, course of dealing, statements or actions or inactions of any party. The venue for any lawsuit arising out of this Contract shall be in Miami-Dade County, Florida.

9.14 Attorneys' Fees. If either the CITY or CONTRACTOR is required to enforce the terms of the Contract by court proceedings or otherwise, whether or not formal legal action is required, the prevailing party shall be entitled to recover from the other party all such costs and expenses, including, but not limited to, court costs, and reasonable attorneys' fees at the trial and appellate level.

9.15 Amendments. This Contract may only be amended by the prior written approval of the parties or by execution of a Change Order in the form attached hereto as Exhibit "____".

IN WITNESS WHEREOF, the parties hereto have made and executed this Contract on the respective dates under each signature: THE CITY OF DORAL, FLORIDA, signing by and through its City Manager, authorized to execute same by Council action on the _____ day of _____ 20___, and by (CONTRACTOR), signing by and through its , duly authorized to execute same.

WITNESS CONTRACTOR By: (Signature and Corporate Seal) (CONTRACTOR) (Print Name and Title)

(Signature)

(Print Name and Title)

day of

, 20

.

ATTEST

CITY OF DORAL

Connie Diaz, City Clerk

Rey Valdes, City Manager

APPROVED AS TO FORM AND LEGALITY FOR THE USE AND BENEFIT OF THE CITY OF DORAL ONLY:

Lorenzo Cobiella GASTESI, LOPEZ & MESTRE, PLLC City Attorney

(*) In the event that the CONTRACTOR is a corporation, there shall be attached to each counterpart a certified copy of a resolution of the board of the corporation, authorizing the officer who signs the contract to do so in its behalf.

MINIMUM INSURANCE REQUIREMENTS

I. Commercial General Liability

Limits of Liability	
Bodily Injury & Property Damage Liability	
Each Occurrence	\$2,000,000
Policy Aggregate (Per job or project)	\$4,000,000
Personal & Advertising Injury	\$1,000,000
Products & Completed Operations	\$4,000,000
	Limits of Liability Bodily Injury & Property Damage Liability Each Occurrence Policy Aggregate (Per job or project) Personal & Advertising Injury Products & Completed Operations

B. Endorsements Required

City of Doral listed as an additional insured. Contingent & Contractual Liability Premises and Operations Liability Primary Insurance Clause Endorsement Explosion, Collapse & Underground Hazard

Waiver of Subrogation in favor of City

II. Business Automobile Liability

 A. Limits of Liability Bodily Injury and Property Damage Combined Single Limit Any Auto/Owned Autos or Scheduled Autos Including hired and Non-Owned Autos Any One Accident

\$1,000,000

B. Endorsements Required

City of Doral listed as an additional insured

III. Workers Compensation

Statutory- State of Florida

Employer's Liability

- A. Limits of Liability
- \$1,000,000 for bodily injury caused by an accident, each accident.

\$1,000,000 for bodily injury caused by disease, each employee.

\$1,000,000 for bodily injury caused by disease, policy limit.

Workers Compensation insurance must be provided for all persons fulfilling this contract, whether employed, contracted, temporary or subcontracted.

V. Umbrella/Excess Liability (Excess Follow Form) can be utilized to provide the required limits. Coverage shall be "following form" and shall not be more restrictive than the

underlying insurance policy coverages, including all special endorsements and City as Additional Insured status.

Subcontractors' Compliance: It is the responsibility of the CONTRACTOR to ensure that all Subcontractors comply with all insurance requirements.

All above coverage must remain in force and Certificate of Insurance on file with City without interruption for the duration of this agreement. Policies shall provide the City of Doral with 30 days' written notice of cancellation or material change from the insurer. If the policies do not contain such a provision, it is the responsibility of the CONTRACTOR to provide such notice within 10 days of the change or cancellation.

Certificate Holder:	City of Doral, Florida
	8401 NW 53 rd Terrace
	Doral, FL 33166

Certificates/Evidence of Property Insurance forms must confirm insurance provisions required herein. Certificates shall include Agreement, Bid/Contract number, dates, and other identifying references.

Insurance Companies must be authorized to do business in the State of Florida and must be rated no less than "A-" as to management, and no less than "Class V" as to financial strength, by the latest edition of AM Best's Insurance Guide, or its equivalent.

Coverage and Certificates of Insurance are subject to review and verification by City of Doral Risk Management. City reserves the right but not the obligation to reject any insurer providing coverage due to poor or deteriorating financial condition. The City reserves the right to amend insurance requirements in order to sufficiently address the scope of services. These insurance requirements shall not limit the liability of the CONTRACTOR/Vendor. The City does not represent these types or amounts of insurance to be sufficient or adequate to protect the CONTRACTOR/Vendor's interests or liabilities but are merely minimums.

PRECONSTRUCTION CONFERENCE

After award and prior to the issuance of the "Notice to Proceed", a preconstruction conference will be held with representatives from the awarded Bidder, CEI Team (if applicable), Engineering Team, City of Doral, various utility companies, and other stakeholders, for the purpose of coordinating the Work. The City will discuss requirements of such matters as project supervision and inspections, progress schedules and reports, Contract Change Orders, insurance, safety, and other items pertinent to the Project. The time and place of the meeting shall be set by the City's project manager.

In some cases, the preconstruction conference may be held after the start work date stated in the written "Notice to Proceed". This may be due to difficulty with coordination of all parties concerned, or other similar reasons. Such delays in holding the preconstruction meeting shall not relieve the Contractor of any responsibilities hereunder and will not be an acceptable reason for him to request additional work completion time beyond that provided since he will be able to begin obtaining permits, mobilizing his equipment and forces, preparing submittals, ordering materials, performing minor work, or other work if approved by the Engineer, during the interim period.

Prior to the preconstruction conference, the Contractor shall prepare the construction schedule and provide copies of the same to others in attendance. The construction schedule shall include the place of beginning, the proposed order of progression, together with the estimated times for beginning and completing the various items of work. In addition, the Contractor shall prepare on electronic media, a critical path method (CPM) with emphasis made to "construction time and completion", Early/Late Start, Early/Late Finish, and clearly present Float Time as associated with activity and project duration with no activity duration longer than 4 calendar weeks unless approved by the Engineer.

The City shall discuss requirements of such matters as description of project, Contract important dates, project contact information, permitting, site and location access, utility coordination, maintenance of traffic (MOT), review of plans and special requirements, testing requirements, erosion control, project supervision and inspections, progress schedules and reports, Contract Change Orders, insurance, safety, special provisions, warranty and other items pertinent to the Project.

All parties to this conference shall be prepared to discuss any problems anticipated with the execution of the Work under this Contract. Contractor will be presented with a link to the copy of the preconstruction power point and a hard copy for his/her execution.

The following submittals will be required from the Contractor at Preconstruction Conference

- i. Construction Schedule
- ii. Pre-Construction photos and video
- iii. Chain of Authority letter
- iv. Hurricane Preparedness Plan (Site Specific)
- v. Emergency Contact Information letter
- vi. Competent Person Information letter
- vii. Labor Burden Declaration letter (Exhibit K) from CPA

SITE CONDITIONS

SITE INVESTIGATION AND REPRESENTATION

The Contractor acknowledges that he has satisfied himself as to the nature and location of the work, the general and local conditions, particularly those bearing upon availability of transportation; disposal, handling and storage of materials; availability of labor, water, electric power, roads; disposal of water from construction; uncertainties of weather; the conformation and conditions at the ground; the type of equipment and facilities needed preliminary to and during the prosecution of the work and all other matters which can in any way affect the work or the cost thereof under this Contract.

The Contractor further acknowledges that he has satisfied himself as to the character, quality, and quantity of surface and subsurface materials to be encountered from inspecting the site, making whatever site investigations he deems diligent or prudent, and from evaluating information derived from exploratory work that may have been done by the City of Doral or included with these Contract Documents. Any failure by the Contractor to acquaint himself with all the available information will not relieve him from responsibility for properly estimating the difficulty or cost thereof under this Contract.

The Contractor acknowledges that by personal field observation or other means satisfactory to himself, performed prior to the Bid, he has included in the prices bid all costs for dealing with all construction problems created by observable above or on grade features on or adjacent to the site of the work whether or not these features are shown on the Plans or described in the Specifications. In instances where the observable features indicate subsurface conditions which may affect the Project work, as for example, a pavement patch or catch basin gratings indicating respectively a utility or storm sewer not shown on the Plans, the Contractor acknowledges that he has made timely, diligent, inquiry of the Engineer or by other means fully satisfied himself prior to the Bid as to the nature of, and costs created by, the subsurface condition and included all costs therefore in the prices bid.

INFORMATION ON SITE CONDITIONS

All information obtained by the City of Doral regarding the site conditions, topography, subsurface information, ground water elevations, existing construction of site facilities as applicable, and similar data will be available for inspection at the office of the Engineer upon request. Such information is offered as supplementary information only. Neither the Engineer nor the City of Doral assumes any responsibility for the completeness or for the Contractor's interpretation of such supplementary information. The interpretation of the record and the conclusions drawn there from as to the actual existence of surface conditions are the sole responsibility of the Contractor. Prior to bidding and after written approval from the City of Doral, the bidder may make his own survey investigations to satisfy himself with site conditions at his own cost. Any estimates of quantities of work or materials, based on set borings, test excavations and other subsurface investigations are not warranted by the City to indicate the true conditions or distribution of quantities unless the Contractor is expressly directed to rely on such information to prepare and submit his Bid.

SUBSURFACE INFORMATION

Subsurface investigations, including test borings, have been made to indicate subsurface conditions at particular locations. All information regarding subsurface conditions and all available soil samples recovered from test borings at the project site that the City of Doral may have, may be examined by all prospective bidders prior to the receipt of proposals. Appointment for the examination of such information or soil samples shall be made with the City of Doral.

BIDDERS SUBSURFACE INVESTIGATION

Prospective bidders are advised, at their own expense, to make such subsurface investigation, by boring or test hole excavation, as may be desirable. However, such work is to be scheduled by appointment with the Engineer if on a City of Doral site or by notification to the City of Doral.

DIFFERING SUBSURFACE CONDITIONS

In the event subsurface or latent physical conditions are found materially different from those indicated in these Documents, and differing materially from those ordinarily encountered and generally recognized as inherent in the character of work covered in these Contract Documents, promptly, and before such conditions are disturbed, notify the Engineer in writing of such changed conditions.

The Engineer and/or the Engineer of Record will investigate such conditions promptly and following this investigation, the Contractor shall proceed with the work, unless otherwise instructed by the Engineer. If the Engineer and/or the Engineer of Record find that such conditions do so materially differ as to cause an increase or decrease in cost and time considered reasonable by the Engineer, the City of Doral will make the final decision regarding any adjustment in cost or time for completion.

In the event that site conditions differ from those expected by the Contractor, the Contractor shall proceed to complete the work as contemplated by the Plans and Specifications at his own cost and expense. If in the discretion of the Engineer, the difference in site conditions renders completion of the work as described by the Plans and Specifications impossible, the Engineer may alter the work, in accordance with the terms of the Solicitation, whereupon the Contractor shall be compensated for any extra work pursuant to the terms of the Solicitation; the Engineer shall not alter the work where the site conditions render the work more difficult or costly to perform, if such work is otherwise still possible as described in the Contract Documents.

EXISTING UTILITIES AND LOCATION SERVICES

Known utilities and structures adjacent to or encountered in the work are shown on the Drawings. The locations shown are taken from existing records and the best information available from existing plans; however, it is expected that there may be some discrepancies and omissions in the locations and quantities of utilities and structures shown. Those shown are for the convenience of the Contractor only, and no responsibility is assumed by the City of Doral, the Engineer, and/or the Engineer of Record for their accuracy or completeness.

No request for additional compensation or Contract time (except for a non-compensable time extension at the sole discretion of the Engineer, whose decision shall be final) resulting from encountering utilities or structures not shown, or differing in location or elevation from that shown, will be considered. The Contractor shall explore sufficiently ahead of the Work to allow time for any necessary adjustments without delay to the progress of the installation. Costs due to delays occasioned by encountering underground utilities or structures which could have or should have been discovered by timely exploration ahead of the Work shall rest solely with the Contractor.

Contractor'S RESPONSIBILITY FOR UTILITY PROPERTIES AND SERVICE

Where the Contractor's operation could cause damage or inconvenience to railway, telephone, fiber optic, television, electrical power, oil, gas, water, sewer, irrigation system, or any other utility, the Contractor shall make all arrangements necessary for the protection of these utilities and services.

Notify all utility companies that are affected by the construction operation at least 48 hours in advance. Under no circumstance expose any utility without first obtaining permission from the appropriate agency. Once

Exhibit D - Additional Specifications

permission has been granted, locate, expose, and provide temporary support for all existing underground utilities and utility poles where necessary. Absolutely no extra compensation will be allowed for construction problems created by utility poles of whatever size, overhead electric, telephone or other lines, whether shown on the Plans or not. The Contractor is solely responsible for discerning such items in the field prior to bidding and including all costs for such work in the prices bid.

The Contractor and his Subcontractors shall be solely and directly responsible to the City and operators of such properties for any damage, injury, expense, loss, inconvenience, delay, suits, actions, or claims of any character brought because of any injuries or damage which may result from the construction operations under this Contract. Neither the City of Doral nor its officers or agents shall be responsible to the Contractor for damages as a result of the Contractor's failure to protect utilities encountered in the work.

In the event of interruption to domestic water, sewer, storm drain, or other utility services as a result of accidental breakage due to construction operations, promptly notify the proper authority. Cooperate with said authority in restoration of service as promptly as possible and bear all costs of repair. In no event shall interruption of any utility service be allowed unless granted by the City or the utility. In the event water service lines that interfere with trenching are encountered, the Contractor may, by obtaining prior approval of the water utility, cut the service, dig through, and restore the service with similar and equal materials at the Contractor's expense and as approved by the Engineer.

Contractor shall further replace, with material approved by the Engineer, at Contractor's expense, any and all other materials, existing utilities or structures removed or damaged during construction, unless otherwise provided for in these Contract Documents and as approved by the Engineer.

INTERFERING STRUCTURES

Take necessary precautions to prevent damage to existing structures whether on the surface, above ground, or underground. An attempt has been made to show major structures on the Drawings. While the information has been compiled from the best available sources, its completeness and accuracy cannot be guaranteed, and is presented as a guide. The Contractor is solely responsible for field verification of all locations and information provided and to determine the type, location, elevation and extent of any utilities which may not have been shown on the Plans.

FIELD RELOCATION

During the process of construction, it is expected that minor relocations of the work may be necessary. Such relocations shall be made only by the direction of the Engineer at the Contractor's expense. If existing structures are encountered that will prevent construction as shown, notify the Engineer before continuing with the work in order that the Engineer may make such field revisions as necessary to avoid conflict with the existing structures. If the Contractor fails to notify the Engineer when an existing structure is encountered, and proceeds with the work despite this interference, the Contractor does so at his own risk.

LAND FOR CONSTRUCTION PURPOSES

The Contractor shall limit his operations, temporary facilities and storage of equipment and materials to on-site areas to be designated by the City.

Should the Contractor require additional space he shall make his own arrangements for storage of materials and equipment in locations off the construction site. For the allocated space, submit to the City for approval, proposed plan and layout for all temporary sanitary facilities, offices, storage facilities, temporary water service and

distribution, and temporary power service and distribution. Prior to commencing any new construction remove, relocate and protect where necessary all existing underground and above ground facilities, pipelines, utility systems, plantings and all other existing installations. All of these existing features shall be restored to their initial or better than initial conditions.

ELEVATIONS AND LOCATIONS OF EXISTING INSTALLATIONS

The elevations and locations of existing installations, including piping, equipment, etc., shown on the Plans are approximate. Be responsible for verifying the accuracy of these locations and elevations prior to commencement of any work which is to be connected to the existing installation and immediately bring to the attention of the Engineer any and all discrepancies discovered.

The Contractor shall verify these locations and elevations sufficiently ahead of the Work to allow time for any necessary adjustments without delay to the progress of the installation. Costs due to delays occasioned by locations and/or elevations differing from those shown on the Plans which could have or should have been discovered by timely verification ahead of the Work shall rest solely with the Contractor. No request for additional compensation or Contract time (except for a non-compensable time extension at the sole discretion of the Engineer, whose decision shall be final) resulting from encountering interfering installations not shown, or existing installations differing in location or elevation from that shown, will be considered.

HURRICANE PREPAREDNESS

The Contractor shall submit a "Site Specific" Hurricane Preparedness Plan to the City and Engineer at the Preconstruction Conference. The Plan shall outline the necessary measures that the Contractor proposes to perform at no additional cost to the City in case of a hurricane watch and a hurricane warning.

During such periods of time as designated by the United States Weather Bureau or local authorities as being a hurricane alert, the Contractor shall perform all precautions as necessary to safeguard the work and property, including the removal of all small equipment and materials from the site, lashing all other equipment and materials to each other and to rigid construction, and any other safety measures as may be directed by the Engineer and the City.

Upon Notification of a Hurricane Watch, Contractor shall prepare and submit for approval a Plan of Action for the specific actions to be taken on this project.

Upon Notification of a Hurricane Warning, Contractor shall:

- 1. Implement the approved Plan of Action to protect the Project and the public; and
- 2. Backfill all open trenches, remove all construction equipment and materials from the right-of-way, remove unnecessary traffic barricades and signs, secure remaining barricades by "half burial" or "double sandbags".

PROTECTION OF EXISTING FACILITIES, VEGETATION, STRUCTURES, UTILITIES, AND IMPROVEMENTS

The Contractor shall preserve and protect existing vegetation such as trees, shrubs, and grass on or adjacent to the work site which are not indicated to be removed and which do not unreasonably interfere with the construction work and he shall replace in kind the vegetation, shrubs and grass damaged by him at his own expense.

The Contractor shall protect from damage all utilities, foundations, walls or other parts of adjacent, abutting or overhead buildings, railroads, bridges, structures, surface and subsurface structures at or near the site of the Work and shall repair or restore any damage to such facilities, except utilities, resulting from failure to comply with the requirements of the Contract or the failure to exercise reasonable care in the performance of the Work. If, after receipt of notification from the Architect/Engineer, the Contractor fails to or refuses to repair any such damage promptly, the Owner may have the necessary Work performed and charge the cost thereof to the Contractor.

At points where the Contractor's operations are adjacent to utility facilities, damage to which might result in expense, loss, disruption of service or other undue inconvenience to the public or to Owners, Work shall not be commenced until all arrangements necessary for the protection thereof have been made by the Contractor. The Contractor shall be solely and directly responsible to the Owners and operators of such utilities for any damage, injury, expense, loss, inconvenience, or delay, caused by the Contractor's operations.

Where public utilities or their appurtenances interfere with permanent construction, unless otherwise specified, work involved in permanently relocating or otherwise altering such public utilities and their appurtenances will not be a part of this Contract but will be done by utility Owners at no cost to the Contractor. If the Contractor wishes to have utilities temporarily relocated, he shall make necessary arrangements with utility Owners and reimburse them at his own expense for cost of the Work. The Contractor shall keep the Architect/Engineer advised of temporary relocation arrangements.

The Contractor shall not repair or attempt to repair utility damage but shall immediately contact the utility Owner. The Contractor shall obtain the name, address and telephone number of each utility company that the work will affect and the person in such utility company to contact. He shall submit to the Architect/Engineer said names, addresses and telephone numbers.

The Contractor shall comply with the latest version of the Florida Building Code or the Code under which the Contract Documents were approved, whichever is applicable at the time of the Work is performed.

