

SECTION No.: 82020000
Permit No. (s): 2016-L- 491-0001
COUNTY: BROWARD
S.R. No.: 5

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT FOUR
LANDSCAPE MAINTENANCE MEMORANDUM OF AGREEMENT

THIS AGREEMENT, made and entered into this _____ day of _____, 20____, by and between the **STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION**, a component agency of the State of Florida, hereinafter called the DEPARTMENT and the City of Fort Lauderdale, a municipal corporation, existing under the Laws of Florida, hereinafter called the AGENCY.

WITNESSETH:

WHEREAS, the DEPARTMENT has jurisdiction over State Road 5 (US 1) as part of the State Highway System as described in **Exhibit "A"**; and

WHEREAS, the AGENCY seeks to have installed by permit and maintain certain landscape improvements within the right of way of State Road 5 (US 1) as described within **Exhibit "B"**; and

WHEREAS, as part of the continual updating of the State of Florida Highway System, the DEPARTMENT, for the purpose of safety, protection of the investment and other reasons, has constructed and does maintain the highway facility as described in **Exhibit "A"** attached hereto and incorporated by reference herein, within the corporate limits of the AGENCY ; and

WHEREAS, the AGENCY is agreeable to maintaining those landscape improvements within the AGENCY'S limits including plant materials, irrigation system and/or hardscape which may contain specialty surfacing (concrete pavers, color stamped concrete and color stamped asphalt [also known as patterned pavement]) including any other nonstandard hardscape (if applicable), but excluding standard concrete sidewalk, and agree such improvements shall be maintained by periodic mowing, fertilizing, weeding, litter pick-up, pruning, necessary replanting, irrigation repair and/or repair of the median concrete replacements associated with the specialty surfacing (if applicable) as needed; and

WHEREAS, it is the intent of the AGENCY and the DEPARTMENT that the AGENCY shall maintain all right of way within the medians, outside the travelway and improvements made to the travelway that was made at the request of the AGENCY; and

WHEREAS, the parties hereto mutually recognize the need for entering into an Agreement designating and setting forth the responsibilities of each party; and

WHEREAS, the AGENCY by Resolution No. _____ dated _____, 20____, attached hereto and by this reference made a part hereof, desires to enter into this Agreement and authorizes its officers to do so; and

NOW THEREFORE, for and in consideration of the mutual benefits to flow each to the other, the parties covenant and agree as follows:

1. The recitals set forth above are true and correct and are deemed incorporated herein.
2. **INSTALLATION OF FACILITIES**

The AGENCY shall install and agrees to maintain the *landscape improvements* described herein as: plant materials, irrigation and/or hardscape on the highway facilities substantially as specified in plans and specifications hereinafter referred to as the Project (s) and incorporated herein as **Exhibit "B" and "D"**. *Hardscape* shall mean, but not be limited to any site amenities such as landscape accent lighting, bike racks, fountain, tree grates, decorative free standing wall, and/or sidewalk, median and/or roadway specialty surfacing such as concrete pavers, stamped colored concrete and/or stamped colored asphalt (also known as patterned pavement).

- (a) All plant materials shall be installed and maintained in strict accordance with sound nursery practice prescribed by the International Society of Arboriculture (ISA). All plant materials installed shall be Florida #1 or better according to the most current edition of Florida Department of Agriculture, *Florida Grades and Standards for Nursery Stock*; and all trees shall meet Florida Power & Light, *Right Tree, Right Place, South Florida*.
- (b) Trees and palms within the right of way shall be installed and pruned to prevent encroachment to roadways, lateral offsets and sidewalks. Definition of these criteria is included in the most current editions of FDOT standards for design, construction, maintenance, and utility operations on the state highway system and **Exhibit "C"**, the Maintenance Plan.
- (c) Tree and palm pruning shall be supervised by properly trained personnel trained in tree pruning techniques and shall meet the most current standards set forth by the International Society of Arboriculture (ISA) and the American National Standard Institute (ANSI), Part A-300.
- (d) Irrigation installation and maintenance activities shall conform to the standards set forth by the Florida Irrigation Society (FIS) latest edition of FIS, *Standards and Specifications for Turf and Landscape Irrigation Systems*.
- (e) The AGENCY shall provide the FDOT Local Operation Center accurate as-built plans of the irrigation system so if in the future there is a need for the DEPARTMENT to perform work in the area, the system can be accommodated as much as possible. (See paragraph (l) for contact information)
- (f) If it becomes necessary to provide utilities (water/electricity) to the median or side areas, it shall be the AGENCY'S responsibility to obtain a permit for such work through the local Operations Center (see paragraph (l) below) and the AGENCY shall be responsible for all associated fees for the installation and maintenance of these utilities.

- (g) All specialty surfacing shall be installed and maintained in strict accordance with the most current edition of the *Florida Accessibility Code for Building Construction* and the *Interlocking Concrete Pavement institute (ICPI)*.
- (h) All activities, including landscape improvements installation and future maintenance operations performed on State highway right of way, must be in conformity with the most current edition of the *Manual on Uniform Traffic Control (MUTCD)* and *FDOT Design Standards, Index 600 Series, Traffic Control through Work Zones*.
- (i) The most current edition of *FDOT Design Standards, Index 546 (Sight Distance at Intersections)* must be adhered to.
- (j) Lateral Offsets as specified in the *FDOT Plans Preparation Manual, Volume 1, Chapters 2 and 4* must be adhered to.
- (k) Landscape improvements shall not obstruct roadside signs or permitted outdoor advertising signs, (see Florida Administrative Code [F.A.C.] Rule Chapter 14-10.)
- (l) The AGENCY shall provide the local FDOT Operation Center located at Broward Operations, 5548 NW 9th Avenue, Ft. Lauderdale, FL 33309 (954) 776-4300, a twenty-four (24) hour telephone number and the name of a responsible person that the DEPARTMENT may contact. The AGENCY shall notify the local maintenance office forty-eight (48) hours prior to the start of the landscape improvements.
- (m) If there is a need to restrict the normal flow of traffic, it shall be done on non-holiday, weekday off-peak hours (9 AM to 3 PM), and the party performing such work shall give notice to the local law enforcement agency within whose jurisdiction such road is located prior to commencing work on the landscape improvements. The DEPARTMENT'S Operation Center Public Information Officer (see telephone number in Paragraph (l) shall also be notified.
- (n) The AGENCY shall be responsible to clear all utilities within the landscape improvement limits before construction commences.
- (o) The AGENCY shall follow the minimum level of maintenance guidelines as set forth in FDOT'S Rule Chapter 14-40 *Highway Beautification and Landscape Management*, in the *FDOT Guide to Roadside Mowing and Maintenance Management System*, and **Exhibit "C"**, the *Maintenance Plan* for maintenance activities for landscape improvements.

3. MAINTENANCE OF FACILITIES

- A. The AGENCY agrees to maintain the landscape improvements, as existing and those to be installed, within the physical limits described in **Exhibit "A"** and as further described in **Exhibit "B"**. The non-standard improvements within and outside the travelway shall be maintained by the AGENCY regardless if the said improvement was made by the DEPARTMENT, the AGENCY, or others authorized pursuant to Section 7, by periodic mowing, pruning, fertilizing, weeding, curb and

sidewalk edging, litter pickup, necessary replanting, irrigation system repair and/ or repair of any median concrete replacement associated with specialty surfacing (if applicable) following the DEPARTMENT'S landscape safety and maintenance guidelines, **Exhibit "C"**, the Maintenance Plan and **Exhibit "E"** Patterned Pavement Maintenance. The AGENCY'S responsibility for maintenance shall include all landscaped, turfed and hardscape areas on the sidewalk or within the medians and areas outside the travelway to the right of way and/or areas within the travelway containing specialty surfacing. It shall be the responsibility of the AGENCY to restore an unacceptable ride condition of the roadway caused by the differential characteristics of non-standard travelway surfacing (if applicable) on DEPARTMENT right of way within the limits of this Agreement.

- B. Such maintenance to be provided by the AGENCY is specifically set out as follows: to maintain, which means to properly water and fertilize all plant materials; to keep them as free as practicable from disease and harmful insects; to properly mulch the planting beds; to keep the premises free of weeds; to mow the turf to the proper height; to properly prune all plants which at a minimum includes: (1) removing dead or diseased parts of plants, (2) pruning such parts thereof to provide clear visibility to signage, permitted outdoor advertising signs per Florida Statute 479.106 and for those using the roadway and/or sidewalk; (3) preventing any other potential roadway hazards. *Plant materials* shall be those items which would be scientifically classified as plants and including trees, palms, shrubs, groundcover and turf. To maintain also means to remove or replace dead or diseased plant materials in their entirety, or to remove or replace those that fall below original project standards. Palms shall be kept fruit free year round. To maintain also means to keep the header curbs that contain the specialty surfacing treatment in optimum condition. To maintain also means to keep the nonstandard hardscape areas clean, free from weeds and to repair said hardscape as is necessary to prevent a safety hazard. To maintain also means to keep litter removed from the median and areas outside the travel way to the right of way line. All plants removed for whatever reason shall be replaced by plants of the same species type, size, and grade as specified in the original plans and specifications. Any changes to the original plans shall be submitted by permit application to the DEPARTMENT for review and approval.
- C. If it becomes necessary to provide utilities (water/electricity) to the medians or areas outside the travelway to maintain these improvements, all costs associated with the utilities associated for the landscape improvements including any impact and/or connection fees, and the on-going cost of utility usage for water and electrical, are the maintaining AGENCY'S responsibility.

The AGENCY shall be directly responsible for impact and connection fees.

- D. The maintenance functions to be performed by the AGENCY may be subject to periodic inspections by the DEPARTMENT at the discretion of the DEPARTMENT. Such inspection findings will be shared with the AGENCY and shall be the basis of all decisions regarding, repayment, reworking or agreement termination. The AGENCY shall not change or deviate from said plans without written approval of the DEPARTMENT.

4. NOTICE OF MAINTENANCE DEFICIENCIES

A. If at any time after the AGENCY has undertaken the landscape improvements installation and/or maintenance responsibility for the landscape improvements it shall come to the attention of the DEPARTMENT'S District Secretary that the limits, or a part thereof, are not properly maintained pursuant to the terms of this Agreement, said District Secretary, may at his/her option, issue a written notice that a deficiency or deficiencies exist(s), by sending a certified letter to the AGENCY, to place said AGENCY on notice thereof. Thereafter, the AGENCY shall have a period of thirty (30) calendar days within which to correct the cited deficiencies. If said deficiencies are not corrected within this time period, the DEPARTMENT may, at its option, proceed as follows:

- (1) Maintain the landscape improvements or any part thereof, with the DEPARTMENT or Contractor's personnel and invoice the AGENCY for expenses incurred, and/or
- (2) At the discretion of the DEPARTMENT, terminate the Agreement in accordance with Paragraph 9 of this Agreement and remove, by the DEPARTMENT or Contractor's personnel, all of the landscape improvements installed under this Agreement or any preceding Agreements, except as to trees and palms, and charge the AGENCY the reasonable cost of such removal.

5. FUTURE DEPARTMENT IMPROVEMENTS

It is understood between the parties hereto that the landscape improvements covered by this Agreement may be removed, relocated, or adjusted at any time in the future, as determined to be necessary by the DEPARTMENT in order that the adjacent state road be widened, altered, or otherwise changed to meet future criteria or planning needs of the DEPARTMENT.

The AGENCY shall be given sixty (60) calendar day notice to remove said landscape improvements at the AGENCY's expense after which time the DEPARTMENT may remove same. All permits (including tree permits), fees, and any mitigation associated with the removal, relocation or adjustments of these improvements are the maintaining AGENCY'S responsibility.

6. FUTURE AGENCY IMPROVEMENTS

The AGENCY may construct additional landscape improvements within the limits of the landscape improvements rights of ways identified as a result of this document, subject to the following conditions:

- (a) Plans for any new landscape improvements shall be subject to approval by the DEPARTMENT. The AGENCY shall not change or deviate from said plans without written approval by the DEPARTMENT.

