

PLANNING DIVISION



File No. (internal use only): _____

2600 Hollywood Boulevard Room 315
Hollywood, FL 33022

GENERAL APPLICATION



Tel: (954) 921-3471
Fax: (954) 921-3347

This application must be completed in full and submitted with all documents to be placed on a Board or Committee's agenda.

The applicant is responsible for obtaining the appropriate checklist for each type of application.

Applicant(s) or their authorized legal agent must be present at all Board or Committee meetings.

At least one set of the submitted plans for each application must be signed and sealed (i.e. Architect or Engineer).

Documents and forms can be accessed on the City's website at

<http://www.hollywoodfl.org/DocumentCenter/Home/View/21>



APPLICATION TYPE (CHECK ONE):

- Technical Advisory Committee
- City Commission
- Historic Preservation Board
- Planning and Development Board

Date of Application: _____

Location Address: NE corner of 441 and Griffin Road, Hollywood

Lot(s): Parcel A Block(s): _____ Subdivision: Griffin 441 Plaza and Marlene Plaza

Folio Number(s): 5041-25-30-0010 and 5041-25-26-0010

Zoning Classification: SR7 CCD-RC (C-4)(C-3) Land Use Classification: Medium High Density Comm

Existing Property Use: Vacant lot Sq Ft/Number of Units: 266,073 sq. ft.

Is the request the result of a violation notice? () Yes (x) No If yes, attach a copy of violation.

Has this property been presented to the City before? If yes, check all that apply and provide File Number(s) and Resolution(s): No

- Economic Roundtable
- Technical Advisory Committee
- Historic Preservation Board
- City Commission
- Planning and Development

Explanation of Request: PD Rezoning and site plan for multifamily structure, WAWA, Wendy's, Storage facility, waiver of 10-acre requirement, and variance

Number of units/rooms: 180 Residential Units Average size of Units: 802.88 SF
Sq Ft: _____

Value of Improvement: \$42,000,000 Estimated Date of Completion: 4/31/18

Will Project be Phased? (x) Yes () No If Phased, Estimated Completion of Each Phase _____

Name of Current Property Owner: LL Hart Development, LLC

Address of Property Owner: 7200 W. Camino Real, Boca Raton, FL 33433

Telephone: 561-952-2501 Fax: _____ Email Address: Donny@privcapcompanies.com

Name of Consultant/Representative/Tenant (circle one): Lon Tabatchnick

Address: 3501 N. Ocean Drive, Hollywood, FL 33019 Telephone: 954-922-6491

Fax: _____ Email Address: LonT@Lojeta.com

Date of Purchase: 12/31/14 Is there an option to purchase the Property? Yes () No (x)

If Yes, Attach Copy of the Contract.

List Anyone Else Who Should Receive Notice of the Hearing: Wilson C. Atkinson, III, Esq.

Tripp Scott, P.A. Address: 110 SE 6 St., Suite 1500

Fort Lauderdale, FL 33301 Email Address: WCA@TrippScott.com

PLANNING DIVISION

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2600 Hollywood Boulevard Room 315
Hollywood, FL 33022

GENERAL APPLICATION

CERTIFICATION OF COMPLIANCE WITH APPLICABLE REGULATIONS

The applicant/owner(s) signature certifies that he/she has been made aware of the criteria, regulations and guidelines applicable to the request. This information can be obtained in Room 315 of City Hall or on our website at www.hollywoodfl.org. The owner(s) further certifies that when required by applicable law, including but not limited to the City's Zoning and Land Development Regulations, they will post the site with a sign provided by the Office of Planning and Development Services. The owner(s) will photograph the sign the day of posting and submit photographs to the Office of Planning and Development Services as required by applicable law. Failure to post the sign will result in violation of State and Municipal Notification Requirements and Laws.

(I)(We) certify that (I) (we) understand and will comply with the provisions and regulations of the City's Zoning and Land Development Regulations, Design Guidelines, Design Guidelines for Historic Properties and City's Comprehensive Plan as they apply to this project. (I)(We) further certify that the above statements and drawings made on any paper or plans submitted herewith are true to the best of (my)(our) knowledge. (I)(We) understand that the application and attachments become part of the official public records of the City and are not returnable.

Signature of Current Owner: *Daniel Cohen* Date: 6/5/17
 PRINT NAME: Daniel Cohen Date: 6/5/17
 Signature of Consultant/Representative: *Law Tabachnick* Date: 6/5/17
 PRINT NAME: Law TABACHNICK Date: 6/5/17
 Signature of Tenant: _____ Date: _____
 PRINT NAME: _____ Date: _____

Current Owner Power of Attorney

I am the current owner of the described real property and that I am aware of the nature and effect the request for _____ to my property, which is hereby made by me or I am hereby authorizing _____ to be my legal representative before the _____ (Board and/or Committee) relative to all matters concerning this application.

Sworn to and subscribed before me
 this _____ day of _____

 Notary Public
 State of Florida
 My Commission Expires: _____ (Check One) _____ Personally known to me; OR _____ Produced Identification _____

Signature of Current Owner

Print Name

LL HART DEVELOPMENT, LLC

7200 W. Camino Real, Suite 200
Boca Raton, FL 33433

OWNER AUTHORIZATION

May 31, 2017

City of Hollywood
Planning Department
2600 Hollywood Boulevard
Hollywood, FL 33020

Re: Project: 441 ROC
Applicant: LL Hart Development, LLC

Dear Sir or Madam:

This letter will confirm that I am the authorized agent and signatory for the Owner/Applicant, LL HART DEVELOPMENT, LLC.

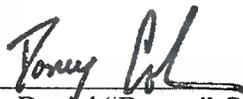
This will further confirm that the Applicant designates LON TABATCHNICK as its Agent for the filing of all necessary applications for the project known as "441 ROC", and further designates MATTHEW H. SCOTT, ESQUIRE and WILSON C. ATKINSON, III, ESQUIRE, of the law firm of TRIPP SCOTT, P.A., as its attorney representatives.