In order to safeguard the Owners and tenants of abutting property and at the same time prevent unjust or fraudulent claims against the Contractor the Government, State, the Owner and the Architect/Engineer in respect thereto, the Contractor shall cause a detailed examination of abutting property to be made before construction is begun. The Owner or tenant of each parcel or structure or his or their duly authorized representative will be invited to be present during the examination by a notice in writing delivered by the Contractor to a person in charge of the premises or structures, or by the mailing of the notice to the Owner at the premises. The Architect/Engineer will attend while the Contractor makes the detailed examination. A complete record including photographs of the existing conditions of each parcel or structure shall be made in triplicate, singed by the Contractor, Owner and the Architect/Engineer and one copy will be delivered to the Owner, one to the Architect/Engineer and one copy will be retained by the Contractor. At such time as the Architect/Engineer may direct, or upon the filling of the verified statement by the Owner, tenant, lessee, operator or occupant of the

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building structure, and in any event, upon the completion of any work that in the opinion on the Architect/Engineer might affect the abutting property, the Contractor will make another detailed examination of such abutting property. A complete record of the then existing conditions of said property will be made in triplicate, signed by the Contractor and one copy will be delivered to the Owner, one to the Architect/Engineer and one will be retained by the Contractor. In any action, which may be brought by any Owner, tenant, lessee, operator or occupant of abutting property to recover under the provisions of this article or any paragraph hereof, the record of the existing conditions of each parcel will be prima facie evidence of the conditions thereof at the time of the making of the examination.

The Contractor shall maintain access to fire hydrants and fire alarm boxes throughout the prosecution of the Work. Hydrants, alarm boxes and standpipe connections shall be kept clear and visible at all times unless approved otherwise. If visibility cannot be maintained, the Contractor shall provide clearly visible signs showing the location of the fire hydrant, fire alarm box or standpipe connection. The Contractor shall promptly notify the authority having jurisdiction of any impairment to any fire systems.

INTERFERENCE WITH EXISTING UTILITIES

Attention of the Contractor is specifically directed to the need for careful control of all aspect of his work to prevent damage to cables, ducts, water mains, sewers, fire mains, telephone cables, fuel lines, radar cables, and any other existing overhead or underground utilities and structures.

Before commencing work in any given area, the Contractor shall contact utility companies to identify any potential conflicts. Further, the Contractor shall also carefully review the Plans, survey and search the site for utility locations, and determine possible utility conflicts. All known above and underground utilities, including, but not limited to , electrical, telephone, communications, lighting cables, fuel lines, sewer, drainage and water pipes, and other existing structures are shown on the Plans for reference purposes only, but no guarantee is expressed or implied that the information is accurate. It shall be the sole responsibility of the Contractor to ascertain and/or verify the location of any and all such utilities or structures using magnetic and electronic detector and by hand excavation or other appropriate measures before performing any work that could result in damage to such existing utilities or structures. The Contractor shall make a thorough search of the particular location for underground utilities or structures whether or not shown on the drawings, before excavation work is commenced in any particular location. To this end of the Contractor shall provide and maintain throughout the term of the Contractor shall, after locating primary and critical existing utilities, mark their location with indelible material or other means satisfactory to the Field Representative and maintain above ground physical identification during the work.

In the event of damage to, or accidental disruption of utilities or other facilities as a result of the Contractor's operations, the Contractor shall take immediate steps to repair or replace all damage and to restore all services. Further, the Contractor shall engage any additional outside services which may be necessary to prosecute repairs on a continuous "around the clock" basis until services are restored. The Contractor shall also provide and operate any supplemental temporary services to maintain uninterrupted use of the facilities. All costs involved in making repairs and restoring disrupted service resulting from the Contractor's work shall be borne by the Contractor and the Contractor shall be fully responsible for any and all claims resulting from the damage.
ENVIRONMENTAL PROTECTION AND SPECIAL CONTROLS

PART 900 - GENERAL

900.1 SUMMARY

A. Section Includes:

1. Minimizing the pollution of air, water, or land; control of noise, the disposal of solid waste materials, and protection of deposits of historical or archaeological interest.

B. Related Specification Sections include but are not necessarily limited to:

1. Division 00 - Front Ends Documents.

2. Division 01 - General Requirements.

900.2 SUBMITTALS

A. Shop Drawings:

1. See Specification Section 01340 for requirements for the mechanics and administration of the submittal process.

2. Prior to the start of any construction activities submit:

a. A detailed proposal of all methods of control and preventive measures to be utilized for environmental protection.

b. A drawing of the work area, haul routes, storage areas, access routes and current land conditions including trees and vegetation.

c. A copy of the NPDES permit for storm water discharges from construction activities.

d. A copy of the approved pollution prevention plan.

900.3 - PRODUCTS – (NOT APPLICABLE TO THIS SPECIFICATION SECTION)

900.4 - EXECUTION

900.4.1 INSTALLATION

A. Employ and utilize environmental protection methods, obtain all necessary permits, and fully observe all local, state, and federal regulations.

B. Land Protection:

1. Except for any work or storage area and access routes specifically assigned for the use of the Contractor, the land areas outside the limits of construction shall be preserved in their present condition.

a. Contractor shall confine his construction activities to areas defined for work within the Contract Documents.

2. Manage and control all borrow areas, work or storage areas, access routes and embankments to prevent sediment from entering nearby water or land adjacent to the work site.

3. Restore all disturbed areas including borrow and haul areas and establish a permanent type of locally adaptable vegetative cover.

4. Unless earthwork is immediately paved or surfaced, protect all side slopes and backslopes immediately upon completion of final grading.

5. Plan and execute earthwork in a manner to minimize duration of exposure of unprotected soils.

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6. Except for areas designated by the Contract Documents to be cleared and grubbed, the Contractor shall not deface, injure or destroy trees and vegetation, nor remove, cut, or disturb them without approval of the Engineer. a. Any damage caused by the Contractor's equipment or operations shall be restored as nearly as possible to its original condition at the Contractor's expense.

C. Surface Water Protection:

1. Utilize, as necessary, erosion control methods to protect side and backslopes, minimize and the discharge of sediment to the surface water leaving the construction site as soon as rough grading is complete.

a. These controls shall be maintained until the site is ready for final grading and landscaping or until they are no longer warranted, and concurrence is received from the Engineer.

b. Physically retard the rate and volume of run-on and runoff by:

1) Implementing structural practices such as diversion swales, terraces, straw bales, silt fences, berms, storm drain inlet protection, rocked outlet protection, sediment traps and temporary basins.

2) Implementing vegetative practices such as temporary seeding, permanent seeding, mulching, sod stabilization, vegetative buffers, hydroseeding, anchored erosion control blankets, sodding, vegetated swales or a combination of these methods.

3) Providing Construction sites with graveled or rocked access entrance and exit drives and parking areas to reduce the tracking of sediment onto public or private roads.

2. Discharges from the construction site shall not contain pollutants at concentrations that produce objectionable films, colors, turbidity, deposits or noxious odors in the receiving stream or waterway.

D. Solid Waste Disposal:

1. Collect solid waste on a daily basis.

2. Provide disposal of degradable solid waste to an approved solid waste disposal site.

3. Provide disposal of nondegradable solid waste to an approved solid waste disposal site or in an alternate manner approved by Engineer and regulatory agencies.

4. No building materials wastes, or unused building materials shall be buried, dumped, or disposed of on the site.

E. Fuel and Chemical Handling:

1. Store and dispose of chemical wastes in a manner approved by regulatory agencies.

2. Take special measures to prevent chemicals, fuels, oils, greases, herbicides, and insecticides from entering drainage ways.

3. Do not allow water used in onsite material processing, concrete curing, cleanup, and other waste waters to enter a drainage way(s) or stream.

4. The Contractor shall provide containment around fueling and chemical storage areas to ensure that spills in these areas do not reach waters of the state.

F. Control of Dust:

1. The control of dust shall mean that no construction activity shall take place without applying all such reasonable measures as may be required to prevent particulate matter from becoming airborne so that it remains visible beyond the limits of construction.

a. Reasonable measures may include paving, frequent road cleaning, planting vegetative groundcover, application of water or application of chemical dust suppressants.

b. The use of chemical agents such as calcium chloride must be approved by the State of Florida DOT.

2. Utilize methods and practices of construction to eliminate dust in full observance of agency regulations.

3. The Engineer will determine the effectiveness of the dust control program and may request the Contractor to

provide additional measures, at no additional cost to Owner.

G. Burning:

1. Do not burn material on the site.

2. If the Contractor elects to dispose of waste materials by burning, decide for an off-site burning area and conform to all agency regulations.

H. Control of Noise:

1. Control noise by fitting equipment with appropriate mufflers.

I. Completion of Work:

1. Upon completion of work, leave area in a clean, natural looking condition.

2. Ensure all signs of temporary construction and activities incidental to construction of required permanent work are removed.

J. Historical Protection:

1. If during the course of construction, evidence of deposits of historical or archaeological interests is found, cease work affecting find and notify Engineer.

a. Do not disturb deposits until written notice from Engineer is given to proceed.

2. The Contractor will be compensated for lost time or changes in construction to avoid the find based upon normal change order procedures.

CONTAMINATED SOIL/GROUNDWATER

PART 1 - GENERAL

The purpose of this section is to provide basic guidelines for properly working (i.e., excavation, handling, transportation, disposal, etc.) with contaminated soil/groundwater during construction and/or any other activities that require the excavation of soil and/or exposure of groundwater, to prevent negative environmental impacts such as cross contamination, spreading out existing contamination that is already contained, etc. All excavation shall be conducted in accordance with the contract and construction documents. The contractors and all subcontractors shall comply with all applicable federal, state and local environmental laws and regulations including but not limited to US Environmental Protection Agency (EPA), Florida Department of Environmental Protection (FDEP), South Florida Water Management District (SFWMD) and Miami-Dade County Department of Environmental Resources Management (DERM).

PART 2 - CLASSIFICATIONS

For the purpose of these specifications the following classifications are used:

- 1. Clean Fill Soils: These soils meet the DERM defined clean fill criteria and can be reused anywhere without restrictions.
- 2. Residential Soils: These soils meet the DERM defined residential criteria and upon DERM approval can be reused on site without tracking requirements.
- 3. Industrial Soils: These soils meet the DERM defined industrial criteria and upon DERM approval can be reused. These soils require tracking from origin to final disposition.
- 4. Environmentally Non-Reusable Soils (ENR): These soils exceed the DERM defined industrial or the Federal hazardous levels and cannot be reused on site. These soils require proper disposal offsite.
- 5. Suspect Soils: Soils from any area pre-designated by DERM as an area where the requirements of this Standard Technical Specification shall be implemented, pursuant to the results of the preconstruction assessment or designated during field activities by City of Doral/Miami Dade County or its designated representatives.

PART 3 HEALTH AND SAFETY

The contractors and all subcontractors working with contaminated soil/groundwater shall conform to all applicable laws, regulations, and guidelines such as, but not limited to, EPA Hazardous Waste Operations and Emergency Response (HAZWOPER), US Occupational Safety and Health Agency (OSHA) and National Institute of Occupational Safety and Health (NIOSH).

PART 4 CONSTRUCTION METHODS

CONTAMINATED SOIL/ GROUNDWATER DETECTION

If contaminated groundwater, visible stains in the soil, free floating product, sheen on groundwater, or odor in soil/groundwater are detected during the normal course of construction activities, the Contractor shall immediately:

- 1. Notify the Architect/Engineer (A/E).
- 2. Notify the City of Doral
- 3. Notify DERM at (305) 372-6789.
- 4. Proceed with the work in accordance to the contract and construction documents and the provisions of these guidelines. To avoid miscommunication, any directives from City of Doral and/or DERM shall be given through the A/E to the Contractor.

STOCKPILING OF SUSPECTED AND ENR SOIL

Prior to the excavation of suspected and ENR soil, the Contractor shall prepare a suitable area previously approved by the A/E Firm for stockpiling such soil in accordance with the contract and construction documents. The Contractor shall take due care during the stockpiling operation to prevent the spread of any further contamination. The stockpile shall not exceed twelve (12) feet in height. The Contractor shall regularly inspect the stockpile area and restore its protection membranes to their original required condition and maintain them throughout the entire construction contract period.

After the Contractor has safely completed the stockpiling, (A/E Firm) shall collect soil samples (by volume) from the stockpile and send the samples to a laboratory certified by Miami Dade County and the State of Florida to be analyzed for applicable environmental criteria. Once a stockpile has been sampled, it cannot be altered in any way. Therefore, the (A/E Firm) shall mark the stockpile with a yellow flag, indicating that the final disposition of the stockpile is pending the analytical results from the laboratory. Once the analytical results are available, DERM shall determine the final disposition of the soil. If according to the analytical results, DERM determines that the soil can be reused on site, (A/E Firm) shall remove the yellow flag and replace it with a green flag, indicating that the soil cannot be reused and therefore it must be properly disposed of, (A/E Firm) shall remove the yellow flag and replace it with a red flag, indicating that the stockpile cannot be reused. Unless otherwise specified by the (A/E Firm), the Contractor shall handle, transport and properly dispose of all ENR soils.

Prior to the excavation of suspected soil, the Contractor shall prepare a suitable area (previously approved by the A/E) for stockpiling soil on an impervious surface, away from any drainage and/or active utility structures. If an impervious surface is not available, the Contractor shall create it by laying down two (2) layers of polyethylene film (each a minimum of four (4) mils thick) on a flat horizontal surface with a twelve (12) inch high berm around its perimeter. The stockpile area shall be free of any sharp materials and debris that could accidentally puncture the polyethylene film. The area selected for stockpiling must be free from water ponding. Once the stockpile is completed, a single layer of the same polyethylene film material shall be placed over the stockpile and secured properly. Rainwater must be directed outside the berm-contained area. Any rainwater collected inside the berm-contained area, must be collected, stored and treated as directed by the A/E. Continued inspection of the stockpile area is required to ensure the polyethylene film is intact and secure and to maintain proper drainage and drainage collection as stated herein.

TRANSPORTATION/ HAULING OF SOIL

The Contractor shall transport the ENR soil in accordance with all applicable laws and regulations. Haulers shall be certified to transport the soil as classified.

DISPOSAL OF NON-HAZARDOUS SOIL AT LANDFILL

If the soil is to be disposed of in a landfill, the Contractor shall dispose of all non-hazardous soils in an approved landfill licensed to handle the soil as classified. The Contractor shall conduct disposal activities in accordance with all applicable laws and regulations.

INCINERATION OF SOIL

If the soil is to be incinerated, the Contractor shall transport the soil to a certified incineration facility licensed to handle the soil as classified. The Contractor shall conduct the transportation and handling activities in accordance with all applicable laws and regulations.

DISPOSAL OF HAZARDOUS SOIL

If soil is classified as hazardous, the Contractor shall prepare, transport and dispose of the soil in accordance with all applicable laws and regulations such as, but not limited to, the Code of Federal Regulations (CFR), EPA, FDEP, DERM, etc., at a licensed hazardous material disposal facility.

REMOVAL/DISPOSAL OF FREE-FLOATING HYDROCARBON PRODUCT (FFHP)

Contractor shall remove/dispose of FFHP and/or sheen in accordance with all applicable laws and regulations.

TRANSPORTATION/DISPOSAL MANIFESTS

The Contractor shall provide copies of all the manifests for the proper transportation/disposal of contaminated soil and/or free-floating product to the A/E and the City of Doral.

DEWATERING/TREATMENT OF CONTAMINATED DEWATERING GROUNDWATER

City of Doral encourages, whenever possible, that construction activities be carried out in the wet. If dewatering in areas of groundwater contamination is absolutely necessary for construction purposes, the Contractor shall apply for and obtain the dewatering permit(s) from the appropriate regulatory agencies. Once the permit(s) has(have) been obtained, the Contractor shall comply with all the permit conditions during the entire course of the dewatering activities. If the permit(s) expire(s) before the dewatering activities are completed, the Contractor shall obtain a permit renewal within the stipulated time frame. The Monthly Pumpage Report required by the dewatering permit shall be submitted to the City of Doral no later than the 5th day of the following month.

SUBMITTALS

Contractor shall submit information and samples to the City for review as follows. The information shall include:

- 1. Detailed description of the proposed methods for temporary stockpiling, transportation, and disposal of all contaminated soils and groundwater.
- 2. Copies of permits for all disposal facilities.
- 3. Copies of all manifest and documentation for handling and disposing of all contaminated soil and groundwater in full compliance with local, state and federal requirements. This documentation must be provided prior to requesting payment under this Bid item.
- 4. Copies of all laboratory analyses required for transportation and disposal of all contaminated soils and groundwater in full compliance with local, state and federal requirements.
- 5. Names, addresses and contact numbers of all subcontractors.
- 6. Copy of Contractor's Health and Safety Plan and training certificates of personnel who will be handling the contaminated material in accordance with OSHA requirements.

PART 5 MEASUREMENT AND PAYMENT

Dedicated Allowance shall be as determined by the City's Architecture and Engineering firm.

CLEARING AND GRUBBING / LANDSCAPING / SITE CLEANLINESS

PART 1 GENERAL

1.01 WORK INCLUDED

A. Clear and grub the areas to be occupied by the facilities or utility systems to be constructed, including all areas to be excavated, filled, paved or planted as shown on the Plans and as specified herein.

1.02 DEFINITIONS

A. Clearing shall consist of the cutting, removal and disposal of all trees, stumps, brush, shrubs, rubbish and any other objectionable material within the designated areas.

B. Grubbing shall consist of the removal and disposal of all stumps larger than 1-1/2 inches in diameter and other objectionable material to a depth of at least 12 inches below the ground surface.

1.03 QUALITY ASSURANCE

A. In the course of the work, it may become necessary to remove trees if they interfere with the work. City of Doral and various municipalities have ordinances regulating the removal, relocation and pruning of trees in the public right-of-way; these ordinances shall be strictly adhered to. The Contractor shall obtain a permit from City of Doral, Miami-Dade County, Public Works and Waste Management County and/or other regulatory agencies having jurisdiction over the work area before removing, relocating and/or pruning any tree. The Contractor shall comply with all requirements and conditions of the permit at no additional cost to the City of Doral.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

3.01 CLEARING AND GRUBBING

A. The Contractor shall remove and replace, where required all existing shrubbery, trees, grass, sprinklers, fences, signs, mailboxes, structures, roadways, sidewalks, curbs and similar items or structures in the way of all excavation necessary for the construction of the Project.

3.02 PROTECTION OF ADJACENT AREAS

A. The Contractor shall protect areas shown on the Plans or designated by the Engineer to remain protected from damage by construction operations by erecting suitable barriers or other acceptable means.

3.03 DISPOSAL OF WASTE MATERIALS

A. All roots, vegetation and other refuse removed from the site during clearing and/or grubbing operations shall be legally disposed of by the Contractor. Burning of any material on site will not be permitted.

B. The Contractor shall provide the Engineer tickets indicating proof of legal disposal of unsuitable backfill material. If the unsuitable material has beneficial use, the transport destination needs to be reported to the Engineer. Payment for disposal of the unsuitable material shall not be made until the City of Doral has proof of legal disposal at a particular destination.

3.04 LANDSCAPING

A. General: Existing plants, trees and grassed areas damaged or destroyed by the Contractor's operations shall be restored or replaced by the Contractor, at his expense to equal or better than original condition, and to the satisfaction of the Engineer.

B. Solid Sod:

1. Solid sod shall be planted in the unpaved areas abutting the structures and extending to the limits shown on the Drawings.

2. When solid sod is to be placed adjacent to or in close proximity to existing sod or grass, the Contractor is to use similar sod or grass and obtain approval from the Engineer prior to installation. In public areas and rights-of-way the Contractor is also required to comply with Governmental Agency requirements and provide the City with written approval of said agency prior to installation of grass and sod.

3. All areas to be grass sodded shall first be leveled, and debris, rocks, and other undesirable matter removed. Topsoil shall then be placed to a minimum depth of 3", with all larger lumps broken up. The mixture shall be well worked and raked to a uniform surface and then hand tamped, or lightly rolled. The topsoil shall be moistened with water prior to placing sod.

4. The sod shall be placed with closely abutting joints and shall completely cover the disturbed areas. The top of the new sod shall coincide with the top of the existing grass. The sod shall be covered with a light top dressing of topsoil and shall then be thoroughly watered.

5. The Contractor shall weed and water the grassed areas until the Project is accepted by the City; however, the minimum period of this maintenance shall not be less than 60 days even if it extends beyond said acceptance. Any portions of the grassed areas which die or appear to have succumbed to the shock of transplanting, before the acceptance by the City, or expiration of the minimum 60-day maintenance period, shall be replaced by the Contractor at his expense.