- (b) All landscape improvements shall be developed and implemented in accordance with appropriate state safety and roadway design standards.
- (c) The AGENCY agrees to comply with the requirements of this Agreement with regard to any additional landscape improvements it chooses to have installed and there will be no cost to the DEPARTMENT.

7. ADJACENT PROPERTY OWNER IMPROVEMENTS

The DEPARTMENT may allow an adjacent property owner to construct additional landscape improvements within the limits of the right of way identified in **Exhibit "A"** of this Agreement that the AGENCY shall be responsible for maintaining under this Agreement, subject to the following conditions:

- (a) Plans for any new landscape improvements shall be subject to approval by the DEPARTMENT and shall require a valid permit attached with a letter of consent to said plans by the AGENCY. The plans shall not be changed or deviated from without written approval by the DEPARTMENT and the AGENCY.
- (b) All landscape improvements shall be developed and implemented in accordance with appropriate state safety and roadway design standards.
- (c) The AGENCY agrees to comply with the requirements of this Agreement with regard to any additional landscape improvements installed by an adjacent owner.

8. AGREEMENT TERMINATION

In addition to those conditions otherwise contained herein, this Agreement may be terminated under any one (1) of the following conditions:

- (a) By the DEPARTMENT, if the AGENCY fails to perform its duties under this Agreement, following ten (10) days written notice.
- (b) By the DEPARTMENT, for refusal by the AGENCY to allow public access to all documents, papers, letters, or other material subject to the provisions of Chapter 119, Florida Statutes, and made or received by the AGENCY in conjunction with this Agreement.

9. AGREEMENT TERM

- (a) The term of this Agreement commences upon execution by all parties. The term of this Agreement shall remain in effect for twenty-five (25) years.
- (b) If the DEPARTMENT chooses to cancel the landscape improvements described in **Exhibit "B"**, this Agreement becomes void and the original Agreement is reinstated, if any.

10. LIABILITY AND INSURANCE REQUIREMENTS

- A. With respect to any of the AGENCY'S agents, consultants, sub-consultants, contractors and/or sub-contractors, such party in any contract for the landscape improvements shall agree to indemnify, defend, save and hold harmless the DEPARTMENT from all claims, demands, liabilities, and suits of any nature arising out of, because of or due to any intentional and/or negligent act or occurrence, omission or commission of such agents, consultants, subconsultants, contractors and/or subcontractors. The AGENCY shall provide to the DEPARTMENT written evidence of the foregoing upon the request of the DEPARTMENT. It is specifically understood and agreed that this indemnification clause does not cover or indemnify the DEPARTMENT for its own negligence.
- B. In the event that AGENCY contracts with a third party to provide the services set forth herein, any contract with such third party shall include the following provisions:
- (1) AGENCY'S contractor shall at all times during the term of this Agreement keep and maintain in full force and effect, at contractor's sole cost and expense, Comprehensive General Liability with minimum limits of \$1,000,000.00 per occurrence combined single limit for Bodily Injury Liability and Property Damage Liability and Worker's Compensation insurance with minimum limits of \$500,000.00 per Liability. Coverage must be afforded on a form no more restrictive than the latest edition of the Comprehensive General Liability and Worker's Compensation policy without restrictive endorsements, as filed by the Insurance Services Office. The AGENCY and DEPARTMENT shall be named as additional insured on such policies.
 - (2) AGENCY'S contractor shall furnish AGENCY with Certificates of Insurance of Endorsements evidencing the insurance coverage specified herein prior to the beginning performance of work under this Agreement.
 - (3) Coverage is not to cease and is to remain in full force and effect (subject to cancellation notice) until all performance required of AGENCY'S contractor is completed. All policies must be endorsed to provide the DEPARTMENT with at least thirty (30) day notice of cancellation and or/or restriction. If any of the insurance coverage will expire prior to the completion of work, copies of renewal policies shall be furnished at least (30) days prior to the date of expiration.

11. E-VERIFY REQUIREMENTS

The AGENCY shall:

- (a) Utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the AGENCY during the term of the contract; and
- (b) Expressly require any subcontractors performing work or providing services pursuant to the state contract to likewise utilize the U.S. Department of Homeland

Security's E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the contract term

12. SUPERSEDED AGREEMENTS

This writing embodies the entire Agreement and understanding between the parties hereto and there are no other Agreements and understanding, oral or written, with reference to the subject matter hereof that are not merged herein and superseded hereby.

13. FISCAL TERMS

The DEPARTMENT, during any fiscal year, shall not expend money, incur any liability, or enter into any contract which, by its terms, involves the expenditure of money in excess of the amounts budgeted as available for expenditure during such fiscal year. Any contract, verbal or written, made in violation of this subsection is null and void, and no money will/may be paid on such contract. The DEPARTMENT shall require a statement from the Comptroller of the DEPARTMENT that funds are available prior to entering into any such contract or other binding commitment of funds. Nothing herein contained shall prevent the making of contracts for periods exceeding one (1) year, but any contract so made shall be executory only for the value of the services to be rendered or agreed to be paid for in succeeding fiscal years; and this paragraph shall be incorporated verbatim in all contracts of the DEPARTMENT which are for an amount in excess of TWENTY-FIVE THOUSAND DOLLARS (\$25,000.00) and which have a term for a period of more than one year.

14. DISPUTES

The DEPARTMENT'S District Secretary shall decide all questions, difficulties, and disputes of any nature whatsoever that may arise under or by reason of this Agreement, the prosecution or fulfillment of the service hereunder and the character, quality, amount and value thereof; and his decision upon all claims, questions, and disputes shall be final and conclusive upon the parties hereto.

15. ASSIGNMENT

This Agreement may not be assigned or transferred by the AGENCY, in whole or in part, without the prior written consent of the DEPARTMENT.

16. LAWS GOVERNING

This Agreement shall be governed by and construed in accordance with the laws of the State of Florida. In the event of a conflict between any portion of the contract and Florida law, the laws of Florida shall prevail. The AGENCY agrees to waive forum and venue and that the DEPARTMENT shall determine the forum and venue in which any dispute under this agreement is decided.

17. NOTICES

Any and all notices given or required under this Agreement shall be in writing and either personally delivered with receipt acknowledgement or sent by certified mail, return receipt requested. All notices shall be sent to the following addresses:

If to the DEPARTMENT:
State of Florida Department of Transportation
3400 West Commercial Blvd.
Ft. Lauderdale, FL 33309-3421
Attention: Elisabeth Hassett, R.L.A.
FDOT District IV Landscape Architect

If to the AGENCY:
City of Fort Lauderdale
700 N.W. 19th Avenue
Fort Lauderdale, Florida
Attention: Alex Scheffer
Title Urban Design Engineer

18. LIST OF EXHIBITS

- Exhibit A: Landscape Improvements Maintenance Boundaries
- Exhibit B: Landscape Improvement Plans
- Exhibit C: Maintenance Plan for Landscape Improvements
- Exhibit D: Patterned Pavement Installation
- Exhibit E: Patterned Pavement Maintenance

IN WITNESS WHEREOF, the parties hereto have executed this Agreement effective the day and year first above written.

CITY OF FORT LAUDERDALE

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

By: _____
Chairperson/Mayor/Manager

By: _____
Transportation Development Director

Attest: _____ (SEAL)
Clerk

Attest: _____ (SEAL)
Executive Secretary

Legal Review Date

Legal Review Date

Office of the General Counsel

SECTION No.: 82020000
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EXHIBIT A

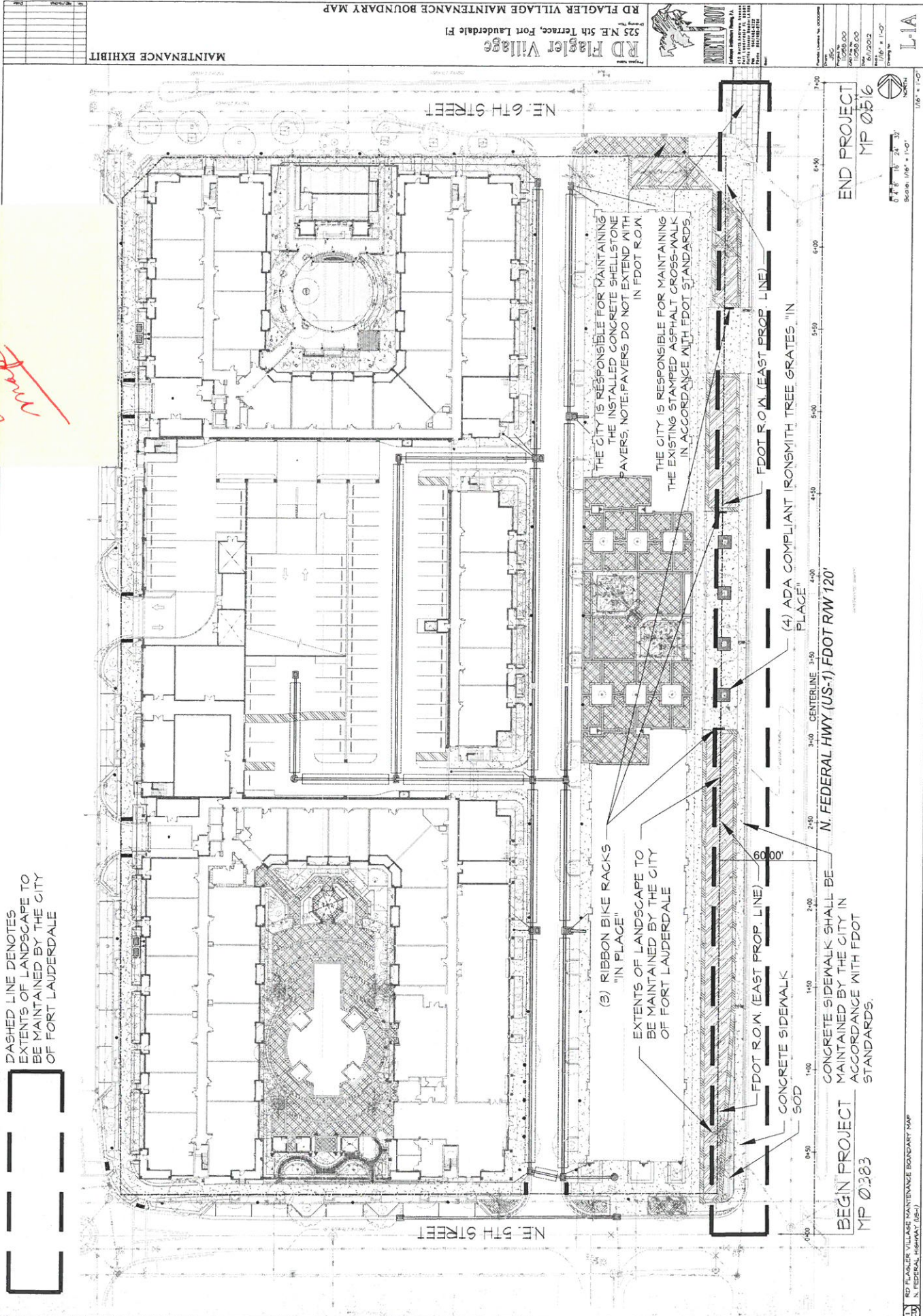
LANDSCAPE IMPROVEMENTS MAINTENANCE BOUNDARIES

I. LIMITS OF MAINTENANCE FOR LANDSCAPE IMPROVEMENTS:

State Road 5 (US 1/North Federal Highway) from N.E. 5th Street (M.P. 0.383) to N.E. 6th Street (M.P. 0.516)

II. LANDSCAPE IMPROVEMENTS MAINTENANCE RESPONSIBILITIES MAP:

Please see attached map



DASHED LINE DENOTES EXTENTS OF LANDSCAPE TO BE MAINTAINED BY THE CITY OF FORT LAUDERDALE

See also: MP 0283

THE CITY IS RESPONSIBLE FOR MAINTAINING THE INSTALLED CONCRETE SHELLSTONE PAVERS. NOTE: PAVERS DO NOT EXTEND WITHIN FDOT R.O.W.

