

**REVOCABLE LICENSE AGREEMENT BETWEEN BROWARD COUNTY AND CITY
OF CITY OF FORT LAUDERDALE FOR NON-EXCLUSIVE ACCESS AND USE OF
BROWARD COUNTY RIGHT-OF-WAY**

This Revocable License Agreement ("Agreement") between Broward County ("County"), a political subdivision of the State of Florida, and City of Fort Lauderdale ("Municipality"), a municipal corporation organized and existing under the laws of the State of Florida (collectively, the "Parties"), is entered into and effective as of the date this Agreement is fully executed by the Parties (the "Effective Date").

RECITALS

A. The right-of-way on Prospect Road from approximately 100 feet west of NW 15th Avenue to NW 10th Avenue (the "Revocable License Area"), and described in the attached Exhibit A, is functionally classified as a County road and under County's control.

B. Municipality seeks and County is amenable to Municipality's nonexclusive access and use of the Revocable License Area.

C. Municipality desires to install improvements, as shown, in Exhibit A, in the Revocable License Area.

D. Municipality, through formal action of its governing body taken on the 3rd day of August, 2020, has accepted responsibility for the ongoing maintenance and repair of the Improvements within the Revocable License Area, more specifically defined herein, under the terms of this Agreement.

E. Municipality has authorized the appropriate municipal officers to execute this Agreement.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. TERM. The term of this Agreement will commence upon the Effective Date and will continue until this Agreement is terminated as provided for in paragraph 9 below.

2. USE OF REVOCABLE LICENSE AREA. County hereby grants to Municipality a revocable license for nonexclusive access and use of the Revocable License Area only for the purpose of installation of green colored surface pavement in bicycle lanes designated below (the "Improvements"), and for the use of such green colored surface pavement in bicycle lanes, not inconsistent with this Agreement (the "Licensed Use"), including ongoing maintenance and repair of the Improvements. The Improvements must meet County's Minimum Standards Applicable to Public Rights-of-Ways Under Broward County Jurisdiction, the Special Technical Provisions attached as Exhibit B-1, and the Manufacturer's Specification attached as Exhibit B-2. The Improvements must be installed in accordance with Exhibit A and Exhibit B-2 and are subject to the conditions of

the Interim Approval Memorandum IA-14 in the attached Exhibit D. Other than the purposes identified in this Agreement, Municipality must not use the Revocable License Area for any other purpose whatsoever without written amendment of this Agreement executed with the same formalities as this Agreement. Municipality must also not permit the Revocable License Area to be used in any manner that will violate the terms of this Agreement or any laws, administrative rules, or regulations of any applicable governmental entity or agency.

PLEASE CHECK THE APPROPRIATE BOX BELOW

- Overflow parking in excess of the minimum of off-street parking required by Chapter 39, Broward County Code of Ordinances, or the applicable municipal minimum of off-street parking requirements.
- A sign that is permitted under applicable municipal/unincorporated sign ordinances and laws.
- Additional landscaping and irrigation in excess of that required by Chapter 39, Broward County Code of Ordinances, or applicable municipal minimum landscaping requirements or as a condition of any special exception or variance.
- Other (explain): Installation, maintenance, repair, and replacement of green colored pavement in bicycle lanes and within other specified and agreed upon traffic conflict areas as the term is used in Exhibit D.

2.1 Municipality shall ensure that the plans provide for the ongoing maintenance of the Improvements in accordance with the schedule provided, and in compliance with the guidance contained in Exhibits B-1 and B-2.

2.2 INTENTIONALLY DELETED.

2.3 County's Director of Highway Construction Engineering Division ("Director") may also terminate the Licensed Use and require Municipality to remove the Improvements if the interim approval, described in Exhibit D, is revoked or if in Director's sole discretion the Improvements pose significant safety concerns. If at any time Municipality is required by Director to reinstall any or all of the Improvements, Municipality shall reinstall the Improvements in accordance with the Standard Detail Sheets attached as Exhibit C.

2.4 County, its agents, or authorized employees, will continue to have unimpeded and unrestricted access to the Revocable License Area at all times for all purposes including to examine and determine if Municipality is properly using and maintaining the Revocable License Area under the terms and conditions of this Agreement.

2.5 Any alteration of the Improvements by Municipality requires the prior submittal of plans and specifications, a permit issued by HCED consistent with the requirements as provided in this Agreement, above, and the subsequent acceptance of the alteration(s) by the Director.

2.6 Municipality specifically agrees to maintain and repair the Improvements in strict accordance with the approved plans and specifications and in a manner that will not pose a hazard to persons or vehicles on any adjacent property.

2.7 If Municipality fails to perform or comply with any terms or conditions of this Agreement, and upon written notice from the Director of the failure, this Agreement may be terminated in accordance with the provisions in paragraph 9.

2.8 The obligations of Municipality as set forth in this Agreement may be performed by Municipality through its employees, or Municipality may enter into a contract with a third party to perform the services. If Municipality contracts with a third party, Municipality will remain fully responsible hereunder and shall ensure that the third party complies at all times with each and every term, condition, duty, and obligation set forth in this Agreement.

3. COMPENSATION. No payment to County shall be made by Municipality for the Licensed Use granted in this Agreement.

4. DAMAGE TO REVOCABLE LICENSE AREA. Municipality must not by its access or installation cause damage to the Revocable License Area. The Parties agree that all Improvements and personal property placed by Municipality upon the Revocable License Area will remain the property of Municipality and will be placed upon the Revocable License Area at the sole risk of Municipality. Municipality shall give County prompt written notice of any occurrence, incident, or accident occurring on the Revocable License Area.

5. INDEMNIFICATION OF COUNTY. Municipality shall at all times indemnify, hold harmless, and defend County and all of County's current and former officers, agents, servants, and employees (collectively, "Indemnified Party") from and against any and all causes of action, demands, claims, losses, liabilities, and expenditures of any kind, including attorneys' fees, court costs, and expenses (collectively, a "Claim"), raised or asserted by any person or entity not a party to this Agreement, which Claim is caused or alleged to be caused in whole or in part, by any intentional, reckless, or negligent act or omission of Municipality, its current or former officers, employees, agents, servants or assigns, arising from relating to, or in connection with this Agreement. If such claim is brought against Indemnified Party, Municipality shall upon written notice from County, defend each Indemnified Party against each such Claim by counsel satisfactory to County, or, at County Attorney's option, pay for an attorney selected by County Attorney to defend Indemnified Party. The obligations of this section shall survive the termination of this Agreement.

5.1 If Municipality contracts with a third party to perform any of Municipality's obligations under this Agreement, any contract with such third party must include the following provisions:

5.1.1 Indemnification. Third party shall indemnify and hold harmless County, and all of County's current and former officers, agents, servants, and employees (collectively, "Indemnified Party") from and against any and all causes of action, demands, claims, losses, liabilities, and expenditures of any kind, including attorneys' fees, court costs, and expenses (collectively, a "Claim"), raised or asserted by any person or entity not a party to this Agreement, which Claim is caused or alleged to be caused in whole or in part, by any intentional, reckless, or negligent act or omission of Municipality's third party, its current or former officers, employees, agents, servants or assigns, arising from relating to, or in connection with this Agreement. If any claim is brought against Indemnified Party, Municipality's third party shall upon written notice from County, at its own expense, defend each Indemnified Party against each such Claim by counsel satisfactory to County, or, at County Attorney's option, pay for an attorney selected by County Attorney to defend Indemnified Party.

5.2 County and Municipality are entities subject to Section 768.28, Florida Statutes, as may be amended from time to time, and agree to be fully responsible for the negligent or wrongful acts or omissions of their respective agents, employees or officers acting within the scope of their office or employment subject to the statutory limitation on liability as set forth in 768.28(5), Florida Statute (2019). Nothing herein is intended to serve as a waiver of sovereign immunity by any party to which sovereign immunity may be applicable. Nothing in this Agreement shall be construed as consent by Municipality to be sued by third parties in any matter arising out of this Agreement or any other contract.

5.3 The provisions of paragraph 5 shall survive the expiration or earlier termination of this Agreement.

6. INSURANCE. Municipality must provide County with written verification of liability protection that meets or exceeds any requirements of Florida law. Additionally, if Municipality holds any excess liability coverage, Municipality must ensure that "Broward County" is named as an additional insured and certificate holder under such excess liability policy and provide evidence of same to County.

6.1 If Municipality maintains broader coverage or higher limits than the minimum coverage required under Florida law, County will be entitled to such broader coverage and higher limits on a primary and non-contributory basis. County's insurance requirements apply to Municipality's self-insurance.

6.2 If Municipality contracts with a third party to provide any of the services set forth herein, Municipality shall require that each contractor procure and maintain

insurance coverage, at contractor's sole cost and expense, of the types and minimum amounts set forth in Exhibit E. Municipality must ensure that all such contractors name "Broward County" as an additional insured and certificate holder under the applicable insurance policies. Municipality must not permit any contractor to provide services until the insurance requirements under this section are met. Municipality shall furnish evidence of insurance for all such contractors.

6.3 County reserves the right, but not the responsibility, to periodically review any and all insurance policies and to reasonably adjust the limits and/or types of coverage required, from time to time throughout the term of this Agreement.

6.4 Coverage is not to cease and is to remain in full force and effect until all performance required of Municipality's contractor is completed.

7. MAINTENANCE, REPAIRS, AND OTHER OBLIGATIONS. Municipality is solely responsible for all costs associated with the Licensed Use, including maintenance and repair, and costs for repairing any damage to the Revocable License Area.

8. SECURITY. There is no obligation for security as part of this Revocable License Agreement.

9. TERMINATION. This Agreement is merely a right to access and use and grants no estate in the Revocable License Area. This Agreement may be terminated by County, through the Broward County Board of County Commissioners (the "Board"), with or without cause and at any time during the term hereof, upon thirty (30) days' written notice to Municipality.

10. SURRENDER UPON TERMINATION. Municipality must peaceably surrender its use of and deliver the Revocable License Area to County, or its agents, immediately upon termination of this Agreement.

Upon surrender, Municipality must remove from the Revocable License Area, at Municipality's own expense, the Improvements unless County, in writing, authorizes Municipality to leave the Improvements on the Revocable License Area. County will have no obligation to move, reinstall, replace, or in any way compensate Municipality for any loss resulting from or arising out of the termination of this Agreement, the requirement to remove the Improvements, or the removal of the same by County upon failure of Municipality to restore the Revocable License Area. Following removal of the Improvements, Municipality agrees to restore the Revocable License Area to its original condition, or a condition that complies with the MUTCD, and that is acceptable to the County as determined in the sole discretion of the Director. Municipality shall repair or pay for any damage to County property resulting from the removal of the Improvements.