6. Solid sod shall be certified bitter blue St. Augustine Floratam. The sod shall be firm touch texture having a compact growth of grass with good root development. It shall contain no weeds or other objectionable vegetation.

7. Where sodding is used in drainage ditches, the setting of the pieces shall be staggered to avoid a continuous seam along the line of flow. Along the edges of such staggered areas, the offsets of individual strips shall not exceed 6-inches. In order to prevent erosion caused by vertical edges at the outer limits, the outer pieces of sod shall be tamped to produce a featheredge effect.

8. Sodding shall not be performed when weather and soil conditions are, in the Engineer of Record's ITB No. 2024-17

opinion, unsuitable for proper results.

C. Watering:

The areas on which the sod is to be placed shall contain sufficient moisture, as determined by the Engineer, for optimum results. After being placed, the sod shall be kept in a moist condition to the full depth of the rooting zone for at least 2 weeks. Thereafter, the Contractor shall apply water as needed until the sod roots and starts to grow for a minimum of 60 days (or until final acceptance whichever is latest).

3.05 SITE CLEANLINESS

A. The Contractor shall at all times during the execution of this Contract keep the work site free and clear of all rubbish and debris. As soon as the work is completed, the accumulated rubbish or surplus materials shall be promptly removed. The Contractor shall also restore in an acceptable manner all property, both public and private, which has been displaced or damaged during the prosecution of the work and shall leave the site and vicinity unobstructed and in a neat and presentable condition.

B. In the event of delay exceeding two days after written notice is given to the Contractor by the Engineer to remove such rubbish or materials or to restore displaced or damaged property, the Engineer may employ such labor and equipment as he may deem necessary for the purpose, and the cost of such work, together with the cost of supervision, shall be charged to the Contractor and shall be deducted from any monies due him. The Project shall not be considered as having been completed until all rubbish and surplus materials have been removed.

CONCRETE DRIVEWAY, SIDEWALK, AND CURB AND GUTTER REMOVAL AND REPLACEMENT

Work covered under this Section covers the furnishing of all labor, equipment and material required for cutting, removing, protecting and replacing all existing concrete driveways, sidewalks, and curb and gutter of the various types encountered, removed or damaged under this Contract.

General Requirements

A. Contractor shall be responsible for the protection from damage from his construction operations, all concrete driveways, sidewalk, and curb and gutter within the work area. If payment items are established in the Proposal for the removal and replacement of concrete driveway, sidewalk, and curb and gutter, payment will be made only if such items are encountered within the limits of the trench width plus 2 feet (shoulders) An concrete driveway, sidewalk, or curb and gutter beyond those limits, damaged as a result of the Contractor's operation, shall be restored in accordance with the applicable requirements of these Specifications, and to the satisfaction of the Engineer, at no additional cost to the City. In order to protect himself from being held liable for any existing damaged concrete driveways, sidewalks or curb and gutter, the Contractor is advised to notify in writing the authority having jurisdiction over the street where such damage exists prior to proceeding with any work in the vicinity. A copy of all such notices shall be forwarded to the Engineer.

B. No payment will be made for removal and replacement of concrete driveway, sidewalk, or curb and gutter which falls outside the above-described limits required for thrust blocks, and other appurtenant items, and the cost for such work shall be included in the price bid for the applicable item.

C. If payment items have not been established in the Proposal for the removal and replacement of concrete driveways, sidewalks, and curb and gutter, the cost for such work shall be included in the overall Project cost bid. No other compensation will be provided.

D. No form shall be set higher than the elevation of the adjacent concrete surface.

E. As used herein, "driveway" shall mean concrete driveway, and "curb and gutter" shall mean free standing curb, gutter, or combination curb and gutter.

F. All concrete shall be treated with a liquid curing compound, and in some cases, concrete colorant shall be required in order to match the color of the existing concrete being replaced. In each such case the curing compound, the colorant, and the color, shall meet with the approval of the Engineer and the municipality having jurisdiction over the work area. All additives to the concrete shall be applied in strict conformance with the recommendations of the manufacturer.

G. The Contractor shall provide adequate means to protect each driveway, sidewalk, and curb and gutter installation from damage from vandals, animals, weather or other causes, until the concrete is hard. Should damage occur from such causes, the Contractor shall remove and replace the damaged item at his own expense.

Concrete Driveways

A. Concrete driveways, and sidewalks crossing driveways, shall be restored in full sections or blocks rather than trench width plus two feet (shoulders), if the original construction was divided into such sections or blocks. The existing driveway (or sidewalk) shall be cut with an abrasive disc saw to trim the edges to straight and true

lines, with edges parallel and rectangular in plan. The interior concrete shall then be broken up and removed from the site.

B. Driveways, and sidewalks crossing driveways, shall be replaced with a concrete slab having a minimum thickness of 6 inches. Steel reinforcement is not required unless the existing driveway (or sidewalk) is so reinforced, in which case the replaced driveway shall also be reinforced to match the existing.

C. Such forms as are necessary shall be set up and the subgrade regarded for a slab 6 inches thick. The subgrade shall be thoroughly compacted and wet down prior to placing the concrete. The surface shall be given a surface and edging to match, as nearly as possible, that of the existing driveway (or sidewalk). The finish and edging shall be obtained through the use of screeds, trowels, edges and any other tool normally required by the trade in performing this kind of work.

D. All forms for driveways (or sidewalks) including those for expansion joints, shall be metal and shall be clean and well-oiled prior to placing concrete. The forms shall be set in place far enough in advance of concrete placing for the Engineer to check line and grade. Abrupt changes in line and grade will not be permitted, and forms shall be set to insure smooth curvature and alignment both vertically and horizontally. Forms shall be left in place for a minimum of 24 hours after concrete has been placed.

E. Replacement driveways (and sidewalks) shall match the elevation and alignment of existing driveways (and sidewalk) wherever a connection is made.

<u>Sidewalks</u>

A. Sidewalks shall be restored in full section rather than trench width plus 2 feet (shoulder).

B. Removal of existing sidewalk, installation of forms, preparation of subgrade, and the final finish shall be performed as specified hereinabove for driveways, except that the minimum thickness of the sidewalk shall be 4 inches thick.

Curb and Gutter

A. Curb and gutter shall be restored in lengths equal to trench width plus 2 feet (shoulders), or 10 feet, whichever is greater, unless otherwise permitted or ordered by the Engineer.

EXCAVATION / TRENCH STABILIZATION / TRENCH OVERCUT / COMPACTED BACKFILL

910.1 EXCAVATION

A. The Contractor shall remove and replace, where required, all existing shrubbery, trees, grass, sprinklers, fences, signs, mail boxes, structures, roadways, sidewalks, curbs and similar items or structures in the way of the pipeline and shall make all excavation necessary for the construction of the connections to the lines and grades shown on the Drawings. Weeded areas shall be restored to their original condition in an acceptable manner. Where pavements or sidewalks are cut, they shall be cut by means of a mechanical pavement saw to form true and straight edges which shall in general be either parallel or at right angles with the centerline of the pipe. Unless specific bid items are provided in the Proposal form, the cost of removing and replacing any plantings or existing structures shall be included in the price bid for pipes, structures, and concrete appurtenances. In order to protect Contractor from being held liable for any existing damaged pavement, including detour routes, the Contractor is advised to notify in writing the authority having jurisdiction over the street where such defective pavement exists prior to proceeding with any work in the vicinity. A copy of all such notices shall be forwarded to the Engineer.

B. All cleared materials shall be promptly removed from the work area and disposed of in an area provided by the Contractor, at no additional cost to City. Accumulation of debris or stockpiling along the route of the work will not be allowed.

C. The Contractor shall excavate solid pipe trenches to a minimum of six inches below the outside bottom of the proposed pipe barrel to provide for the installation of the bedding material or as dictated by design drawings; whichever is more stringent.

D. Not more than 100 feet of trench shall be opened ahead of pipe laying operations at one time unless a greater length of open trench is approved by the Engineer.

E. If, in the opinion of the Engineer, the soil at that depth is unsatisfactory as foundation material because it contains marl, muck, organic matter, or other unsuitable material, the excavation shall be continued two (2) feet deeper, except if a suitable foundation material is exposed at a lesser depth, further excavation will not be required. The cost of this extra excavation, and backfilling with select backfill material, shall be included in the price for pipe laying and no additional payment will be made for this work.

F. If the soil is still unsuitable after the additional excavation as prescribed above, and the Engineer authorizes "Overcut", the trench bottom shall be excavated further in one-foot increments and paid for as "Trench Overcut". See Section 910.3, "Trench Overcut".

G. Trench widths; Refer to Plans provided and as details shown.

H. For excavations five (5) feet deep or less, sheeting and shoring shall be installed where necessary to control trench width, protect the workmen and the general public, and prevent damage to this or adjacent work, or structures. When an excavation is in excess of five (5) feet deep, the Contractor shall comply with the provisions of the State of Florida "Trench Safety Act". Method(s) of compliance used shall protect the workmen and the general public, prevent damage to this or adjacent work, structures, utilities, pavements, sidewalks, curbs, gutters and similar improvements both public and private, and provide for proper maintenance of traffic. The trench width may vary to accomplish this and to comply with the Trench Safety Act, but only from a point

one (1) foot above the top of the pipe.

I. Where wood sheeting or certain designs of steel sheeting are used, the City may require that the sheeting be cut off at a level two (2) feet above the top of the installed pipe and that portion below that level be left in place. If ordered left in place, sheeting and shoring shall be paid for under the appropriate Proposal Item.

J. If interlocking steel sheeting is used, the City may permit its complete removal in lieu of the cut-off, providing removal can be accomplished without disturbing the bedding, pipe or pipe alignment. Any damage to the pipe bedding, pipe or pipe alignment shall be cause for rejection of the affected portion of the work.

K. A substantially and safely constructed moveable shield or box, as approved by the Engineer, may be used in place of sheeting when the trench is opened immediately behind the shield as pipe laying proceeds inside the shield. All construction in conjunction with using such a shield must be as approved by the Engineer, including excavation, installation of pipe and backfilling and compaction.

L. Excavation for other piping and appurtenances shall be sufficient to leave at least 12 inches clear between their outer surfaces and the embankment or sheeting that may be used to protect them.

M. Materials removed from the trenches shall be stored and disposed of in such a manner that they will not interfere unduly with traffic on public streets and sidewalks and they shall not be placed on private property. In congested areas, such materials cannot be stored adjacent to the trench or used immediately as backfill; these materials shall be removed to convenient places of storage. If any material is creating a public hazard or other unsafe condition, in the opinion of the Engineer, it shall be removed immediately by the Contractor to a storage area at no cost to the City.

N. The trench wall shall be kept at a stable angle of repose to maintain trench widths within the limits hereinafter specified or shown on the Drawings.

O. The trench, when in rock, shall be excavated to a width within the limits of the top of the pipe and the trench bottom so as to provide a clearance on each side of the pipe barrel, measured to the face of the excavation, of 12 inches. Rock or removal in the excavation shall be considered a part of the excavation and as such no additional payment shall be made, therefore. Where excavation is in silt, the width of trench bottom shall be pipe O.D. plus 2- feet with the trench walls being kept at a stable angle of repose. All pipe trenches shall be excavated to a level at least 12 inches below the outside bottom of the proposed pipe barrel.

P. The Contractor shall perform all excavation of every description and of whatever substances encountered, to the dimensions and depth shown on the Drawings, or as directed by the Engineer. All excavations shall be made by open cut. Any existing utilities such as pipes, cables, etc., shall be carefully supported and protected from damage, and in case of damage, they shall be restored at no cost to the City.

Q. The Contractor shall temporarily store excavated material suitable for backfill in full compliance with the provisions of the permits. All mud, silt, debris and other material unsuitable for backfilling the trench shall be removed and legally disposed of offsite by the Contractor. The Contractor shall make his own arrangements regarding stock piling of excavated suitable material and storage and assembly space to properly and safely carry out the construction. Any agreements entered into by the Contractor and property Owners shall hold the City harmless. Storage of excavated material shall not cause environmental problems and shall be performed at no additional cost to the City.

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910.2 TRENCH STABALIZATION

A. No claim for extras or additional payment will be considered for cost incurred in the stabilization of trench bottoms which are rendered soft or unstable as a result of construction methods, such as improper or inadequate sheeting, dewatering or other causes. In no event shall pipe be installed when such conditions exist, and the Contractor shall correct such conditions to provide proper bedding or foundations for the proposed installation at no additional cost to the City.

910.3 TRENCH OVERCUT

A. Trench Overcut provisions herein shall be used only under direct authorization by the Engineer. Since the amount of trench overcut that may be required is usually unknown until the actual work begins, trench overcut may be established in the Proposal on a contingent basis. A Contingent Item may or may not be used at the option of the City, and any provisions contained within the Contract Documents for quantity overruns or underruns will not be applicable.

B. If, after excavating the trench to a depth of 2 feet 6 inches below the outside bottom elevation of the proposed pipe barrel, and the soil at that depth is still unsatisfactory as foundation material because it contains marl, muck, organic matter, or other unsuitable material, and the Engineer authorizes overcut, the pipe trench shall be excavated further in one-foot increments until either a suitable foundation material is found, or the Contractor is directed by the Engineer to stop trench overcut operation and begin backfilling. In no case will trench overcut be more than 6 feet in depth, i.e., to a point 8.5 feet below the bottom of the pipe.

B. Selected backfill, as defined in Section 910.4, "Compacted Backfill", shall then be compacted in 6-inch layers up to the bottom of the proposed 6 inches of pipe bedding.

910.4 COMPACTED BACKFILL

A. When mains are to be installed within existing street areas, the Contractor shall limit the amount of ditch open at any one time to one block (approximately 600 feet). The work in each block including excavation, pipe laying, backfilling, compaction and temporary paving, shall be completed before proceeding with the work in the next block. The Contractor may employ more than one installation crew on the Project, but not less than 1,200 feet shall separate any two open trench sections.

B. Backfilling and compaction shall be kept up with the rate of pipe laying. Backfill consisting of the specified material shall be placed and properly compacted, to the degree specified hereinafter. Unless otherwise ordered or approved by the Engineer, in writing, no temporary fill, refill, or uncompacted fill shall be installed. Under no circumstances shall backfill material other than that specified or an approved equal be installed. Backfill shall be placed and compacted immediately after installation of piping.

C. Backfill Material: Shall be clean and free from all organic material, clay, marl or unstable materials, debris, lumps or broken paving. No rocks or stones larger than 6 inches in diameter shall be allowed in any backfill. Material for backfill may be material resulting from trench excavation, if suitable in the opinion of the Engineer.

D. Select Backfill Material: Specified in these Specifications or required by the Drawings shall meet all of the general requirements for backfill material set forth above, and, in addition, shall be free of any rocks or stones larger than 2 inches in diameter. Select backfill material may be material resulting from trench excavation, if suitable in the opinion of the Engineer, carefully selected to comply with these requirements.

E. Backfilling and compaction of trenches will not be allowed until the work has been inspected by the Engineer, and the Engineer indicates that backfilling and compaction may proceed. Any work covered up or concealed without the knowledge or consent of the Engineer may be required to be uncovered or exposed at no cost to the Department.

F. The Contractor shall backfill and compact all trenches and other excavations made in the process of installing the pipe. The cost of all backfilling and compaction shall be included in the price bid under the various Items. The Contractor shall maintain the surface of the backfill free from major irregularities and potholes. Backfill to a point at least one foot above the pipe shall be select backfill material not exceeding 2 inches in diameter. Above this point, backfill shall be of material not exceeding 6 inches in diameter.

G. Backfilling and compacting of material under and around the pipe and to one foot above the crown shall be in layers not exceeding 6 inches in thickness. Each layer shall be thoroughly compacted to at least 90 percent of maximum density as determined by AASHTO Standard No T-180-74, "Moisture-Density Relations of Soils using a 10-lb. (4.54 Kg.) Rammer and an 18 in. (457 mm) Drop." The material in the ditch may be compacted by either hand tamper or a mechanized power tamper, provided the results obtained meet the continued approval of the Engineer.

H. Backfilling and compacting of material lying above a point one foot above the crown of the pipe and below the pavement base or the surface of the ground if out of pavement shall be accomplished in layers not exceeding 9 inches in thickness. Each layer shall be thoroughly compacted with a powered hand tamper or a mechanized power tamper to at least 98 percent of maximum density as determined by AASHTO Specification T-180-74 or such greater density as may be required by the governing authority over the area in which the work is performed.

I. Backfill and compaction shall be kept up with the rate of pipe laying. The backfill up to the spring line of the pipe shall be placed and compacted as soon as practical after the laying of the pipe.

J. On parts of the line where ground water level may be high enough to float the pipe, the placing of the backfill and the rate of pumping the trench shall be so controlled as to prevent the pipe from floating or moving from the line and grade shown on the Drawings.

K. In the event that sufficient suitable material is not available at any point to properly backfill the trench, the Contractor shall transport suitable material from points of the line where such material is available or shall otherwise furnish suitable material at no additional cost to the City.

L. Suitable material in excess of all backfill requirements shall be removed from the work and disposed of by the Contractor. The cost for removal shall be included in the overall Project cost bid.

M. Where cuts have been made through unpaved, stabilized rock roadways, driveways and parkways, surface restoration shall consist of 3 inches of compacted lime rock overlaid by 3 inches of gravel or graded and washed rock with a maximum diameter of 1/2-inch except as otherwise directed by the Engineer. The rock shall be installed over the entire width of the disturbed area and shall closely match the existing rock at each location. Several grades of rock may be required to attain this end, but it is not anticipated that more than one grade will have to be used at any one location. The cost for replacement of gravel or rock stabilized driveways and roadways shall be included in the overall Project cost bid unless a specific Bid Item is established in the Proposal.

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N. Backfill material shall consist of the suitable excavated material being stored for this purpose. Backfill material placed within 1-foot of piping and appurtenances shall not contain any stones or rocks larger than 2 inches in diameter, and no stones or rocks larger than 6 inches in diameter will be permitted in any backfill. Backfill material containing mangrove muck or other unsuitable materials shall not be used.

O. During the backfilling operation, care shall be taken to preserve the alignment and gradient of the installed pipe.

SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

PART 1 GENERAL

1.01 SCOPE OF WORK

A. Before proceeding with the erection of the construction plan, including the setting or placing thereof, and the erection of other temporary structures, the Contractor shall furnish the Engineer with such information and plans as City may require.

B. Shop Drawings shall be submitted prior to any project construction activity. In a timely fashion, well before the contemplated ordering for fabrication of special or- der or long-lead items or construction use of any standard element of the work, the Contractor shall furnish Shop Drawings for the review and approval of Engineer of Record and City.

C. It is the Contractor's sole responsibility, upon the first occasion of submittal of a particular element of the work, to submit Shop Drawings of an element which match and fulfill the requirements and intent of the Plans and Specifications. Any delays or costs caused, either directly or indirectly, by non-timely submissions; submission of items differing significantly from the intent of the Plans and/or Specifications; repeated submission of, or argument over, rejected elements or changes required for acceptance; arguments with the criteria or requirements of the Plans or Specifications; or any other such similar activities shall be at the expense of the Contractor.

D. It is the intent of the Contract Documents that the Contractor shall, in the first in- stance, submit Shop Drawings of elements which meet or exceed the requirements of the Contract Documents and fit with the other elements of the work and the existing conditions. Activities such as those mentioned in Article 1.01 C, which are inimical to this intent will not be tolerated and may, at the sole discretion of the Engineer, subject the Contractor to costs for any delays, costs, damages or penal- ties suffered by the City due to such activities to include but not be limited to; extra engineering and overhead costs together with any liquidated or actual dam- ages.

1.02 DESCRIPTION OF WORK

A. Submit to the Engineer for review and approval, Shop Drawings, test reports and data on materials, equipment, and material samples as required for the proper control of work, and as specified in the Specification sections. Shop Drawings shall be submitted for all materials and equipment to be furnished.

B. Within fifteen (15) calendar days after the effective date of the Contract, submit to the Engineer a complete list of preliminary data on items for which Shop Drawings are to be submitted. Included in this list shall be the names of all proposed manufacturers furnishing specified items. Review of this list by the Engineer shall in no way expressed or implied relieve the Contractor from submitting complete Shop Drawings and providing materials, equipment, etc., fully in accordance with the Specifications. This procedure is required in order to expedite final review of Shop Drawings.