THE CITY IS RESPONSIBLE FOR MAINTAINING THE EXISTING STAMPED ASPHALT CROSS-WALK IN ACCORDANCE WITH FDOT STANDARDS.

(3) RIBBON BIKE RACKS "IN PLACE"

EXTENTS OF LANDSCAPE TO BE MAINTAINED BY THE CITY OF FORT LAUDERDALE

FDOT R.O.W. (EAST PROP. LINE)

(4) ADA COMPLIANT IRONSMITH TREE GRATES "IN PLACE"

FDOT R.O.W. (EAST PROP. LINE)

CONCRETE SIDEWALK SHALL BE MAINTAINED BY THE CITY IN ACCORDANCE WITH FDOT STANDARDS.

60'-00"

FDOT R.O.W. (EAST PROP. LINE)

CONCRETE SIDEWALK

SOD

N. FEDERAL HWY (US-1) FDOT RW 120'

BEGIN PROJECT MP 0283

END PROJECT MP 0516

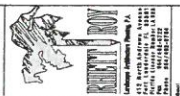
Scale: 1/8" = 1'-0"

67'8" 16' 24' 32'

0 100 200 300 400 500 600 700 800 900 1000

1/8" = 1'-0"

NORTH



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EXHIBIT B

LANDSCAPE IMPROVEMENT PLANS

The AGENCY agrees to install the landscape improvements in accordance with the plans and specifications attached hereto and incorporated herein.

Please see attached plans prepared by: Rhett Roy RLA
Rhett Roy Landscape Architecture/Planning PA
Date: January 26, 2017

LANDSCAPE ARCHITECTURAL PERMIT PACKAGE FOR:

RD FLAGLER VILLAGE

525 N.E. 5th Terrace, Fort Lauderdale Fl

DRAWING INDEX

- L-1 As-Built Planting Plan & Plant Schedule Federal Highway
- L-2 Plant Notes & Details
- L-3 Hardscape Details
- IR1 Irrigation Plan
- IR2 Irrigation Notes, Specifications & Details

GENERAL NOTES

- Installed Landscape shall be installed and maintained in accordance with FDOT Specifications and Design Standard Indexes, Governing Standards and Specifications, 2016 Florida Department of Transportation, Design Standards, and 2016 Standard Specifications for Road and Bridge Construction.
- Contractor shall repair any and all damage done to FDOT property during demolition, relocation &/or installation activities at his sole expense.
- Patterned Pavement Installation in FDOT roadway shall comply with current FDOT Standard Specification 523. Online Reference: <http://www.dot.state.fl.us/programmanagement/Implemented/SpecBooks/January2016/Files/523-116.pdf>
- Architectural Pavers Installation for sidewalks within FDOT right of way shall comply with current FDOT Standard Specification 526. Note: Architectural pavers are installed along Struik only with in the City R.O.M. in accordance with the CRA Improvements. These pavers do "NOT" extend with in the FDOT R.O.M. Online Reference: <http://www.dot.state.fl.us/programmanagement/Implemented/SpecBooks/January2016/Files/526-116.pdf>

Ownership of all suitable excavated materials, as determined by the Department, shall remain in the Department until a final acceptance of the permitted project is fulfilled. Excavated materials shall be hauled by the Permittee, at their cost & expense from the site to the Broward Operations Center or stockpiled in those areas as directed by the Department, including asphalt millings.

MAINTENANCE AGREEMENT NOTES

- Any non-standard component specified on FDOT right of way (such as planting in addition to trees and sod, hardscape, and/or an irrigation system) requires a Maintenance Memorandum of Agreement (MMA). FDOT requires an executed MMA prior to installation of the project. Please submit MMA documents with next submittal. (Contact Mary Ann Randolph MaryAnn.Randolph@dot.state.fl.us - 954-671-1831 for more information about the MMA process.)

PLANTING NOTES

- Planting details shown on sheet L-2 delineate the planting details for use within the property boundaries only. For the proposed landscapes within the FDOT right of way shall conform with standards set forth in Index 544, refer to FDOT Standard Index 544 Details. Online Reference: <http://www.dot.state.fl.us/tradesign/D5/16/IDz/02544.pdf>

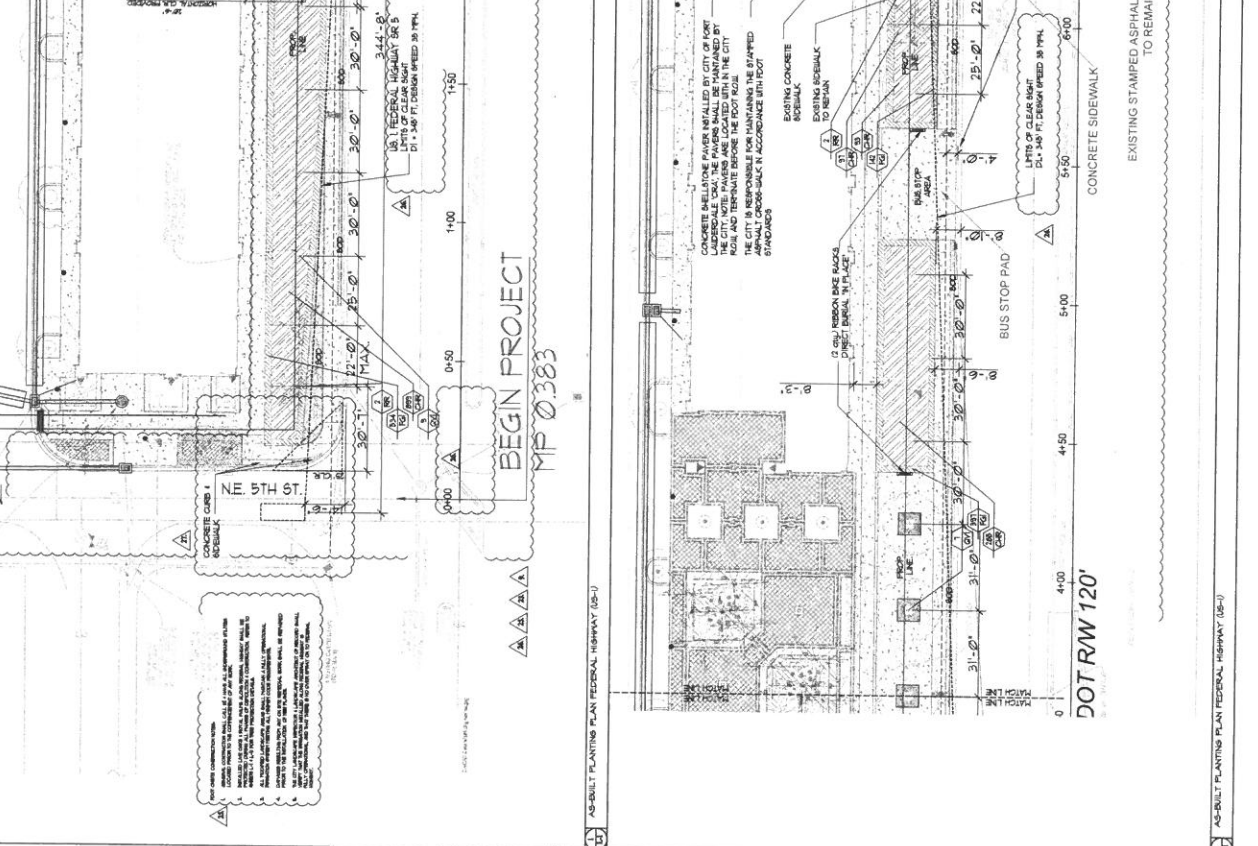
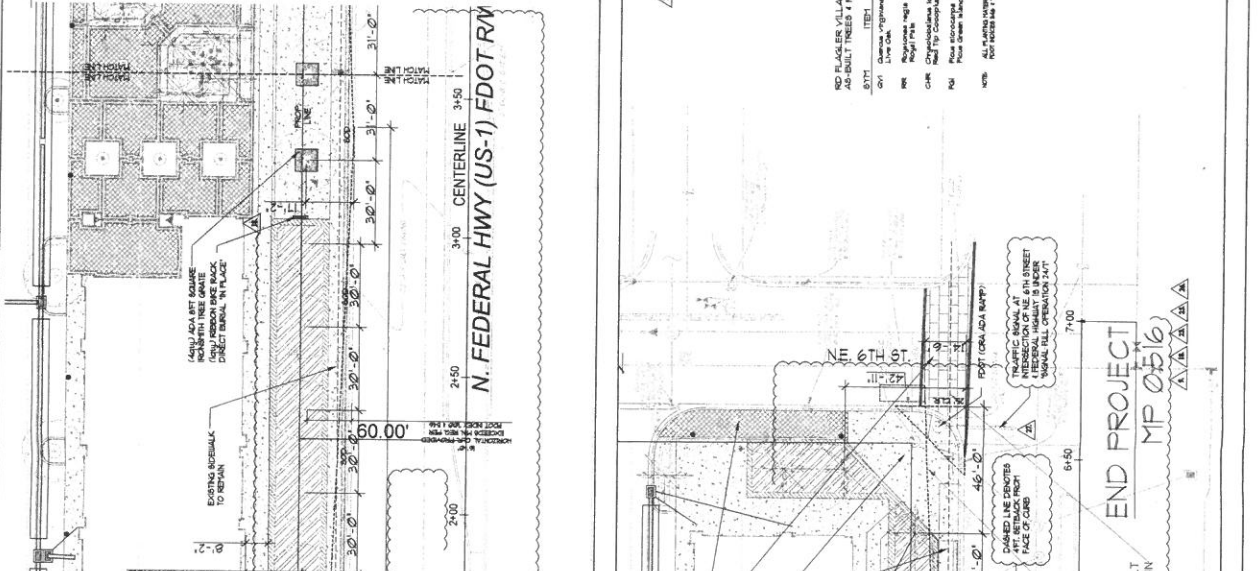
IRRIGATION NOTES

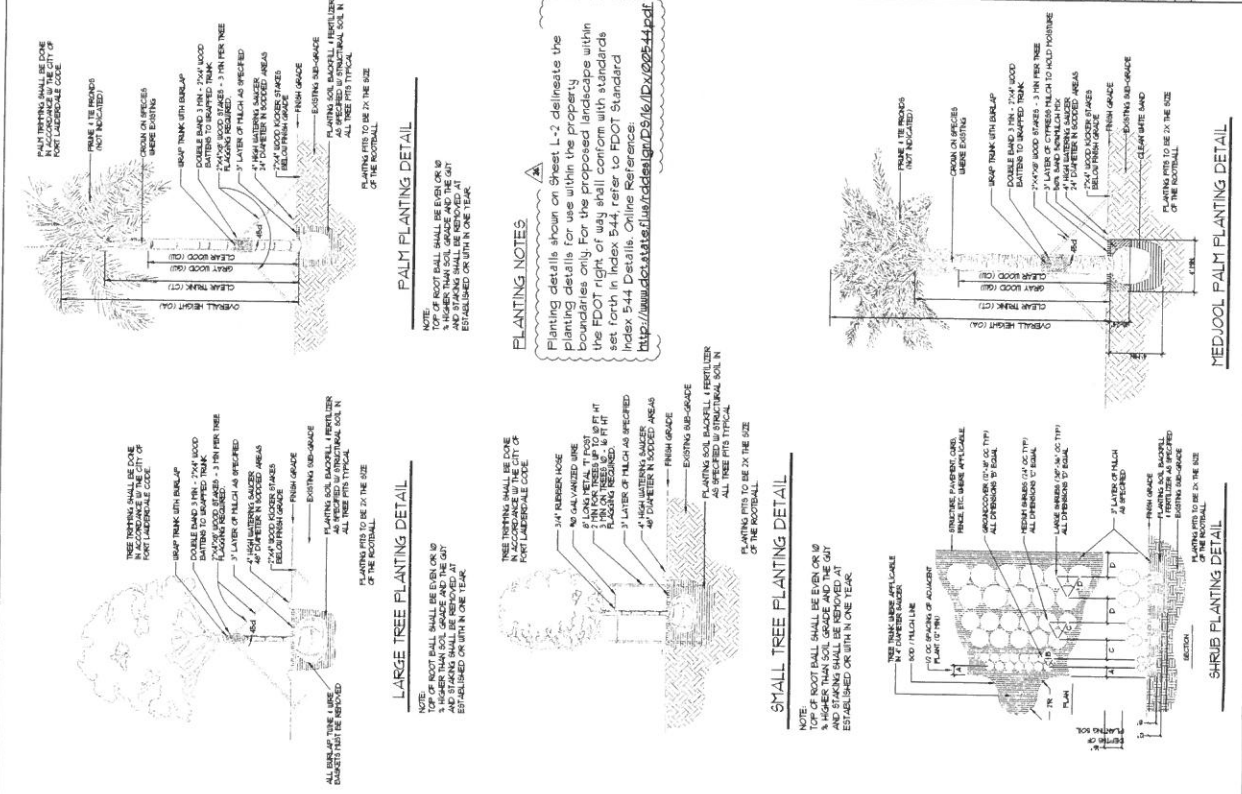
- DOT requires 24 hour emergency access to water source.
- Refer to Irrigation plans for water connection points, and electrical connection for proposed controllers and pumps.
- Contractor shall provide FDOT District Operations Manager with a set of "As-Built" Irrigation plans.