11. WAIVER. Failure of County to insist upon strict performance of any covenant or condition of this Agreement, or to exercise any right contained in this Agreement, will not be construed as a waiver or relinquishment for the future of any such covenant, condition,

or right; but the same will remain in full force and effect. None of the conditions, covenants, or provisions of this Agreement will be waived or modified by the Parties unless done so in writing as provided for in paragraph 17 below.

12. NOTICES. Whenever either party desires to give notice to the other, such notice must be in writing, sent by certified United States Mail, postage prepaid, return receipt requested, or sent by commercial express carrier with acknowledgement of delivery, or by hand-delivery with a request for a written receipt of acknowledgment of delivery, together with a contemporaneous email, addressed to the party for whom it is intended at the place last specified. The manner in which and persons to whom notice may be provided will remain the same unless and until changed in writing in accordance with this article. The Parties respectively designate the following persons for receipt and issuance of notice:

For County:
Director, Broward County Highway Construction & Engineering Division
1 North University Drive, Suite 300B
Plantation, FL 33324-2038
Email: rtornese@broward.org

with a copy to:
Director, Traffic Engineering Division
2300 W. Commercial Boulevard
Fort Lauderdale, Florida 33309
Email: asebo@broward.org

For Municipality:
Christopher J. Lagerbloom, City Manager
City of Fort Lauderdale
City Hall
100 North Andrews Avenue
Fort Lauderdale, FL 33301

With a copy to:
Karen Warfel
Transportation & Mobility Department
City of Fort Lauderdale
290 NE 3rd Avenue
Fort Lauderdale, FL 33301

13. ENTIRE AGREEMENT. This Agreement embodies the entire agreement between the Parties. It may not be modified or terminated except as provided in this Agreement. If any provision is invalid, it will be considered deleted from this Agreement, and such deletion will not invalidate the remaining provisions.

14. COMPLIANCE WITH LAWS. Municipality shall comply with all applicable federal, state, and local laws, codes, ordinances, rules, and regulations related to the use of the Revocable License Area.

15. LAW, JURISDICTION, VENUE, WAIVER OF JURY TRIAL. This Agreement must be interpreted and construed in accordance with and governed by the laws of the State of Florida. The exclusive venue for any lawsuit arising from, related to, or in connection with this Agreement will be in the state courts of the Seventeenth Judicial Circuit in and for Broward County, Florida. If any claim arising from, related to, or in connection with this Agreement must be litigated in federal court, the exclusive venue for any such lawsuit will be in the United States District Court or United States Bankruptcy Court for the Southern District of Florida. **BY ENTERING INTO THIS AGREEMENT, THE PARTIES HEREBY EXPRESSLY WAIVE ANY RIGHTS EITHER PARTY MAY HAVE TO A TRIAL BY JURY OF ANY CIVIL LITIGATION RELATED TO THIS AGREEMENT.**

16. FURTHER ASSURANCES. The Parties hereby agree to execute, acknowledge, and deliver and cause to be done, executed, acknowledged, and delivered all further assurances and to perform such acts as shall reasonably be requested of them in order to carry out this Agreement.

17. AMENDMENTS. No modification, amendment, or alteration in the terms or conditions contained herein shall be effective unless contained in a written document prepared with the same or similar formality as this Agreement and executed by the Board and the Parties or others delegated authority or otherwise authorized to execute same on their behalf.

(THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK)

IN WITNESS WHEREOF, the Parties hereto have made and executed this Agreement: BROWARD COUNTY through its BOARD OF COUNTY COMMISSIONERS, signing by and through its Mayor or Vice-Mayor, authorized to execute same by Board action on the _____ day of _____, 2020, and CONTRACTOR, signing by and through its _____, duly authorized to execute same.

COUNTY

ATTEST:

BROWARD COUNTY, by and through
its Board of County Commissioners

Broward County Administrator, as
ex officio Clerk of the Broward County
Board of County Commissioners

By _____
Mayor
____ day of _____, 2019

Approved as to form by
Andrew J. Meyers
Broward County Attorney
Governmental Center, Suite 423
115 South Andrews Avenue
Fort Lauderdale, Florida 33301
Telephone: (954) 357-7600
Telecopier: (954) 357-7641

By  01/27/2021
Nathaniel Klitsberg (Date)

Senior Assistant County Attorney
MICHAEL KERR Digitally signed by MICHAEL KERR
Date: 2021.01.27 10:30:03 -05'00'

By _____
Michael J. Kerr (Date)
Deputy County Attorney

IF/MM/NK
2020-02-29 RLA with City of Fort Lauderdale for Prospect Road Bike Lanes
02/29/2020
#497822v1

REVOCABLE LICENSE AGREEMENT BETWEEN BROWARD COUNTY, AND CITY OF FORT LAUDERDALE FOR NON-EXCLUSIVE ACCESS AND USE OF A PORTION OF COUNTY RIGHT-OF-WAY

MUNICIPALITY

ATTEST:

Jeffrey A. Modarelli, City Clerk

CITY OF FORT LAUDERDALE, a municipal corporation of the State of Florida.

By
Dean J. Trantalis, Mayor

1 day of Sept, 2020

By
Christopher J. Lagerbloom, ICMA-CM
City Manager

Approved as to form:
Alain E. Boileau, City Attorney

Kimberly Cunningham Mosley
Assistant City Attorney

STATE OF FLORIDA
COUNTY OF BROWARD

The foregoing instrument was acknowledged before me by means of physical presence or online notarization, this 1st day of September, 2020, by Dean J. Trantalis as mayor of the City of Fort Lauderdale, Florida, a municipal corporation.

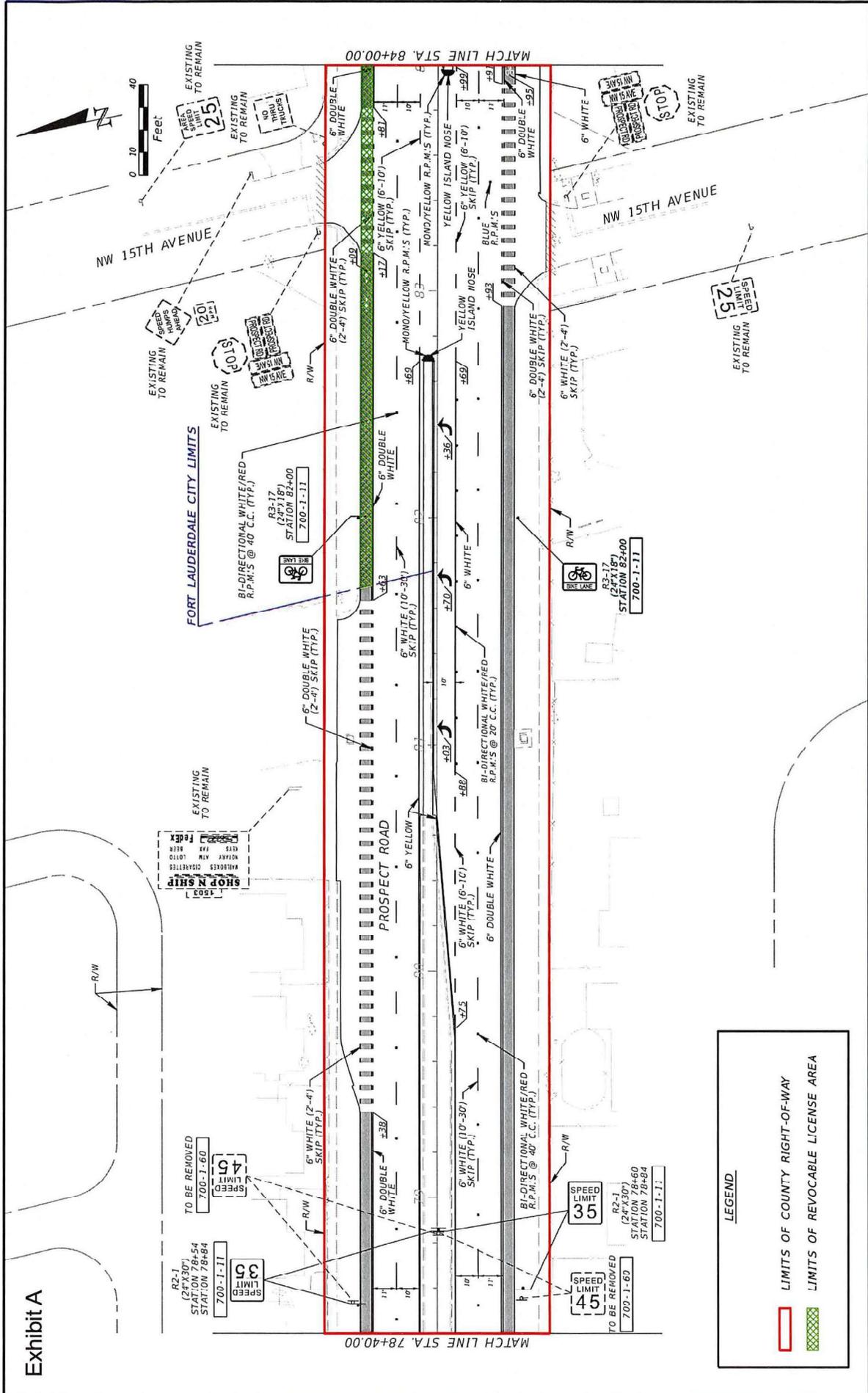
(SEAL)