C. Maintain an accurate updated Shop Drawing submittal log which shall include the following items:

- 1. Submittal Description and Number Assigned
- 2. Specification Section
- 3. Plans Sheet Number

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4. Date to Engineer

- 5. Date Returned to Contractor (from Engineer)
- 6. Status of Submittal (Approved, Approved as Noted, Rejected/Resubmit)
- 7. Date of Resubmittal and Return (as Applicable)
- 8. Date Material Release (for Fabrication)
- 9. Projected Date of Fabrication
- 10. Projected Date of Delivery to Site
- 11. Status of O & M Manuals Submittal

1.03 CONTRACTOR'S RESPONSIBILITY

A. Furnish the Engineer with a schedule of Shop Drawings submittals, fixing the respective dates for the submission of Shop Drawings, the beginning of manufacture, testing and installation of materials, supplies and equipment. This schedule shall indicate those that are critical to the progress schedule.

B. Submit to the Engineer all plans and schedules sufficiently in advance of construction requirements to provide maximum time for checking and appropriate action from the time the Engineer receive them.

C. It is the duty of the Contractor to check and approve all plans, data and samples prepared by or for him before submitting them to the Engineer for review. Each and every copy of the Plans and data shall bear Contractor's stamp showing that they have been checked and approved. Shop Drawings submitted to the Engineer without the Contractor's stamp and approval shall be returned to the Contractor for conformance with this requirement before Engineer's review. Shop Drawings shall indicate any deviations in the submittal from requirements of the Project Documents and the Contractor shall state the reason why a deviation is required.

D. All submittals shall be accompanied by a transmittal letter prepared in duplicate containing the following information:

- 1. Date
- 2. Project Title and Number
- 3. Contractor's name and address
- 4. The number of each Shop Drawing, Data, and Sample submitted
- 5. Notification of Deviations from Project Documents

6. Submittal Log Number conforming to and referring to Specification Section Numbers. Submit three copies of Shop Drawings and of descriptive or product data submittals necessary to complement Shop Drawing. The Engineer will retain two sets.

F. After receiving approval by the Engineer, the Contractor shall be responsible for submitting the Shop Drawings to the Building Department. Shop Drawings of all premanufactured items and all other Shop Drawings are required to obtain approval prior to manufacturing or installing the submitted items. The Contractor shall also be responsible for contesting any interpretations by the Building Department that City considers non-acceptable. The Contractor shall include in the bid prices, all costs for permits, fees and expenses associated with the submittals, including resubmittals (if any) of Shop Drawings to the Building Department. The Building Department as used in this paragraph shall be taken to mean the Miami-Dade County Building Department and/or other governing building authority appropriate to this project.

G. Do not begin any of the work covered by a drawing, data, or a sample returned as "Rejected/Resubmit" until

a revision or correction thereof has been reviewed and returned to the Contractor, by the Engineer, with approval or approval "As Noted". Be responsible for and bear all costs of damages which may result from the ordering of any material or from proceeding with any part of work prior to receiving Engineer's approval or approval "As Noted" of the necessary Shop Drawings.

H. Be fully responsible for observing the need for and for making any changes in the arrangement of piping, connections, wiring, manner of installation, etc., which may be required by the materials/equipment the Contractor proposes to supply, both as they pertain to the Contractor's own work, work of others, or of other Divisions herein or Trades and clearly show such changes on the Shop Drawings.

I. When substitutions in materials or equipment are allowed, the Contractor shall make all necessary changes in adjacent or connected structures and equipment at his expense. Where contemplated changes, substitutions or appurtenant work re- quire engineering design, in the opinion of the Engineer, the Contractor shall have such design services performed at his expense. Said engineering design services shall be of an extent satisfactory to the Engineer whose word shall be final and shall be performed by a Registered Professional Engineer licensed to practice in the State of Florida.

J. When substitutions in materials or equipment are allowed, the Contractor shall be solely responsible for all costs and time required by any differences in construction methods, fabrication or assembly required and no additional time will be allowed.

K. The Miami-Dade Building Department requires that any changes made during construction which result in differences between the as constructed arrangement/elements and the arrangement/elements shown on the permitted plans be reconciled by re-permitting of the plan sheet or sheets affected by the construction changes prior to inspection. Thus, the plan sheet or sheets must be redrawn to reflect the construction change, signed, sealed, dated and re-submitted by the Engineer of Record for re-permitting.

L. When a construction change, initiated by the Contractor or resulting from a change made by the Contractor, requires re-permitting as discussed in the preceding paragraph, the Contractor shall be responsible for all labor, material and equipment required to redraw the Plan sheet or sheets affected by the change to the satisfaction of the Engineer of Record and City. The costs for all work of this sort and all costs of re-permitting shall be borne by the Contractor and no extra compensation will be allowed.

M. Determine and verify:

- 1. Field measurements
- 2. Field construction criteria
- 3. Catalog numbers and similar data
- 4. Conformance with specifications

5. That installation and maintenance clearances are sufficient particularly when equipment or arrangement changes have been made

1.04 ENGINEER'S REVIEW OF SHOP DRAWINGS

A. Engineer's review of plans, data and samples, submitted by the Contractor will cover only general conformity to the Drawing and Specifications. The Engineer's review will not constitute an approval of dimensions, quantities, and details of the material, equipment, device, or item shown. The review of plans and schedules will

be general, and shall not be construed:

- 1. As permitting any departure from the Contract requirements
- 2. As relieving the Contractor of responsibility for any errors, including detail, dimensions, and materials
- 3. As approving departures from details furnished by the Engineer, except as otherwise provided herein

B. Variations

1. If the plans or schedules, as submitted, describe variations per paragraph 1.03 C, and show a departure from the Contract requirements which Engineer finds to be in the interest of the City and to be so minor as not to involve a change in Contract price or time for performance, the Engineer may return the reviewed plans without noting an exception.

2. If the plans or schedules, as submitted, describe variations and show a departure from the Contract requirements which the Engineer finds to be minor enough to be corrected by redlining the submittal, the engineer will mark and return the submittal marked "Approved as Noted." The redlined corrections shall be as binding on the Contractor as would be a resubmission embodying the same corrections.

C. When reviewed by the Engineer, each of the Shop Drawings shall be stamped and dated to indicate it had been reviewed. Shop Drawings stamped "Revise and Resubmit" and with required corrections shown will be returned to the Contractor for correction and resubmittal.

D. Resubmittals will be handled in the same manner as first submittals. On resubmittals the Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, to revisions and corrections required by the Engineer on previous sub- missions. The Contractor shall make any corrections required by the Engineer.

E. If the Contractor considers any correction indicated on the Shop Drawings to constitute a change to the Project Plans or Specifications, the Contractor shall give written notice thereof to the Engineer who will render a decision which shall be final. After the decision has been made, the Contractor shall without delay, provide the corrections to the plans.

F. When the Shop Drawings have been approved by the Engineer, the Contractor shall carry out the construction in accordance therewith and shall make no further changes therein except upon written instructions from the Engineer.

G. No partial submittals will be reviewed. Submittals not complete will be returned to the Contractor for resubmittal. Unless otherwise specifically permitted by the Engineer, all submittals shall be made in groups containing all associated items for systems, processes or as indicated in specific specifications sections. All plans, schematics, manufacturer's product data, certifications and other Shop Drawing submittals required by a system specification shall be submitted at one time as a package to facilitate interface checking.

1.05 SHOP DRAWINGS

A. When used in the Project Documents, the term "Shop Drawings" shall be considered to mean Contractor's plans for materials and equipment which become an integral part of the Project. These Shop Drawings shall be complete and detailed. Shop Drawings shall consist of fabrication, erection and setting drawings and schedule drawings, manufacturer's scale drawings, and wiring and control diagrams. Cuts, catalogs, pamphlets, descriptive literature, and performance/test da- ta shall be considered only as supportive to required Shop

Drawings as defined above.

B. Manufacturer's catalog sheets, brochures, diagrams, illustrations and other standard descriptive data shall be clearly marked to identify pertinent materials, product or models. Information which is not applicable to the Work shall be deleted by striking or cross hatching.

C. Each Shop Drawing shall have a blank area 3½ inches by 3½ inches, located adjacent to the title block. The title block shall display the following:

- 1. Project Title and Number
- 2. Name of Project Building or Structure
- 3. Number and Title of the Shop Drawing
- 4. Date of Shop Drawing or Revision
- 5. Name of Contractor and Subcontractor Submitting Drawing
- 6. Supplier/Manufacturer
- 7. Separate Detailer when Pertinent
- 8. Specification Title and Number
- 9. Specification Section
- 10. Application Project Drawing Number

D. If plans show variations from Contract requirements because of standard shop practice or for other reasons, describe such variations in the letter of transmittal. If no explanation of these variations is provided, the Contractor shall not be relieved of the responsibility for executing the work in accordance with the Contract, even though such plans have been reviewed and approved.

E. For all mechanical and electrical equipment furnished, provide a list including the equipment name, address of and telephone number of the manufacturer's representative and service company so that service and/or spare parts can be readily obtained.

F. All manufacturers or equipment suppliers who propose to furnish equipment or products shall submit an installation list to the Engineer along with the required Shop Drawings. The installation list shall include at least five installations where identical equipment has been installed and has been in operation for a period of at least five years, unless otherwise specified. Manufacturers and/or equipment which fails to meet the specified experience period will be considered if the manufacturer or supplier provides a bond or cash deposit which will guarantee replacement of the equipment or process in the event of failure or unsatisfactory service.

G. Only the Engineer will utilize the color "red" in marking Shop Drawing submittals.

1.06 REQUIRED INFORMATION

A. Submit, as applicable, the following for all prefabricated or manufactured structural, mechanical, electrical, plumbing, process system, and equipment work:

1. Shop Drawings or equipment drawings, including dimensions, size and location of connections to other work, and weight of equipment

- 2. Catalog information and cuts
- 3. Installation or placing plans for equipment, drives, and bases

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4. Supporting calculations, signed and sealed by a Florida Registered Engineer when required, for equipment and associated supports, or hangers required or specified to be designed by equipment manufacturers.

5. Signed and sealed calculations and plans by in-house Florida Registered Professional Engineer for structural systems, indicating compliance to the structural design criteria specified in the Plans.

- 6. Complete manufacturer's specifications, including materials description and paint system.
- 7. Performance data and pump curves
- 8. Suggested spare parts with current price information

9. List of special tools required for testing, checking, parts replacement, and maintenance. (Special tools are those which have been specially designed or adapted for use on parts of the equipment, and are not customarily and routinely carried by maintenance mechanics)

- 10. List of special tools furnished with the equipment
- 11. List of materials and supplies required for the equipment prior to, and during startup
- 12. List of materials or supplies furnished with the equipment
- 13. Special handling instructions
- 14. Requirements for storage and protection prior to installation
- 15. Requirements for routine maintenance required prior to equipment startup
- 16. List of all requested exceptions to the Project Documents

1.07 SUBMITTAL REQUIRED FOR FOREIGN MANUFACTURED ITEMS

A. In addition to the submittal requirements stated above, suppliers of foreign manufactured items shall submit the names and addresses of companies within the United States that maintain technical service representatives and a complete inventory of spare parts and accessories for each foreign-made item proposed for incorporation into the Work. Failure to prove these capabilities shall be cause for rejection of the foreign manufactured items.

B. Foreign manufactured equipment and materials shall in all cases be clearly and permanently marked with the manufacturer's name and country of origin of the item. The name of the U.S. importing/supplying firm is not acceptable. Shop Drawing submittals of foreign-made items shall be accompanied by written information to include name and location (i.e. country, City, and street address) of the manufacturer. This requirement shall also apply to the foreign made elements of items assembled in this country from parts wholly or partially manufactured overseas.

1. The words, "Permanently Marked" as used in this paragraph shall mean; die stamped, cast-in, welded, or otherwise marked such that the removal of the marking by any mechanical or chemical means will result in obvious permanent damage to the surface marked. These markings shall be on surfaces which are not hidden by assembly.

C. Where specified elsewhere herein or at the sole discretion of the Engineer, whose word shall be final, supply verification of quality, suitability, or other aspects, as directed by the Engineer, from a Professional Engineer licensed to practice in the State of Florida or the state where the supplying U.S. firm is located. The verification shall be signed, sealed, and dated. All costs for this verification shall be at the sole expense of the Contractor and no extra compensation will be allowed. Verification by foreign-based engineers, firms, manufacturers, etc. will not be acceptable. Verification by means of a very stringent foreign testing agency/standard (for example ISO 9000 series) may be acceptable. However, this shall again be at the sole discretion of the Engineer and the full burden of proof and satisfaction of City shall rest with the Contractor. No extra time will be permitted due to the requirement for verification and the Contractor has the sole responsibility to make his submittals with all

necessary information in a timely fashion.

D. Items which are fabricated (i.e. assembled in this country from partially or wholly foreign manufactured parts) may also be required to have verification of their foreign made elements as specified for wholly foreign made items in the preceding paragraph.

E. Any items in contact with or being added to potable water shall conform with NSF/ANSI 61 or 60, as appropriate.

1.08 SAMPLES

A. Furnish for the approval of the Engineer, samples required by the Project Documents or required by the Engineer. Samples shall be delivered to the Engineer as specified or directed. The Contractor shall prepay all shipping charges on samples. Materials or equipment for which samples are required shall not be used in work until approved by the Engineer.

B. Samples shall be of sufficient size and quantity to clearly illustrate:

- 1. Functional characteristics of the product, with integrally related parts and attachment devices
- 2. Full range of color, texture and pattern
- 3. A minimum of two samples of each Item shall be submitted

C. Each sample shall have a label indicating:

- 1. Name of Project
- 2. Material or Equipment Represented
- 3. Name of Producer and Brand (if any)
- 4. Location in Project

D. Prepare a transmittal letter in triplicate for each shipment of samples containing the information specified herein in Paragraph 1.06 A. Enclose a copy of this letter with the shipment and send a copy of this letter to the Engineer. Approval of a sample shall be only for the characteristics or use specified and shall not be construed to change or modify any Contract requirements.

E. Approved samples of the hardware in good condition will be marked for identification and may be used in the work. Materials and equipment incorporated in work shall match the approved samples. Samples which failed testing or were not ap- proved shall be returned to the Contractor at his expense, if so, requested at time of submission.

1.09 SUBSTITUTIONS

A. Changes in products, materials, equipment, and methods of construction required by the Contract Documents, which are proposed by the Contractor after award of the Contract, are considered to be requests for substitutions. Where the Plans and/or Specifications designate the products of a particular manufacturer, the product specified has been found suitable for the intended use. Articles or products of similar characteristics may be offered for the approval of the Engineer, whose decision shall be final. Copies of complete descriptive data shall be furnished regarding all materials furnished by the Contractor, consisting of Dimension drawings, catalog references, product data, cost, and other information necessary to clearly identify and evaluate each article.

When substitutions are permitted, the Contractor shall make all necessary changes in adjacent, connected, or other structures and equipment at his expense.

B. Where engineer-recommended changes, substitutions or appurtenant work require engineering design, the Contractor shall have such design services performed. Those engineering design services shall be of an extent satisfactory to the Engineer, whose decision shall be final. Engineering services for engineer- recommended changes, substitutions or appurtenant work, shall be performed by a Registered Professional Engineer licensed to practice in the State of Florida.

C Unless specifically authorized by the Engineer in writing, no additional contract time will be allowed, and a decrease in time may be appropriate.

- A. Shop Drawings, Submittals, and Final As-Builts
 - 1. Furnish to Engineer and City two (2) sets of shop drawings unless otherwise directed by the City.
 - 2. At the completion of the Project and prior to final payment the Contractor shall provide to City two (2) complete sets of As-Builts Documents as well as an electronic copy with drawings in both CADD and PDF formats. The City will also require all documentation for all equipment and at City's request arrange for manufacturer's representative to meet with the City. Contractor will prepare a manual for City to include maintenance and operation of equipment. At the completion of construction, the Contractor will provide training in proper operations, and maintenance schedules.
- B. Warranty and Inspection of Defects
 - 1. The Contractor will warranty all materials, workmanship, and equipment for a minimum period of one (1) year from the date of final completion.
 - 2. Manufacturer's standard warranties on materials and equipment which exceed the minimum one (1) year warranty period will be assigned by the Contractor to the City for its benefit prior to final payment.
 - 3. The Contractor warrants the material and equipment with respect to performance as specified in the specifications. If the Contractor fails to meet performance warranties, it shall be liable and shall have the obligation, at its sole expense, to make adjustment or replacement to meet guarantees. All transportation, supervision, labor, and other costs incidental to the adjustment or replacement shall be borne by the Contractor.
 - 4. The Contractor guarantees that sound engineering, construction principles, and practices in the performance of the work shall be used.
 - 5. The Contractor guarantees that it shall provide the City with the degree of skill, care, judgment, and supervision necessary to assure that the work shall be of the highest quality, with workmanship proper fit, suitable, and sufficient for the purpose contemplated and in accordance with the best trade practices.
 - 6. All parts of the work, throughout the time of performance of the contract, are subject to inspection and testing by the City or such of its agents, employees, or representatives as it may designate, the Engineer's staff, and the authorized representatives of any public authority having jurisdiction. The Contractor shall provide all such persons with safe and proper facilities for access to and inspection of the work both at the construction site and any subcontractor's plant or other source of supply where any equipment, material, or other part of it may be located. The Contractor shall give the City written notice of readiness of the work or any part of the work for any special inspection or test which may be required by the specifications or other contract documents or by any applicable law or public regulation. No part of the work as to which any specific inspection is required shall be covered up until such inspection has been completed. If such work is covered, then it shall be uncovered and replaced at the Contractor's expense.
 - 7. All parts of work shall, during time of contract, be subject to inspection and test by the City or its representatives. Approval for all work will be by the City or its representatives. When poor

workmanship or improperly specific materials are reason for rejection, correction will be at the Contractor's expense.

- C. Construction Services
 - All work shall be performed in strict accordance with the approved specifications, plans, and drawings. The specifications, plans, and drawings and all other similar documents which are a part of the contract are supplementary and complementary to each other and intended to provide for all labors, materials, equipment, services, and other things necessary for the satisfactory completion of the work. Anything called for by any one of such documents shall be required to the same extent as if called for by all of them, and the work shall be complete in every detail whether or not every item is particularly mentioned.
 - 2. After notification of award and prior to the start of any work, the Contractor shall submit their detailed construction schedule to City for approval. The schedule shall be written in sufficient detail to show the chronological relationship of all major aspects of the project, including estimated starting and completion dates of various activities, procurement of materials, and scheduling of equipment. The schedule is subject to approval by the City. Contract shall also provide an explanation of how it handles rain days in the schedule. A rain day for definition in this purpose shall mean a day in which rain or other inclement weather at the site is sufficient to prevent the Contractor from performing critical path activities for a period greater than three hours.
 - 3. Notwithstanding the other items stated under previous sections, the Contractor shall be responsible for:
 - a. Shop drawings, submittals and other work customarily performed by a Contractor.
 - b. Contractor to respond to request for Information from subcontractors.
 - c. Contractor to request and obtain all inspections from agencies having jurisdiction over the project.
 - d. Notifying Florida Power and Light ("FPL") of commencement of project, obtaining approval, and executing any required documentation required by FPL for performing work near their facilities.

D. Permitting

- 1. The Contractor will be responsible to apply and obtain permit from the City of Doral and any other agencies having jurisdiction. If the contractor intends to use a permit expeditor, the cost of those services shall be included in the base bid.
- 2. The City will be responsible for payment of direct permit fees levied by the City of Doral and/or any other agencies having jurisdiction.

FORM OF BID BOND

STATE OF) COUNTY OF)

KNOW ALL MEN BY THESE PRESENTS, that we, , as Principal, and ______, as Surety, are held firmly bound unto the City of Doral, a municipal corporation of the State of Florida in the sum of Dollars (\$______), lawful money of the United States, for the payment of which sum and truly to be made, we bind ourselves, our heirs, executors, administrators and successors jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that the Principal has submitted the Bid dated ______, 20____ for: ______.