1/10/16
1/10/16

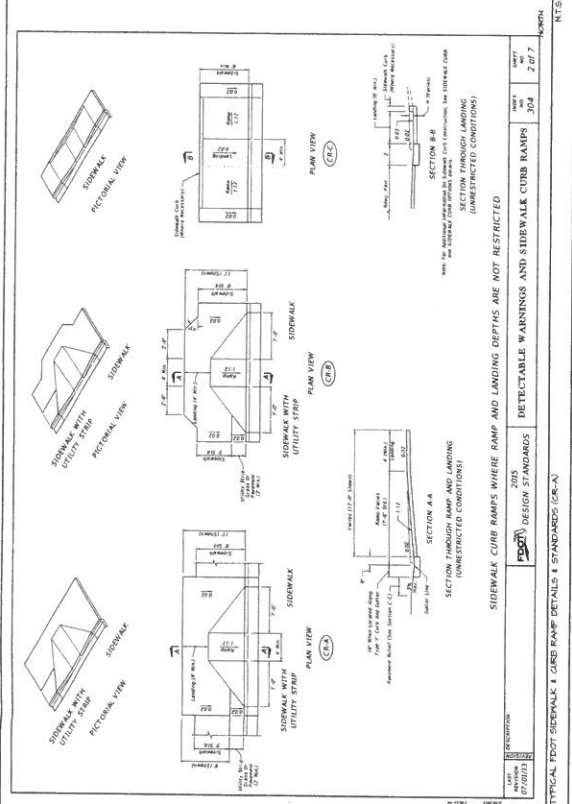
ITEM	DESCRIPTION	QUANTITY
001	Live Oak	4
002	Red Tip Crape Myrtle	314
003	Flower Hibiscus	340

NOTE: ALL PLANTS SHALL BE MAINTAINED IN ACCORDANCE WITH THE CITY OF FORT LAUDERDALE PLANTING STANDARDS.

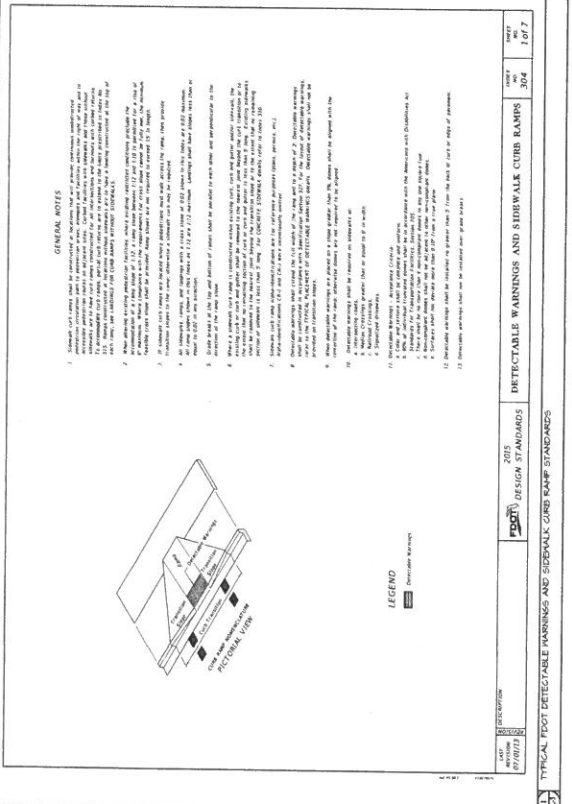




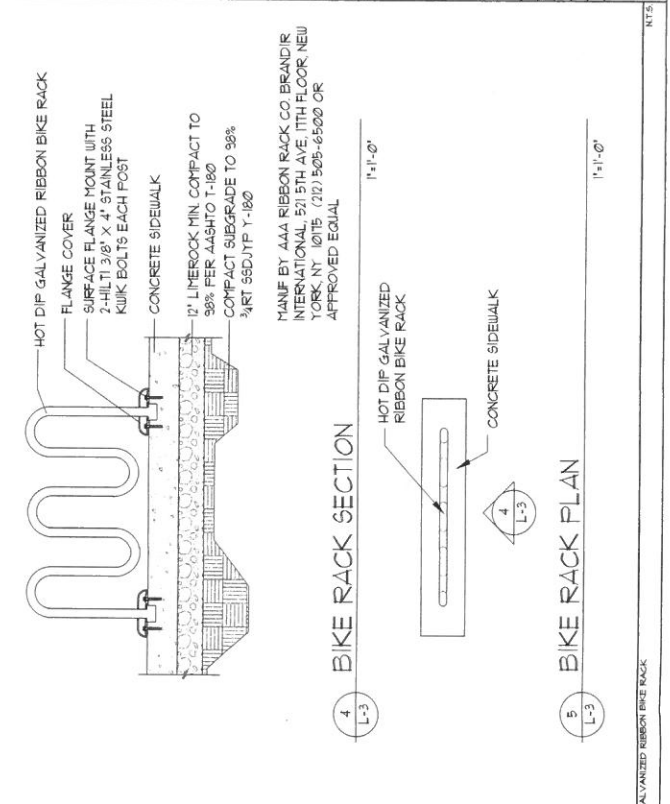
- PLANT NOTES**
- ALL PLANTS ARE TO BE FLORIDA NO. GRADE OR BETTER.
 - NO SUBSTITUTIONS WILL BE ACCEPTED WITHOUT PRIOR WRITTEN APPROVAL BY THE LANDSCAPE ARCHITECT FOR RIGHT OF WAY PLANTINGS ONLY.
 - ALL LANDSCAPE AREAS TO RECEIVE 100% VEGETATION COVERAGE WITH A MINIMUM 80% MINIMUM OVERLAP IN SHRUB AREAS BY AN AND 100% PERCENT MINIMUM OVERLAP IN GRASS AREAS. GRASS AREAS SHALL BE PLANTED WITH A 1/2" DEPTH OF MULCH OR OTHER APPROPRIATE MULCH MATERIAL. MULCH SHALL BE APPLIED TO A MINIMUM 2" DEPTH.
 - QUANTITIES ON PLANT LIST ARE FOR CONVENIENCE ONLY. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR ALL PLANTS. THE CONTRACTOR SHALL VERIFY THE PLANTS LISTED ARE TO OVERLAP THE PLANT LIST IN ALL CASES.
 - CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION WORK.
 - ALL SHRUB AND GRASS COVER BEDS SHALL BE LAD OUT IN A UNIFORM AND CONSISTENT PATTERN SET IN A FERRIBICULAR LIVE BUSH ADJACENT PATIENT OR BUILDING.
 - ALL TREES AND PALMS TO BE STAKED AND GATED AS INDICATED ON THE PLANT LIST.
 - ALL PLANTING AREAS TO RECEIVE 3" LAYERS OF GRASS & SHREDDED BULKY FRESH MULCH TOP OF MULCH SHALL BE 2" BELOW ADJACENT PAVEMENT.
 - ALL PLANT MATERIAL TO BE BACKFILLED WITH 50% THICK 50% SAND PLANTING MIXTURE.
 - RECOMMENDATIONS AS FOLLOWS:
SOD: 8-8-8
ANNUAL GRASSCOVER: OSMOCOTE (SERRA BLEND 14-14-14)
PERMANENT PALMS: NURSERY (10-10-10) TABLETS
 - ALL SOD SHALL BE LAD ON 7" DEPTH OF TOPSOIL LAD SMOOTH GUT TO CONFORM TO CURB & FLANKERS, AND LAD TO THE WATERLINE 12" MULCH RING.
 - ALL MECHANICAL EQUIPMENT SHALL BE SCREENED ON ALL SIDES WITH APPROVED MULCH.
 - ALL PLANTS SHALL BE PLANTED AT LEAST 16" FROM OVERHEAD POWER LINES.
 - LANDSCAPE SHALL NOT OVERSOW FIRE HYDRANT NOR SPRINKLER/SANDBOX SITES.
 - ALL EXISTING TREES ON SITE IN THE VICINITY OF NEW CONSTRUCTION SHALL BE PROTECTED AS PER THE DETAIL SHOWN ON SHEET L-1.
 - TOPSOIL TO BE CLEAN & REASONABLY FREE OF CONSTRUCTION DEBRIS, BEDS, ROCKS, INOXIOUS PESTS & DISEASE. THE TOPSOIL FOR ALL PLANTING AREAS SHALL BE APPLIED HORIZONTAL/VERTICALLY ACCEPTABLE ORGANIC MATERIAL. THE MINIMUM TOPSOIL DEPTH SHALL BE SIX (6) INCHES FOR SHRUBS AND GRASS AREAS AND TWO (2) INCHES FOR SODDED GRASS AREAS.
 - GRASS, SOD AND SEED SHALL BE REASONABLY FREE OF WEEDS, PESTS, AND DISEASES. FOR ANY GIVEN SPECIES OF GRASS, THE MOST PEST AND DISEASE RESISTANT VARIETY OR STRAIN AVAILABLE SHALL BE REQUIRED.
 - AN EXISTING TREE ON THE SITE HAVING A CALIPER OF FOUR (4) INCHES OR GREATER EXCEPT FOR FLORIDA HOLLY, POINCIAN, AUSTRALIAN PINE, AND PALM SHALL BE REMOVED FROM THE BUILDING SITE WITHOUT A PERMIT FROM THE LANDSCAPE DEPARTMENT OF THE CITY.
 - ALL TREES REQUIRED SHALL BE SHADE TREES HAVING A NATURAL HEIGHT OF SEVEN (7) FEET OR GREATER. TREES THAT SHALL HAVE A CLEAR TRUNK AT THIRTY (30) FEET OR GREATER.
 - SHADE TREES AT THE TIME OF INSTALLATION SHALL HAVE A MINIMUM TRUNK CALIPER OF FOUR (4) INCHES ABOVE FINISH GRADE. A MINIMUM HEIGHT OF FOUR (4) FEET ABOVE FINISH GRADE. A MINIMUM HEIGHT OF TEN (10) TO TWELVE (12) FEET AND A MINIMUM CROWN SPREAD OF SIX (6) FEET.
 - ALL SHRUBS AT THE TIME OF INSTALLATION SHALL NOT BE LESS THAN TWO AND ONE-HALF (2 1/2) FEET IN HEIGHT.
 - VINES AT THE TIME OF INSTALLATION SHALL NOT BE LESS THAN TWO AND ONE-HALF (2 1/2) FEET IN HEIGHT WITH AT LEAST THREE (3) RUNNERS.
 - GROUND COVER AREAS AT THE TIME OF INSTALLATION SHALL BE PLANTED WITH A MINIMUM OF SEVENTY-FIVE (75) PERCENT COVERAGE WITH ONE INCHES (1") PERCENT COVERAGE OCCURRING WITHIN THREE (3) MONTHS OF INSTALLATION.
 - ALL GRASS AREAS SHALL BE SODDED WITH GRASS THAT IS RESISTANT TO GRASSHOPPER DAMAGE.
 - ALL OWNERS OF THE LAND, THEIR AGENTS SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE LANDSCAPING.
 - ALL PLANTING TO BE DONE IN ACCORDANCE WITH THE PROPER AGRICULTURE PRACTICES.
 - ALL PLANTING SHALL BE PROPERLY FERTILIZED AT THE TIME OF INSTALLATION WITH TRACE ELEMENTS OR BETTER FERTILIZER. THE FERTILIZER ORGANIC 6-6-9.
 - GROUND COVERS SHALL BE PLANTED WITH A MINIMUM OF 75 PERCENT COVERAGE WITH 100% PERCENT COVERAGE OCCURRING WITHIN THREE MONTHS OF INSTALLATION.
 - REQUIRED: THE ERADICATION OF NUISANCE, VEGATATION (EXCEPTS) EXISTING ON THE SITE IS REQUIRED ON ALL SITES INCLUDING ADJACENT RIGHTS-OF-WAYS PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY. PRIVATELY OWNED NATURAL AREAS SHALL BE PROTECTED AND MAINTAINED. A FIVE-FOOT SEPARATION FROM WATER LINES. FIBER HEDGES MAY NOT BE PLANTED IN UTILITY EASEMENTS.
 - REQUIRED: ALL SHADE TREES INSTALLED WITH IN SIX FEET OF PUBLIC RIGHT-OF-WAY SHALL UTILIZE A ROOT BARRIOR SYSTEM. NOT APPLICABLE TO THIS SITE.