Signature of Notary Public – State of Florida

Jeanette A. Johnson
Print, Type, or Stamp Commissioned Name of Notary Public

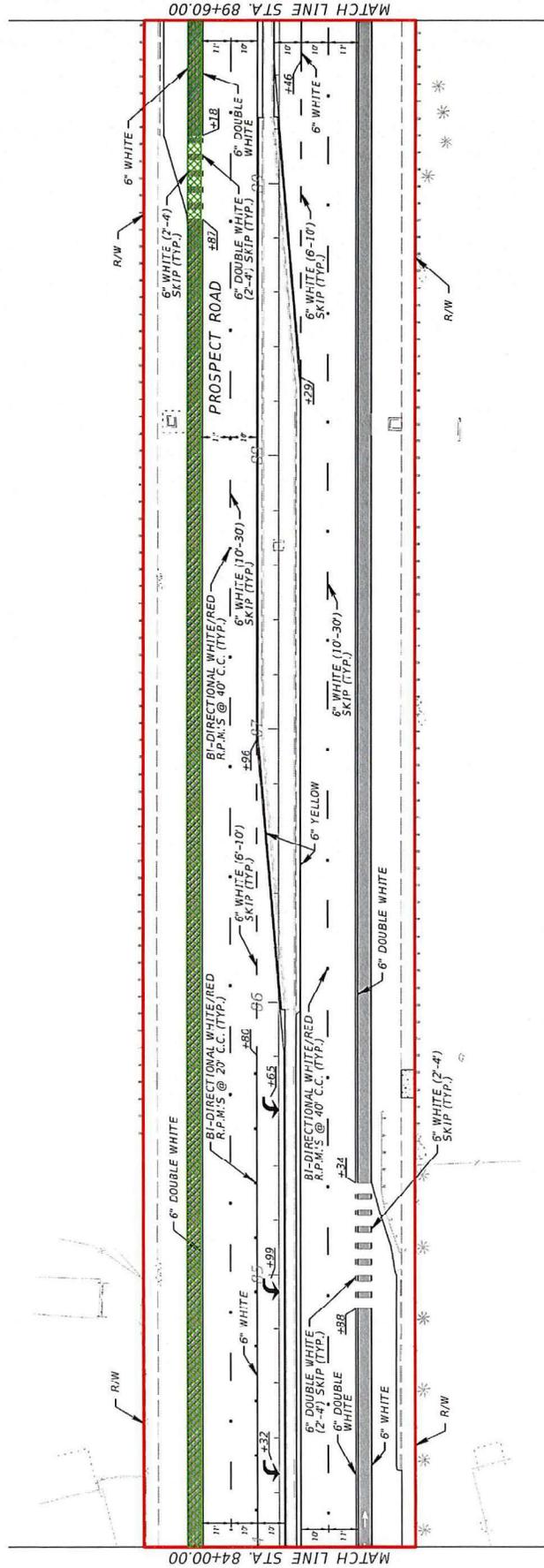
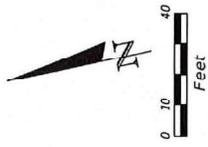
Personally Known OR Produced Identification
Type of Identification Produced _____



DATE	REVISIONS	PUBLIC WORKS DEPARTMENT TRAFFIC ENGINEERING DIVISION FORT LAUDERDALE, FL 33309	PUBLIC WORKS DEPARTMENT TRAFFIC ENGINEERING DIVISION COUNTY PROJECT NO.	SHEET NO. S-1
		BROWARD COUNTY FLORIDA	SIGNING AND PAVEMENT MARKING PLAN	

Exhibit A

Exhibit A



LEGEND

- LIMITS OF COUNTY RIGHT-OF-WAY
- LIMITS OF REVOCABLE LICENSE AREA

DATE	REVISIONS	DESCRIPTION	SHEET NO.
			5-2
PUBLIC WORKS DEPARTMENT TRAFFIC ENGINEERING DIVISION COUNTY PROJECT NO.			SIGNING AND PAVEMENT MARKING PLAN
PUBLIC WORKS DEPARTMENT TRAFFIC ENGINEERING DIVISION COUNTY PROJECT NO.			
			STILES FILES

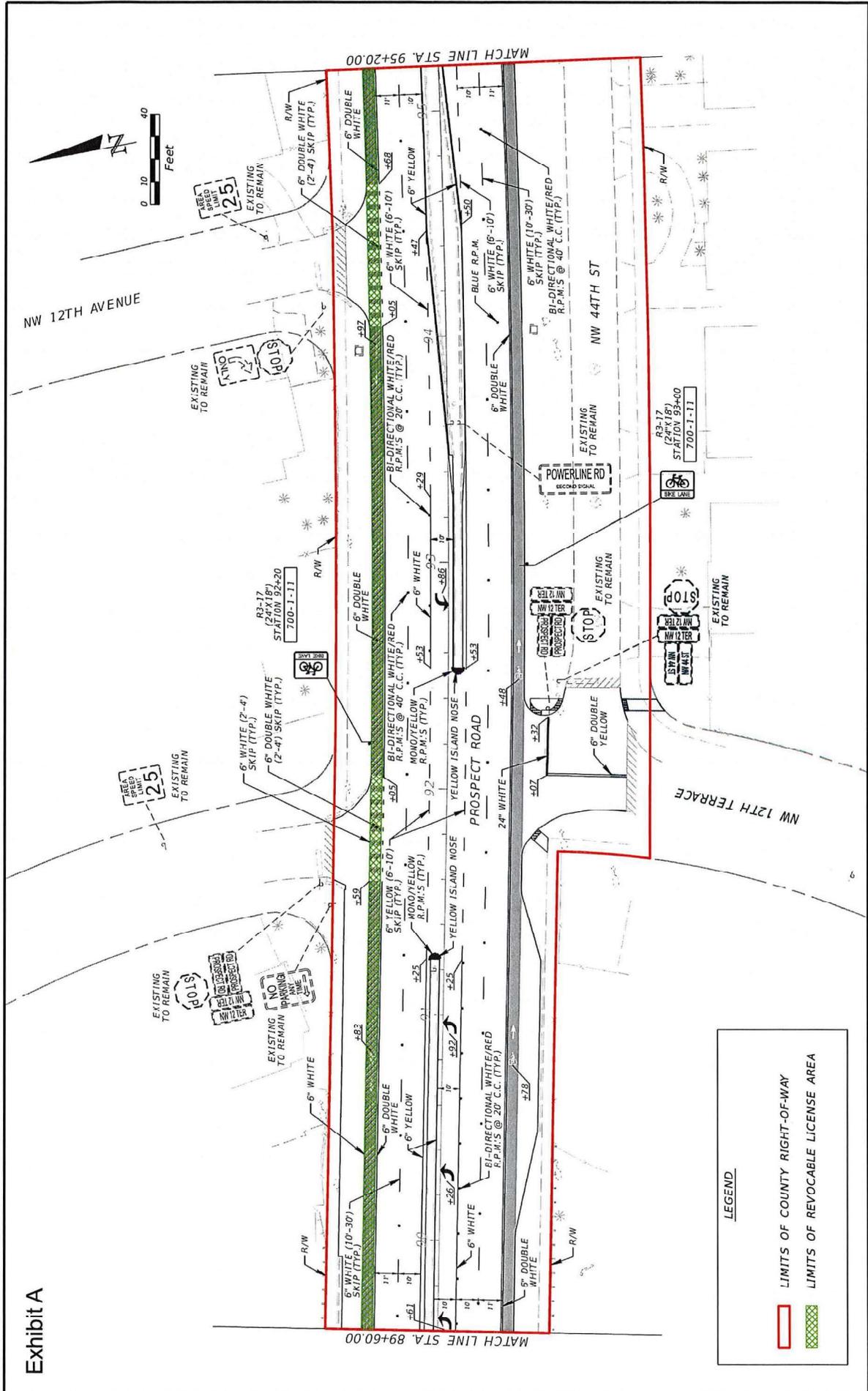
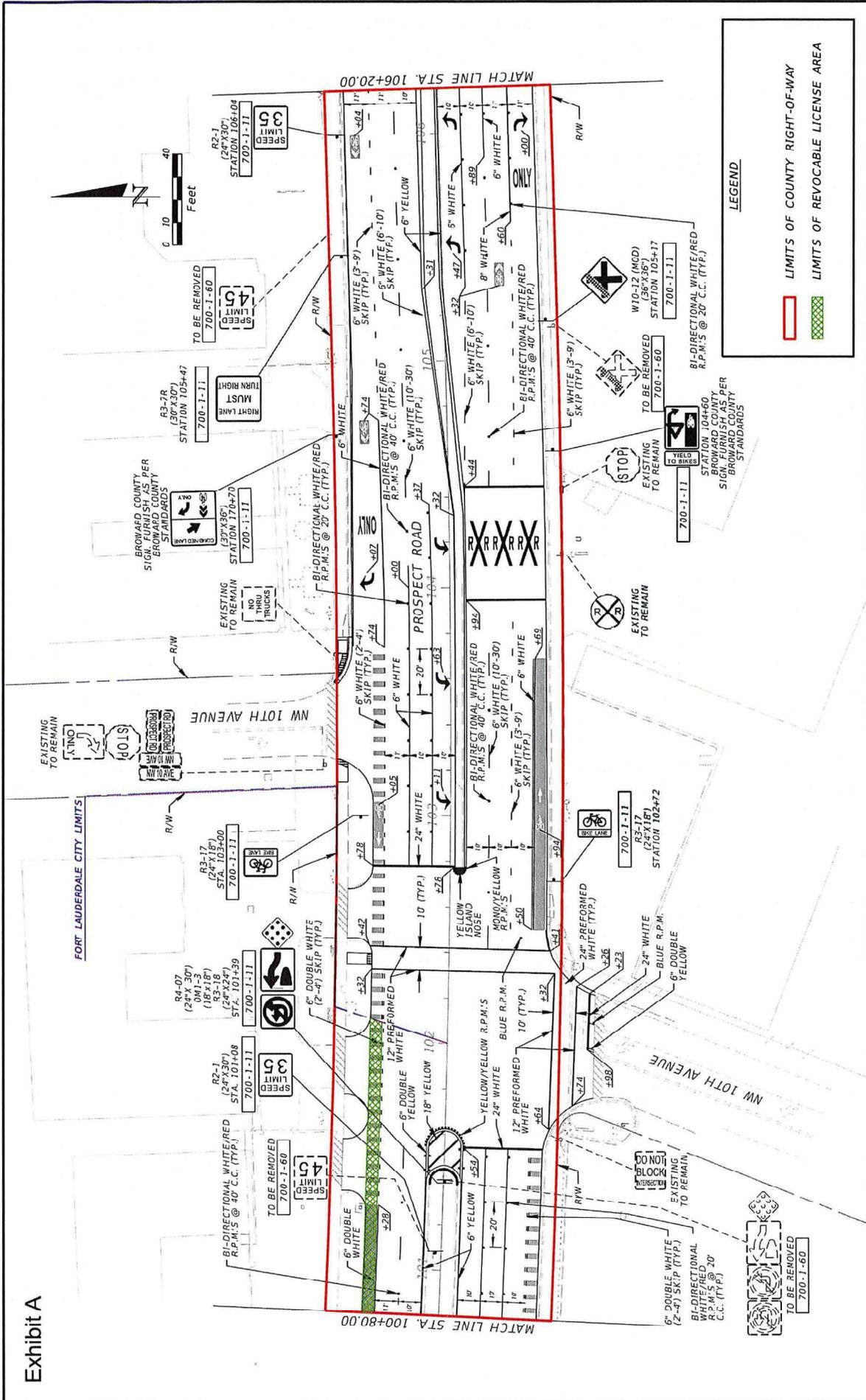


Exhibit A

LEGEND

- LIMITS OF COUNTY RIGHT-OF-WAY
- LIMITS OF REVOCABLE LICENSE AREA

DATE	REVISIONS	SHEET NO.	5-3
	DESCRIPTION	SIGNING AND PAVEMENT MARKING PLAN	
PUBLIC WORKS DEPARTMENT TRAFFIC ENGINEERING DIVISION COUNTY PROJECT NO.		SOUTHERN STATES FILES	
BROWARD COUNTY FLORIDA			
PUBLIC WORKS DEPARTMENT TRAFFIC ENGINEERING DIVISION 2500 W. WINDWARD BOULEVARD FORT LAUDERDALE, FL 33309			