WHEREAS, it was a condition precedent to the submission of said Bid that a or Bid Bond in the amount of five percent (5%) of the Base Bid be submitted with said Bid as a guarantee that the BIDDER would, if awarded the Contract, enter into a written Contract with the City for the performance of said Contract, within ten (10) consecutive calendar days after written notice having been given of the Award of the Contract.

NOW, THEREFORE, the conditions of this obligation are such that if the Principal within ten (10) consecutive calendar days after written notice of such acceptance, enters into a written Contract with the City of Doral and furnishes the Performance and Payment Bonds, satisfactory to the City, each in an amount equal to one hundred percent (100%) of the Contract Price, and provides all required Certificates of Insurance, then this obligation shall be void; otherwise the sum herein stated shall be due and payable to the City of Doral and the Surety herein agrees to pay said sum immediately, upon demand of the City, in good and lawful money of the United States of America, as liquidated damages for failure thereof of said Principal.

IN WITNESS WHEREOF, the above bonded parties have executed this instrument under their several seals this ______ day of ______, 20_____, the name and the corporate seal of each corporate party being hereto affixed and these presents being duly signed by its undersigned representative.

IN PRESENCE OF:

(Individual or Partnership Principal)

(Business Name)

_____ (SEAL)

(Business Address)

(City/State/Zip)

(Corporate Surety)

ATTEST:

(Business Phone)

FORM OF PAYMENT BOND

STATE OF) COUNTY OF)

KNOW ALL MEN BY THESE PRESENTS, that pursuant to the requirements of Florida Statute 255.05, we, as Principal, hereinafter called Contractor, and , as Surety, are bound to the City of Doral, Florida as Obligee, hereinafter called City, in the amount of Dollars (\$) for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally.

WHEREAS, Contractor has by written agreement entered into a Contract, ITB NO. 2024-17, awarded the day of , 20__, with the City of Doral for [project name] in accordance with specifications prepared by the City of Doral which Contract is by reference made a part hereof, and is hereafter referred to as the Contract;

THE CONDITION OF THIS BOND is that if the Contractor:

1. Indemnifies and pay Obligee all losses, damages (including, but not limited to, damages for delay (specifically, liquidated damages as per section 00710 – General Conditions of the ITB and section 3.4 of the Construction Contract) and actual damages caused or arising out of the acts, omissions or negligence of Contractor), expenses, costs, and attorney's fees including attorney's fees incurred in appellate proceedings, that Obligee sustain because of default by Contractor under the Contract; and

2. Promptly makes payments to all claimants as defined by Florida Statute 255.05(1) supplying Contractor with all labor, materials and supplies used directly or indirectly by Contractor in the prosecution of the Work provided for in the Contract, then this obligation shall be void; otherwise, it shall remain in full force and effect subject, however, to the following conditions:

- 2.1 A claimant, except a laborer, who is not in privity with the Contractor and who has not received payment for their labor, materials, or supplies shall, within forty-five (45) days after beginning to furnish labor, materials, or supplies for the prosecution of the Work, furnish to the Contractor a notice that they intend to look to the Bond for protection.
- 2.2 A claimant who is not in privity with the Contractor and who has not received payment for their labor, materials, or supplies shall, within ninety (90) days after performance of the labor, or after complete delivery of the materials or supplies, deliver to the Contractor and to the Surety, written notice of the performance of the labor or delivery of the materials or supplies and of the non-payment.
- 2.3 No action for the labor, materials, or supplies may be instituted against Contractor or the Surety unless the notices stated under the preceding paragraphs 2.1 and 2.2 have been given.
- 2.4 Any action under this Bond must be instituted in accordance with the Notice and Time Limitations provisions prescribed in Section 255.05(2), Florida Statutes.

The Surety hereby waives notice of and agrees that any changes in or under the Contract Documents and compliance or noncompliance with any formalities connected with the Contract or the changes do not affect the Surety's obligation under this Bond.

IN WITNESS WHEREOF, the above bonded parties have executed this instrument under their several seals this ______ day of ______, 20_____, the name and the corporate seal of each corporate party being hereto affixed and these presents being duly signed by its undersigned representative.

IN PRESENCE OF:

(Individual or Partnership Principal)

_____ (SEAL) (Business Name)

ATTEST:

(City/State/Zip)

(Business Address)

(Corporate Surety)

(Business Phone)

FORM OF PERFORMANCE BOND

STATE OF) COUNTY OF)

KNOW ALL MEN BY THESE PRESENTS, that pursuant to the requirements of Florida Statute 255.05, we, as Principal, hereinafter called Contractor, and , as Surety, are bound to the City of Doral, Florida, as Obligee, hereinafter called City, in the amount of Dollars (\$) for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally.

WHEREAS, Contractor has by written agreement entered into a Contract, ITB NO. 2024-17, awarded the day of, 20__, with City of Doral for [project name] in accordance with drawings (plans) and specifications which Contract is by reference made a part hereof, and is hereafter referred to as the Contract;

THE CONDITION OF THIS BOND is that if the Contractor:

1. Fully performs the Contract between the Contractor and the City for: [project name] as scheduled after the date of Contract commencement as specified in the Notice to Proceed and in the manner prescribed in the Contract; and bid specifications.

2. Indemnifies and pay Obligee all losses, damages (including, but not limited to, damages for delay (specifically, liquidated damages as per section 00710 – General Conditions of the ITB and section 3.4 of the Construction Contract) and actual damages caused or arising out of the acts, omissions or negligence of Contractor), expenses, costs, and attorney's fees including attorney's fees incurred in appellate proceedings, that Obligee sustain because of default by Contractor under the Contract; and

3. Upon notification by the City of Doral, corrects any and all defective or faulty Work or materials which appear within ONE (1) YEAR.

4. Performs the guarantee of all Work and materials furnished under the Contract for the time specified in the Contract, then this Bond is void, otherwise it remains in full force. Whenever Contractor shall be, and declared by City to be, in default under the Contract, the City having performed their obligations thereunder, the Surety may promptly remedy the default, or shall promptly:

- 4.1 Complete the Contract in accordance with its terms and conditions; or
- 4.2 Obtain a Bid or Bids for completing the Contract in accordance with its terms and conditions, and upon determination by Surety of the best, lowest, qualified, responsible and responsive BIDDER, or, if the City elects, upon determination by the City, and Surety jointly of the best, lowest, qualified, responsible and responsive BIDDER, arrange for a Contract between such BIDDER and City, and make available as Work progresses (even though there should be a default or a succession of defaults under the Contract or Contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the Contract Price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "balance of the Contract Price." as used in this paragraph, shall mean the total amount payable by City of Doral to Contractor.

No right of action shall accrue on this Bond to or for the use of any person or Corporation other than the City named herein.

Surety hereby waives notice of and agrees that any changes in or under the Contract Documents and compliance or noncompliance with any formalities connected with the Contract or the changes do not affect Surety's obligation under this Bond.

Signed and sealed this day of, 20___.

IN WITNESS WHEREOF, the above bonded parties have executed this instrument under their several seals this ______ day of ______, 20____, the name and the corporate seal of each corporate party being hereto affixed and these presents being duly signed by its undersigned representative.

IN PRESENCE OF:

	(SEAL)
(Business Name)	()
(Business Address)	
(City/State/Zip)	
(Business Phone)	
	(Business Name) (Business Address) (City/State/Zip) (Business Phone)

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	SHEET NO.	SHEET DESCRIPTION
	L-1	KEYSHEET
	L-2 - L-3	TABULATION OF QUANTITIES
	L-4 - L-5	GENERAL NOTES
	L-6	LEGEND
	L-7	POLE DATA
	L-8	PROJECT LAYOUT
	L-9 - L-16	LIGHTING PLANS
	L-17	LIGHT POLE DETAILS
	L-18	SERVICE POINT DETAILS
	L-19 - L-20	SIDEWALK REPAIR PLAN

CITY OF DORAL, FLORIDA



TRAIL LIGHTING IMPROVEMENT PLANS

GREENWAY TRAIL ALONG NW 50TH ST FROM NW 114TH AVE TO NW 107TH AVE.



GOVERNING STANDARD PLANS: Florida Department of Transportation, FY2024-25 Standard plans for Road and Bridge Construction and applicable Interim Revisions (Irs).

Standard Plans for Road Construction and associated Irs are available at the following website:

http://www.fdot.gov/design/Standardplans.shtm

APPLICABLE IRs: IR536-001-01, IR521-001-01

Standard Plans for Bridge Construction are included in the Structures Plans Component.

GOVERNING STANDARD SPECIFICATIONS: Florida Department of Transportation, FY 2024-25 Standard Specifications for Road and Bridge Construction at the following website: http://www.fdot.gov/programmanagement/Implemented/SpecBooks

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110-4-10	REMOVAL OF EXISTING CONCRETE	SY												
522 - 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY										<u> </u>		
630-2-11	CONDUIT, FURNISH & INSTALL, OPEN TRENCH	LF	60				129		566		484	<u> </u>		
630-2-12	CONDUIT, FURNISH & INSTALL, DIRECTIONAL BORE	LF					134				82	<u> </u>	566	
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24" COVER SIZE	EA	1				3		7		7	<u> </u>	7	
715-1-12	LIGHTING CONDUCTORS, F&I, INSULATED, NO.8 - 6	LF	252									<u> </u>		
715-1-13	LIGHTING CONDUCTORS, F&I, INSULATED, NO.4 - 2	LF					924		2202		2202	<u> </u>	2202	
715-7-21	LOAD CENTER, REWORK, SECONDARY VOLTAGE	EA					1					<u> </u>		
715-69-000	LIGHT POLE COMPLETE, REMOVE POLE AND FOUNDATION	EA	5		8		5					<u> </u>		
715-516-114	LIGHT POLE COMPLETE, DIRECT BURIED, F&I, POLE TOP MOUNT, 14'	EA	5		8		7		7		7	<u> </u>	7	
715-550-000	LIGHT POLE COMPLETE, SOLAR POWERED, REMOVE	EA					3		12		9	<u> </u>	11	
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	REVISIONS
DATE	DESCRIPTION

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JOSEPH M. CALDERON TORRES II, P.E. P.E. LICENSE NUMBER 90625 H.W. LOCHNER, INC. CONSULTING ENGINEERS AND PLANNERS 8750 NW 36th STREET - SUITE 360 MIAMI, FLORIDA - 33178





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522-1 CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	27								27	27	
630-2-11 CONDUIT, FURNISH & INSTALL, OPEN TRENCH	LF										1239	
630-2-12 CONDUIT, FURNISH & INSTALL, DIRECTIONAL BORE	LF	105								105	1453	
635-2-11 PULL & SPLICE BOX, F&I, 13" x 24" COVER SIZE	EA	2								2	34	
715-1-12 LIGHTING CONDUCTORS, F&I, INSULATED, NO.8 - 6	LF										252	
715-1-13 LIGHTING CONDUCTORS, F&I, INSULATED, NO.4 - 2	LF	435								435	10167	
715-7-21 LOAD CENTER, REWORK, SECONDARY VOLTAGE	EA										1	
715-69-000 LIGHT POLE COMPLETE, REMOVE POLE AND FOUNDATION	EA										18	
715-516-114 LIGHT POLE COMPLETE, DIRECT BURIED, F&I, POLE TOP MOUNT, 14'	EA	2								2	50	
715-550-000 LIGHT POLE COMPLETE, SOLAR POWERED, REMOVE	EA	3								3	49	
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GENERAL NOTES

DATE

- 1. CONTRACTOR TO FURNISH AND INSTALL THE ELECTRICAL SYSTEM AS DEPICTED ON ELECTRICAL DRAWINGS.
- 2. THE ELECTRICAL CONTRACTOR TO PROVIDE ALL MATERIALS AND LABOR TO INSTALL THE ELECTRICAL SYSTEMS AS INDICATED ON THE DRAWINGS. IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION. ITEMS NOT SHOWN BUT OBVIOUSLY NECESSARY FOR COMPLETION OF THE WORK SHALL BE INCLUDED.
- 3. THE INSTALLATION SHALL BE IN ACCORDANCE WITH THE 2020 NATIONAL ELECTRICAL CODE, NFPA-70, 2023 FLORIDA BUILDING CODE, EIGHTH EDITION, 2021 NFPA-101, LOCAL CODES, AND OTHER APPLICABLE JURISDICTION CODES.
- 4. THE CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS, INSPECTIONS, AND APPROVALS. ALL WORK SHALL BE DONE BY A LICENSED ELECTRICIAN.
- 5. THE CONTRACTOR TO COORDINATE THE WORK WITH THE ENGINEER AND OWNER.
- 6. THE CONTRACTOR SHALL DETERMINE THE SERVICE REQUIRED DATE FOR THE POWER COMPANY CONFERENCE.
- 7. GROUNDING TO BE INSTALLED TO MEET NEC. ARTICLE 250 REQUIREMENTS. A GROUNDING SYSTEM SHALL NOT EXCEED A 48-HOUR DRY RESISTANCE OF 10 OHMS. ADDITIONAL GROUNDING TO MEET THIS REQUIREMENT SHALL BE INSTALLED AT NO EXTRA COST. GROUNDING AND BONDING CONNECTIONS SHALL NOT BE PAINTED. TESTING SHALL BE PERFORMED IN THE PRESENCE OF THE ENGINEER. AN EQUIPMENT GROUND WIRE SIZED PER NEC SHALL BE PULLED IN ALL ELECTRICAL CONDUITS.
- 8. ALL EQUIPMENT AND MATERIALS SHALL BE NEW, FURNISHED, AND UL LISTED.
- 9. UNDERGROUND CONDUITS SHALL BE SCHEDULE 40 PVC. ALL ABOVE GRADE CONDUITS SHALL BE RIGID GALVANIZED STEEL CONDUIT.
- 10. ELECTRICAL WARNING TAPE SHALL BE PLACED 12 INCHES DEEP ON TOP OF ALL UNDERGROUND TRENCHES.
- 11. ALL TRENCHES SHALL BE FILLED WITH COMPACTED EXISTING CLEAN BACKFILL (98% AASHTO T-99) AND COMPACTED UTILIZING COMPACTION MACHINE AT DEPTH OF NOT MORE THAN 6 INCH LAYERS.
- 12. ALL UNDERGROUND ELECTRICAL CONDUITS SHALL BE A MINIMUM OF 24 INCHES DEEP TO TOP OF BRANCH CIRCUIT CONDUIT AND 36 INCHES DEEP TO THE TOP OF FEEDER CONDUIT FROM FPL TRANSFORMER, UNLESS NOTED OTHERWISE.
- 13. INSTALL PULL BOXES AS NECESSARY TO ACCOMMODATE LONG CABLE PULLS. INSTALL DUCT SEALS AT END OF CONDUITS THAT ENTER PULL BOXES, AND JUNCTION BOXES. LEAVE A MINIMUM OF 6 INCH SPACE BETWEEN WIRES AND PULL BOX COVERS.
- 14. THE DRAWINGS ARE NOT INTENDED TO SHOW THE EXACT LOCATION OF CONDUIT RUNS. TRENCHING SHALL BE COORDINATED WITH OTHER TRADES SUCH AS LANDSCAPING, AND OTHER UNDERGROUND UTILITIES SO THAT CONFLICTS ARE AVOIDED PRIOR TO INSTALLATION. ADDITIONALLY, MAINTAIN ENOUGH DISTANCE FROM EXISTING TREES AND LANDSCAPE AREAS SUCH THAT MINIMUM DAMAGE IS DONE TO EXISTING ROOTS.
- 15. THE CONTRACTOR IS RESPONSIBLE TO TEST ALL SYSTEMS AND REPAIR OR REPLACE ALL DEFECTIVE WORK TO THE SATISFACTION OF THE ENGINEER AND OWNER.
- 16. TYPE WRITTEN PANEL SCHEDULE SHALL BE INSTALLED IN THE PANEL BOARDS. ALL CIRCUITS SHALL BE IDENTIFIED IN PULL BOXES, PANEL BOARDS AND CONTRACTORS. IDENTIFICATION SHALL MATCH PANEL BOARD SCHEDULE.
- 17. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE EXISTING CONDITIONS AND THE COORDINATION OF THE WORK, ANY OMISSIONS OR CONFLICT IN THE WORKING DRAWINGS OR BETWEEN THE DRAWINGS AND EXISTING FIELD CONDITIONS WHICH MAY INTERFERE WITH THE PROPER EXECUTION AND COMPLETION OF THE DESCRIBED WORK SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK.
- 18. TWO WEEKS AFTER JOB COMPLETION, THE CONTRACTOR SHALL PERFORM ONE NIGHT CHECK OF LIGHTS WITH ENGINEER. REPAIR OR REPLACE NON-FUNCTIONING LUMINARIES AND NOTIFY THE CITY.
- 19. CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO PREVENT OBJECTIONABLE BLOWING OR DRIFTING OF DIRT, SOIL, OR OTHER DEBRIS DURING EXCAVATION AND INSTALLATION OF ELECTRICAL CONDUIT.
- 20. THE CONTRACTOR SHALL LEAVE THE SITE CLEAN AND ORDERLY AT THE END OF EACH WORKDAY
- 21. ALL MATERIALS AND EQUIPMENT SHALL BE STORED AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS UNLESS OTHERWISE NOTED.
- 22. CONTRACTOR TO SUBMIT SHOP DRAWINGS & CATALOG NUMBERS FOR ALL NEW MATERIAL FOR APPROVAL BY THE ELECTRICAL CONSULTANT PRIOR TO CONSTRUCTION.
- 23. EVERY ATTEMPT SHALL BE MADE TO PROTECT ALL EQUIPMENT & MATERIAL FROM ANY DAMAGE DURING TRANSPORTATION, LOADING, UNLOADING, AND INSTALLATION AT THE SITE.
- 24. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOST, STOLEN OR DAMAGED EQUIPMENT OR MATERIAL.
- 25. ALL EQUIPMENT INSTALLED OUTSIDE OR EXPOSED TO WEATHER SHALL BE NEMA TYPE 4X UNLESS NOTED OTHERWISE.
- 26. ALL GRASS AREAS AFFECTED BY CONSTRUCTION SHALL BE RE-SODDED TO MATCH THE EXISTING (EX. ZOYSIA, ST. AUGUSTINE).
- 27. THE CONTRACTOR SHALL TAKE SPECIAL NOTE OF SOIL CONDITIONS THROUGHOUT THIS PROJECT. ANY SPECIAL SHORING, SHEETING OR OTHER PROCEDURES NECESSARY TO PROTECT ADJACENT PROPERTY, PUBLIC OR PRIVATE, DURING THE EXCAVATION OF SUBSOIL MATERIAL AND EXFILTRATION TRENCH, OR FILLING OF ANY AREA, OR FOR ANY OPERATION DURING CONSTRUCTION, SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

REVISIONS DESCRIPTION	
	LOCHNER

28. THE CONTRACTOR SHALL RESTRICT PERSONNEL, THE USE OF EQUIPMENT, AND THE STORAGE OF MATERIALS TO AREAS WITHIN THE LIMITS OF CONSTRUCTION AND DESIGNATED STAGING AREA.