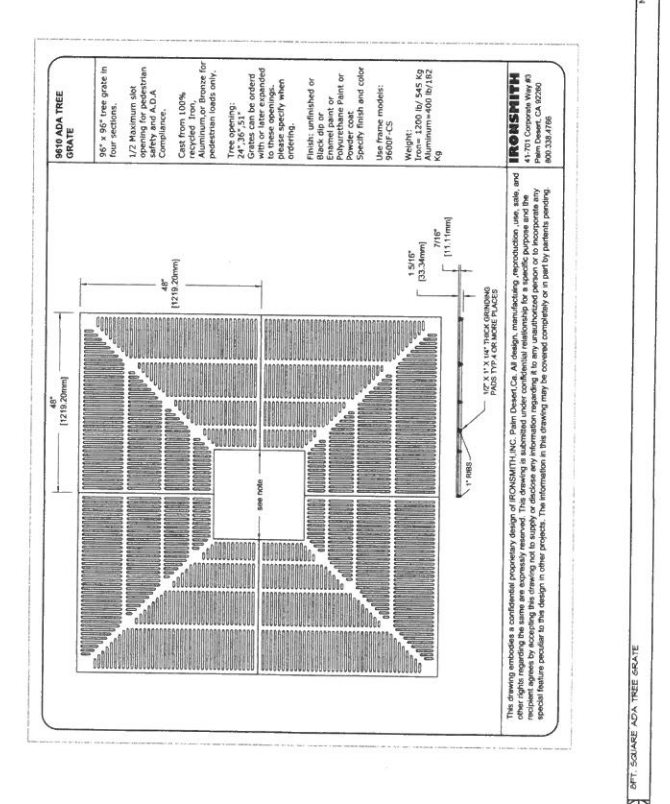
NTS TYPICAL FOOT SIDEWALK CURB RAMP DETAILS & STANDARDS (OR-A)



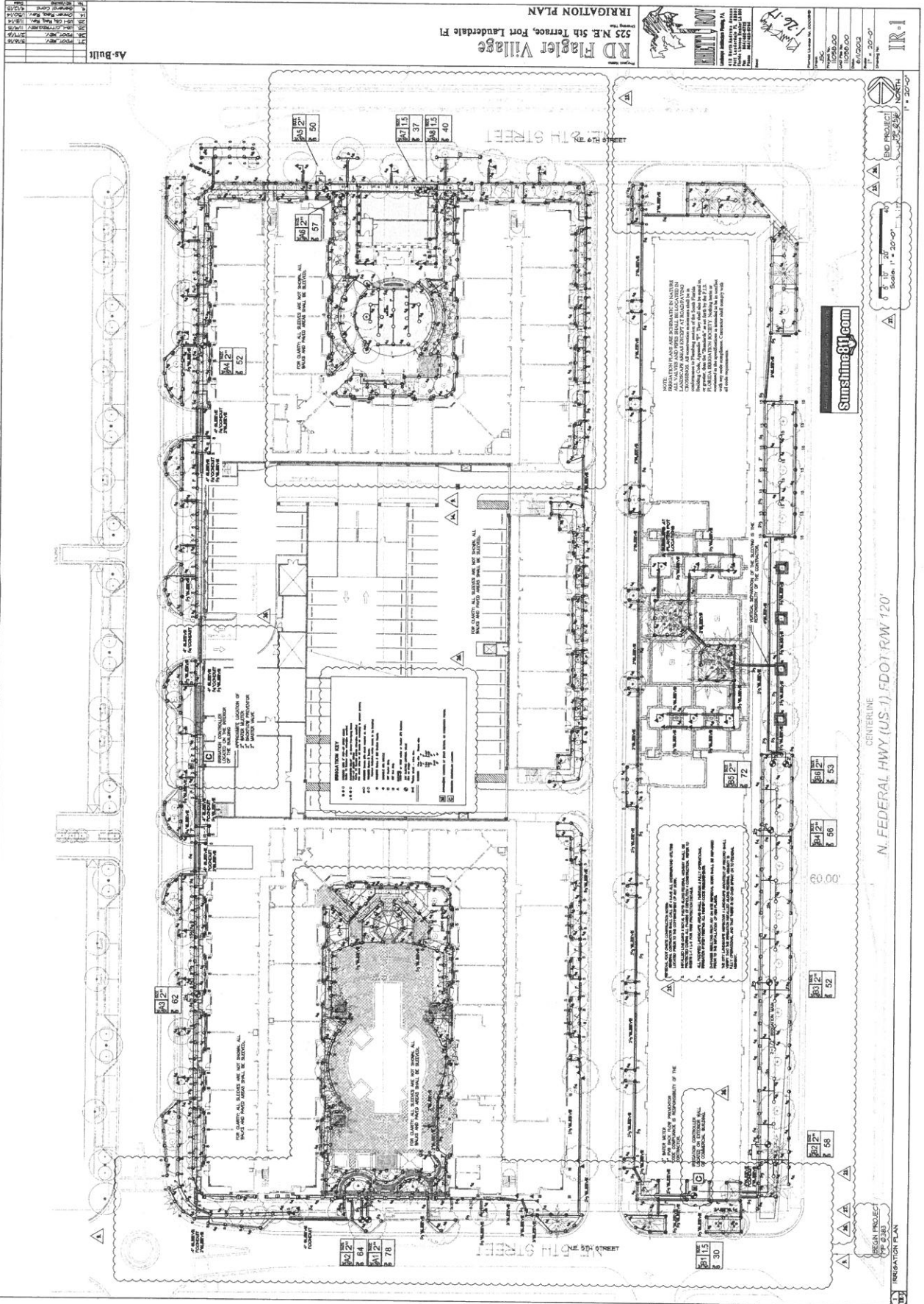
NTS TYPICAL SQUARE ADA TREE GRATE



NTS TYPICAL HOT DIP GALVANIZED RIBBON BIKE RACK



NTS TYPICAL SQUARE ADA TREE GRATE



NO.	DESCRIPTION	DATE
1	AS-BUILT	11/20/23
2	REVISION	11/20/23
3	REVISION	11/20/23
4	REVISION	11/20/23
5	REVISION	11/20/23
6	REVISION	11/20/23
7	REVISION	11/20/23
8	REVISION	11/20/23
9	REVISION	11/20/23
10	REVISION	11/20/23
11	REVISION	11/20/23
12	REVISION	11/20/23
13	REVISION	11/20/23
14	REVISION	11/20/23
15	REVISION	11/20/23
16	REVISION	11/20/23
17	REVISION	11/20/23
18	REVISION	11/20/23
19	REVISION	11/20/23
20	REVISION	11/20/23

As-Built

IR-R1

RD Flagler Village
525 N.E. 5th Terrace, Fort Lauderdale, FL

IRRIGATION PLAN

PROJECT NO. 17-00000000
DATE: 11/20/23

SCALE: 1" = 20'-0"

Sunshine8U.com

CENTERLINE N. FEDERAL HWY (US-1) FDOT RW 120'

NE 5th STREET

NE 5th STREET

NE 5th STREET

IRRIGATION SPECIFICATION

GENERAL NOTES:

Irrigation plans are schematic in nature. All valves and pipes shall be located in landscape areas, except at road/paving crossings. Some sprinkler mains and control valves are shown in plan view for clarity. They shall be installed at the edges of landscape spaces. ALL PIPE UNDERGROUND. ALL BE SLEEVED. All material shall be new. It is the contractor's responsibility to supply, install, and test all components, operational, and maintenance drawings, and to coordinate with the Owner prior to final acceptance. The contractor shall be responsible for notifying the architect so that the irrigation system can be properly modified to accommodate the site modification. It is the contractor's responsibility to see that the system is finally adjusted to have full coverage with no overspray onto pavement, and that all heads are set to proper height and vertical with the final grade. Turn pressure or flow regulation, on valves, down to lowest possible pressure to prevent missing of spray heads. Any conditions not shown in the drawings shall be submitted for approval prior to installation. Shop drawings shall be submitted for approval prior to installation. Any changes shall be submitted in writing and approval shall be in writing prior to installation. GPS coordinates for all valves and changes of direction on the main line shall be part of the As-Built drawings. Submittals for all irrigation equipment being used on this project shall be submitted by the contractor. Approval of the equipment in these submittals, in writing, shall be required prior to equipment being brought to this job site.

SITE CONDITIONS:

Care must be taken not to damage any underground utilities or existing irrigation systems. Repair of damages will be the responsibility of the irrigation contractor. See the representative for details. Safety on the job is the responsibility of the irrigation contractor. It is the responsibility of the irrigation contractor to see that surface drainage is NOT modified by his work. All rock that is brought to the surface by the trenching operation is to be removed from the site by the irrigation contractor. Irrigation in undisturbed landscape areas shall be repaired and restored to working condition.

NOTE: INSTALLATION AROUND EXISTING TREES

Trenches and around existing trees must be hand dug. Extreme care must be used to prevent damage to the root systems of existing trees. Roots larger than 1 1/2" diameter shall NOT be cut. Soil beneath rock pockets of existing trees can be carefully placed through and beneath the existing roots, at the proper depth, to prevent root rot conditions. Back filling in these areas shall be done by washing the soil back into the trenches to prevent the forming of any air pockets around the existing root system.

SYSTEM DESCRIPTION:

The separate automatic irrigation systems. One system for the housing and one system for the rest of the system. This separate water meter, or connection point. Verify connection points prior to installation.

SYSTEM PIPE:

All pipe shall be Class 200 PVC or heavier. System Main shall be Sch. 40 PVC pipe. All fittings shall be Sch. 40 fittings unless otherwise indicated in these specifications. Main pipe shall be pressure tested with 100 PSI water pressure for one hour. Test shall be 100 PSI for one hour. Loss of 10 PSI within the hour shall constitute failure. Sprinkler and pipe ends shall be cleaned with an all purpose PVC pipe cleaner prior to applying glue. Main pipe shall have a minimum 24" of cover. All other pipe, laterals, etc. shall have a minimum 12" of cover. Backfill shall be free of debris and sharp objects. No rock larger than 3/4" shall be in contact with PVC pipe anywhere. All pipe above ground, with the exception of shrub risers, shall be galvanized copper, bronze or ductile iron, and shall be painted with a flat black epoxy black epoxy paint. Sprinkler risers shall be Sch. 40 or Sch. 80 PVC and shall be painted with flat black epoxy paint.