Very truly yours,

LL HART DEVELOPMENT, LLC,
a Florida limited liability company

By: PRIVCAP MANAGER, LLC,
a Florida limited liability company

Its: Manager

By: 
Daniel "Donny" Cohen
Its: Manager



MATTHEW H. SCOTT
(954) 760-4911
Email: MHS@TrippScott.com

June 5, 2017

VIA HAND DELIVERY

Arceli Redila, LEED AP
Planning Administrator
City of Hollywood
Department of Development Services
2600 Hollywood Blvd, Suite 315
Hollywood, Florida 33022-9045

RE: 17-DPZ-21 - 441 ROC - Criteria Statement for Planned Development Rezoning, Waiver of 10 Acre Requirement, Variance Justification, and Parking Modification Request

Dear Arceli:

LL Hart Development LLC (“Applicant”), owner of real property in Hollywood, Florida generally located on the northeast corner of U.S. 441 and Griffin Road, proposes developing the property with an innovative mixed-use project that will: (1) bring the first Wawa to the City of Hollywood, (2) include a brand new, modern-designed Wendy’s restaurant, (3) activate Griffin Road with an elegantly articulated eight-story residential building offering one hundred eighty market-rate rental apartments, and (4) provide a small self-storage facility for residents of the multifamily building and nearby neighbors. The plans and renderings included with the application demonstrate this project will measurably contribute to the City’s revitalization efforts in this area. The Applicant looks forward to working with the City of Hollywood on this exciting development.

The real property contemplated for this project is comprised of the Griffin 441 Plaza Plat and the Marlene Plaza Plat, which together total approximately 6.1 acres and will be referred to as “the Property.” The Griffin-441 Plaza Plat has an underlying base zoning of C-4, and the Marlene Plaza Plat has an underlying base zoning of C-3. Both are located within the SR7 Commercial Corridor – Resort Commercial Sub-Area (SR 7 CCD-RC) overlay district and are designated with a land use of Medium-High Intensity Commercial. The abutting real property to the west of the Property is located in the Town of Davie and the land directly east and north east is within the boundaries of the City of Dania Beach.

In order to achieve the goals of this project, rezoning the Property to the “PD – Planned Development District” zoning category will be necessary. The rezoning will allow for the diversification of uses on the Property and a creative project that will serve resident and visitor demands in the area. As discussed below and depicted in the plans submitted with this application, the Applicant can show by competent substantial evidence that:

1. It complies with the Zoning and Land Development Regulations for a PD rezoning;
2. A waiver from the 10-acre minimum size requirement for a PD rezoning is warranted for this project;
3. The Application complies with the criteria for a landscape setback variance; and
4. The proposed parking on site is sufficient to justify City Commission modification of the existing parking requirements.

110 Southeast Sixth Street, Fifteenth Floor • Fort Lauderdale, Florida 33301
Post Office Box 14245 • Fort Lauderdale, Florida 33302
Tel 954.525.7500 • Fax 954.761.8475 • www.trippscott.com

Fort Lauderdale • Tallahassee

Compliance with Planned Development District Criteria (§ 4.15 PD Planned Development District)¹:

C. Unified Control. All land included for the purpose of development within a Planned Development District shall be under the control of the applicant (an individual, partnership or corporation, or group of individuals, partnerships or corporations). The applicant shall present satisfactory legal documents to constitute evidence of the unified control of the entire area within the proposed Planned Development which shall be certified by the Department. The applicant shall agree in the application for rezoning to the following:

- 1. To proceed with the proposed development according to the provisions of these regulations, conditions attached to the rezoning of the land to Planned Development, and the approved master development plan;**
- 2. To provide, subsequent to rezoning and prior to the issuance of a building permit, any agreements, contracts, covenants, deed restrictions or sureties as reasonably deemed necessary by the City, and in a form acceptable to the City, to assure that the development proceeds in accordance with prior approvals and to further provide for continuing operation and maintenance of such areas, functions and facilities which are not proposed to be provided, operated, or maintained at public expense;**
- 3. To bind their successors in title to any commitments made as set forth above; and**
- 4. If the developer elects to administer common open space through an association or nonprofit corporation, said organization shall conform to the applicable laws of the State of Florida.**

The Property contemplated for the PD rezoning is under unified ownership and control by LL Hart Development LLC. Legal documents were provided with the application evidencing the unified control and copies of the title for each parcel are included with this criteria statement. The Applicant acknowledges the other potential conditions of this Section C and will work with the City on any of them as they may arise during the review and permitting process.

D. Permitted Uses. The uses permitted in a Planned Development, as set forth below, must be consistent with the provisions herein, as may be further revised by the City of Hollywood Comprehensive Plan:

- 1. All residential uses permitted by the City of Hollywood Comprehensive Plan;**
- 2. Business uses located in a Planned Development which is intended to be predominantly residential or intended to meet the neighborhood shopping and service needs of the Planned Development and not the general needs of the surrounding area. Such uses shall be grouped in convenient centers designed as integral, harmonious parts of the Planned Development appropriately buffered and screened from residential uses (whether within or outside the Planned Development) to protect them from unsightliness, noise, odors and other characteristics incompatible with residential uses. Businesses should be pedestrian oriented and accessible to walkways and bicycle paths. The center should consist of neighborhood shopping and personal services consistent with the daily needs of the Planned Development;**
- 3. Business uses in a Planned Development which is intended to be predominantly commercial, office or resort to include all commercial uses consistent with Medium High/High Residential, General Business and Office categories of the City of Hollywood Comprehensive Plan;**
- 4. Resort uses in a Planned Development may include entertainment and recreational uses permitted in the Central Beach and Recreational districts as well as those uses permitted by the City of Hollywood Comprehensive Plan;**

¹ The criteria from City of Hollywood Zoning and Land Development Regulations are in bold and Applicant responses are in italics.

5. Uses and structures which are customarily accessory and clearly incidental to principal uses and structures may be permitted, subject to regulations applying thereto; and

6. In connection with residential uses in waterfront property, wet dockage or moorage of private pleasure craft shall be permitted subject to regulations applying thereto.

The Applicant proposes the following four uses for the PD plan: multifamily residential, gasoline service station with convenience store (Wawa), restaurant with drive-thru (Wendy's), and self-storage facility. The three commercial uses support and serve the residential component, as well as the existing neighboring residential areas. The residential structure is placed on the southeast corner of the Property, directly abutting Griffin Road. Eight stories tall, the residential building will have a formal lobby, lush pool area/gym/clubhouse on the second floor, and an attached parking garage. Positioned close to Griffin Road, it will create pedestrian interest along a major roadway and activate this area at the ground level.