- 29. ALL EXCESS MATERIAL IS TO BE REMOVED AND DISPOSED BY THE CONTRACTOR WITHIN 72 HOURS OF BEING DEPOSITED IN THE CONSTRUCTION PROJECT LIMITS. CONTRACTOR SHALL INCUR ALL COSTS FOR DISPOSAL.
- 30. DISPOSAL OF ALL MATERIALS, RUBBISH, AND DEBRIS SHALL BE MADE AT A LEGAL DISPOSAL SITE OR BY OTHER PRIOR APPROVED MANNER. MATERIAL CLEARED FROM THE SITE AND DEPOSITED ON ADJACENT OR NEARBY PROPERTY WILL NOT BE CONSIDERED AS HAVING BEEN DISPOSED OF SATISFACTORILY.
- 31. WHEN DISSIMILAR MATERIAL CONNECTIONS ARE MADE, SUCH AS CONCRETE TO METAL, THE DISSIMILAR MATERIAL SHALL BE SEPARATED BY COATING THE CONTACT SURFACE WITH BITUMASTIC MATERIAL.
- 32. THE INFORMATION PROVIDED IN THESE DRAWINGS IS SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF CONDITIONS WHICH WILL BE ENCOUNTERED DURING THE COURSE OF WORK. THE CONTRACTORS ARE DIRECTED, PRIOR TO BIDDING, TO CONDUCT WHATEVER INVESTIGATIONS THEY DEEM NECESSARY TO ARRIVE AT THEIR OWN CONCLUSIONS REGARDING THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED AND UPON WHICH BIDS WILL BE BASED.
- 33. OPERATING INSTRUCTIONS: UPON COMPLETION OF ALL WORK AND OF ALL TESTS, FURNISH THE NECESSARY SKILLED LABOR AND HELPERS, FOR OPERATING ALL ELECTRICAL SYSTEMS AND EQUIPMENT IN ORDER TO INSTRUCT AND TRAIN THE OWNERS' REPRESENTATIVES IN THE OPERATION AND MAINTENANCE OF ALL EQUIPMENT FURNISHED.
- 34. OPERATION AND MAINTENANCE MANUALS: WITHIN 30 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE, THE CONTRACTOR SHALL PROVIDE TO THE OWNER, OPERATION AND MAINTENANCE MANUALS CONTAINING SUBMITTAL DATA STATING EQUIPMENT RATING, SELECTED OPTIONS AND REQUIRED MAINTENANCE ACTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE THE CONTRACTOR SHALL ALSO PROVIDE THE NAME AND ADDRESS OF AT LEAST ONE QUALIFIED SERVICE AGENCY.
- 35. RECORD DRAWINGS: THE CONTRACTOR IS RESPONSIBLE FOR ALL AS-BUILT DRAWINGS, WHICH SHALL BE PROVIDED TO THE OWNER WITHIN 30 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE. THEY SHALL INCLUDE A ACTUAL CONDUIT RUNS, PULL BOX LOCATIONS, AND ANY AND ALL EQUIPMENT THAT IS PROVIDED AND INSTALLED AS PART OF THIS PROJECT INDICATING AN ACCURATE DEPICTION OF ALL INSTALLED ELECTRICAL EQUIPMENT.
- 36. BRANCH CIRCUIT VOLTAGE DROP: CONTRACTOR TO VERIFY THAT THE VOLTAGE DROP FOR ALL THE BRANCH CIRCUITS DOES NOT EXCEEL 3% OF THE HOMERUN CIRCUITS ORIGINAL VOLTAGE AND TO INCREASE THE WIRE SIZE AS NECESSARY TO ADJUST FOR THE VOLTAGE DROP.
- 37. UNGROUNDED CONDUCTORS SHALL USE BLACK INSULATION, NEUTRAL CONDUCTORS SHALL USE WHITE INSULATION, & GROUNDING CONDUCTORS SHALL USE GREEN INSULATION.
- 38. ALL EXPOSED OR SURFACE MOUNTED CONDUIT SHALL BE RIGID GALVANIZED STEEL CONDUIT.
- 39. ALL CONDUIT THAT WILL REMAIN EMPTY AS SPARES SHALL BE MANDREL TESTED, CLEANED INSIDE AND BOTH ENDS CAPPED. LEAVE CORROSION RESISTANT, PULL/DRAG WIRE AND PLACE DUCT MARKERS, OR PULLBOXES TO MARK THE LOCATION OF THE ENDS OF THE CONDUIT.
- 40. PULL BOXES SHALL BE LOCATED AT ENDS OF CONDUIT CROSSING ROADWAYS, AND AS NECESSARY FOR THE COMPLETION OF THE PROJECT. INSTALL WITH A 12" BED OF PEAROCK OR CRUSHED STONE FOR DRAINAGE.
- 41. THESE PLANS REPRESENT MINIMUM ACCEPTABLE CRITERIA. THE INSPECTION PER THESE DRAWINGS REPRESENT THE MINIMUM BASE ACCEPTANCE.
- 42. TRAIL TO REMAIN ACCESSIBLE TO PEDESTRIANS AT ALL TIMES DURING CONSTRUCTION. PROVIDE A MINIMUM OF 4FT OF UNOBSTRUCTED PATH AROUND WORK ZONES. IF 4FT OF UNOBSTRUCTED PATH CANNOT BE MAINTAINED, PROVIDE TEMPORARY PATH AROUND WORKZONE OR PROVIDE PEDESTRIAN DETOURS AS REQUIRED.

JOSEPH M. CALDERON TORRES II, P.E. P.E. LICENSE NUMBER 90625 H.W. LOCHNER, INC. CONSULTING ENGINEERS AND PLANNERS 8750 NW 36th STREET - SUITE 360 MIAMI, FLORIDA - 33178





SPECIAL NOTES

- 1. THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL UTILITIES BY ELECTRONIC METHODS AND PRE-TRENCHING IN COORDINATION WITH ALL UTILITY COMPANIES, PRIOR TO BEGINNING ANY CONSTRUCTION OPERATIONS.
- 2. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT ALL EXISTING UNDERGROUND AND ABOVE GROUND IMPROVEMENTS SUCH AS CONDUITS, GAS MAINS, SANITARY SEWER LINES, TV CABLE, TELEPHONE, LATERALS, WATER MAINS, POLES, PIPES, CABLES AND OTHER STRUCTURES FROM INJURY, AND IN CASE OF DAMAGE THEY SHALL BE RESTORED WITHOUT COMPENSATION.
- 3. HAND-DIG WHERE THERE IS ANY CONFLICT WITH THE EXISTING UNDERGROUND UTILITIES.
- 4. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT ALL UTILITY COMPANIES FOR LOCATION OF THEIR EXISTING FACILITIES. IT'S THE CONTRACTOR'S RESPONSIBILITY TO LOCATE THESE UTILITIES FOR THE EXACT DEPTH. CONTACT "SUNSHINE"AT 811 PRIOR TO DIGGING.
- 5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL DAMAGES SUSTAINED OR COST INCURRED BECAUSE OF THE CONTRACTOR'S OPERATION IN THE VICINITY OF EXISTING UTILITIES OR STRUCTURES. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY COMPANIES WHEN THEIR EXISTING FACILITIES CONFLICT WITH THE CONSTRUCTION.
- 6. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE TO CONTACT/LOCATE OTHER UTILITIES NOT SUBSCRIBING TO "SUNSHINE".
- 7. CONTRACTOR TO USE CAUTION WHEN WORKING UNDER AND IN THE VICINITY OF OVERHEAD AND UNDERGROUND UTILITIES. PROVIDE A LETTER FROM FPL APPROVING METHOD OF LIGHT POLE INSTALLATION. CONTACT JESSICA SALAZAR AT JESSICA.SALAZAR@FPL.COM PRIOR TO CONSTRUCTION.
- 8. LIGHT POLE USED AS BASIS OF DESIGN IS HAPCO'S ROUND TAPERED ALUMINUM (RTA) POLE, OR APPROVED EQUAL. POLES SHALL BE DIRECT BURIED AS PER MANUFACTURER'S RECOMMENDATION AND DESIGNED FOR A WIND SPEED ACCORDING TO THE 2023 FLORIDA BUILDING CODE.
- 9. CONTRACTOR IS TO REMOVE ALL SHRUBS/BUSHES WITHIN A 4 FT RADIUS OF ALL LIGHT POLE LOCATIONS TO ALLOW ADEQUATE SPACE FOR ACCESS AND MAINTENANCE. TRIM TREE BRANCHES WITHIN 2 FT RADIUS OF ALL LIGHT POLE LOCATIONS. VERIFY OWNERSHIP AND COORDINATE REMOVAL AND TRIMMING OF BUSHES, SHRUBS, AND TREES WITH OWNER. REPLACE ANY REMOVED TREES, BUSHES, AND SHRUBS IN KIND.

10. COORDINATE LIGHT POLE AND LUMINAIRE COLORS WITH THE CITY OF DORAL PRIOR TO PROCUREMENT.

GUARANTEE

THE CONTRACTOR SHALL SUBMIT A WRITTEN GUARANTEE COVERING ALL MATERIALS, WORKMANSHIP, AND EQUIPMENT FOR A PERIOD OF ONE (1) YEAR COMMENCING FROM THE DAY OF FINAL ACCEPTANCE. ANY REPAIRS DUE TO DEFECTIVE WORKMANSHIP OR MATERIALS DURING THE ONE-YEAR PERIOD SHALL BE MADE BY THE CONTRACTOR WITHOUT CHARGE TO THE CITY.

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JOSEPH M. CALDERON TORRES II, P.E. P.E. LICENSE NUMBER 90625 H.W. LOCHNER, INC. CONSULTING ENGINEERS AND PLANNERS 8750 NW 36th STREET - SUITE 360 MIAMI, FLORIDA - 33178





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GENERAL NOTES
SYMBOLS	LEGEND DESCRIPTION		
X	POST TOP LIGHT POLE WITH 86W LED LUMINAIRE DESIGNED FOR 9,209 LUMENS, TYPE IV L 4000K CCT, AND WIRED FOR 240V OPERATION. USE LITHONIA'S RADIAN POST TOP LED WIT. RADPT_LED_P4_40K_PATH_HS. LUMINAIRES TO BE EQUIPPED WITH HOUSE SIDE SHIELDS.	DISTRIBUTION, H CURVE	PEDESTRIAN WAYS AN LIGHTING C
$(\hat{\boldsymbol{y}})$	EXISTING POLE LIGHT TO REMAIN		(GREENWAY AVERAGE MAINTAINED INTENS. UNIFORMITY RATIO AVG./MIN. UNIFORMITY RATIO MAX./MIN.
	EXISTING SOLAR POWERED LIGHT POLE TO BE REMOVED AND DISPOSED.		WIND SPEED
	EXISTING LIGHT POLE AND FOUNDATION TO BE REMOVED AND DISPOSED.		
	PROPOSED LOAD CENTER		
	EXISTING LOAD CENTER		
— • —	2" SCHEDULE 40 PVC CONDUIT, DIRECT BURIED IN OPEN TRENCH, CONTAINING CIRCUIT CO INDICATED ON PLANS. ALL CONDUCTORS SHALL BE STRANDED COPPER WITH THWN-2 INSUL CONDUCTORS SHALL HAVE GREEN COLOR INSULATION. RUN GROUND CONDUCTORS WITH OTH	NDUCTORS AS LATION. GROUND ER CONDUCTORS.	
	2" HDPE CONDUIT INSTALLED BY DIRECTIONAL BORE, CONTAINING CIRCUIT CONDUCTORS AS PLANS. ALL CONDUCTORS SHALL BE STRANDED COPPER WITH THWN-2 INSULATION. GROUND SHALL HAVE GREEN COLOR INSULATION. RUN GROUND CONDUCTORS WITH OTHER CONDUCTO	5 INDICATED ON CONDUCTORS RS.	
	PULL BOX		
DATE	LOCHNER	JUSEPH M. CALDERON TORRES II, P.E. P.E. LICENSE NUMBER 90625 H.W. LOCHNER, INC. CONSULTING ENGINEERS AND PLANNERS 8750 NW 36th STREET - SUITE 360 MIAMI, FLORIDA - 33178	CITY OF DORAL TRAIL LIGHTING IMPROVEMENTS
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ND BICYCLE WAYS CRITERIA Y TRAIL)

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Pole No.	Easting	Northing	Baseline	Station	Offset	Foundation	Length	Arm Rise	Height	Quantity Luminaires	Туре	Make\ Model	Lumens	Type	CCT(K)	(deg)	Luminaire Watts	Luminaire Volts	Center No.	No.	Agency	Pay Item
P-1	859680.756'	540299.086'	NW 50TH ST	23+89	34.50' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	Α	1	Doral	715-516-114
P-2	859751.767'	540299.887'	NW 50TH ST	24+54	31.48' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	A	1	Doral	715-516-114
P-3	859822.102'	540319.396'	NW 50TH ST	25+25	31.21' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	1	Doral	715-516-114
P-4	859891.097'	540320.206'	NW 50TH ST	25+96	12.23' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	1	Doral	715-516-114
P-5	859962.092'	540321.016'	NW 50TH ST	26+65	11.94' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	1	Doral	715-516-114
P-6	860034.084'	540320.675	NW 50TH ST	27+36	11.67' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	1	Doral	715-516-114
P-7	860104.075'	540319.682'	NW 50TH ST	28+08	12.55' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	1	Doral	715-516-114
P-8	860174.073	540319.189'	NW 50TH ST	28+78	14.07' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	1	Doral	715-516-114
P-9	860245.070'	540319.462'	NW 50TH ST	29+48	15.09' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	1	Doral	715-516-114
P-10	860315.062'	540321.415'	NW 50TH ST	30+19	15.35' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	1	Doral	715-516-114
P-11	860377.052'	540322.547'	NW 50TH ST	30+89	13.93' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	1	Doral	715-516-114
P-12	860447.231'	540322.759'	NW 50TH ST	31+51	13.26' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	1	Doral	715-516-114
P-13	860526.616'	540325.916'	NW 50TH ST	32+21	13.58' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	1	Doral	715-516-114
P-14	860598.107'	540304.621'	NW 50TH ST	33+00	11.02' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	1	Doral	715-516-114
P-15	860666.038'	540297.435'	NW 50TH ST	33+72	32.86' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	1	Doral	715-516-114
P-16	860728.271'	540296.598'	NW 50TH ST	34+40	40.55' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	1	Doral	715-516-114
P-17	860795.285'	540303.300'	NW 50TH ST	35+02	41.86' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	1	Doral	715-516-114
P-18	860938.713'	540302.066'	NW 50TH ST	35+69	35.56' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	1	Doral	715-516-114
P-19	861017.687'	540298.398'	NW 50TH ST	37+12	37.97' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	2	Doral	715-516-114
P-20	861097.150'	540305.422'	NW 50TH ST	37+91	42.22' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	2	Doral	715-516-114
P-21	861176.584'	540299.539'	NW 50TH ST	38+71	35.79' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	2	Doral	715-516-114
P-22	861256.186'	540304.820'	NW 50TH ST	39+50	42.26' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	2	Doral	715-516-114
P-23	861335.760'	540299.659'	NW 50TH ST	40+30	37.57' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	2	Doral	715-516-114
P-24	861417.975'	540299.276'	NW 50TH ST	41+09	43.32' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	2	Doral	715-516-114
P-25	861495.220'	540307.603'	NW 50TH ST	41+92	44.31' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	2	Doral	715-516-114
P-26	861574.744'	540302.349'	NW 50TH ST	42+69	36.56' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	2	Doral	715-516-114
P-27	861656.573'	540301.391'	NW 50TH ST	43+48	42.40' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	2	Doral	715-516-114
P-28	861728.242'	540311.538'	NW 50TH ST	44+30	43.96' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	2	Doral	715-516-114
P-29	861813.166'	540304.906'	NW 50TH ST	45+02	34.35' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	2	Doral	715-516-114
P-30	861892.465'	540313.685'	NW 50TH ST	45+87	41.61' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	2	Doral	715-516-114
P-31	861956.641'	540314.375'	NW 50TH ST	46+66	33.42' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	2	Doral	715-516-114
P-32	862034.169'	540305.350'	NW 50TH ST	47+30	33.20' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	2	Doral	715-516-114
P-33	862105.974'	540316.728'	NW 50TH ST	48+08	42.80' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	2	Doral	715-516-114
P-34	862225.116'	540335.225	NW 50TH ST	48+80	31.96' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	2	Doral	715-516-114
P-35	862305.114'	540335.838'	NW 50TH ST	49+99	14.34' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	2	Doral	715-516-114
P-36	862385.111'	540336.425'	NW 50TH ST	50+79	14.32' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	2	Doral	715-516-114
P-37	862465.109'	540337.012'	NW 50TH ST	51+59	14.33' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	2	Doral	715-516-114
P-38	862545.107'	540337.599'	NW 50TH ST	52+39	14.34' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	A	2	Doral	715-516-114
P-39	862625.105'	540338.186'	NW 50TH ST	53+19	14.34' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	2	Doral	715-516-114
P-40	862705.103'	540338.77 <i>3</i> '	NW 50TH ST	53+99	14.35' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	2	Doral	715-516-114
P-41	862785.100'	540339.360'	NW 50TH ST	54+79	14.35' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	А	2	Doral	715-516-114
P-42	862865.098'	540339.947'	NW 50TH ST	55+59	14.36' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	A	2	Doral	715-516-114
P-43	862945.096'	540340.518'	NW 50TH ST	56+39	14.34' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	A	2	Doral	715-516-114
P-44	862970.327'	540340.687'	NW 50TH ST	57+19	14.39' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	A	2	Doral	715-516-114
P-45	863025.094'	540341.074	NW 50TH ST	57+99	14.42' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	A	2	Doral	715-516-114
P-46	863105.090'	540341.724'	NW 50TH ST	58+79	14.37' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	A	2	Doral	715-516-114
P-47	863185.092'	540341.735	NW 50TH ST	59+59	14.95' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	A	2	Doral	715-516-114
P-48	863265.089'	540342.348'	NW 50TH ST	60+39	14.93' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	A	2	Doral	715-516-114
P-49	863345.084'	540343.250'	NW 50TH ST	61+19	14.65' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	A	2	Doral	715-516-114
P-50	863425.077'	540344.431'	NW 50TH ST	61+99	14.03' RT	DIRECT	N/A	N/A	14'	1	POST TOP	RADPT	9209	IV	4000K	0	86	240V	A	2	Doral	715-516-114

DATE	R E V I S I O N S DESCRIPTION	IOCHNER	JOSEPH M. CALDERON TORRES II, P.E. P.E. LICENSE NUMBER 90625 H.W. LOCHNER, INC. CONSULTING ENGINEERS AND PLANNERS	CITY OF DORA
		LOCINLA	8750 NW 36th STREET - SUITE 360 MIAMI, FLORIDA - 33178	IMPROVEMENT



POLE DATA

:\MIA\PRJ\000021994\700	_CADD\Lighting\Greenway	Trail\PLDTLT01.dw

Approved as Noted

smithb PUBLIC WORKS PLANS REVIEWER



 REVISIONS

 DATE

 DESCRIPTION

LOCHNER

JOSEPH M. CALDERON TORRES II, P.E. P.E. LICENSE NUMBER 90625 H.W. LOCHNER, INC. CONSULTING ENGINEERS AND PLANNERS 8750 NW 36th STREET - SUITE 360 MIAMI, FLORIDA - 33178

CITY OF DORAL TRAIL LIGHTING IMPROVEMENTS







I:\MIA\PRJ\000021994\700_CADD\Lighting\Greenway Trail\PLANLT01-PRJLAYOUT01-GREENWAY.dwg



I:\MIA\PRJ\000021994\700_CADD\Lighting\Greenway Trail\PLANLT01-50TH ST.dwg





I:\MIA\PRJ\000021994\700_CADD\Lighting\Greenway Trail\PLANLT01-50TH ST.dwg



I:\MIA\PRJ\000021994\700_CADD\Lighting\Greenway Trail\PLANLT01-50TH ST.dwg



I:\MIA\PRJ\000021994\700_CADD\Lighting\Greenway Trail\PLANLT01-50TH ST.dwg



I:\MIA\PRJ\000021994\700_CADD\Lighting\Greenway Trail\PLANLT01-50TH ST.dwg



I:\MIA\PRJ\000021994\700_CADD\Lighting\Greenway Trail\PLANLT01-50TH ST.dwg







SHEET

NO.