1. Assembly for Solvent Weld PVC pipe.
 - a. Cut square with PVC cutter, and debur the cut prior to assembly.
 - b. Clean PVC pipe with PVC cleaner prior to assembly.
 - c. Use gray, heavy bodied, slow drying, high strength glue.
 - d. Keep out of service for the length of time as specified by the Manufacturer of the PVC glue.

SLEEVES:

All pipe under paving (walks, planter walls and drives etc.) shall be sleeved with Sch. 40 PVC pipe. Sleeves shall extend beyond the edge of pavement and shall be marked. The sleeve line shall be installed in steeve prior to installation of the steeve. Cap ends of water line during construction to prevent debris from entering. Sleeves under roads shall have a minimum cover of 18 inches. Sleeves under FDOT roadways shall have a minimum cover of 36 inches.

CONTROLLERS:
Two Rainbird ESP Modular Controller to operate 8 sections on A Building and 6 sections on B Building. Separate Controller for each system shall be located (See recommendation). Grounding shall be equal to - or better than the manufacturer's recommendation. It shall also comply with the National Electrical Code. Both of these requirements preclude using the building or electrical supply line for grounding purposes. UL approved Ground Rod shall be utilized unless otherwise specified, or if the minimum resistance reading cannot be made. If minimum grounding cannot be made, utilize grounding plates until specified resistance is met.

RAIN SHUT OFF DEVICE:
Install a rain shut off device out of the range of the sprinklers as per State DER requirements. Submit manufacturers equipment sheet prior to installation of any such device.

ELECTRIC CONTROL VALVES:
Rainbird PESA 24V solenoid valves. All valves shall be housed in 16" x 12" rectangular Carson 14198 valve boxes of larger and installed per details. Control Valve shall be rated at 150 PSI or higher. Use bottom inlet whenever possible.

CONTROL WIRE:
Control wire shall be UL approved, solid core, PE or PVC covered irrigation control wire. Control wire shall be a minimum of 14 gauge control and 12 gauge bond wire. All splices and connections shall be made in accordance with the manufacturer's instructions. All splices shall be as recommended by manufacturer. All wires shall be encased in UL approved PVC conduit. All wire shall be Splice Kit. All wire to be encased in UL approved PVC conduit. All wire shall be light blue not rated for direct burial shall be installed in water tight conduit with water tight junction boxes. Communication wire for 2 wire controllers shall be connected utilizing the 600V wire nuts as recommended by manufacturer.

WATER METERS:
City water meters. Location shown on plan - verify locations prior to commencing with installation. Code compliance is the responsibility of the contractor.

SPRINKLERS:
All sprinklers shall be the type referred to in the Sprinkler Key and shall be attached to the lateral with either flexible line (sway pipe) or a PVC swing joint. Sprinklers shall be supplied by Lasco, Rainbird or Dura Industries, specifically for irrigation use, being constructed with components utilizing Acme threads and o-ring seals. Pressure rating shall be 200 PSI, or greater, as stated by the manufacturer. Sprinklers using more than 4 GPM shall be connected utilizing PVC swing joints. Sprinklers shall be set flush with final grade and absolutely vertical. Use Stainless Steel risers on all rotor heads.

1. Spray heads shall be Rainbird 1806, 6" pop up heads with series 10 nozzles, unless otherwise specified in these drawings.
2. Spray heads in shrub areas shall be shrub adapters on Sch. 40 risers. Height to be established by landscape architect. Risers shall NOT be used next to paved areas and pedestrian walks where they are exposed to damage. In these areas use 12" pop-ups. Paint shrub risers with water proof black paint.

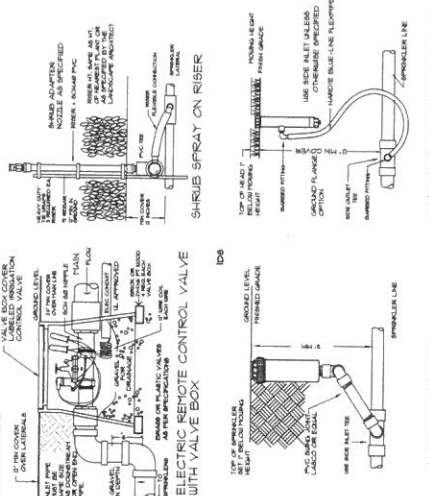
MAINTENANCE:
It is the contractor's responsibility to maintain the system, repairing leaks, repairing broken heads, adjusting sprinkler heads, flushing system, etc. until final acceptance by the Owner. The contractor shall contact Owners maintenance personnel as to maintenance requirements for this irrigation system.

AS-BUILT DRAWINGS:
Contractor shall provide "as-built" drawings showing all changes. All valves and changes of direction on the main line shall have GPS coordinates noted on the as-built drawings. Controller program shall be part of this submission.

GUARANTEE:
The contractor shall be guaranteed for a period of one year from the time of final acceptance. All manufacturers warranties, as shown on drawings, shall be maintained. Maintenance and operational information shall be turned over to the Owner. All drawings are a condition of final acceptance. Guarantee period shall not commence until all of the documents have been turned over to the Owners representative.

IRRIGATION KEY	
●●●	MAJOR MAIN 1/2" PVC OR HEAVIER
●●●●	MINOR MAIN 1/2" PVC OR HEAVIER
●●●●●	SPRINKLER MAIN 1/2" PVC OR HEAVIER
●●●●●●	SPRINKLER LATERAL 1/2" PVC OR HEAVIER
●●●●●●●	SPRINKLER HEAD
●●●●●●●●	SPRINKLER HEAD WITH NOZZLE
●●●●●●●●●	SPRINKLER HEAD WITH NOZZLE AND SWAY PIPE
●●●●●●●●●●	SPRINKLER HEAD WITH NOZZLE AND SWAY PIPE AND GROUND ROD
●●●●●●●●●●●	SPRINKLER HEAD WITH NOZZLE AND SWAY PIPE AND GROUND ROD AND VALVE BOX
●●●●●●●●●●●●	SPRINKLER HEAD WITH NOZZLE AND SWAY PIPE AND GROUND ROD AND VALVE BOX AND CONTROL WIRE
●●●●●●●●●●●●●	SPRINKLER HEAD WITH NOZZLE AND SWAY PIPE AND GROUND ROD AND VALVE BOX AND CONTROL WIRE AND WATER METER
●●●●●●●●●●●●●●	SPRINKLER HEAD WITH NOZZLE AND SWAY PIPE AND GROUND ROD AND VALVE BOX AND CONTROL WIRE AND WATER METER AND RAIN SHUT OFF DEVICE
●●●●●●●●●●●●●●●	SPRINKLER HEAD WITH NOZZLE AND SWAY PIPE AND GROUND ROD AND VALVE BOX AND CONTROL WIRE AND WATER METER AND RAIN SHUT OFF DEVICE AND SLEEVES
●●●●●●●●●●●●●●●●	SPRINKLER HEAD WITH NOZZLE AND SWAY PIPE AND GROUND ROD AND VALVE BOX AND CONTROL WIRE AND WATER METER AND RAIN SHUT OFF DEVICE AND SLEEVES AND ELECTRICAL CONTROL VALVE
●●●●●●●●●●●●●●●●●	SPRINKLER HEAD WITH NOZZLE AND SWAY PIPE AND GROUND ROD AND VALVE BOX AND CONTROL WIRE AND WATER METER AND RAIN SHUT OFF DEVICE AND SLEEVES AND ELECTRICAL CONTROL VALVE AND SYSTEM PIPE
●●●●●●●●●●●●●●●●●●	SPRINKLER HEAD WITH NOZZLE AND SWAY PIPE AND GROUND ROD AND VALVE BOX AND CONTROL WIRE AND WATER METER AND RAIN SHUT OFF DEVICE AND SLEEVES AND ELECTRICAL CONTROL VALVE AND SYSTEM PIPE AND SYSTEM DESCRIPTION

APPROXIMATE LOCATION OF EACH SYMBOL ON CONNECTION POINT.
INDICATE CONTROLLER LOCATION.



RAINBIRD 1806 POP-UP SPRAY
4\"/>

RD Hunter Village
525 N.E. 5th Terrace, Fort Lauderdale FL
N.T.S.
DATE: 01/20/03
BY: [Signature]
PROJECT NO: 10000000
SHEET NO: 10000000

SECTION No.: 82020000
Permit No. (s): 2016-L-491-0001
COUNTY: BROWARD
S.R. No.: 5

EXHIBIT C

MAINTENANCE PLAN FOR LANDSCAPE IMPROVEMENTS

This Exhibit forms an integral part of the DISTRICT FOUR (4) LANDSCAPE MAINTENANCE MEMORANDUM OF AGREEMENT between the State of Florida, Department of Transportation and the AGENCY.

Please see attached

MAINTENANCE PLAN

Landscape Improvements

Project State Road No: State Road 5 (US 1) from (M.P. 0.383) to (M.P. 0.516)
Permit #: 2016-L-496-0003
Maintaining Agency: City of Fort Lauderdale
RLA of Record: Rhett Roy
Date: June 7, 2016

I. GENERAL MAINTENANCE REQUIREMENTS AND RECOMMENDATIONS:

The purpose of a plan for the landscape improvements maintenance practices is to allow the plant material on your project to thrive in a safe and vigorous manner while fulfilling their intended purpose and conserving our natural resources. Plantings and all other landscape improvements shall be maintained to avoid potential roadway hazards and to provide required clear visibility, accessibility, clearance, and setbacks as set forth by Florida Department of Transportation (FDOT) governing standards and specifications: *FDOT Design Standards, FDOT Plans Preparation Manual Vol. 1, Chapter 2.11* and *FDOT Standard Specifications for Road and Bridge Construction*, as amended by contract documents, and all other requirements set forth by the District 4 Operations Maintenance Engineer. The initial portion of the Maintenance Plan describes general maintenance requirements and recommendations. **The concluding section provides recommendations prepared by the Registered Landscape Architect of Record specific to the attached approved plans.**

WATERING REQUIREMENTS

Watering is a critical concern for not only the maintenance of healthy plant material but also for observing water conservation practices. The amount of water to apply at any one time varies with the weather, drainage conditions and water holding capacity of the soil. For plant materials that have been established, it is imperative that any mandated water restrictions be fully conformed to on FDOT roadways.

Proper watering techniques should provide even and thorough water dispersal to wet the entire root zone, but not saturate the soil or over-spray onto travel lanes.

IRRIGATION SYSTEM

The Agency shall ensure there are no roadway overspray or irrigation activities during daytime hours (most notably "rush hour" traffic periods). It is imperative the irrigation controller is properly set to run early enough that the watering process will be entirely completed before high traffic periods, while adhering to mandated water restrictions. To ensure water conservation, the Agency shall monitor the system for water leaks and the rain sensors to ensure they are functioning properly so that the system shuts down when there is sufficient rainfall.

INTEGRATED PLANT MANAGEMENT

An assessment of each planting area's soil is recommended to periodically determine the nutrient levels needed to sustain healthy, vigorous plant growth.

Palms, shrubs, trees and turf areas shall be fertilized in such a manner and frequency to ensure that the plant material remains healthy and vigorously growing. Please be alert to changes in fertilization types per University of Florida, Institute of Food and Agricultural Services (I.F.A.S.) recommendations. Establishment of an integrated pest management program is encouraged to ensure healthy plants, which are free of disease and pests.

MULCHING

Mulch planting beds in such a manner as to prevent weed growth, retain moisture to the plants, protect against soil erosion and nutrient loss, maintain a more uniform soil temperature, and improve the appearance of the planting beds. Avoid mulch mounded up on the trunks of trees, palms, and the base of shrubs to encourage air movement in this area which aids in lowering disease susceptibility. Cypress mulch is prohibited on state right of way.