The Wawa is positioned on the southwest corner (north and west of the existing Happy Pappy's liquor store and sub shop) and the Wendy's is intended for the northwest corner, with the storage facility situated on the northern side of the site, effectively in the back of the Property. The commercial uses along U.S. 441 fit well in the overall design, as they are popular uses along a busy road. The storage facility will be placed in the back of the Property, as this is the least active of the uses proposed in the PD plan. In between the commercial uses and the residential use are landscaping, connecting internal roads, and sidewalks, serving to round out the planned development.

E. Land use and design regulations:

1. Minimum size of planned development. All Planned Developments shall contain a minimum of ten acres of land under unified control. This minimum may be waived by the City Commission upon the recommendation of the Planning and Development Board.

The Property subject to this Planned Development Rezoning application is approximately 6.1 acres. The Applicant respectfully requests the City Commission waive the 10-acre requirement to allow for this innovative mixed-use project on a site that has been vacant and underutilized for many years in an area of Hollywood in need of development and investment. The beautifully-designed multifamily residential structure proposed along Griffin Road will create pedestrian activity and interest along the street. The value of this alone justifies waiver of the 10-acre requirement, not to mention the increased tax revenue from the project, new landscaping proposed throughout the site, and addition of popular uses in Wawa and Wendy's.

2. Maximum density.

a. The total number of dwelling units permitted in a Planned Development shall not exceed the total number of units permitted by the City of Hollywood Comprehensive Plan.

The City of Hollywood Comprehensive Plan permits 36 residential units per acre, indicating the maximum density on this 6.1 acre parcel is approximately 219 residential units. The Applicant proposes only 180 residential units.

3. Minimum lot area, distance between structures, frontage and setbacks.

a. No minimum lot size shall be required within a Planned Development.

b. No minimum distance between structures shall be required within a Planned Development, except as required by the Florida Building Code. The appropriate distance between structures shall be evaluated on an individual development basis by the City Commission, upon recommendation of the Planning and Development Board, after considering the type and character of the building types within a development.

The distances between the structures comply with the Florida Building Code.

The distance between the Wendy's and the Storage Building is 122'-6".

The distance between the Wendy's and the WAWA is 124'-4".

The distance between the WAWA and the Residential Structure is 107'-3".

The distance between the Storage Building and the Residential Structure is 55'-9".

c. Each dwelling unit or other permitted use shall have access to a public street, either directly or indirectly, via an approach, private road, pedestrian way, court or other area dedicated to public or private use of a common easement guaranteeing access. Permitted uses are not required to front on a dedicated road. The City shall be allowed access on privately owned roads, easements and common open space to insure the police and fire protection of the area, to meet emergency needs, to conduct City services and to generally insure the health, safety and welfare of the residents of the Planned Development.

The residential structure abuts and has two direct points of access to Griffin Road. The other uses have access to U.S. 441 and Griffin Road. The PD master plan shows internal circulation for vehicles and pedestrians.

d. There are no required setbacks or yards except for the following:

1. Internal streets. There shall be a setback of not less than 25 feet in depth abutting all public road rights-of-way within a Planned Development District.

Not applicable.

2. External streets. There shall be a peripheral landscaped setback from all external streets of the Planned Development of not less than 25 feet in depth.

The Applicant is seeking a variance from the peripheral setback requirement to allow for smaller setbacks around the Property. Due to the interesting diversity of the project, the Planned Development provides for the following peripheral landscape setbacks:

North: 4'-6", 12'-0", 6'-5"

South: 6'-0", 37'-4", 13'-4", 51'-0"

East: 4'-3", 15'-5", 10'-6", 5'-5"

West: 10'-1", 9'-10", 16'-3", 9'-6", 19'-2".

As discussed directly below, the Applicant meets the criteria for this variance.

Variations. Except as set forth in division F.2. below, no Variance shall be granted by the Planning and Development Board unless the Board finds that the Applicant has shown that criteria a. through d. have been met or criteria e. is established, then the Variance shall be granted.

a. That the requested Variance maintains the basic intent and purpose of the subject regulations, particularly as it affects the stability and appearance of the city;

The Applicant requests a variance from the 25 foot peripheral landscape setback called for by the Planned Development zoning district requirements.

b. That the requested Variance is otherwise compatible with the surrounding land uses and would not be detrimental to the community;

The requested Variance is compatible with the surrounding land uses and would not be detrimental to the community. A commercial vehicle storage lot is directly north of the proposed Wendy's, obviating the need for a substantial buffer at that location. Prefabricated homes/trailers are located directly north of the PD's storage facility and parking area, with an access road between the prefabricated homes and an existing wooden fence. The access road and wooden fence buffer the existing residential uses, and the Applicant proposes locating the least intensive use (storage facility) at this part of the Planned Development.

To the east of the Property are commercial uses. The Applicant proposes parking areas and the residential structure and parking garage for the east side, which will all be separated from the east property line by an access road. Again, this provides ample buffering from the surrounding uses.

On the west and south side are major roadways. Allowing for reduced setbacks along Griffin Road and SR 441 will promote pedestrian interaction with the PD uses and activate the area. In fact, city staff requested that the Applicant bring the residential building closer to Griffin Road. Thus, the peripheral landscape setback variance is compatible with the surrounding land uses and would not be detrimental to the community.

c. That the requested Variance is consistent with and in furtherance of the Goals, Objectives and Policies of the adopted Comprehensive Plan, as amended from time to time, the applicable Neighborhood Plan and all other similar plans adopted by the city; and

The requested Variance is consistent with the goals and objectives of the Comprehensive Plan. The Property has sat vacant for years, and the proposed PD offers to revitalize this corner with popular consumer uses and an architecturally unique residential building. The reduced landscape setback allows for this creative project, which supports the redevelopment and economic development objectives and goals of the Comprehensive Plan. Moreover, the proposed residential building offers 180 market rate rental units to an area of Hollywood the Comprehensive Plan targeted for multifamily residential development. Overall, the mixed-use project is fundamentally consistent with the City's vision for this part of Hollywood and approving the landscape buffer variance will facilitate the project.

d. That the need for the requested Variance is not economically based or self-imposed.