L-16

I:\MIA\PRJ\000021994\700_CADD\Lighting\Greenway Trail\PLANLT01-50TH ST.dwg





EXISTING LOAD CENTER "A" PHOTO (TOP PORTION)

LOCHNER

EXISTING LOAD CENTER "A" PHOTO (BOTTOM PORTION)

VOLTAC	Æ:	240	V, 1PH, 3W (240/120VAC)							_			
RATING	с	60	AMPS		EXI	ST	ING	PANE	LA				
FEEDEF	२ :	4	AWG		1.11					1			
CKT	AMPS	POLE	DESCRIPTION	VOLT-AN	MPERES	L1	L2	VOLTAN	IPERES	DESCRIPTION	POLE	AMPS	CKT
1	30	2		968		Х		-		SPD	2	30	2
3		-			968		Х		-	51 5	~	00	4
5	20	2		1720		Х				SPACE			6
7	30	2	LIGHTING (A-2)		1720		X			SPACE			8
9			SPACE			Х				SPACE			10
11			SPACE				Х			SPACE			12
13		SPACE				Х				SPACE			14
15			SPACE				SPACE			16			
17			SPACE			Х				SPACE			18
<mark>1</mark> 9			SPACE				X			SPACE			20
21			SPACE			Х				SPACE			22
23			SPACE				X			SPACE			24
25			SPACE			Х				SPACE			26
27			SPACE				X			SPACE			28
29			SPACE			Х				SPACE			30
	· · · · ·		TOTALS	2688	2688	S	/N	0	0	TOTALS			
	BUS	1	2688	VA				-		6.72	KVA D	EMAND	
	BUS	2	2688	VΔ						28.0		MPS	
	DUU	-	2000	VA									
										00	MAINS	RATING	
CONNE	CTED LO	AD	5376	VA									
25% OF	CONTIN	UOUS I	LOAD 1344	VA									
TOTAL I	OAD		6720	VA									

PANEL SCHEDULE

REVISIONS DESCRIPTION

DATE

JOSEPH M. CALDERON TORRES II, P.E. P.E. LICENSE NUMBER 90625 CITY OF DORAL H.W. LOCHNER, INC. CONSULTING ENGINEERS AND PLANNERS 8750 NW 36th STREET - SUITE 360 MIAMI, FLORIDA - 33178 TRAIL LIGHTING *IMPROVEMENTS*



- EXISTING GROUND BAR

SERVICE POINT DETAIL

SHEET NO. L-18

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CITY OF DORAL Public Works Department Permit # PWUT-2406-0030 RECIEVED: 06/21/2024

<u>LEGEND</u>



Approved by Luis E. Consue 06/27/2024 2:55:00	gra PM
CANCIDE THE DEDATE DI ANI	SHEET NO.
ONCREIE REPAIR PLAN	L-20

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LIGHTING DESIGN ANALYSIS REPORT

CITY OF DORAL TRAIL LIGHTING IMPROVEMENTS

GREENWAY TRAIL ALONG NW 50TH ST FROM NW 114TH AVE TO NW 107TH AVE

PERMIT SET

Prepared For: City of Doral 8401 NW 53rd Terrace Doral, FL 33166



May 28, 2024



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Appendix C. FIXTURE CATALOG CUT SHEETS	C-1
	Project Description Existing Conditions Roadway Lighting Design Criteria Design Methodology Photometric Analysis Luminaires Load Analysis Voltage Drop Calculations Conclusions Appendix A. LIGHTING PHOTOMETRICS Appendix B. VOLTAGE DROP CALCULATIONS Appendix C. FIXTURE CATALOG CUT SHEETS

1.0 Project Description

The City of Doral (The City) has asked H.W. Lochner Inc. (Lochner) to design the lighting along several shared use path trails throughout Doral totaling to approximately 4 miles. The goal for these improvements is to enhance pedestrian safety and security, while providing an aesthetically pleasing, energy efficient pedestrian lighting system at the locations listed below and highlighted in Figure 1.

- <u>Turnpike Trail</u> along NW 117th Avenue from NW 25th Street to NW 58th Street
- Dressel's Dairy Trail along NW 58th Street from NW 117th Avenue to NW 107th Avenue
- ➤ <u>Greenway Trail</u> from NW 114th Avenue to NW 107th Avenue
- ▶ <u>Beacon Trail</u> along NW 25th Street from NW 117th Avenue to west of NW 107th Avenue



Figure 1: This image highlights the trail areas throughout The City of Doral with proposed lighting.

The purpose for this report is to document the analysis, methodology, and conclusions for the lighting system design for the Greenway Trail. Photometric analysis will be performed to meet the AASHTO Roadway Lighting Design Guidelines (GL-7). The Lighting Design Analysis Report includes, photometric point-to-point calculations and voltage drop calculations.

2.0 Existing Conditions

A walkthrough of Greenway has been performed to assess the existing conditions such as overhead utility lines, location of existing and proposed light poles, adjacent residential properties, vegetation which may obscure light, and environmental issues.

Greenway Trail runs along NW 50th St and runs East/West. The majority of the trail is asphalt and is 10ft wide. There is existing 14ft, hardwired pedestrian lighting along Greenway trail from NW 114th Ave to NW 112th Ave. The light pole, luminaire, and foundation in this area is to be removed. The existing conduit, conductors, and pull boxes are to remain and be reused. There is existing direct buried, 10ft solar powered pedestrian lighting to be removed along Greenway trail from NW 112th Ave to NW 107th Ave. Toward the end of the trail, West of NW 107th Ave, the trail transitions to a 5ft concrete sidewalk. Existing lighting in this area is located within the concrete.

3.0 Roadway Lighting Design Criteria

3.1 Design Methodology

The AASHTO Roadway Lighting Design Guide, Seventh Edition describes two methods, illuminance and luminance, for performing photometric calculations. The illuminance method is used in this report and is congruent with FDOT methods. The level, and uniformity of a lighting system depends on several factors, including the lumen output of the light source, luminaire distribution, mounting height, luminaire position/setback, pole spacing and pole arrangement. Below is a description of terms needed to better understand the design criteria:

- **average initial illuminance** the average level of horizontal illuminance on the pavement area of a traveled way at the time the lighting system is installed (when lamps are new and luminaires are clean); expressed in average footcandles (fc) for the pavement area.
- **average maintained illuminance** the average level of horizontal illuminance on the roadway pavement when the output of the lamp and luminaire is diminished by the maintenance factors (light loss factors); expressed in average footcandles (fc) for the pavement area.
- **uniformity ratio** falls under two categories and is the ratio between the maximum to minimum points and the ratio between the average to minimum points.

Illumination engineering software, AGi32 Version 21.2 was used to perform photometric calculations to facilitate choosing the correct lumen output, distribution, mounting height, position/setback, pole spacing, and pole arrangement for the most cost effective and efficient lighting system. Additionally, RADPT Path lighting luminaire was utilized as a basis of design to match adjacent trail lighting at Trails and Tails Park.

Trails not adjacent to a state road will use the AASHTO Roadway Lighting Design Guideline (GL-7) lighting criteria. The AASHTO criteria utilizes average maintained illuminance and accounts for light loss factors. A light loss factor of 0.82 was utilized per manufacturer recommendation based on a design life of 100,000 hours. Please refer to the following table for lighting design criteria:

Illumination Design Criteria										
Roadway and Walkway Classification	Average Illuminance (fc)	Illuminance Uniformity Ratio								
		(Avg./Min.)	(Max./Min.)							
AASHTO GL-7	7 Illuminance Design	Values								
Pedestrian Ways and Bicycle Way/Trails	2.01	3:1 or Less	N/A							
¹ Average maintained illuminance value.										

Table 1. Shows the design criteria used for determining the lighting system.

The proposed lighting was designed with the following considerations and goals:

- improve public safety and security
- provide day and nighttime aesthetics
- consider environmental issues
- identify the nature of the site (residential, commercial, or industrial)
- use energy efficiently
- control sky glow and light trespass
- standardizing design choices
- simplify maintenance

3.2 Photometric Analysis

Illumination engineering software, AGI32 Version 21.2 was used to perform the Photometric Analysis. The photometric values calculated include the average illuminance in horizontal foot candles and illumination uniformity ratios. The calculation grid for the intersection is bound between the front and back of each shared use path. Calculation points in the grid are spaced every 5 feet longitudinally and 5 feet transversely. The resulting model indicates that the horizontal illumination levels and uniformity meet the design criteria. The results of the lighting photometric calculations are provided in **Appendix A**.

3.3 Luminaires

Radeon Post top 86W LED luminaires were utilized as the basis of design for the photometric analysis of the trails. These luminaires match the existing luminaires recently installed at the Trails and Tails park. All lights have a type IV (PATH) type distribution pattern with a 4000K color temperature and are designed for 240V operation. The catalog number for the proposed pedestrian lighting is: RADPT_LED_P4_40K_MVOLT_RADPT20_HS. All lighting at Greenway trail is proposed at a mounting height of 14ft. Between 112th and 114th Ave, proposed lighting in this area were located adjacent to existing lighting to be able to utilize the same pull boxes, conduit and conductors where possible. Lighting fixture catalog cut sheets are included in **Appendix C**.

4.0 Load Analysis

Load analysis was performed to determine the conductor and circuit breaker sizes to provide a maximum branch loading percentage of 80% or less as required by the National Electrical Code (NEC). Per FY2024-25 FDOT Standard Specifications, the minimum service and circuit conductor size shall not be smaller than No. 6 AWG. The calculated demand load shown in the panelboard schedule is assumed to be the highest loading during normal operations of the roadway lighting system. The system is considered to be continuously loaded.

5.0 Voltage Drop Calculations

Voltage drop calculations were performed for lighting connected to existing load center A. Voltage drop calculations were performed for a combination of service feeders and branch circuits. Per the 2024 FDM, and the National Electrical Code, the acceptable total system voltage drop is 5% or less. The voltage drop was measured from the point of service to the last load on each branch circuit. The results of the voltage drop calculations are provided in **Appendix B.** Branch conductors and service feeders are adequately sized to maintain the voltage drop of the system below 5%.

6.0 Conclusions

- Horizontal illuminance and uniformity criteria requirements as defined in AASHTO GL-7 have been met within the project limits.
- Service and branch circuit conductors are adequately sized to have a maximum loading percentage below 80% and a voltage drop of 5% or less for Greenway Trail Lighting.

Appendix A. LIGHTING PHOTOMETRICS

	NW	50	ST		
				3-2	3-3

- 1			-							
Symbol		Qty	Label	Arrangement	Description	LLF	Luminaire	Luminaire	Arm	IES Class
							Lumens	Watts		
	\odot	50	RADPT P4 40K PATH HS_LLF	Single	RADPT P4 40K PATH HS	0.820	8258	85.6782	0	Type IV

Calculation Summary								
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min	
Greenway Trail 1	Illuminance	FC	2.24	3.34	0.89	2.52	3.75	
Greenway Trail 2	Illuminance	Fc	2.12	3.27	0.73	2.90	4.48	
Greenway Trail 3	Illuminance	Fc	2.04	3.2	0.9	2.27	3.56	





View_1:Greenway Trail 1 - 1

Luminaire Sc	Luminaire Schedule										
Project: Gree	Project: Greenway Trail										
Symbol	Qty	Label	Arrangement	Description	LLF	Luminaire	Luminaire	Arm	IES Class		
						Lumens	Watts				
\odot	50	RADPT P4 40K PATH HS_LLF	Single	RADPT P4 40K PATH HS	0.820	8258	85.6782	0	Type IV		

Calculation Summary	Calculation Summary									
Project: Greenway Trail										
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min			
Greenway Trail 1	Illuminance	Fc	2.24	3.34	0.89	2.52	3.75			
Greenway Trail 2	Illuminance	Fc	2.12	3.27	0.73	2.90	4.48			
Greenway Trail 3	Illuminance	FC	2.04	3.2	0.9	2.27	3.56			





View_1:Greenway Trail 1 - 2

Luminaire Schedule									
Project: Gre	Project: Greenway Trail								
Symbol	Qty	Label	Arrangement	Description	LLF	Luminaire	Luminaire	Arm	IES Class
						Lumens	Watts		
\odot	50	RADPT P4 40K PATH HS_LLF	Single	RADPT P4 40K PATH HS	0.820	8258	85.6782	0	Type IV

Calculation Summary	Calculation Summary									
Project: Greenway Trail										
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min			
Greenway Trail 1	Illuminance	Fc	2.24	3.34	0.89	2.52	3.75			
Greenway Trail 2	Illuminance	Fc	2.12	3.27	0.73	2.90	4.48			
Greenway Trail 3	Illuminance	Fc	2.04	3.2	0.9	2.27	3.56			





View_1:Greenway Trail 1 - 3

Luminaire Sc	Luminaire Schedule										
Project: Gre	Project: Greenway Trail										
Symbol	Qty	Label	Arrangement	Description	LLF	Luminaire	Luminaire	Arm	IES Class		
						Lumens	Watts				
\odot	50	RADPT P4 40K PATH HS_LLF	Single	RADPT P4 40K PATH HS	0.820	8258	85.6782	0	Type IV		

Calculation Summary								
Project: Greenway Trail								
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min	
Greenway Trail 1	Illuminance	Fc	2.24	3.34	0.89	2.52	3.75	
Greenway Trail 2	Illuminance	Fc	2.12	3.27	0.73	2.90	4.48	
Greenway Trail 3	Illuminance	Fc	2.04	3.2	0.9	2.27	3.56	







Luminaire Scl	Luminaire Schedule										
Project: Greenway Trail											
Symbol	Qty	Label	Arrangement	Description	LLF	Luminaire	Luminaire	Arm	IES Class		
						Lumens	Watts				
\odot	50	RADPT P4 40K PATH HS_LLF	Single	RADPT P4 40K PATH HS	0.820	8258	85.6782	0	Type IV		

Calculation Summary	Calculation Summary									
Project: Greenway Trail										
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min			
Greenway Trail 1	Illuminance	Fc	2.24	3.34	0.89	2.52	3.75			
Greenway Trail 2	Illuminance	Fc	2.12	3.27	0.73	2.90	4.48			
Greenway Trail 3	Illuminance	Fc	2.04	3.2	0.9	2.27	3.56			



View_1:Greenway Trail 2 - 2

Luminaire Scl	Luminaire Schedule										
Project: Greenway Trail											
Symbol	Qty	Label	Arrangement	Description	LLF	Luminaire	Luminaire	Arm	IES Class		
						Lumens	Watts				
\odot	50	RADPT P4 40K PATH HS_LLF	Single	RADPT P4 40K PATH HS	0.820	8258	85.6782	0	Type IV		

Calculation Summary	Calculation Summary									
Project: Greenway Trail										
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min			
Greenway Trail 1	Illuminance	Fc	2.24	3.34	0.89	2.52	3.75			
Greenway Trail 2	Illuminance	Fc	2.12	3.27	0.73	2.90	4.48			
Greenway Trail 3	Illuminance	Fc	2.04	3.2	0.9	2.27	3.56			







View_1:Greenway Trail 2 - 3

Luminaire Sc	Luminaire Schedule										
Project: Greenway Trail											
Symbol	Qty	Label	Arrangement	Description	LLF	Luminaire	Luminaire	Arm	IES Class		
						Lumens	Watts				
\odot	50	RADPT P4 40K PATH HS_LLF	Single	RADPT P4 40K PATH HS	0.820	8258	85.6782	0	Type IV		

Calculation Summary	Calculation Summary									
Project: Greenway Trail										
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min			
Greenway Trail 1	Illuminance	Fc	2.24	3.34	0.89	2.52	3.75			
Greenway Trail 2	Illuminance	Fc	2.12	3.27	0.73	2.90	4.48			
Greenway Trail 3	Illuminance	FC	2.04	3.2	0.9	2.27	3.56			





Luminaire Schedule										
Project: Gre	enway !	Frail								
Symbol	Qty	Label	Arrangement	Description	LLF	Luminaire	Luminaire	Arm	IES Class	
						Lumens	Watts			
\odot	50	RADPT P4 40K PATH HS_LLF	Single	RADPT P4 40K PATH HS	0.820	8258	85.6782	0	Type IV	

Calculation Summary							
Project: Greenway Trail							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Greenway Trail 1	Illuminance	Fc	2.24	3.34	0.89	2.52	3.75
Greenway Trail 2	Illuminance	Fc	2.12	3.27	0.73	2.90	4.48
Greenway Trail 3	Illuminance	Fc	2.04	3.2	0.9	2.27	3.56



View_1:Greenway Trail 3 - 2

Luminaire Schedule										
Project: Gre	enway '	Trail								
Symbol	Qty	Label	Arrangement	Description	LLF	Luminaire	Luminaire	Arm	IES Class	
						Lumens	Watts			
\odot	50	RADPT P4 40K PATH HS_LLF	Single	RADPT P4 40K PATH HS	0.820	8258	85.6782	0	Type IV	

Calculation Summary							
Project: Greenway Trail							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Greenway Trail 1	Illuminance	Fc	2.24	3.34	0.89	2.52	3.75
Greenway Trail 2	Illuminance	Fc	2.12	3.27	0.73	2.90	4.48
Greenway Trail 3	Illuminance	Fc	2.04	3.2	0.9	2.27	3.56





View_1:Greenway Trail 3 - 3

Luminaire Schedule										
Project: Gree	enway	Trail								
Symbol	Qty	Label	Arrangement	Description	LLF	Luminaire	Luminaire	Arm	IES Class	
						Lumens	Watts			
\odot	50	RADPT P4 40K PATH HS_LLF	Single	RADPT P4 40K PATH HS	0.820	8258	85.6782	0	Type IV	

Calculation Summary							
Project: Greenway Trail							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Greenway Trail 1	Illuminance	Fc	2.24	3.34	0.89	2.52	3.75
Greenway Trail 2	Illuminance	Fc	2.12	3.27	0.73	2.90	4.48
Greenway Trail 3	Illuminance	FC	2.04	3.2	0.9	2.27	3.56

H Date Comments	evis		ons	
Drawn By: JMC	Checked By: BLM		Date:5/24/2024	Scale: NTS
City of Doral Trail Lighting			Photometric Analvsis	
Pag	e 1	0	of	11



Lumina	ire Location Summary						Luminaire Location Summary		
Lumini	The hocacion bankary	Insertion Po	int					Inserti	ion Point
LumNo	Label	x	y v	мн	Orient	Til+	LumNo Label	x	v v
1	RADPT P4 40K PATH HS LLF	859615 252	- 540295 568	14	99 261	0			
2	RADPT P4 40K PATH HS LLF	860728 281	540296 598	14	274 441	0	_		
3	RADPT P4 40K PATH HS LLF	860666 048	540297 435	14	241 423	0	-		
4	RADET PA AOK PATH HS LLE	861017 625	540298 717	14	101 088	0	_		
5		861176 586	540290.717	11	90 555	0	-		
5	RADET F4 40K FAIL H5_LLF	859680 78	540299.333	14	90.555	0	-		
7	RADIT IT TOK TATH HS_LLE	861335 783	540299.922	14	84 956	0	-		
8	RADIT IT TOK TATH HS_DDF	861417 88	540300 23	14	95 692	0	-		
9	RADET PA AOK PATH HS LLE	859751 777	540300.424	14	90 567	0	_		
10	RADET PA AOK PATH HS LLF	861656 531	540301 764	14	96 424	0	_		
11	RADPT P4 40K PATH HS LLF	860938 713	540302 066	14	79 696	0	_		
12	RADET PA AOK PATH HS LLF	861574 747	540302.392	14	86 598	0	_		
13	RADIT IT TOK TATH HS_LLF	860795 295	540303 3	14	106 694	0	-		
11		860598 117	540304 621	11	90 851	0	-		
15		861256 172	540304.021	11	99 645	0	-		
16	RADET F4 40K FAIL H5_LLF	861813 164	540305 011	14	99.045	0	-		
17	RADIT IT TOK TATH HS_LLE	861097 147	540305 5	14	92 14	0	-		
1.8	RADET PA AOK PATH HS LLF	862034 192	540306 087	14	88 18	0	_		
19	RADET PA AOK PATH HS LLE	861495 233	540307 231	14	92 036	0	_		
20	RADIT IT TOK TATH HS LLE	861728 243	540311 719	14	89 549	0	_		
21	RADIT IT TOK TATH HS_LLF	861892 455	540313 851	14	93 598	0	-		
22	RADET PA AOK PATH HS LLE	861956 773	540314 865	14	74 89	0	-		
22	RADIT IT TOK TATH HS_LLF	862106 039	540316 349	14	99 718	0	-		
2.5	RADET PA AOK PATH HS LLF	860174 083	540319 189	14	269 573	0	_		
25	RADIT IT TOK TATH HS LLE	859822 112	540319 396	14	270 703	0	_		
26	RADPT P4 40K PATH HS LLF	860245 08	540319 462	14	270.703	0	_		
27	RADPT P4 40K PATH HS LLF	860104.085	540319.682	14	269.573	0	_		
28	RADPT P4 40K PATH HS LLF	859891.107	540320.206	14	270.703	0	_		
29	RADPT P4 40K PATH HS LLF	860034.094	540320.673	14	268.936	0	-		
30	RADPT P4 40K PATH HS LLF	859962.102	540321.016	14	270.703	0	-		
31	RADPT P4 40K PATH HS LLF	860315.072	540321.415	14	270.983	0	-		
32	RADPT P4 40K PATH HS LLF	860377.062	540322.547	14	270.983	0	-		
33	RADPT P4 40K PATH HS LLF	860447.241	540322.759	14	271.507	0	_		
34	RADPT P4 40K PATH HS LLF	860526.626	540325.916	14	271.459	0	-		
35	RADPT P4 40K PATH HS LLF	862225.116	540335.225	14	90.469	0	-		
36	RADPT P4 40K PATH HS LLF	862305.114	540335.838	14	90.42	0			
37	RADPT P4 40K PATH HS LLF	862385.111	540336.425	14	90.42	0			
38	RADPT P4 40K PATH HS LLF	862465.109	540337.012	14	90.42	0			
39	RADPT P4 40K PATH HS LLF	862545.107	540337.599	14	90.42	0	-		
40	RADPT P4 40K PATH HS LLF	862625.105	540338.186	14	90.42	0	_		
41	RADPT P4 40K PATH HS LLF	862705.103	540338.773	14	90.42	0	-		
42	RADPT P4 40K PATH HS LLF	862785.1	540339.36	14	90.42	0	-		
43	RADPT P4 40K PATH HS LLF	862865.098	540339.947	14	90.42	0	_		
44	RADPT P4 40K PATH HS_LLF	862945.096	540340.518	14	90.398	0			
45	RADPT P4 40K PATH HS_LLF	863025.094	540341.074	14	90.398	0			
46	RADPT P4 40K PATH HS_LLF	863105.09	540341.724	14	90.876	0			
47	RADPT P4 40K PATH HS_LLF	863185.087	540342.37	14	90.411	0			
48	RADPT P4 40K PATH HS_LLF	863265.084	540342.983	14	90.683	0			
49	RADPT P4 40K PATH HS_LLF	863345.079	540343.885	14	90.391	0			
50	RADPT P4 40K PATH HS_LLF	863425.077	540344.431	14	90.391	0			