PRUNING

All pruning, and the associated safety criteria, shall be performed according to American National Standard Institute (ANSI) A300 standards and shall be supervised by an International Society of Arboriculture (ISA) Certified Arborist. Pruning shall be carried out with the health and natural growth of plant materials in mind, to specific pruning heights maintaining clear visibility for motorists, and provide vertical clearance for pedestrian, bicyclist, and truck traffic where applicable. Visibility windows must be maintained free of view obstructions, and all trees and palms must be maintained to prevent potential roadway and pedestrian hazards, all palms are to be kept fruit free. The specific pruning heights are determined by understanding the designer's intent when selecting and placing the plants. The intended mature maintained height and spread of plants are noted on the plans (See Exhibit B.) and see Part II. Specific Requirements and Recommendations for guidelines. The understory plant materials selected for use within the restricted planting areas (Limits of Clear Sight) are to be maintained at a height in compliance with *FDOT Design Standards* Index 546; Page 6 of 6, Window Detail. Vertical tree heights must meet *FDOT Maintenance Rating Program* (MRP) standards.

STAKING AND GUYING

All staking materials, except for replacements, are to be removed by the completion of FDOT warranty period or at one year (whichever comes first). Any subsequent staking and guying activities by the Agency must adhere to *FDOT Design Standards* guidelines (See Index 544). The Agency shall closely monitor staking and guying attachment materials so that they are securely fastened to avoid potential roadway hazards.

TURF MOWING:

All grassed areas are to be mowed and trimmed with sufficient frequency to maintain a deep, healthy root system while providing a neat and clean appearance to the urban landscape. All turf efforts, mowing, curb/sidewalk edging and turf condition, must at a minimum, meet *FDOT Maintenance Rating Program* (MRP).

LITTER CONTROL:

The project site shall remain as litter free as practicable. It is recommended to recycle this litter to avoid unnecessary waste by its reuse. Litter removal efforts must meet *FDOT Maintenance Rating Program* (MRP) standards.

WEEDING/HERBICIDE

All planting areas shall be maintained as weed free as practicable by enlisting integrated pest management practices in areas specified on the plans and maintaining proper mulch levels. Extreme care is recommended when using a chemical herbicide to avoid overspray onto plant materials. It is the applicator's responsibility to restore any damage, resulting from overspray to the plantings, per the approved plans.

PLANT REPLACEMENT

Plant replacement shall be the same species and specification as the approved plan. Move and replace all plant materials that may conflict with utility relocations and service. Only plants graded Florida #1 or better, per the *Florida Department of Agriculture and Consumer Services, Grades and Standards for Nursery Plants* are permitted on FDOT roadways. Should it become necessary to change the species, a permit is required from FDOT for approval by the FDOT District Landscape Architect.

HARDSCAPE (SPECIALTY SURFACING)

All tree grates and specialty surfacing shall be maintained in such a manner as to prevent any potential tripping hazards and protect damage to the surfacing and tree grates. Final surface tolerance from grade elevations shall, at a minimum, meet the most current FDOT Maintenance Rating Program Handbook Pages 43-47; ADA accessible sidewalk; and FDOT Design Standards for Design, Construction, Maintenance and Utility Operations on The State Highway System. If the specialty surfacing or tree grates become damaged, they shall be replaced with the same type and specification as the approved plan.

HARDSCAPE (NON-STANDARD) TRAVELWAY SURFACING

It shall be the responsibility of the AGENCY to restore an unacceptable ride condition of the roadway, including asphalt pavement (if applicable), caused or contributed by the installation or failure of non-standard surfacing, and/or the header curb, on the Department of Transportation right of way within the limits of this Agreement. Pavement restoration areas or "patches" will have a minimum length of 10-ft, measured from the edge of the header curb, and a width to cover full lanes for each lane affected by the restoration.

Pavement restoration will be performed in accordance with the most current edition of the *FDOT Standard Specifications for Road and Bridge Construction*, and the *FDOT Design Standards for Design, Construction, Maintenance and Utility Operations on the State Highway System*.

It shall be the responsibility of the AGENCY to maintain all signs located within a non-standard surfacing area. Such maintenance to be provided by the AGENCY shall include repair and replacement of the sign panel, post, and base.

HARDSCAPE (LANDSCAPE ACCENT LIGHTING) (IF APPLICABLE)

Landscape accent lighting shall be maintained in such a manner as to prolong the life of the lighting fixture and prevent potential safety hazards. If the lighting fixtures and their system become damaged, they shall be replaced with the same type and specification as the approved plan. Landscape lighting shall meet requirements for the sea turtle nesting and hatching.

MAINTENANCE OF TRAFFIC CONTROL

Reference the FDOT website regarding the selection of the proper traffic control requirements to be provided during routine maintenance and / or new installations of this DOT roadway.

VEGETATION MANAGEMENT AT OUTDOOR ADVERTISING (ODA) (IF APPLICABLE)

To avoid conflicts with permitted outdoor advertising, please reference the State of Florida website regarding the vegetation management of outdoor advertising. This website provides a portal to search the FDOT Outdoor Advertising Inventory Management System Database. The database contains an inventory of outdoor advertising structures, permits and other related information maintained by the Department.

Also, reference the *Florida Highway Beautification Program* website link for “*Vegetation Management at ODA signs*” “*Florida Statutes*” and “*Florida Administrative Code*” related to vegetation management at outdoor advertising sign, permit applications for vegetation management and determining mitigation value of roadside vegetation.

II. SPECIFIC PROJECT SITE MAINTENANCE REQUIREMENTS AND RECOMMENDATIONS

Replacement material shall be installed at a mature height matching installed material. Green Island Ficus shall be tripped to prevent any obstruction of the sidewalk or the accessible path.

REFERENCES

This reference list is provided as a courtesy. The list may not contain the most current websites. The most current references must be accessed for up to date information.

Accessible Sidewalk (ADA)

<http://www.access-board.gov/guidelines-and-standards/streets-sidewalks>

Americans with Disabilities Act (ADA) (ADAAG)

http://www.ada.gov/2010ADAstandards_index.htm

American National Standard Institute, *ANSI A300, (Part 1) for Tree Care Operations – Trees, Shrub, and Other Woody Plant Maintenance – Standard Practices (Pruning)*, available for purchase

<http://webstore.ansi.org>

Florida Department of Agriculture and Consumer Services, Division of Plant Industry, *Florida Grades and Standards for Nursery Plants 2015*

<http://www.freshfromflorida.com/Divisions-Offices/Plant-Industry/Bureaus-and-Services/Bureau-of-Plant-and-Apiary-Inspection>

Florida Department of Community Affairs (DCA), *Florida Board of Building Codes & Standards, 2010 Florida Building Code, Chapter 11 Florida Accessibility Code for Building Construction Part A*

http://www2.iccsafe.org/states/florida_codes/

Florida Department of Transportation, *FDOT Design Standards for Design, Construction, Maintenance and Utility Operations on the State Highway System, Index 544 Landscape Installation*

<http://www.fdot.gov/roadway/DS/17/IDx/00544.pdf>

Florida Department of Transportation, *FDOT Design Standards for Design, Construction, Maintenance and Utility Operations on the State Highway System, Index 546 Sight Distance at Intersections*

<http://www.fdot.gov/roadway/DS/17/IDx/00546.pdf>

Florida Department of Transportation, *FDOT Design Standards for Design, Construction, Maintenance and Utility Operations on the State Highway System, Index 600 Traffic Control through Work Zones*

<http://www.fdot.gov/roadway/DS/17/IDx/00600.pdf>

Florida Department of Transportation, *FDOT Design Standards for Design, Construction, Maintenance and Utility Operations on the State Highway System, Index 700 Roadside Offsets*

<http://www.fdot.gov/roadway/DS/17/IDx/00700.pdf>

Florida Department of Transportation, *FDOT Plans Preparation Manual (PPM) Vol. 1 Chapter 4, 4.2.4 Lateral Offset*

Table 4.2.1 Clear Zone Width Requirements

Table 4.2.3 Lateral Offset Criteria (for Trees)

<http://www.fdot.gov/roadway/PPMManual/2016PPM.shtm>

Florida Department of Transportation, *Program Management, Maintenance Specifications Workbook Supplemental Specifications, Section 580 Landscape Installation*

<http://www.fdot.gov/programmanagement/Maintenance/2017Jan/Files/SS5800000.doc>

Department of Transportation, Landscape Architecture Website

www.MyFloridaBeautiful.com

Florida Department of Transportation, *Maintenance Rating Program Handbook*

<http://www.dot.state.fl.us/statemaintenanceoffice/MaintRatingProgram.shtm>

Florida Department of Transportation Outdoor Advertising Database

<http://www2.dot.state.fl.us/rightofway/>

Florida Exotic Pest Plant Council Invasive Plant Lists

<http://www.fleppc.org/list/list.htm>

Florida Irrigation Society

<http://www.fisstate.org>

Florida Power and Light (FPL), *Plant the Right Tree in the Right Place*

http://www.fpl.com/residential/trees/right_tree_right_place.shtml

A Guide to Roadside Vegetation Management

[http://www.dot.state.fl.us/statemaintenanceoffice/RDW/DOT%20Final%20\(3\)Turf%20Management%20Guide%20UF.pdf](http://www.dot.state.fl.us/statemaintenanceoffice/RDW/DOT%20Final%20(3)Turf%20Management%20Guide%20UF.pdf)

Interlocking Concrete Pavement Institute (ICPI)

<http://www.icpi.org/>

International Society of Arboriculture (ISA)

www.isa-arbor.com

UF IFAS: *Selecting Tropical and Subtropical Tree Species for Wind Resistance*

<http://edis.ifas.ufl.edu/pdf/FR/FR17500.pdf>

UF IFAS: *Fertilization of Field-grown and Landscape Palms in Florida*

<http://edis.ifas.ufl.edu/ep261>

U.S. Department of Transportation, Federal Highway Administration, *Manual on Uniform Traffic Control Devices*

<http://www.mutcd.fhwa.dot.gov>

SECTION No.: 82020000
Permit No. (s): 2016-L- 491-0001
COUNTY: BROWARD
S.R. No.: 5

EXHIBIT D

PATTERNED PAVEMENT INSTALLATION

This Exhibit forms an integral part of the DISTRICT FOUR (4) MAINTENANCE MEMORANDUM OF AGREEMENT between the State of Florida, Department of Transportation and the AGENCY.

- (1) Prior to acceptance by the DEPARTMENT, all lanes for each of the patterned pavement crossings projects shall be tested for friction in accordance with ASTM E 274-06. All costs for friction testing will be the responsibility of the AGENCY. The initial friction resistance shall be at least 35 obtained at 40 mph with a ribbed test tire (FN40R) or equivalent. Failure to achieve this minimum resistance shall require all deficient crosswalk areas to be removed to their full extent (lane-by-lane) and replaced with the same product installed initially. If more than 50% of the lanes in the intersection require replacement, the entire intersection installation may be reconstructed with a different product on the Qualified Products List (QPL). All lanes receiving new installations shall again be friction tested within 60-90 days of their acceptance by the local AGENCY. The initial friction resistance of each new installation shall be at least 35 (FN40R) or equivalent. Failure to achieve this minimum resistance shall require all deficient areas be removed to their full extent (lane-by-lane) and replaced with the same product installed initially. If more than 50% of the lanes in the intersection require replacement, the entire intersection installation may be reconstructed with a different product on the DEPARTMENT 'S Qualified Products List (QPL), or replaced with conventional pavement.
- (2) The results of all friction tests and condition surveys shall be sent to the Operations Engineer at the local FDOT District Four Operations Center located at Broward Operations, 5548 NW 9th Avenue, Ft. Lauderdale, FL 33309 (954) 776-4300, with a cover letter either certifying that the crosswalks comply with the above stated requirements; or what remedial action will be taken to restore the friction and/or integrity of the crosswalk area.
- (3) When remedial action is required in accordance with the above requirements, the local AGENCY at its own expense shall complete all necessary repairs within 90 days of the date the deficiency was identified.