LEGEND

- [Red outline] LIMITS OF COUNTY RIGHT-OF-WAY
- [Green hatched] LIMITS OF REVOCABLE LICENSE AREA

DATE	REVISIONS DESCRIPTION	PUBLIC WORKS DEPARTMENT TRAFFIC ENGINEERING DIVISION COUNTY PROJECT NO.	SHEET NO. S-5
		BROWARD COUNTY FLORIDA	
		PUBLIC WORKS DEPARTMENT TRAFFIC ENGINEERING DIVISION 2500 WEST COMMERCIAL BLVD FORT LAUDERDALE, FL 33309	

Exhibit A

EXHIBIT B-1

Green Colored Pavement in Bicycle Lanes, Extensions of Bicycle Lanes and Within Other Potential Traffic Conflict Areas

Special Technical Provisions

General

1. The following Broward County Special Technical Provisions provide requirements and guidance for the use of green colored pavement in bicycle lanes, extensions of bicycle lanes, and within other potential traffic conflict areas on County roadways.
2. The special technical provisions herein are supplemental requirements to the applicable minimum standard conditions contained within the Broward County Public Works Department, Highway Construction & Engineering Division APPLICATION FOR PERMIT FOR CONSTRUCTION IN THE PUBLIC RIGHT-OF-WAY. The special technical provisions described are intended to meet the special circumstances associated with the installation and maintenance of green colored pavement in bicycle lanes, extensions of bicycle lanes, and within other potential traffic conflict areas on County roadways.

Governing Standards

1. The governing standards and specifications related the use of green colored pavement in bicycle lanes, extensions of bicycle lanes, and within other potential traffic conflict areas is limited, however, relevant technical standards, guidance and support is provided in Chapter 9C of the USDOT/FHWA Manual on Uniform Traffic Control Devices (MUTCD). Additional guidance on the use of colored pavement is provided in Section 3G.01 of the MUTCD.
2. Additional guidance on the use of green colored pavement in bicycle lanes can be found in the Broward County Engineering Division's Technical Policy Memo #TPM-15-003 located at <http://www.broward.org/Traffic/About/Pages/Publications.aspx>.
3. The Federal Highway Administration (FHWA) has issued Interim Approval to Broward County for the use of green colored pavement in bicycle lanes, extensions of bicycle lanes, and within other potential traffic conflict areas. A copy of the approval letter is included as Exhibit D.

Installation Requirements

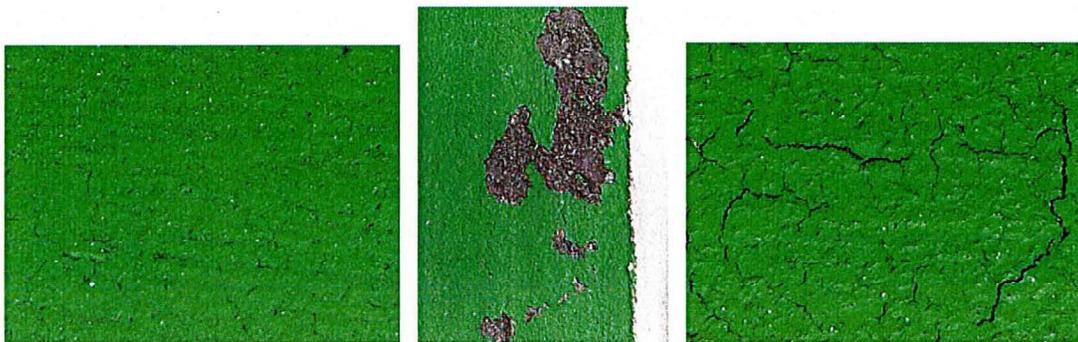
1. The green colored patterned pavement surface product used for the project shall be suitable for application to asphalt surfaces (per manufacturer's specifications) and shall have received federal or State of Florida approval for application on asphalt roadway surfaces with moderate to high levels of vehicular traffic. The product shall be listed on the Florida Department of Transportation's (FDOT) Approved Product List (APL)
2. The installation, materials and performance of the green colored pavement surface shall be in accordance with the manufacturer's specifications included in the attached Exhibit B-2.
3. The initial installation shall be inspected by County staff to ensure that the green colored pavement surface conforms with the approved plans and the manufacturer's specifications included in Exhibit B-2. The initial installation shall attain 100% coverage of the designated bike lane area, and 98% of the green surface area shall be free of defects including, but not limited to: insufficient or incorrect colorization, surface contamination, embedded foreign particles, uneven application, rippling/buildup greater than 0.25 inches vertical, cracks, chipping, flaking, scaling or inadequately textured (slick) surface.
4. The applicant shall be responsible for any permitting requirements, insurance, security, public information and maintenance of traffic regarding the installation.

Maintenance Requirements

1. The applicant shall be responsible for the continued maintenance of the green colored pavement surface throughout the life of the project, and shall be fully responsible for any direct and indirect costs associated with permitting, insurance, security, public information and maintenance of traffic.
2. The applicant shall ensure that the original quality and visibility of the green colored pavement surface remains in good condition throughout the life of the installation.
3. The applicant shall be responsible for addressing graffiti removal and any other intentional or unintentional damage to the green colored pavement surface.
4. Upon the first and each subsequent bi-annual anniversary of the installation, the applicant's city engineer shall submit a signed and sealed report to the County certifying that the green colored pavement surface is still in good order, provides adequate frictional surface for the safe flow of traffic across the surface and meets minimum color differential criteria in accordance with the manufacturer's specifications included in Exhibit B-2. Any cracking, flaking, chipping, raveling, or peeling of the green colored pavement surface shall be considered a failed condition (examples of failures are shown below). To properly document the condition of the green colored pavement, the engineer's report shall include randomly selected portions of the green colored pavement surface a minimum of 200 feet in length and representing at least 25% of the entire green colored pavement area within

the project limits. The selected areas shall be photo documented and/or video documented during daylight conditions. Resurfacing or other remedial action shall be required if collectively 10% or more of the surface of any 200-foot segment exhibits a failure condition, or if there is a failure extending continuously for 10.0 feet or more. Should the applicant's city engineer identify any deficiencies at any time, regardless of whether they are included within the documented 25% surface area, the city engineer shall notify the County within five (5) business days of the deficiency, and outline the proposed course of remedial action and timetable. The city engineer shall then submit a signed and sealed letter to the County within five (5) business days of successful completion of the mitigation, certifying that the issue has been satisfactorily corrected. The above requirement does not preclude County staff from inspecting the condition of the bike lane surface at any time and reporting any identified failures or deficiencies to the city for remedial action.

Examples of Surface Failures:



5. Notwithstanding the submittal of a condition's report as specified above, the applicant shall be responsible for the recoating/resurfacing of all of the green colored pavement surfaces consistent with the original design of the project and the manufacturer's specifications every five (5) years upon the anniversary of the installation unless it is clearly apparent to both the applicant and the County that the resurfacing is not required; such resurfacing shall be extended in one year increments. The County shall make the final determination on whether recoating/resurfacing is required.

Termination Requirements

1. The green colored pavement surface installation may be terminated by either the County and/or the applicant should the surface be determined to create safety or other concerns attributable to the textured roadway surface or any other aspect of its design.
2. If the installation is terminated, the County will provide written notice to the applicant that the green colored pavement surface must be removed, and the applicant shall have fourteen calendar days from the date of the notice to submit to the County the appropriate permit application, maintenance of traffic plans, and any other required documentation.

The applicant shall have 30 calendar days from the date of notification to satisfactorily remove the textured surface from the existing asphalt pavement.

3. The green colored pavement surface shall be removed by the applicant's forces or an appropriately licensed contractor. The surface shall be removed by water-blasting, sandblasting, or other approved removal method, and shall be performed during off-peak traffic hours. Any pavement markings or asphalt damage as part of the removal process shall be fully restored. The applicant shall be responsible for all direct and indirect costs associated with the surface removal process.

Exhibit B-2 Manufacturer Specifications

TrafficPatterns (APL Product)

by Ennis-Flint, Inc (formaly Flint Trading Inc) (Manufacturer Website)

Active APL Certifications

523-000-009 (Approval Date: 6/1/2009) (Service Life Expectancy:)

Previous APL Numbers

- S523-0009

Product Types

- Patterned Pavement

Resource Links

- [FDOT Standard Specifications for Road and Bridge Construction](#)
- [FHWA IA-14 - Green Bike Lanes](#)
- [Proposed Jan 2020 Specification Modification-Industry Review](#)

Random Sampling Frequency

There are no items to display.

Limitations

There are no items to display.

Documents

There are no items to display.

Comments

Approved for Vehicular and Non-Vehicular applications, requires sealer, Approved for Bike Lane Use

preformed thermoplastic pavement marking material

Manufacturer Detail

Ennis-Flint, Inc (formaly Flint Trading Inc)

4161 Piedmont Parkway, Suite #370

Greensboro 27410

(800)331-8118 

PreMark® Preformed Thermoplastic Application Instructions

ENGLISH p. 1 of 3



INTERMIX AND SURFACE TREATMENT COMBINATIONS: PreMark® is supplied in these options at time of order.

BD = Beaded

Intermixed beads and factory applied surface beads. **Recommended Use:** roadway and intersection markings requiring retroreflectivity

NB = Non-beaded

Intermixed beads, no surface treatment. **General use:** reversible arrows, base layer for rumble bar, manhole protection rings, base layer for two-layer stencils. **Note:** Reversible arrows require casting of beads during application for initial retroreflectivity and skid resistance.

VG = ViziGrip®

Intermixed beads, factory-applied surface beads and antiskid elements **Recommended use:** pedestrian and/or cyclist traffic, such as crosswalks, bike lanes/paths and parking facilities, where both enhanced skid/slip resistance and retroreflectivity are required.

SK = Skid Only

Intermixed anti-skid elements, factory-applied antiskid elements on the surface. **Recommended use:** areas with pedestrian/cyclists traffic, bike lanes/paths and parking facilities, where enhanced skid/slip resistance is required with no retroreflectivity requirements.

BASIC SAFETY PRECAUTIONS (Read all safety data sheets before using this product):

Protective clothing consisting of leather work shoes, long pants and safety vest should be worn. Avoid all contact with the molten PreMark® material and propane torch flame. If you get molten PreMark on your skin, flush the area immediately with plenty of water and seek medical attention. Do not attempt to remove the molten material from your skin.