Z	Orient	Tilt

	B # Date Comments	vis		ons		
	Drawn By: JMC	Checked Bv: BLM		Date:5/24/2024	Scale: NTS	
Citri of Darrel Tracil I Jabrica	ulty of Doral Trail Lignung			Photometric Analvsis		
F	ag	e 1	1	of	11	

Appendix B. VOLTAGE DROP CALCULATIONS

SINGLE PHASE CIRCUIT VOLTAGE DROP CALCULATIONS PROJECT NAME: City of Doral Trail Lighting Improvements LOCATION DESCRIPTION: Voltage Drop - LC-A, CKT No.2 OVERALL CIRCUIT VOLTAGE DROP (V) = 10.27 V OVERALL CIRCUIT VOLTAGE DROP (%) = 4.28% PASS PASS/FAIL THRESHOLD (%) = 5% TOTAL CIRCUIT AMPS = 12.74 A OPERATING VOLTAGE = 240 V OPERATING pf = 0.85 IMPEDANCE WIRE SIZE (AWG) AMPS **PER 1000FT** DISTANCE **V DROP** WATTAGE LOCATION 19.91 A 0.29 Ω 10 ft Service Point to LC-A 0.12 V 4 86 W 4 12.74 A 0.29 Ω 134 ft 0.99 V 4 12.34 A 0.29 Ω 79 ft 0.57 V 86 W 0.29 Ω 86 W 4 11.94 A 80 ft 0.55 V 11.55 A 0.29 Ω 79 ft 0.53 V 86 W 4 4 11.15 A 0.29 Ω 80 ft 0.52 V 86 W 4 10.75 A 0.29 Ω 79 ft 0.49 V 86 W 10.35 A 0.29 Ω 86 W 4 83 ft 0.50 V 9.95 A 0.29 Ω 77 ft 0.44 V 86 W 4 4 9.56 A 0.29 Ω 79 ft 0.44 V 86 W 0.29 Ω 4 9.16 A 82 ft 0.44 V 86 W 0.29 Ω 0.37 V 4 8.76 A 72 ft 86 W 4 8.36 A 0.29 Ω 85 ft 0.41 V 86 W 4 7.96 A 0.29 Ω 79 ft 0.36 V 86 W 86 W 4 0.29 Ω 7.56 A 64 ft 0.28 V 4 0.29 Ω 86 W 7.17 A 78 ft 0.32 V 4 0.29 Ω 0.28 V 86 W 6.77 A 72 ft 4 6.37 A 0.29 Ω 119 ft 0.44 V 86 W 0.29 Ω 86 W 4 5.97 A 80 ft 0.28 V 5.57 A 0.29 Ω 80 ft 0.26 V 86 W 4 4 5.18 A 0.29 Ω 80 ft 0.24 V 86 W 4 4.78 A 0.29 Ω 80 ft 0.22 V 86 W 4.38 A 0.29 Ω 80 ft 86 W 4 0.20 V 3.98 A 0.29 Ω 80 ft 86 W 4 0.18 V 4 3.58 A 0.29 Ω 80 ft 0.17 V 86 W 4 3.19 A 0.29 Ω 80 ft 0.15 V 86 W 4 2.79 A 0.29 Ω 80 ft 0.13 V 86 W 4 2.39 A 0.29 Ω 80 ft 0.11 V 86 W 4 1.99 A 0.29 Ω 80 ft 0.09 V 86 W 0.29 Ω 0.07 V 86 W 4 1.59 A 80 ft 0.29 Ω 0.06 V 86 W 4 1.19 A 80 ft 0.29 Ω 0.04 V 86 W 4 0.80 A 80 ft 4 0.40 A 0.29 Ω 80 ft 0.02 V 86 W Note 1: Luminaire wattages and loads at 240V and 0.9 pf. Wattage Amps 86 W 0.40 A Note 2: Voltage Drop (VD) Equation: VD = (2 x IMPEDANCEx DISTANCE/1000ft x AMPS) IMPEDANCE is derived from Table 9, NEC 2020, Using PVC Conduits, Copper Conductors OVERALL CIRCUIT VOLTAGE DROP (V) = 10.27

Appendix C. FIXTURE CATALOG CUT SHEETS






Specifications

EPA:	1.02 ft² (0.105 m²)
Length:	24" (61cm)
Width:	24" (61cm)
H1 Luminaire Height:	4" (10.16cm)
H2 Luminaire Height:	26" (66.04cm)
Weight:	38lbs (17.24Kg)

Ordering Information



Catalog Number Notes Type

Introduction

The architecturally-inspired shape of the RADEAN™ post top area luminaire embodies the grace and strength of the RADEAN family. The twin copper-core cast aluminum arms support the slender superstructure, creating a beautiful sculpture by day transforming into a beacon of comfort by night. Triangular arms redirect reflection maintaining its visually quiet appearance. With sleek lines and simple silhouettes, these LED luminaires use specialized lighting and visual comfort to transform common areas like courtyards, outdoor retail locations, universities and corporate campuses into pedestrian-friendly nighttime environments.

eries Per	erformance package	Color temperature	Distribution	Voltage	Mounting (required)

EXAMPLE: RADPT LED P3 30K SYM MVOLT PT4 PE DNAXD

Series	Performance packa	ge Color temperature	Distribution	Voltage	Mounting (required)
RADPT LED	 P1 3,000 Lumens P2 5,000 Lumens P3 7,000 Lumens P4 10,000 Lumens P5 15,000 Lumens 	27K 2700K 30K 3000K 35K 3500K 40K 4000K 50K 5000K	SYM Symmetric type V ASY Asymmetric type IV PATH Pathway Type III	MVOLT ² 277 ² 120 ² 347 208 ² 480 240 ² 240 ²	PT43Slips inside a 4" OD round metal poleRADPT20Slips over a 2 3/8" diameter tenon (4" tall tenon required)RADPT25Slips over a 2 7/8" diameter tenon (4" tall tenon required)
Control options		Other options	Fin	nish (required)	

Shipped	installed	SF	Single Fuse ²	Ship	oped installed	DDBXD	Dark bronze	DDBTXD	Textured dark bronze
NLTAIR2	nLight AIR 2.0 enabled ⁴	DF	Double Fuse ²	HS	Houseside shield 6	DBLXD	Black	DBLBXD	Textured black
PE	Button photocell 4	R90	Rotated optics 5			DNAXD	Natural aluminum	DNATXD	Textured natural aluminum
FAO	Field adjustable output 4					DWHXD	White	DWHGXD	Textured white



Ordering Information

Accessories
Ordered and shipped separately

RADHS	Houseside shield (shield is white)
RADCS DDBXD U	Decorative clamshell base for 4" RSS pole
	(specify finish)

RADFBC DDBXD U Full base cover for 4" RSS pole (specify finish) For more control options, visit DTL and ROAM online.

NOTES

- 2700K and 3500K may require extended lead-times. 1
- MVOLT driver operates on any line voltage from 120-277V (50/60 Hz). Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option. Requires nominal 4" round straight metal pole. NLTAIR2 not available with PE or FAO. Must link to external nLight Air network. Does not include occupancy sensor. For more information refer to <u>rSBOR</u> pole mount sensor. 2
- 3 4
- 5 For left rotation, select R90 and rotate luminaire 180° on pole.
- Also available as a separate accessory; see Accessories information at left. HS not available with R90. Shield is field rotatable shield in 180° increments. 6

Mounting



Recommended Poles for use with RADEAN RA	DPT LED Luminaires.	
Description	For luminaires	Used with Mounting
10' Round Straight Steel - 4" O.D Open Top	RADPT LED	PT4
12' Round Straight Steel - 4" O.D Open Top	RADPT LED	PT4
14' Round Straight Steel - 4" O.D Open Top	RADPT LED	PT4
16' Round Straight Steel - 4" O.D Open Top	RADPT LED	PT4
18' Round Straight Steel - 4" O.D Open Top	RADPT LED	PT4
20' Round Straight Steel - 4" O.D Open Top	RADPT LED	PT4
25' Round Straight Steel - 4" O.D Open Top	RADPT LED	PT4
10' Round Straight Steel - 4" O.D Tenon Top	RADPT LED	RADPT20
12' Round Straight Steel - 4" O.D Tenon Top	RADPT LED	RADPT20
14' Round Straight Steel - 4" O.D Tenon Top	RADPT LED	RADPT20
16' Round Straight Steel - 4" O.D Tenon Top	RADPT LED	RADPT20
18' Round Straight Steel - 4" O.D Tenon Top	RADPT LED	RADPT20
20' Round Straight Steel - 4" O.D Tenon Top	RADPT LED	RADPT20
25' Round Straight Steel - 4" O.D Tenon Top	RADPT LED	RADPT20
	Recommended Poles for use with RADEAN RA Description 10' Round Straight Steel - 4" 0.D Open Top 12' Round Straight Steel - 4" 0.D Open Top 14' Round Straight Steel - 4" 0.D Open Top 16' Round Straight Steel - 4" 0.D Open Top 16' Round Straight Steel - 4" 0.D Open Top 20' Round Straight Steel - 4" 0.D Open Top 20' Round Straight Steel - 4" 0.D Open Top 25' Round Straight Steel - 4" 0.D Tenon Top 10' Round Straight Steel - 4" 0.D Tenon Top 12' Round Straight Steel - 4" 0.D Tenon Top 12' Round Straight Steel - 4" 0.D Tenon Top 12' Round Straight Steel - 4" 0.D Tenon Top 14' Round Straight Steel - 4" 0.D Tenon Top 16' Round Straight Steel - 4" 0.D Tenon Top 16' Round Straight Steel - 4" 0.D Tenon Top 16' Round Straight Steel - 4" 0.D Tenon Top 16' Round Straight Steel - 4" 0.D Tenon Top 17' Round Straight Steel - 4" 0.D Tenon Top 18' Round Straight Steel - 4" 0.D Tenon Top 19' Round Straight Steel - 4" 0.D Tenon Top 10' Round Straight Steel - 4" 0.D Tenon Top 10' Round Straight Steel - 4" 0.D Tenon Top	Recommended Poles for use with RADEAN RADPT LED Luminaires. Description For luminaires 10' Round Straight Steel - 4" 0.D Open Top RADPT LED 12' Round Straight Steel - 4" 0.D Open Top RADPT LED 14' Round Straight Steel - 4" 0.D Open Top RADPT LED 16' Round Straight Steel - 4" 0.D Open Top RADPT LED 16' Round Straight Steel - 4" 0.D Open Top RADPT LED 20' Round Straight Steel - 4" 0.D Open Top RADPT LED 20' Round Straight Steel - 4" 0.D Open Top RADPT LED 25' Round Straight Steel - 4" 0.D Tenon Top RADPT LED 10' Round Straight Steel - 4" 0.D Tenon Top RADPT LED 12' Round Straight Steel - 4" 0.D Tenon Top RADPT LED 14' Round Straight Steel - 4" 0.D Tenon Top RADPT LED 16' Round Straight Steel - 4" 0.D Tenon Top RADPT LED 16' Round Straight Steel - 4" 0.D Tenon Top RADPT LED 16' Round Straight Steel - 4" 0.D Tenon Top RADPT LED 16' Round Straight Steel - 4" 0.D Tenon Top RADPT LED 17' Round Straight Steel - 4" 0.D Tenon Top RADPT LED 18' Round Straight Steel - 4" 0.D Tenon Top RADPT LED

* Customer must verify pole loading per required design criteria and specified wind speed. Consult pole specification sheet for additional details.

Control Options





Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Contact factory for performance data on any configurations not shown here.

Performance	Input			2	700K			3000K				3500K				4000K					5000K						
Package	Wattage	Distribution	Lumens	В	U	G	LPW	Lumens	В	U	G	LPW	Lumens	В	U	G	LPW	Lumens	В	U	G	LPW	Lumens	В	U	G	LPW
		ASY	2,924	2	1	2	115	3,022	2	2	2	119	3,095	2	2	2	122	3,168	2	2	2	125	3,168	2	2	2	125
P1	25	PATH	2,529	2	1	2	100	2,613	2	2	2	103	2,676	2	2	2	105	2,739	2	2	2	108	2,739	2	2	2	108
		SYM	3,086	2	1	1	121	3,189	2	1	1	126	3,266	2	1	1	129	3,344	2	1	1	132	3,344	2	1	1	132
		ASY	4,521	3	2	3	119	4,672	3	2	3	123	4,785	3	2	3	126	4,898	3	2	3	129	4,898	3	2	3	129
P2	38	PATH	3,909	2	2	2	103	4,040	2	2	2	106	4,137	2	2	2	109	4,235	3	2	3	111	4,235	3	2	3	111
		SYM	4,772	2	2	1	126	4,931	3	2	1	130	5,050	3	2	1	133	5,169	3	2	1	136	5,169	3	2	1	136
		ASY	6,387	3	2	3	119	6,600	3	2	3	123	6,760	3	2	3	126	6,919	3	2	3	129	6,919	3	2	3	129
P3	54	PATH	5,523	3	2	3	103	5,707	3	2	3	106	5,845	3	2	3	109	5,983	3	2	3	112	5,983	3	2	3	112
		SYM	6,741	3	2	2	126	6,966	3	2	2	130	7,135	3	2	2	133	7,303	3	2	2	136	7,303	3	2	2	136
		ASY	10,150	4	2	4	118	10,489	4	2	4	122	10,742	4	2	4	125	10,996	4	2	4	128	10,996	4	2	4	128
P4	86	PATH	8,777	3	2	3	102	9,070	3	2	3	106	9,289	3	2	3	108	9,509	3	2	3	111	9,509	3	2	3	111
		SYM	10,713	3	2	2	125	11,071	3	2	2	129	11,338	3	2	2	132	11,606	3	2	2	135	11,606	3	2	2	135
		ASY	14,250	4	2	4	116	14,724	4	2	4	120	15,081	4	3	4	123	15,437	4	3	4	126	15,437	4	3	4	126
P5	123	PATH	12,322	4	2	4	101	12,733	4	3	4	104	13,041	4	3	4	106	13,349	4	3	4	109	13,349	4	3	4	109
		SYM	15,040	4	2	3	123	15,541	4	2	3	127	15,917	4	2	3	130	16,293	4	2	3	133	16,293	4	2	3	133

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Amb	Ambient							
0°C	32°F	1.06						
5°C	41°F	1.05						
10°C	50°F	1.04						
15°C	59°F	1.02						
20°C	68°F	1.01						
25°C	77°F	1.00						
30°C	86°F	0.99						
35°C	95°F	0.98						
40°C	104°F	0.96						

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the **RADPT LED** platform in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

				-								
Projected LED Lumen Maintenance												
	0	25,000	50,000	100,000								
P1	1.00	0.96	0.91	0.82								
P2	1.00	0.96	0.91	0.82								
P3	1.00	0.96	0.91	0.82								
P4	1.00	0.96	0.91	0.82								
P5	1.00	0.95	0.89	0.78								

Electrical Load

					Current (A)								
Lumen Package	LED Drive Current	Voltage	Wattage		120	208	240	277	347	480			
D1 500	42.0	21.4	Input Current	0.22	0.13	0.11	0.1	0.08	0.06				
P1	500	42.8	21.4	System Watts	26	26	26	27	25	26			
50	770	42	22.1	Input Current	0.33	0.19	0.16	0.14	0.11	0.08			
P2 //0	770	45	33.1	System Watts	39	39	39	39	38	38			
50	1100 43.3	42.2	47.5	Input Current	0.46	0.26	0.23	0.2	0.16	0.12			
c,	1100	45.2	47.5	System Watts	55	54	54	54	54	54			
D4	000	07.2	70.6	Input Current	0.73	0.42	0.36	0.32	0.25	0.18			
r4	900	67.5	/8.6	System Watts	87	86	86	86	86	86			
DE	1250	00.5	110.2	Input Current	1	0.58	0.5	0.44	0.35	0.25			
P5	1250	88.2		System Watts	120	119	119	119	120	120			



To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's RADPT LED homepage.

Isofootcandle plots are considered to be representative of available optical distributions.



*HS not available with R90 **For L90, use R90 and rotate luminaire 180° on pole

FEATURES & SPECIFICATIONS

INTENDED USE

Pedestrian areas such as parks, campuses, pathways, courtyards and pedestrians malls.

Single-piece die-cast aluminum housing with nominal wall thickness of 0.125" on a 6mm thick acrylic waveguide is fully gasketd with a single piece tubular silicone gasket.

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Standard Super Durable colors include dark bronze, black, natural aluminum and white. Available in textured and non-textured finishes.

OPTICS

6MM thick acrylic waveguide with 360° flexible LED board. Available in 2700K, 3000K, 3500K, 4000K and 5000K (80CRI) CCT configurations.

ELECTRICAL

Light engine consists of 96 high-efficacy LEDs mounted to a flexible circuit board and aluminum heat sink, ensuring optimal thermal management and long life. Fixtures ship standard with 0-10v dimming driver. Class 1 electronic driver has a power factor >90%, THD <20%, and has an expected life of 100,000 hours with <1% failure rate. Easily-serviceable 10kV surge protection device meets a minimum Category C Low for operation (per ANSI/IEEE C62.41.2).

INSTALLATION

Standard post-top PT4 type mounting configuration fits into a 4" OD open pole top (round pole only). Alternate tenon (2-3/8" or 2-7/8") mounting also available and require 4" tall tenons.

LISTINGS

CSA certified to U.S. and Canadian standards. Luminaire is IP65 rated. Rated for -40 $^{\circ}\mathrm{C}$ minimum ambient.

DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at <u>www.designlights.org/OPL</u> to confirm which versions are qualified. International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 3000K color or less. U.S. Patent No. D925,088S

BUY AMERICAN ACT

This product is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT regulations. Please refer to <u>www.acuitybrands.com/</u> resources/buy-american for additional information.

WARRANTY

5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/termsand-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