The need for the Variance is not economically based or self-imposed. The Applicant needs the variance from the peripheral landscaping requirement to provide the unique mix of uses proposed and the positioning of the residential structure close to Griffin Road. The Applicant wants to provide ample landscaping, as seen by the large landscaping area on the southwest corner of the Property.

e. That the Variance is necessary to comply with state or federal law and is the minimum Variance necessary to comply with the applicable law.

This criterion is not applicable to the requested Variance.

4. Maximum height of structures. No maximum height of structures shall be required within a Planned Development. The City Commission upon recommendation of the Planning and Development Board shall determine the appropriate height limitations on an individual development basis after considering the character of the surrounding area, the character of the proposed development, and the goals for community development as stated in the Hollywood Comprehensive Plan.

The underlying existing zoning for the Property allows a maximum height of 175 feet. The maximum height proposed for the residential structure is under 100 feet.

5. Total site coverage. The City Commission upon recommendation of the Planning and Development Board shall determine the appropriate total site coverage on an individual development basis after considering the character and intensity of the proposed development.

The total site coverage of the development is 59,229 square feet, which is 22.2% of the Property.

6. Off-street parking and loading requirements. Off-street parking and loading requirements shall meet all the requirements of Article 7 of the City of Hollywood Zoning and Land Development Regulations unless expressly modified by the City Commission.

The Applicant is requesting modification of the parking requirements by the City Commission. The Wawa and the Wendy's provide ample parking spaces for their uses. The storage facility has enough parking spaces as well. The residential structure has slightly less parking spaces than is required by the Code, but the Applicant is requesting the City Commission authorize use of the storage facility parking spaces for any overflow parking required by the residential structure.

In addition, the Applicant requests the City Commission modify the at-grade parking lot 10 foot setback requirement. The Applicant proposes setbacks smaller than 10 feet for the parking areas.

7. Landscaping.

a. All landscaping shall meet the requirements of Article 9 of the City of Hollywood Zoning and Land Development Regulations unless expressly modified by the City Commission.

b. All undesirable exotic vegetation, including melaleuca, Brazilian pepper, Australian pine or other vegetation deemed undesirable by the Broward County Urban Forester, shall be removed by the applicant according to a schedule approved by the City. However, the City may allow certain undesirable exotic vegetation to remain at the request of the applicant for good cause.

The landscaping plan submitted with the site plan application aims to meet or exceed the requirements of the City of Hollywood Zoning and Land Development Regulations.

All undesirable vegetation, if any, will be removed.

8. Underground utilities. Within the Planned Development, all utilities including telephone, television cable and electrical systems shall be installed underground. Primary facilities providing service to the site may be exempted from this requirement. Large transformers shall be placed on the ground and contained within pad mounts, enclosures or vaults. The developer shall provide adequate landscaping with shrubs and plants to screen all utility facilities permitted above ground.

Utilities will be installed underground.

9. Internal circulation. A Planned Development shall provide an internal circulation system for use by both motorized and non-motorized transportation modes that is orderly, well oriented to the user, coherent with the structure of use and in balance with the intensity of activity. The circulation system should encourage the safe and convenient use of non-motorized transport modes and dissuade the inefficient or excessive use of the automobile.

The PD Master Plan provides a coherent, sensible internal circulation system for vehicles and pedestrians.

10. Energy conservation. A Planned Development shall incorporate passive energy conservation measures in its site design in accordance with Chapter 52, South Florida Building Code. Such measures shall include, but need not be limited to, the directional orientation of buildings, the location of windows, minimization of radiant heat absorption and the inclusion of energy-efficient landscaping.

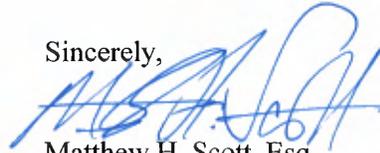
The PD Master Plan incorporates passive energy conservation measures such as white roofing for the residential structure, water containment, and use of an efficient mechanical system.

11. Use of reclaimed water. A Planned Development shall incorporate the use of reclaimed water in cases where it has been determined by the Utilities Director that the use of reclaimed water is feasible and in the best interest of the City of Hollywood.

The use of reclaimed water for this project is not feasible.

Thank you for your consideration of the Applicant's requests. Please contact me if you need additional information or have any questions.

Sincerely,

A handwritten signature in blue ink, appearing to read 'M.H. Scott', is written over the word 'Sincerely,'.

Matthew H. Scott, Esq.
For the Firm

MHS:cgc



2699 Stirling Road, Suite C-202
 Fort Lauderdale, Florida 33312
 Tel: (954)986-9899
 Fax: (954)986-6655
 Email: gg beng@bellsouth.net

SURFACE WATER MANAGEMENT CALCULATION, PRE-DEVELOPMENT CONDITION

GGB PROJECT # 15-1030
 PROJECT NAME Griffin Rd. & US 441 Plaza
 DATE 03/20/07

1) BREAKDOWN BY CURRENT LAND USE

Building:	0 sf	0.0000 ac	0.00%
Pavement:	0 sf	0.0000 ac	0.00%
Dry retention:	0 sf	0.0000 ac	0.00%
Open space:	266,073 sf	6.1082 ac	100.00%
Pervious:	266,073 sf	6.1082 ac	100.00%
Impervious:	0 sf	0.0000 ac	0.00%
Total Site:	266,073 sf	6.1082 ac	100.00%

2) FLOOD AND RAINFALL CRITERIA

3 year, 1 day storm.....	6.30 inches
5 year, 1 day storm.....	7.30 inches
10 year, 1 day storm.....	8.50 inches
25 year, 3 day storm.....	14.30 inches
100 year, 3 day storm.....	17.00 inches
Water control elevation.....	0.50 ft. navd.88
Rainfall distribution	II FL
Hydrograph shape (peak rate) factor	100

3) COMPUTE SOIL MOISTURE STORAGE

High season water table elevation	0.50 ft. ngvd
Average pervious elevation	5.00 ngvd
Depth to the water table	4.50 ft.
Assuming compaction with 25% voids reduction, available ground storage is.....	8.18 inches
Ground Storage available under pervious areas of the site: "green" area x ground stor	4.16 ac.ft.
Converting to equivalent site wide moisture storage, S :	8.18 inches
SCS Curve Number CN = 1000 / (S+10)	55