If using sealer, note the sealer is for outdoor use only. Always wear eye protection and non-absorbent gloves when working with the sealer. Avoid accidental contact with the sealer. Should sealer contact skin, remove any contaminated clothing and wash the affected area with soap and water for at least 15 minutes. Seek medical attention if irritation persists. Should sealer contact eyes, immediately flush eyes with plenty of water for at least 15 minutes; remove contact lenses; call a physician.

When using EF 2-Part Sealer, always point the tip of the cartridge in a direction where an accidental discharge will not contact personnel at the site. Do not let mixed sealer puddle as intense heat will develop during curing. Do not discard cartridges with unused sealer. Any unused sealer can be discharged through the mixing nozzle into the aluminum tray provided. Cured sealer may be safely disposed.

Dispose of all materials in accordance with all applicable federal, state and local laws and regulations.

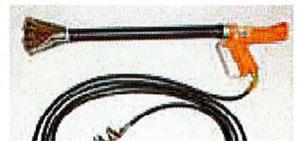
Heat torches operate on vaporized propane gas. Use the largest size propane cylinder possible: 40 lb. cylinder or greater. Propane gas cylinders must be used in the standing, upright position with the valve being the uppermost part. Do not use the torch if the propane cylinder is not in the upright position, as this may allow liquid gas to flow into the torch assembly possibly causing damage to the torch and an unsafe condition. A spare tank with additional propane is recommended if the other tank freezes during use. A frozen tank will lessen torch output and slow application.

GENERAL REQUIREMENTS

(for all application methods shown within this document)

- | | | |
|---|------------------------------|--|
| EQUIPMENT | | |
| • Flint 2000 EX® or equivalent propane fueled torch with pressure regulator and 25 ft. hose | • Tape Measure | • Paint roller (for sealer applications only) |
| • Gas Powered Blower or Broom | • Utility Knife, Putty Knife | • Water sprayer (optional) |
| • Crayon, Chalk Sticks and Chalk Snap Line | • Hammer and Chisel | • 300/600 ml sealer dispensing gun (for 2-Part Sealer applications only) |
| • Adequate Supply of Propane | | |

The Flint 2000 EX® Heat Torch is recommended because of its fan-shaped nozzle and heat dissemination during application of PreMark®.



MOISTURE: Pavement must be dry prior to positioning the PreMark material or sealer application (if required). PreMark cannot be applied to a wet surface or during precipitation. Once precipitation has stopped, PreMark can be applied to bituminous asphalt, if the road surface has been dried thoroughly with all moisture removed. On concrete surfaces, Ennis-Flint recommends waiting 24 hours after precipitation has stopped before applying PreMark.

SURFACE: Surface must be free of moisture, dirt, dust, salt, deicing agents, chemicals and significantly oily substances. Do not apply PreMark on top of paint, with the exception of over a thin, temporary layer of cured and well-bonded paint on new asphalt. Do not apply PreMark on top of cold plastic or plural component marking materials.

New Asphalt: Being oil impervious, PreMark can be applied on new asphalt as soon as the road surface is cool enough to walk on. If using EF 2-Part Sealer, new asphalt should be allowed to cool completely to prevent premature curing of the sealer before material application.

Concrete and Old Asphalt: PreMark can be applied on portland cement concrete or non-bituminous surfaces with PreMark® Sealer. New concrete should cure a minimum of 45 days before application. Any remaining curing compounds must be removed by sandblasting or other standard industry method. Concrete surfaces must have surface porosity. To test for porosity, sprinkle a few drops of water onto the surface. If the concrete does not readily absorb the water drops, the surface is not sufficiently porous. For old asphalt, after the surface preparation noted above, the surface is ready to be treated with PreMark® Sealer. Contact your Ennis-Flint representative for additional instructions before proceeding.

Sealcoat and Chip Seal: PreMark can be applied over completely cured and well bonded sealcoat and/or chip seal surface rejuvenators, with no loose aggregate present. It is recommended to apply a small test piece on these treatments and perform a chisel test as described herein to assure proper bond is achieved.

Thermoplastic: If applying on existing, well-bonded thermoplastic, scrape off any loose material and remove the oxidized (powdery) layer by scarifying the surface, or heating the surface and scraping off the oxidized layer to expose fresh material.

MATERIAL: Keep PreMark dry at all times. Avoid extreme storage temperatures. Store indoors, ideally at temperatures between 35°F and 90°F (2°C and 32°C). Packages should be stored flat and stacked a maximum of 30 high. Handle PreMark with care in temperatures below 50°F (10°C) as it will be less flexible in colder weather. Shelf life is 24 months. PreMark® Sealer should be used for applications on non-bituminous pavements unless otherwise required to use EF 2-Part Sealer for large area applications and interconnected, multicolored markings.

TEMPERATURE: PreMark does not have any minimum road or ambient temperature requirements for application.

PreMark® Preformed Thermoplastic Application Instructions

ENGLISH p. 2 of 3

INSTRUCTIONS FOR APPLICATION ON BITUMINOUS ASPHALT (Read General Requirements on Page 1.)

- PREPARE** application area thoroughly. All loose particles, sand, dust, etc. must be removed by using a power blower, compressed air, or sweeping completely. Do not apply over paint, with the exception of over a thin, temporary layer of cured and well-bonded paint on new asphalt. Do not apply over tape, MMA, epoxy, salt, deicing agents, chemicals, or very oily substances. Ensure that no moisture is present prior to positioning the PreMark material. Surface moisture is not often visible; always assume moisture is present. Remove moisture by drying the area with a propane fueled heat torch (Fig. 1). **It is not necessary to heat and hold the substrate to a specific temperature because PreMark® is a No-Preheat type of preformed thermoplastic material.**
- POSITION** all connecting parts of the PreMark material (lines, legends, or symbols) onto the pavement surface, top side up (Fig. 2). The top side of the material has the heating indicators (indents) and the factory-applied surface treatment (beads, anti-skid elements or a combination). There should be no gaps between the adjoining segments. Ensure that proper layout and alignment is obtained before heating the material.
- HEAT** the PreMark material. Standing with the wind at your back, face the marking so the wind will move heat from the torch over the unheated material, away from your feet. Heat material slowly but steadily until molten, keeping the torch nozzle about 4 to 8 inches above the material, while using a sweeping motion approximately 2 to 3 feet wide (Fig. 3). Heating with the torch nozzle closer than 4 inches will cause superficial scorching of the material without adequate melting throughout. Regularly-spaced heating indicators (indents) have been manufactured into the top surface of the material. The closing of these indents will provide a visual cue during application that the material has reached a molten state allowing for proper bond and bead embedment. Continue to heat the material until the heating indicators (indents) close, the material edges flow or "roll", and the seams between material segments fuse together. Note: Insufficient heat will result in inadequate bonding and failure. Significantly overheating the material will over-embed the factory-applied surface treatment into the PreMark material, causing the marking to be less retroreflective and/or skid-resistant initially. If applying non-beaded markings, any additional beads, if required, should be applied to the material surface immediately following heating while the material is molten for proper adhesion. Note: Any superficial browning or scorching of the material from slight overheating will wear off within days of being opened to traffic. This discoloration affects the topmost layer of material only. Normal traffic wear will expose the underlying color.
- INSPECT** for proper bond and bead/anti-skid element embedment after the material has cooled to near ambient temperature. Make sure edges are rounded and thoroughly bonded. Perform a chisel test to verify bond. Look carefully at the heated material away from the edges for any remaining visible indents and/or under-embedded glass beads/anti-skid elements. Using a 1" chisel, hammer a small "V" shape (<) into the material. Using the chisel tip, carefully lift up the point of the "V" shape (<) off the pavement surface. Evidence of asphalt aggregate bonded to the underside of the lifted material indicates good adhesion (Fig. 4). Little to no evidence of asphalt on the underside of the lifted material indicates the marking was not heated sufficiently in that area. Press the material back into place and reapply heat until adequate bonding has occurred. Note: Do not leave the project until a sufficient bond has been established, as attempts to reheat at a later date will be unsuccessful. PreMark will cool and set rapidly within minutes of application allowing traffic to resume. If desired, setting time can be accelerated with a spray of cool water.



Fig. 1 Prepare area by removing debris with blower then remove moisture with heat torch



Fig. 2 Position PreMark® material according to diagram provided



Fig. 3 Heat PreMark® material according to instructions.



Fig. 4 Perform chisel test to verify bond. Evidence, as shown, of asphalt aggregate bonded to the underside of the lifted material indicates good adhesion.

INSTRUCTIONS FOR APPLICATION ON CONCRETE & NON-BITUMINOUS SURFACES

- Ensure the surface is porous. Refer to the Surface section under "General Requirements" on page 1.
- Follow steps 1 and 2 as stated above for "Instruction for Application on Bituminous Asphalt"
- With marking positioned on the surface but not heated, delineate or trace completely around the marking with chalk or crayon to create an outline. Move the unheated marking from the pavement carefully and set aside for application of sealer.
- Apply PreMark one-part sealer within the outlined area using a roller or sprayer. If sprayed, roll sealer to form a thin, even coating. Allow the sealer to dry until it will not transfer to the gloved finger when touched. It is imperative that the sealer be dry to the touch when the PreMark is applied or the application will likely fail. The more porous the surface, the more sealer is required. Caution: Do not attempt to speed up the drying process by using an open flame, as the sealer is flammable at this stage. It is important to cover the entire area with sealer where the PreMark will be applied.
- Continue with Steps 3 through 4 as stated above under "Instruction for Application on Bituminous Asphalt" until application is complete. Note: When verifying proper bond with the chisel test in step 4 on a non-bituminous surface, it is unlikely that any part of the pavement will be lifted with the PreMark. Adequate bonding has occurred if the PreMark separates from itself, where part of it remains adhered to the pavement. If the material is able to be removed from the substrate, there is insufficient bond and additional heat must be applied.

GENERAL NOTES AND TIPS:

- PreMark is compatible with asphalt and concrete as well as special surfaces such as bricks, pavers, and cobblestones using the approved two-part sealer. PreMark may experience a reduced lifespan on bricks, pavers, and cobblestones. In addition, PreMark will likely crack along the seams between pavers.
- If applied over substrate joints, (i.e. saw cut control, isolation/expansion; cold/construction), make a deep score in the material once it has set up but not entirely cooled down.

- Do not throw or drop PreMark, either within or out of the package.
- Do not allow PreMark pieces to remain in direct contact with each other; they may bond together in hot weather. Use the plastic separation sheets from the package to avoid this risk.
- In snow areas, PreMark must be well bonded with rolled/feathered edges for the best snow plow resistance.

- In warm weather, PreMark can be cut with scissors or scored with a knife and carefully broken along the score if small repairs are needed.
- If using a torch with a higher heat output than the Flint 2000 EX or an infrared heater, the factory-applied surface treatment on PreMark can over-embed more easily. Additional glass beads and/or anti-skid elements may need to be applied immediately following heating.