- (4) Should the local AGENCY fail to satisfactorily perform any required remedial work or testing in accordance with this agreement, the DEPARTMENT reserves the right to replace the patterned pavement with conventional pavement and bill the local AGENCY for this cost. No more than two full patterned pavement depth repairs shall be made to an area without first resurfacing the pavement to its full depth.

SECTION No.: 82020000
Permit No. (s): 2016-L- 491-0001
COUNTY: BROWARD
S.R. No.: 5

EXHIBIT E

PATTERNED PAVEMENT MAINTENANCE

This Exhibit forms an integral part of the DISTRICT FOUR (4) MAINTENANCE MEMORANDUM OF AGREEMENT between the State of Florida, Department of Transportation and the AGENCY.

"Maintenance" of all patterned pavement crosswalks in these Agreements shall be defined, as a minimum, to include its frictional characteristics and integrity as follows:

- (1) Within 60 days of project acceptance by the Department, all lanes of each patterned pavement crosswalk shall be evaluated for surface friction. The friction test shall be conducted using either a locked wheel tester in accordance with **FM 5-592 (Florida Test Method for Friction Measuring Protocol for Patterned Pavements)** or Dynamic Friction Tester in accordance with **ASTM E1911**. **All costs for friction testing are the responsibility of the AGENCY.**
- (2) The initial friction resistance shall be at least 35 obtained at 40 mph with a ribbed tire test (FN40R) or equivalent (FM 5-592 attached). Failure to achieve this minimum resistance shall require all deficient crosswalk areas to be removed to their full extent (land-by-land) and replaced with the same product installed initially. The AGENCY is responsible for all costs associated with the removal and replacement of the crosswalk. If the Department determines that more than 50% of the lanes in the intersection require replacement, the entire intersection installation may be reconstructed with a different product on the Qualified Products List (QPL) or replaced with conventional pavement.
- (3) Approximately **one year** after project acceptance and **every one year** thereafter and for the life of the adjacent pavement, only the outside traffic lane areas of each patterned crosswalk shall be tested for friction resistance in accordance with **ASTM E274** or **ASTME 1911**. Friction resistance shall, at a minimum, have a FN40R value of 35 (or equivalent).

- (4) The results of all friction tests shall be sent to the **Operations Engineer** at the local FDOT District Four Operations Center located at Broward Operations, 5548 NW 9th Avenue, Ft. Lauderdale, FL 33309 (954) 776-4300, with a cover letter either certifying, that the crosswalks comply with the minimum friction criteria, or stating what remedial action will be taken to restore the friction.
- (5) Failure to achieve the minimum resistance shall require all lanes of the crosswalk to be friction tested to determine the extent of the deficiency. All deficient areas shall be removed to their full extent (lane-by-lane) and replaced with the same product installed initially. If the Department determines that more than 50% of the lanes in the intersection require replacement, the entire intersection installation may be reconstructed with a different product on the QPL, or replaced with conventional pavement.
- (6) When remedial action is required in accordance with the above requirements, the local agency shall complete all necessary repairs at its own expense within 90 days of the date when the deficiency was identified. No more than two full depth patterned pavement repairs shall be made to an area without first resurfacing the underlying pavement to 1" minimum depth.
- (7) The Department will not be responsible for replacing the treatment following any construction activities by the Department in the vicinity of the treatment, or any costs for testing.
- (8) Should the local agency fail to satisfactorily perform any required remedial work or testing in accordance with this agreement, the Department reserves the right to replace the patterned pavement with conventional pavement (matching the adjacent pavement) and bill the local agency for this cost.

Florida Test Method
for
Friction Measuring Protocol for Patterned Pavements

Designation: FM 5-592

1. SCOPE

This method covers the testing procedures for evaluating the friction resistance of Patterned surfaces used in crosswalks over asphalt and concrete surfaces

Note: This test method contains two parts:

Part A- Friction testing performed with the Locked Wheel Friction Tester

Part B- Friction testing performed with the Dynamic Friction Tester (DFT)

2. APPARATUS

2.1 Locked Wheel Friction Tester- This apparatus shall be standardized in accordance with ASTM E 274, "Standard Test Method for Skid Resistance of Paved Surfaces Using a Full-Scale Tire". The friction test tire used shall be in accordance with ASTM E 501, "Standard Specification for Standard Rib Tire for Pavement Skid-Resistance".

2.2 Dynamic Friction Tester- This apparatus shall be standardized in accordance with ASTM E 1911, "Standard Test Method for Measuring Paved Surface Frictional Properties Using the Dynamic Friction Tester".

3. FRICTION NUMBER CONVERSION

The regression equations relating the locked wheel test results and the DFT results at 40 mph (65 km/h) are:

$$FN40R = 0.64 \cdot DFT40 + 9.23 \quad (1)$$

$$DFT40 = 1.56 \cdot FN40R - 14.42 \quad (2)$$

where,

FN40R = Friction Number from locked wheel testing at 40 mph using a ribbed tire
DFT40 = Coefficient of Friction from DFT at 40 mph multiplied by 100.

Although the above equations can be used to convert the DFT result to the locked wheel friction number at 40 mph and vice versa, conditions do exist where the DFT testing or the locked wheel testing at 40 mph is not feasible due to constraints such as safety, traffic congestion, speed limits, and/or roadway geometries. In these cases, it may be preferable to conduct the locked wheel

testing at a slower speed, e.g., 20 or 30 mph. The following regression equations have been developed to convert the locked wheel test results at 20 and 30 mph to those at 40 mph:

$$FN40R = 0.89 \cdot FN20R - 4.88 \quad (3)$$

where,

FN20R = Friction Number from locked wheel testing at 20 mph using a ribbed tire, and

$$FN40R = 0.95 \cdot FN30R - 2.91 \quad (4)$$

where,

FN30R = Friction Number from locked wheel testing at 30 mph using a ribbed tire.

For ease of application of the above harmonization results, Table 1 summarizes the conversions from FN30R, FN20R and DFT40 to FN40R. Note that the friction numbers shown in this table were rounded to the closest integer. The numbers highlighted in yellow represent the current minimum required friction numbers depending on survey cycle, test method, and speed evaluated.

Table 1. Friction Number Table

FN40R	FN30R	FN20R	DFT40
22	26	30	20
23	27	31	21
24	28	32	23
25	29	34	25
26	30	35	26
27	31	36	28
28	33	37	29
29	34	38	31
30*	35*	39*	32*
31	36	40	34
32	37	41	36
33	38	43	37
34	39	44	39
35**	40**	45**	40**
36	41	46	42
37	42	47	43
38	43	48	45
39	44	49	46
40	45	50	48
41	46	52	50
42	47	53	51
43	48	54	53
44	49	55	54
45	50	56	56

* Minimum friction numbers required for inventory cycles of patterned crosswalks.

**Minimum friction numbers required for new construction and 3-year QPL test decks for patterned crosswalks.

4. PROCEDURE

The test procedures for both the Locked Wheel Friction Tester and the Dynamic Friction Tester are described in the following. All testing should be performed within either the driver or passenger side wheel path, regardless of the equipment used.

4.1 PART A- Friction Testing with the Locked Wheel Friction Tester

- A) **New Construction** – The locked wheel test shall be conducted on all crosswalks within 60 days of the new surface completion date. One valid lockup test is required for each lane; all lanes shall be evaluated

and compared. The test layout is shown in Figure 1.

- B) **Inventory** – For in-service Qualified Product List (QPL) test sections, the locked wheel test is conducted at 6 month intervals up to 3 years. Maintenance surveys are conducted on a yearly basis. Test site shall be confined to a single outside traffic lane (single direction) for each crosswalk location. The locked wheel test will require three repeat lockups and averaged for the designated test lane. The lane in which the friction tests were conducted must be identified in the report along with the test results.
- C) **Retest** – At any point when friction numbers are determined to be below the required values shown in Table 1, all lanes shall be evaluated and the range of friction values shall be determined.
- D) **Special Request** – At any time a patterned pavement is in need of a special assessment, the designated lane(s) shall be evaluated to determine the range of representative friction values.

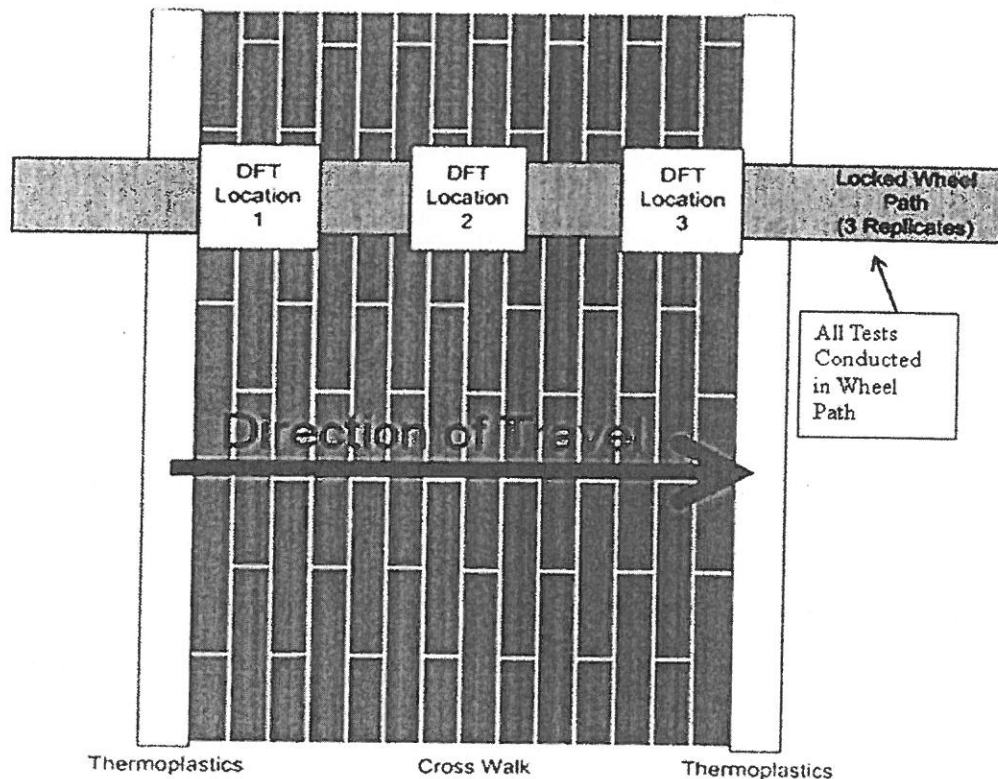


FIGURE 1 Testing protocol for patterned pavement.

4.2 PART B- Skid Testing with the Dynamic Friction Tester (DFT)

- A) **New Construction** – The DFT test shall be conducted on all crosswalks within 60 days of the new surface completion date. DFT tests shall be conducted at three (3) discrete locations in each lane; the results shall be averaged and reported for each lane tested. All lanes shall be evaluated and compared. The test layout is shown in Figure 1.
- B) **Inventory** – For in-service QPL test sections, the DFT test is conducted at 6 month intervals up to 3 years. Maintenance surveys are conducted on a yearly basis. Test site shall be confined to a single outside traffic lane (single direction) for each crosswalk location. DFT tests will be conducted at three (3) discrete locations (Figure 1) in each lane; the results shall be averaged and reported for each lane tested. The lane in which the friction tests were conducted should be identified in the report with the test results.
- C) **Retest** – At any point when friction numbers are determined to be below the required values shown in Table 1, all lanes shall be evaluated and the range of friction values shall be determined.
- D) **Special Request** – At any time a patterned pavement is in need of a special assessment, the designated lane(s) shall be evaluated to determine the range of representative friction values.

5 REPORT

- 5.1 Friction numbers for the patterned crosswalks should be reported using FDOT's Materials form number 675-060-05. This form can be downloaded from FDOT's website at:
<http://formserver.dot.state.fl.us/MiscRepository/forms/67506005.xlsm>.