4) STAGE-STORAGE CALCULATION

Vertical storage over the green areas:

Total area, At: **6.1082 ac**
 Bottom Elev, Eb 5.00 ft.ngvd.
 Top Elev, Et 10.00 ft.ngvd.
 Volume **30.5410 ac.ft.**

Stage	Green Vertical
area, ac	6.1082
low elev, ft.navd.88	5.00
high elev, ft.navd.88	10.00
0.50	
1.00	
1.50	
2.00	
2.50	
3.00	
3.50	
4.00	
4.50	
5.00	0.0000
5.50	3.0541
6.00	6.1082
6.50	9.1623
7.00	12.2164
7.50	15.2705
8.00	18.3246
8.50	21.3787
9.00	24.4328
9.50	27.4869
10.00	30.5410

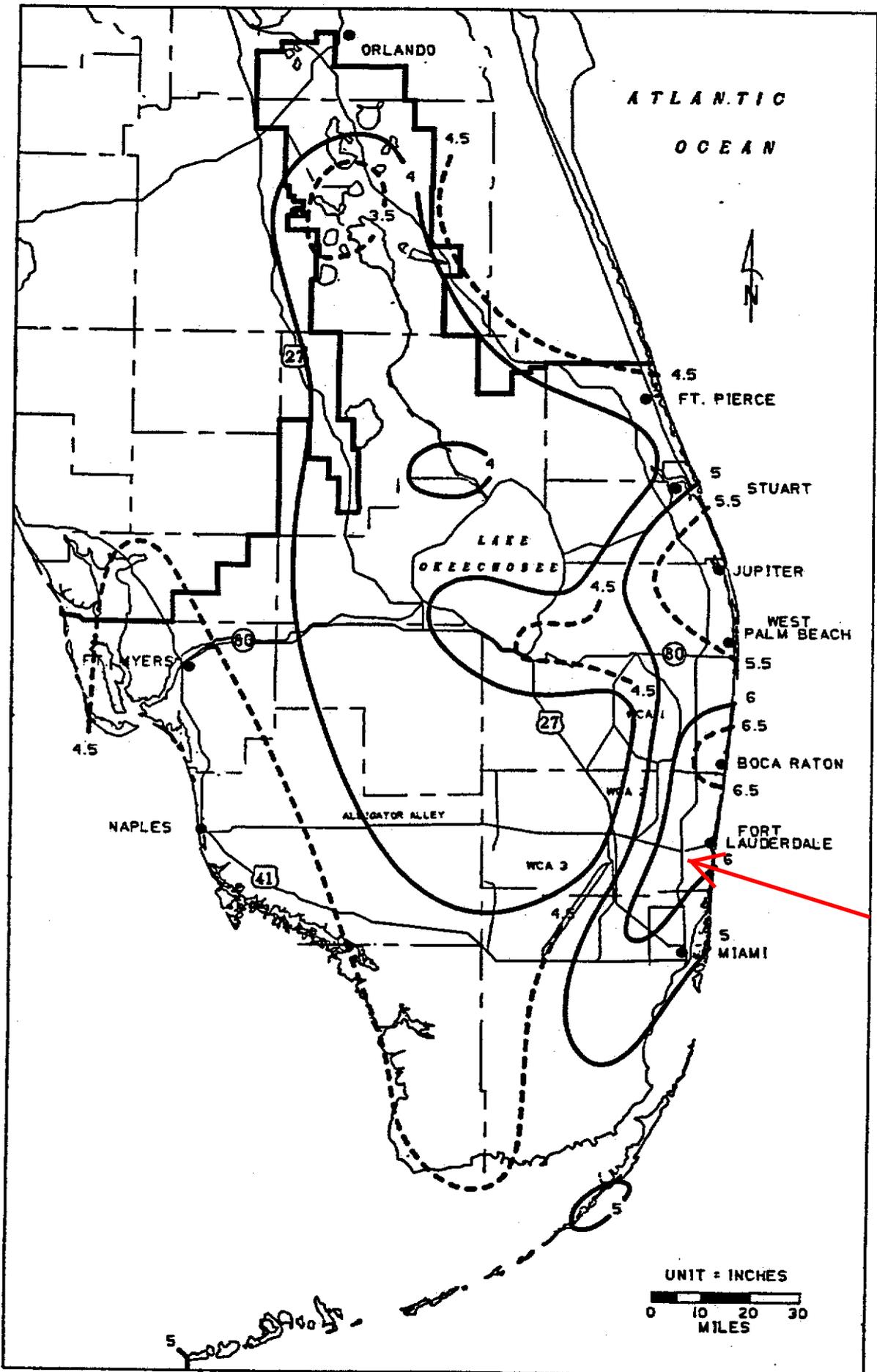


FIGURE C-2. 1-DAY RAINFALL: 3-YEAR RETURN PERIOD

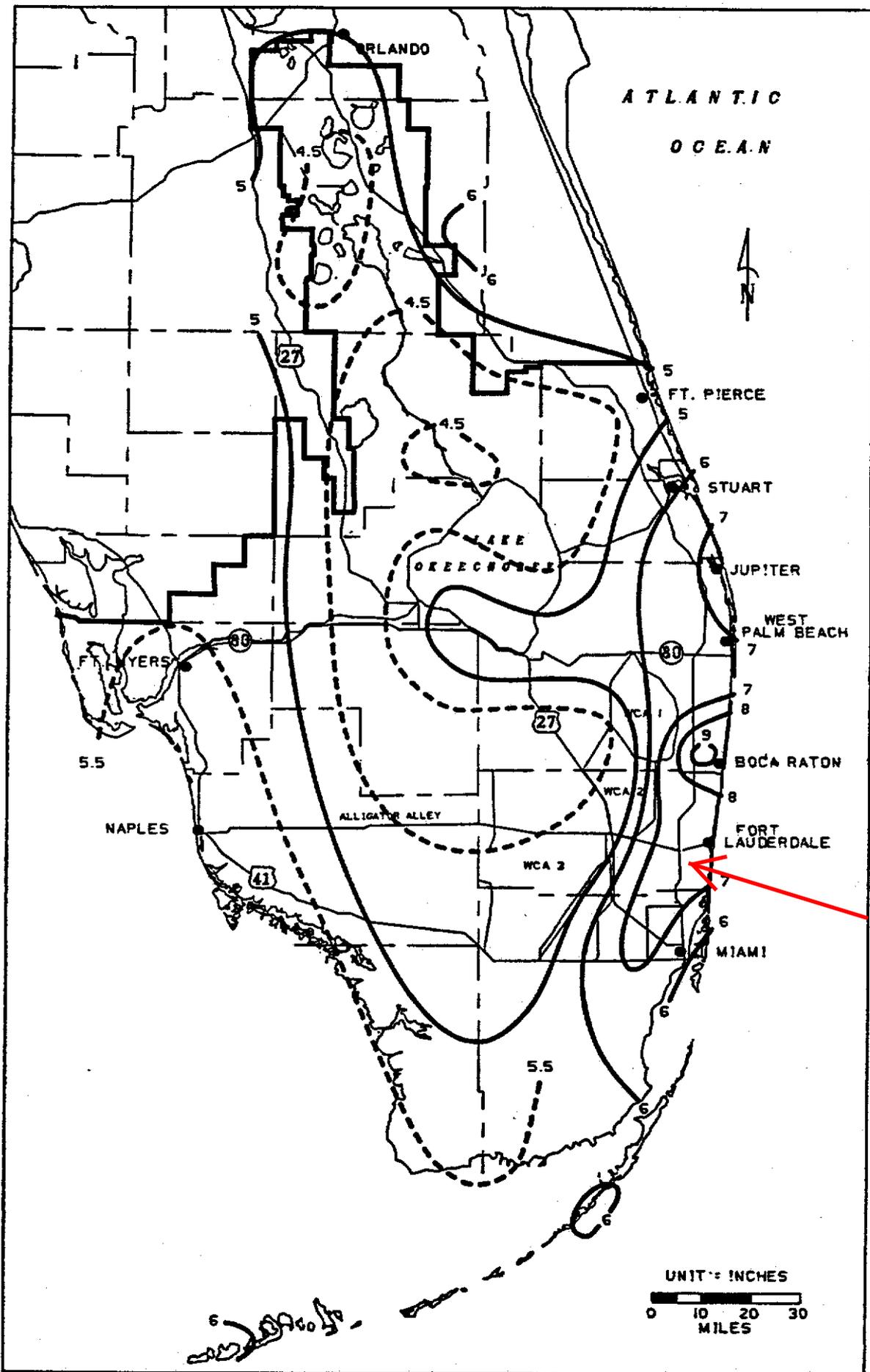


FIGURE C-3. 1-DAY RAINFALL: 5-YEAR RETURN PERIOD

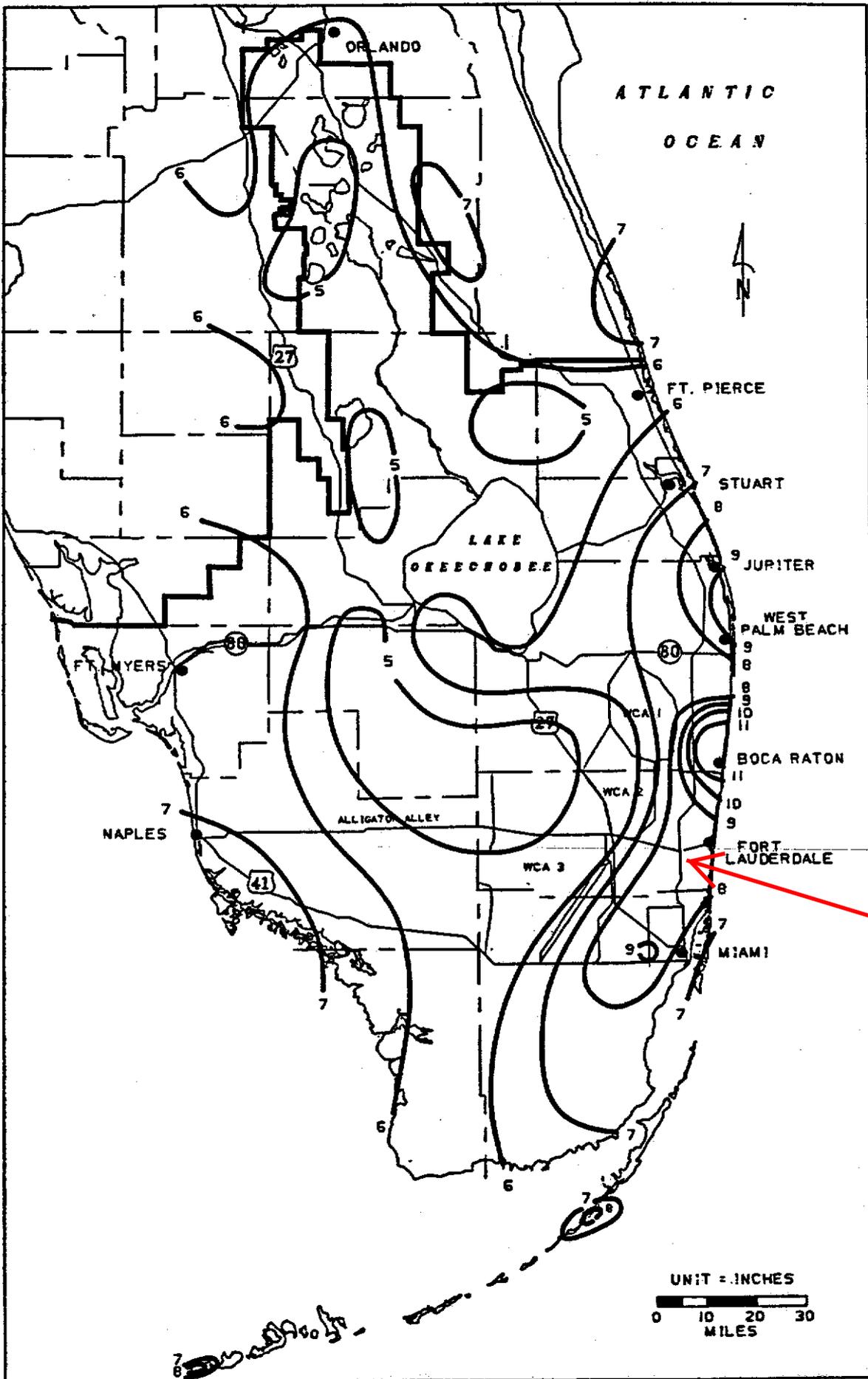


FIGURE C-4. 1-DAY RAINFALL: 10-YEAR RETURN PERIOD

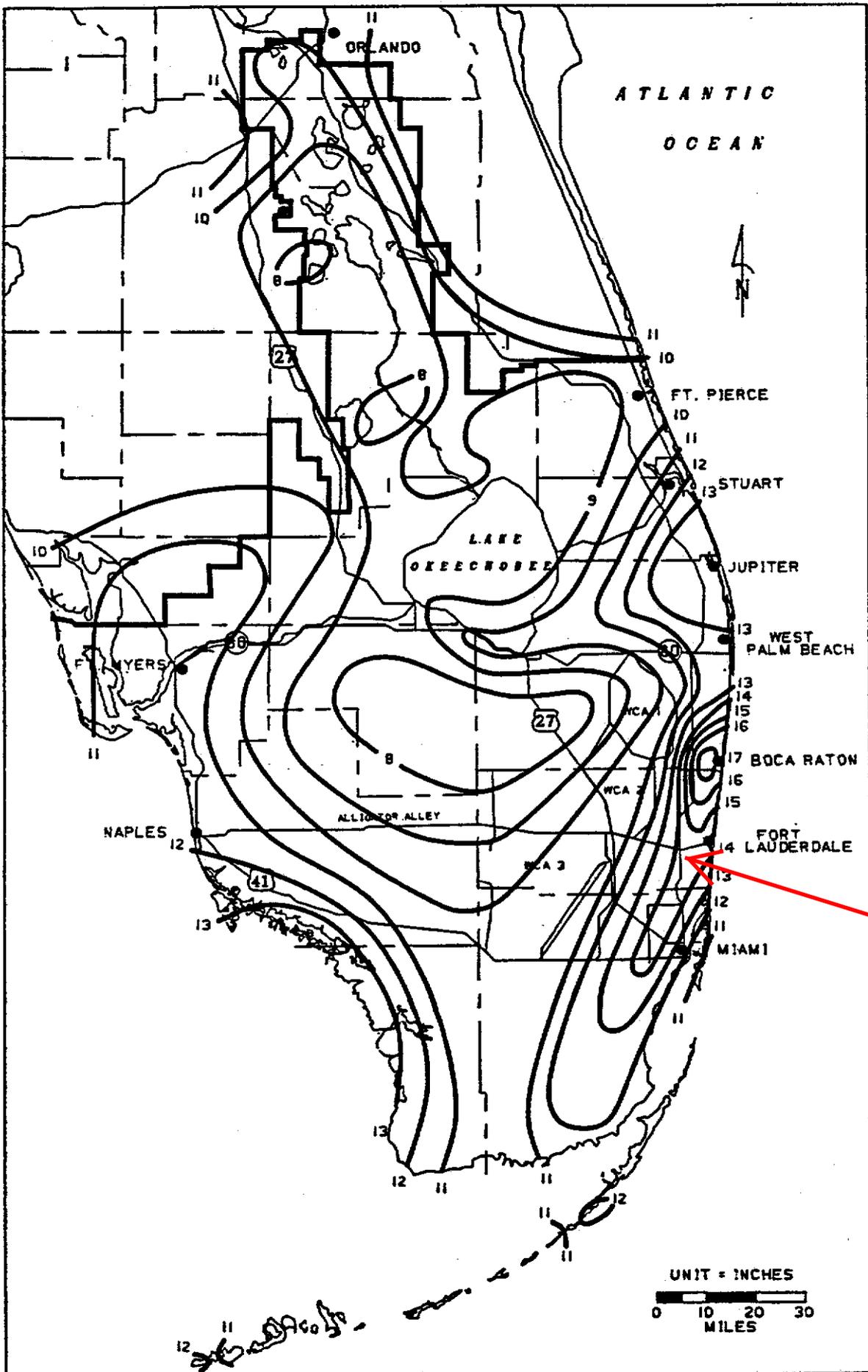


FIGURE C-8. 3-DAY RAINFALL: 25-YEAR RETURN PERIOD

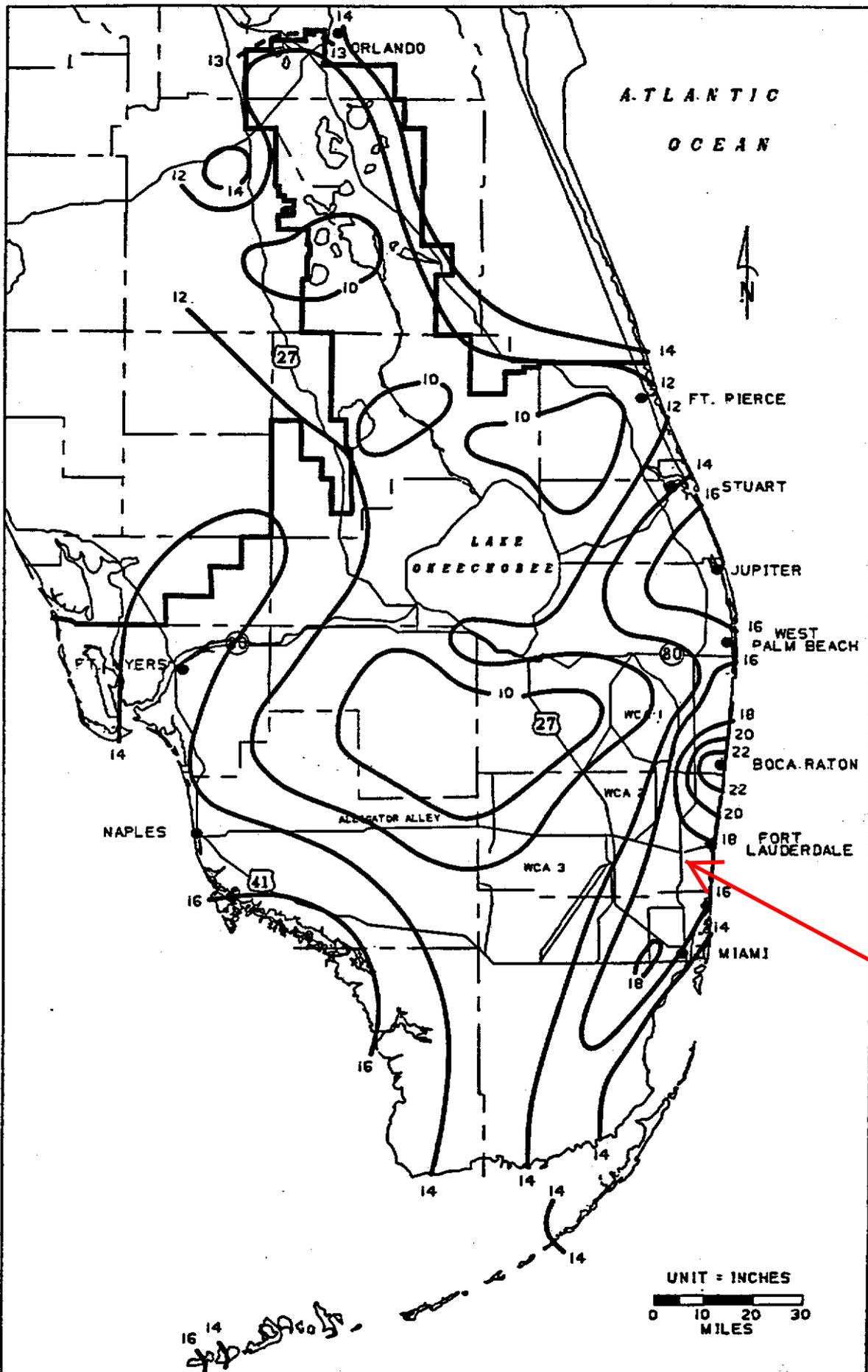


FIGURE C-9. 3-DAY RAINFALL: 100-YEAR RETURN PERIOD

June 19, 2008

H & M Developers
1609 S. Congress Avenue
Boynton Beach, FL – 33426

Attention: Mr. Erik Hadad

Re: Report of Percolation Tests
NE Quad of SR-7 and Griffin Road
Hollywood, FL - 33314

QuEST Report No. J-8125.001

Dear Mr. Hadad:

As requested, Quest Engineering Services & Testing, Inc. (QuEST) has completed two percolation tests to a depth of 10 feet below grade to determine the hydraulic conductivity of the soils in the upper 10 feet of the subsurface profile. The percolation tests were done in general accordance with the South Florida Water Management District's (SFWMD) constant head procedures. This report transmits the test locations, results of these tests, including the types of subsurface materials encountered and the measured groundwater depth.

Stratigraphy

The stratification of the profile components as described below represents the subsurface conditions at the actual percolation test location. Variations may occur within a short distance from the boring. Lines of demarcation represent the approximate boundary between the types of materials encountered, but the transition may be gradual, or not clearly defined.

The subject site is a vacant land parcel located at the northeast quadrant of SR-7 and Griffin Road in Hollywood, Florida. The borings for the percolation tests disclosed the site subsurface profile to comprise essentially of intermittent layers of sand and limestone to the terminal limits of the exploration at 10 feet below grade.

The ground water table was encountered at a depth of 5 feet below ground surface. In the absence of other data, we suggest assuming that a 12 to 18-inch rise in the water table could occur during periods of prolonged rainfall and at the peak of the wet hydroperiod, which typically occurs in the Fall.

Percolation Test

Three constant head borehole permeability tests were done to a depth of 10 feet below grade, at the approximate locations indicated on the Percolation Test Location Plan. The field tests performed for this study indicated hydraulic conductivities of 2.71×10^{-5} to 4.15×10^{-5} cubic feet per second per square foot (of seepage area) per foot (of head). This translates to a permeability of approximately 2.3 to 3.6 feet per day. The detailed results are given in the attached Percolation Test Results sheet.

The hydraulic conductivity values discussed above are typically used assuming constant head and gradient conditions. The percolation capacity of the subsurface materials should be evaluated in view of potentially diminishing head as a result of groundwater mounding during and following a rainfall event. The analysis method would include use of a three-dimensional groundwater flow model (MODRET), with input consisting of pertinent soil and groundwater parameters obtained from the field test.

LIMITATIONS OF STUDY

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

-oOo-