PreMark® Preformed Thermoplastic Application Instructions

ENGLISH p. 3 of 3

INSTRUCTIONS FOR APPLICATION REQUIRING EF 2-PART SEALER

IMPORTANT NOTE BEFORE YOU START APPLICATION: Ambient and surface temperatures must be 45°F (7°C) and rising for EF 2-Part Sealer use. For large area markings, such as colored bike lanes or large interstate shields with multiple material sections, do not apply two-part sealer to an area larger than can be heated in 20 minutes. Leave the 8 inches of material closest to the continuation edge unheated. Repeat steps 1 through 5 working in intervals until entire application area is complete.



Fig. 1 Handle sheets with plastic

1. **PREPARE** application area thoroughly. All loose particles, sand, dust, etc. must be removed by using a power blower, compressed air, or sweeping completely. Do not apply over paint, with the exception of over a thin, temporary layer of cured and well-bonded paint on new asphalt. Do not apply over tape, MMA, epoxy, salt, deicing agents, chemicals, or very oily substances. Always handle the material with care. A multicolor marking consists of interconnected individual pieces of preformed thermoplastic. Do not lift an entire assembled segment by holding onto a small individual piece, as it may separate. The material should be handled on the plastic sheet with which it is packed until it is placed in its final position (Fig. 1). With marking positioned on the surface, delineate area or trace completely around the marking with chalk or crayon to create an outline (Fig. 2). Move the unheated marking from the pavement carefully and set aside for application of EF 2-Part Sealer (“the sealer”).



Fig. 2 Position marking to draw outline of application area

2. **APPLY** the sealer after ensuring that no moisture is present. Surface moisture is not often visible; always assume moisture is present. Remove moisture by drying the application area with a propane fueled heat torch (Fig. 3). It is not necessary to heat the substrate to a specific temperature. Remove the sealer kit contents from the carton. Install the sealer cartridges into the sealer gun. Point the gun upwards (nose up), and remove the cap or nut and plugs. With gun still pointing upwards, attach the mixing nozzle and ensure it is properly secured to the sealer cartridge (Fig. 4). Point the gun downward and squeeze the handle gently until the sealer is approximately 2 inches from the tip of the mixing nozzle. If circumstances do not permit the mixed sealer to be used within 10 minutes, remove the mixing nozzle, reinsert plugs and secure with cap or nut.



Fig. 3 After moving material aside, remove moisture from substrate

One 300/600 ml sealer cartridge is sufficient for applying 50 sq. ft. of PreMark material. It is critical the sealer does not cure before PreMark has been applied and heated; therefore, do not apply two-part sealer to an area larger than can be heated in 20 minutes. Do not apply sealer outside the chalk line, as it may stain the substrate. Holding the tip of the nozzle over the application area, squeeze out an appropriate amount of sealer. Spread the sealer within the delineated application area with the roller provided (Fig. 5). The sealer should appear as a light coating with a shiny surface. Do not wait for the sealer to cure before applying the PreMark material. Cold temperature consideration: the sealer may dispense more slowly in temperatures around 45°F (7°C). Whenever possible, keep the unopened sealer cartridges insulated with a material heater blanket or inside the cab of the work vehicle keeping sealer closer to room temperature until ready for use.



Fig. 4 Prepare sealer cartridges for use in sealer gun.

3. **POSITION** the PreMark material. After the sealer application, immediately position the PreMark segments onto the pavement surface, top side up (Fig. 6). The top side of PreMark has heating indicators (indents), and the factory-applied surface treatment (beads, anti-skid elements or a combination). There should be no gaps between the adjoining segments, and the segments should align properly to form overall marking according to diagram provided in the package. Ensure proper layout is obtained before heating the material. Heating should begin immediately after proper layout has been confirmed.



Fig. 5 Squeeze out sealer and spread with roller.

4. **HEAT** the PreMark material. Standing with the wind at your back, face the marking so the wind will move heat from the torch over the unheated material, away from your feet. Heat material slowly but steadily until molten, keeping the torch nozzle about 4 to 8 inches above the material, while using a sweeping motion approximately 2 to 3 feet wide (Fig. 7). Heating with the torch nozzle closer than 4 inches will cause superficial scorching of the material without adequate melting throughout. Regularly-spaced heating indicators (indents) have been manufactured into the top surface of the material. The closing of these indents will provide a visual cue during application that the material has reached a molten state indicating proper bond and bead embedment. Continue heating the material until the heating indicators (indents) close, the material edges round or “roll”, and the material seams fuse together. Note: Insufficient heat will result in inadequate bonding and failure. Significantly overheating the material will over embed the factory applied surface treatment into the PreMark material, causing the marking to be less retroreflective and/or skid-resistant initially.



Fig. 6 Position PreMark® material according to diagram provided.

5. **INSPECT** for proper bond and bead/anti-skid element embedment after the material has cooled to near ambient temperature. Make sure edges are rounded and thoroughly bonded. Perform a chisel test to verify bond. Look carefully at the heated material away from the edges for any remaining visible indents and/or under-embedded glass beads/anti-skid elements. Using a 1” chisel, hammer a small “V” shape (<) into the material. Using the chisel tip, carefully lift up the point of the “V” shape (<) off the pavement surface. Evidence of asphalt aggregate bonded to the underside of the lifted material indicates good adhesion (Fig. 8). Little to no evidence of asphalt on the underside of the lifted material indicates the marking was not heated sufficiently in that area. Apply a small amount of sealer beneath the material, press it back into place, and reapply heat until adequate bonding has occurred. Note: Do not leave the project or begin applying adjacent rows until a sufficient bond has been established, as attempts to reheat at a later date will be unsuccessful.



Fig. 7 Heat PreMark material



Fig. 8 Perform chisel test to verify bond. Evidence of aggregate bonded to the underside of the lifted material indicates good adhesion.

Cold temperature consideration: Ambient and surface temperatures must be 45°F (7°C) and rising for EF 2-Part Sealer use. Material will not fully bond with the pavement until the sealer cures. Since the sealer will take longer to cure in cooler temperatures, 45°F-55°F (7°C-13°C), allow for more time to elapse before checking bond. To facilitate sealer curing, apply more heat to the material surface, but carefully avoiding risk of sinking all the surface treatment. Thereafter, check the bond at 15 minute intervals. Sealer should cure within an hour at the 45°F-55°F (7°C-13°C) temperature range.

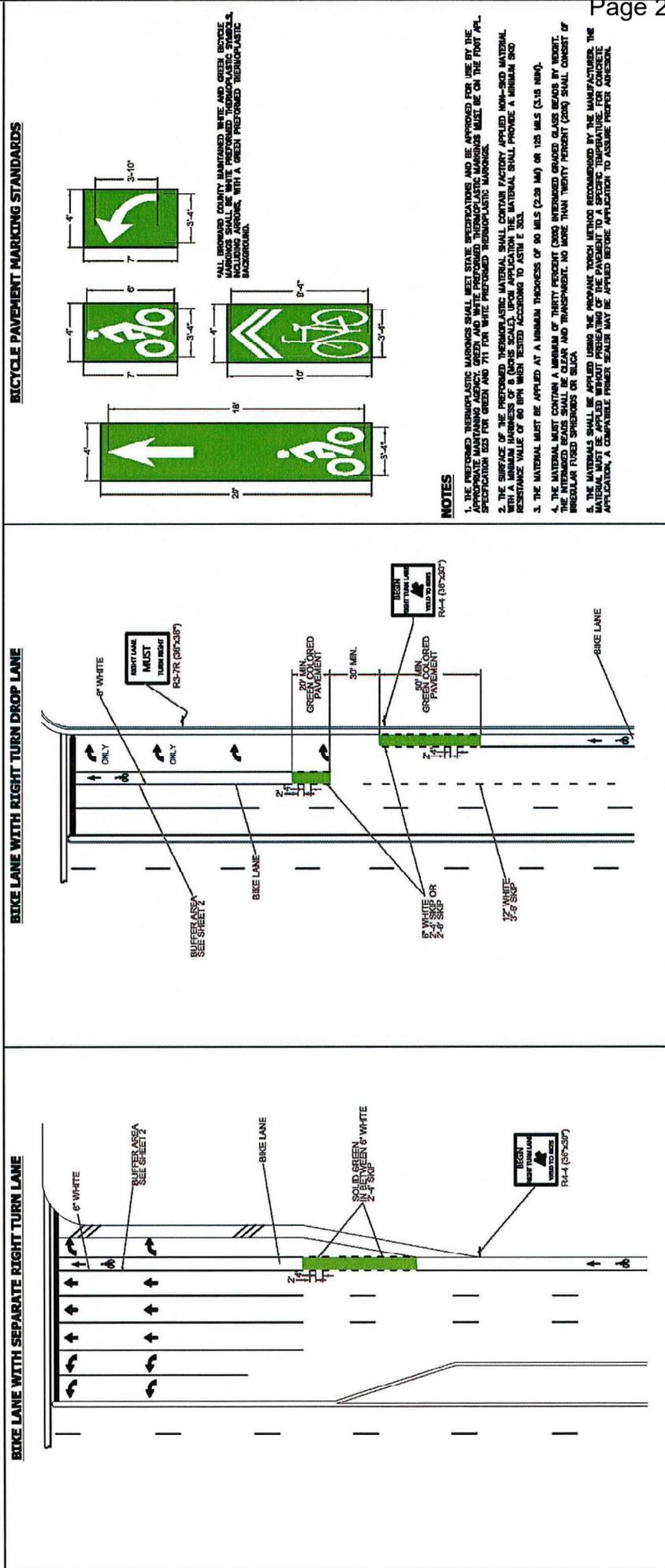
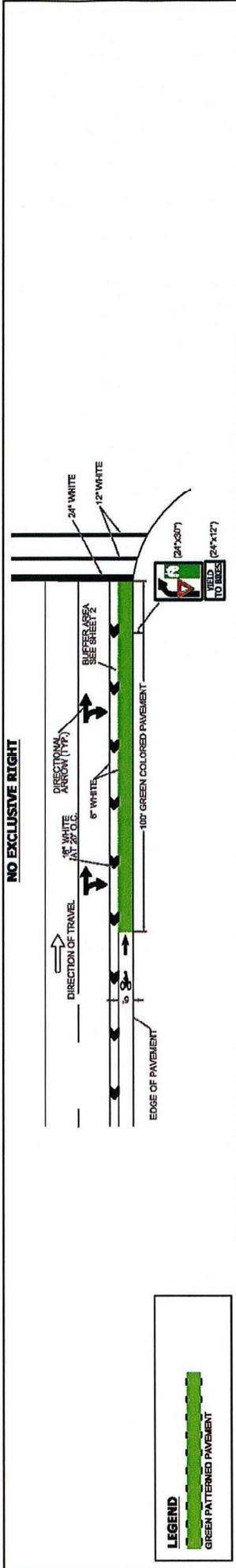


OPTIONAL: If using a large infrared heater, contact your Ennis-Flint representative for more information.

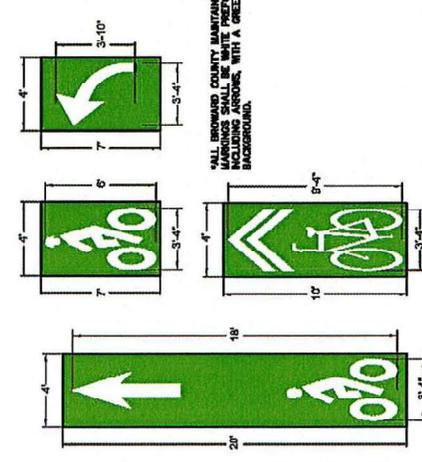
Note: When applying a very large marking, such as an interstate shield or bike lane with multiple material sections, leave the 8 inches closest to the continuation edge unheated. Repeat steps 1 through 5 within 50 sq. ft. sections at a time until entire application area is complete. Do not expose uncovered areas of applied sealer to the flame of the torch, as this will cause the sealer to cure prematurely.

EXHIBIT C

**Broward County Traffic Engineering Division
Bicycle Pavement Markings and Signs Details**



BIKE PAVEMENT MARKING STANDARDS



NOTES

1. THE PREFORMED THERMOPLASTIC MARKINGS SHALL MEET STATE SPECIFICATIONS AND BE APPROVED FOR USE BY THE APPROPRIATE MAINTENANCE AGENCY. GREEN AND WHITE PREFORMED THERMOPLASTIC MARKINGS MUST BE ON THE FRONT FACE OF THE PREFORMED THERMOPLASTIC MATERIAL. THE MARKINGS SHALL BE WHITE PREFORMED THERMOPLASTIC MARKINGS INCLUDING ARROWS, WITH A GREEN PREFORMED THERMOPLASTIC BACKGROUND.
2. THE SURFACE OF THE PREFORMED THERMOPLASTIC MATERIAL SHALL CONTAIN FACTORY APPLIED NON-SKO MATERIAL WITH A MINIMUM THICKNESS OF 8 (EIGHT) MILS. UPON APPLICATION THE MATERIAL SHALL PROVIDE A MINIMUM SKO RESISTANCE VALUE OF 60 BPA WHEN TESTED ACCORDING TO ASTM E 303.
3. THE MATERIAL MUST BE APPLIED AT A MINIMUM THICKNESS OF 90 MILS (2.28 MM) OR 105 MILS (3.18 MM).
4. THE MATERIAL MUST CONTAIN A MINIMUM OF THIRTY PERCENT (30%) INTERMEDIATE GRADED GLASS BEADS BY WEIGHT. THE INTERMEDIATE BEADS SHALL BE CLEAR AND TRANSPARENT. NO MORE THAN TWENTY PERCENT (20%) SHALL CONSIST OF IRREGULAR FUSED SPHERICAL OR SILICA.
5. THE MATERIALS SHALL BE APPLIED USING THE PROPANE TORCH METHOD RECOMMENDED BY THE MANUFACTURER. THE MATERIAL MUST BE APPLIED WITHOUT PREHEATING OF THE PAVEMENT TO A SPECIFIC TEMPERATURE FOR CONCRETE APPLICATION. A COMPATIBLE PRIMER SEALER MAY BE APPLIED BEFORE APPLICATION TO ASSURE PROPER ADHESION.

<p>REVISIONS</p> <p>DATE: 07-31-2017</p> <p>DESCRIPTION: N/A</p>		<p>PUBLIC WORKS DEPARTMENT</p> <p>TRAFFIC ENGINEERING DIVISION</p> <p>DESIGN BY: CARMELO CARATTOLO, P.E. SCALE: NTS</p> <p>DRAWN BY: STEPHON RAMOUTAR</p> <p>CHECKED BY: ANDREW SEBO, P.E., P.T.O.E</p>		<p>BICYCLE PAVEMENT MARKINGS AND SIGNS DETAILS</p>		<p>SHEET NO. 1 OF 2</p>
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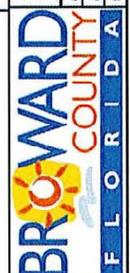


EXHIBIT D

**Broward County Traffic Engineering Division
FHWA Interim Approval Letters**



PUBLIC WORKS DEPARTMENT
TRAFFIC ENGINEERING DIVISION
2300 W. Commercial Boulevard • Fort Lauderdale, Florida 33309 • 954-847-2600

August 19, 2013

Mr. Jeffrey A. Lindley
Office of Transportation Operations
Federal Highway Administration
400 7th Street, SW
Washington, DC 20590

RE: Request for Interim Approval of Green Colored Pavement in Bike Lanes

Dear Mr. Lindley:

In accordance with your memorandum dated April 15, 2011, I am writing to request Interim Approval for the use of green colored pavement in marked bike lanes and in extensions of bicycle lanes through intersections and traffic conflict areas within our jurisdiction.

Broward County, Florida, has a significant number of bicyclists using our streets, bike routes and paths, and we wish to enhance the safety and visibility of bike lanes with the use of green pavement and/or bike lane symbols and arrows with green background. I have read your memorandum and the guidance provided on the FHWA website, and I understand the requirements of the approval are as follows:

- 1) Broward County agrees to comply with the technical conditions detailed in the memorandum.
- 2) Broward County agrees to maintain an inventory of all locations where green colored pavement is installed.
- 3) Per Section, 1A.10 of the 2009 MUTCD, Broward County agrees to restore the site of the Interim Approval to a condition that complies with the provisions of the Manual "within 3 months following the issuance of a Final Rule on this traffic control device." Also, the County agrees to terminate the use of the device at any time it determines significant safety concerns are attributable to the device.

Also, please be aware that Broward County has original traffic control jurisdiction on all County roads, and on the vast majority of municipal roadways (city and towns) through a joint-party agreement with the municipalities. This request would also extend to include those municipal roadways under our traffic control jurisdiction. However, this is not intended to preclude a municipality from undertaking its own program directly through your office, if applicable. Broward County, however, does not have such jurisdiction on State roads.

We await your response and thank you in advance for your consideration.

Sincerely,

A handwritten signature in blue ink that reads "Scott Brunner".

Scott Brunner, Director
Broward County Traffic Engineering



U.S. Department
of Transportation
**Federal Highway
Administration**

SEP - 4 2013

1200 New Jersey Avenue, SE
Washington, D.C. 20590

In Reply Refer to:
HOTO-1

Scott Brunner
Director
Broward County Traffic Engineering
2300 West Commercial Boulevard
Fort Lauderdale, FL 33309

Dear Mr. Brunner:

Thank you for your letter of August 19 requesting approval to use green colored pavement on a countywide basis for marked bicycle lanes in the County of Broward. Your request was made under the provisions of Section 1A.10 in the 2009 Edition of the *Manual on Uniform Traffic Control Devices for Streets and Highways* (MUTCD) and our Interim Approval Memorandum IA-14 dated April 15, 2011.

Your request is approved. It is recommended that you provide a list of locations where the device will be used to the Florida Department of Transportation in accordance with Paragraph 20 of Section 1A.10 in the MUTCD.

For recordkeeping purposes, we have assigned your Interim Approval request the following number and title: "IA-14.46 – Green Colored Pavement for Bicycle Lanes – Broward County, FL." Please reference this number in any future correspondence.

Thank you for your interest in improving highway safety for bicyclists. If we can be of further assistance on this matter, please contact Mr. Kevin Dunn at kevin.dunn@dot.gov.

Sincerely yours,

A handwritten signature in blue ink that reads "Mark R. Kehrli".

Mark R. Kehrli
Director, Office of Transportation
Operations

ATTACHMENT 2



U.S. Department
of Transportation
Federal Highway
Administration

Memorandum

Subject: **INFORMATION:** MUTCD – Interim
Approval for Optional Use of Green
Colored Pavement for Bike Lanes (IA-14)

Date: APR 15 2011

From: Jeffrey A. Lindley
Associate Administrator for Operations

In Reply Refer To:
HOTO-1

To: Federal Lands Highway Division Engineers
Division Administrators

Purpose: The purpose of this memorandum is to issue an Interim Approval for the optional use of green colored pavement in marked bicycle lanes and in extensions of bicycle lanes through intersections and other traffic conflict areas. Interim Approval allows interim use, pending official rulemaking, of a new traffic control device, a revision to the application or manner of use of an existing traffic control device, or a provision not specifically described in the Manual on Uniform Traffic Control Devices (MUTCD).

Background: Chapter 3G of the 2009 MUTCD contains provisions regarding the use of colored pavements. Paragraph 1 of Section 3G.01 describes colored pavement as consisting of differently colored road paving materials, such as colored asphalt or concrete, or paint or other marking materials applied to the surface of a road or island to simulate a colored pavement.

If colored pavement is used to regulate, warn, or guide traffic, the colored pavement is considered to be a traffic control device. Paragraph 3 of Section 3G.01 limits the use of colored pavement used as a traffic control device to the colors yellow and white. Paragraph 2 of Section 3G.01 discusses the use of colored pavement as a purely aesthetic treatment that is not intended to regulate, warn, or guide traffic and is therefore not considered to be a traffic control device. Part 9, Traffic Control for Bicycle Facilities, of the 2009 MUTCD does not mention colored pavement.

A number of experiments have been conducted in the United States and in other countries around the world to determine the value of designating a particular pavement color to communicate to road users that a portion of the roadway has been set aside for exclusive or preferential use by bicyclists and to enhance the conspicuity of a bicycle lane or a bicycle lane extension. Green, blue, and red are among the colors that have been tested for this purpose. Because these colored pavements are intended to regulate, warn, or guide traffic (motorists and bicyclists) and thus are serving as more than just an aesthetic treatment, they are considered to be traffic control devices.

For the past 10 years in the United States, green has been the only color that has received official FHWA approval for colored pavement experiments on bicycle facilities. Blue colored pavement cannot be designated for exclusive or preferential use in bicycle facilities because it is already the primary color of the international symbol of accessibility parking symbol (see Figure 3B-22 of the 2009 MUTCD) and it is also used for the lines that are adjacent to parking spaces that are reserved for use only by persons with disabilities. The use of red colored pavement has not been approved for any bicycle-related experiments in the United States because it is currently being tested for a different potential use.

Research on Green Colored Pavement for Bike Lanes: Agencies across the United States are showing an increased interest in using colored pavement specifically for bicycle facilities, and many of them have submitted requests to the FHWA to experiment with colored pavement. During the past 10 years, the FHWA has approved experiments with green colored pavement for a variety of State and local governmental agencies, including the following: the Vermont Agency of Transportation; the City of Chicago, IL; the City of New York, NY; the City of St. Petersburg, FL; the City of San Francisco, CA; the City of Portland, OR; the City of Columbia, MO; the City of Long Beach, CA; the City of Austin, TX; the City of Nashville, TN; the City of Missoula, MT; the City of Golden, CO; the Minnesota DOT (for Minneapolis); and the Pennsylvania DOT (for Philadelphia). In these experiments, green colored pavement is being used as a traffic control device to designate locations where bicyclists are expected to operate, and areas where bicyclists and other roadway traffic might have potentially conflicting weaving or crossing movements.

FHWA Evaluation of Results: The Office of Transportation Operations has reviewed the available data and considers the experimental green colored pavement to be satisfactorily successful for the bicycle applications that were tested. Positive operational effects have been noted in the experiments, such as bicyclists positioning themselves more accurately as they travel across intersections and through conflict areas, and no notable negative operational effects have been observed. The research has also shown that bicyclists and motorists both have a positive impression of the effect of the green colored pavement, with bicyclists saying that they feel safer when the green colored pavement is present, and motorists saying that the green colored pavement gives them an increased awareness that bicyclists might be present and where those bicyclists are likely to be positioned within the traveled way.

The design of the experimental green colored pavement is not proprietary and can be used by any jurisdiction that requests and obtains interim approval from the FHWA to use green colored pavement. The FHWA believes that the experimental green colored pavement has a low risk of safety or operational concerns.

This Interim Approval does not create a new mandate compelling the use of green colored pavement, but will allow agencies to install green colored pavement, pending official MUTCD rulemaking, to enhance the conspicuity of a bicycle lane or a bicycle lane extension.

Conditions of Interim Approval: The FHWA will grant Interim Approval for the optional use of green colored pavement in marked bicycle lanes and in extensions of bicycle lanes through intersections and traffic conflict areas to any jurisdiction that submits a written request to the Office of Transportation Operations. A State may request Interim

Approval for all jurisdictions in that State. Jurisdictions using green colored pavement under this Interim Approval must agree to comply with the technical conditions detailed below, to maintain an inventory list of all locations where green colored pavement is installed, and to comply with Item D in Paragraph 18 of Section 1A.10 of the 2009 MUTCD, which requires:

“An agreement to restore the site(s) of the Interim Approval to a condition that complies with the provisions in this Manual within 3 months following the issuance of a Final Rule on this traffic control device; and terminate use of the device or application installed under the interim approval at any time that it determines significant safety concerns are directly or indirectly attributable to the device or application. The FHWA’s Office of Transportation Operations has the right to terminate the interim approval at any time if there is an indication of safety concerns.”

1. General Conditions:

The use of green colored pavement is optional. However, if an agency opts to use green colored pavement under this Interim Approval, the following design and installation requirements shall apply, and shall take precedence over any conflicting provisions of the MUTCD.

2. Allowable Uses:

Green colored pavement may be used within a bicycle lane or within an extension of a bicycle lane to enhance the conspicuity of the bicycle lane or extension.

The use of green colored pavement under this Interim Approval is limited to the following applications:

- a. Green colored pavement may be installed within bicycle lanes as a supplement to the other pavement markings that are required for the designation of a bicycle lane. Green colored pavement shall not be used instead of the longitudinal line required by Paragraph 2 of Section 9C.04 of the 2009 MUTCD or instead of the word, symbol, and arrow pavement markings illustrated in Figure 9C-3 of the 2009 MUTCD and required by Item C in Paragraph 6 of Section 3D.01 of the 2009 MUTCD. The green colored pavement may be installed for the entire length of the bicycle lane or for only a portion (or portions) of the bicycle lane. Green colored pavement may be installed as a rectangular background behind the word, symbol, and arrow pavement markings in a bicycle lane as a means of enhancing the conspicuity of these word, symbol, and arrow pavement markings.
- b. If a pair of dotted lines is used to extend a bicycle lane across an intersection or driveway (see Section 3B.08 of the 2009 MUTCD) or a ramp, green colored pavement may be installed between these lines as a supplement to the lines. Green colored pavement shall not be used instead of these dotted lines to extend a bicycle lane across an intersection, driveway, or ramp. The green colored pavement may be installed for the entire length of the bicycle lane extension or for only a portion (or portions) of the bicycle lane extension. The pattern of the green colored pavement may be dotted in a manner that matches the pattern of the

dotted lines, thus filling in only the areas that are directly between a pair of dotted line segments that are on opposite sides of the bicycle lane extension.

- c. If a pair of dotted lines is used to extend a bicycle lane across the beginning of a turn bay where drivers who desire to turn must cross the bicycle lane when moving out of the through lane in order to turn (see Figures 9C-1, 9C-4, and 9C-5 of the 2009 MUTCD), green colored pavement may be installed between these lines as a supplement to the lines. Green colored pavement shall not be used instead of these dotted lines to extend a bicycle lane across the beginning of a turn bay. The green colored pavement may be installed for the entire length of the bicycle lane extension or for only a portion (or portions) of the bicycle lane extension. The pattern of the green colored pavement may be dotted in a manner that matches the pattern of the dotted lines, thus filling in only the areas that are directly between a pair of dotted line segments that are on opposite sides of the bicycle lane extension.

3. Design of Green Colored Pavement:

- a. The daytime chromaticity coordinates for the color used for green colored pavement shall be as follows:

1		2		3		4	
x	y	x	y	x	y	x	y
0.230	0.754	0.266	0.500	0.367	0.500	0.444	0.555

The daytime luminance factor (Y) shall be at least 7, but no more than 35.

- b. The nighttime chromaticity coordinates for the color used for green colored pavement shall be as follows:

1		2		3		4	
x	y	x	y	x	y	x	y
0.230	0.754	0.336	0.540	0.450	0.500	0.479	0.520

- c. Green colored pavement may be retroreflective, but there is no requirement or recommendation that it be retroreflective.
- d. If green paint or other marking materials applied to the roadway surface are used to simulate a green colored pavement, consideration should be given to selecting pavement marking materials that will minimize loss of traction for bicyclists (see Paragraph 4 of Section 3A.04 of the 2009 MUTCD).

4. Other:

Except as otherwise provided above, all other provisions of the MUTCD that are applicable to colored pavements shall apply to green colored pavement.

Any questions concerning this Interim Approval should be directed to Mr. Bruce Friedman at bruce.friedman@dot.gov.

cc:

Associate Administrators

Chief Counsel

Chief Financial Officer

Directors of Field Services

Director of Technical Services

EXHIBIT E
INSURANCE REQUIREMENTS

Project: Revocable License Agreement with City of Fort Lauderdale for Continuous Green Pavement Bicycle Lanes
Agency: Traffic Engineering Division

TYPE OF INSURANCE	ADD L INSD	SUBR WVD	MINIMUM LIABILITY LIMITS		
				Each Occurrence	Aggregate
GENERAL LIABILITY - Broad form <input checked="" type="checkbox"/> Commercial General Liability <input checked="" type="checkbox"/> Premises-Operations <input type="checkbox"/> XCU Explosion/Collapse/Underground <input checked="" type="checkbox"/> Products/Completed Operations Hazard <input checked="" type="checkbox"/> Contractual Insurance <input checked="" type="checkbox"/> Broad Form Property Damage <input checked="" type="checkbox"/> Independent Contractors <input checked="" type="checkbox"/> Personal Injury Per Occurrence or Claims-Made: <input checked="" type="checkbox"/> Per Occurrence <input type="checkbox"/> Claims-Made Gen'l Aggregate Limit Applies per: <input type="checkbox"/> Project <input type="checkbox"/> Policy <input type="checkbox"/> Loc. <input type="checkbox"/> Other _____	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Bodily Injury		
			Property Damage		
			Combined Bodily Injury and Property Damage	\$1,000,000	\$2,000,000
			Personal Injury		
			Products & Completed Operations		
AUTO LIABILITY <input checked="" type="checkbox"/> Comprehensive Form <input checked="" type="checkbox"/> Owned <input checked="" type="checkbox"/> Hired <input checked="" type="checkbox"/> Non-owned <input checked="" type="checkbox"/> Any Auto, If applicable <i>Note: May be waived if no driving will be done in performance of services/project.</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Bodily Injury (each person)		
			Bodily Injury (each accident)		
			Property Damage		
			Combined Bodily Injury and Property Damage	\$500,000	
<input type="checkbox"/> EXCESS LIABILITY / UMBRELLA Per Occurrence or Claims-Made: <input type="checkbox"/> Per Occurrence <input type="checkbox"/> Claims Made <i>Note: May be used to supplement minimum liability coverage requirements.</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/> WORKER'S COMPENSATION <i>Note: U.S. Longshoremen & Harbor Workers' Act & Jones Act is required for any activities on or about navigable water.</i>	N/A	<input checked="" type="checkbox"/>	Each Accident	STATUTORY LIMITS	
<input checked="" type="checkbox"/> EMPLOYER'S LIABILITY			Each Accident	\$500,000	
<input type="checkbox"/> PROFESSIONAL LIABILITY (ERRORS & OMISSIONS) All engineering, surveying and design professionals.	N/A	<input checked="" type="checkbox"/>	If claims-made form:		
			Extended Reporting Period of:		
			*Maximum Deductible:		
<input type="checkbox"/> POLLUTION/ENVIRONMENTAL LIABILITY	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If claims-made form:		
			Extended Reporting Period of:		
			*Maximum Deductible:		
<input type="checkbox"/> Installation floater is required if Builder's Risk or Property are not carried. <i>Note: Coverage must be "All Risk", Completed Value.</i>			*Maximum Deductible:	\$10,000	Completed Value
			Contractor is responsible for deductible		
Description of Operations: "Broward County" shall be listed as Certificate Holder and endorsed as an additional insured for liability, except as to Professional Liability. County shall be provided 30 days written notice of cancellation, 10 days' notice of cancellation for non-payment. Contractors insurance shall provide primary coverage and shall not require contribution from the County, self-insurance or otherwise. Any self-insured retention (SIR) higher than the amount permitted in this Agreement must be declared to and approved by County and may require proof of financial ability to meet losses. Contractor is responsible for all coverage deductibles unless otherwise specified in the agreement.					

CERTIFICATE HOLDER:
Broward County
115 South Andrews Avenue
Fort Lauderdale, Florida 33301


TIMOTHY CROWLEY
dc=cty, dc=broward, dc=hc, ou=Organization, ou=BCC, ou=RM, ou=Users, cn=TIMOTHY CROWLEY
2019.09.23 10:37:31 -0400
Risk Management Division