QuEST appreciates the opportunity to be of service. If we may answer any additional questions or be of further service, please call.

Sincerely,
Quest Engineering Services & Testing, Inc.


6/19/08

R. N. Sailappan, P.E.
Principal
Florida Registration No. 46696



Samuel N. Beigelman, E.I.
Staff Engineer

Attachments: Percolation Test Location Plan
Percolation Test Results

PERCOLATION TEST RESULTS

Date June 18, 2008

Proj. # J-8125

Project Griffin Road Mixed Use Project
NE Quad. of Griffin Road & SR-7
Hollywood, FL -33314

Test No.	Location	Flow (gpm)	Flow (CFS)	Hole Diameter (Inches)	Hole Depth (Feet)	Depth To Watertable (Feet)	Hydraulic Conductivity (CFS/ft**2-ft)	Hydraulic Conductivity (ft/day-ft)
1	P-1 (See Percolation Test Location Plan)	1.0	2.17E-03	8	10.0	5.0	2.71E-05	2.3
2	P-2 (See Percolation Test Location Plan)	1.0	2.21E-03	8	10.0	5.0	2.75E-05	2.4
3	P-3 (See Percolation Test Location Plan)	1.5	3.33E-03	8	10.0	5.0	4.15E-05	3.6

Notes: 1. Test conducted in accordance with SFWMD's Usual Open-Hole Constant Head procedures.



RAIN

FLOOD



SITE

Name... RAIN Tag: 25Y3D

Event: 25 yr

File... K:\JOB\GGB\MUSE\SWM 2017\Haestad\PreDevt7.ppw

Storm... SFWMD72 Tag: 25Y3D

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 25 year storm
Duration = 72.0000 hrs Rain Depth = 14.3000 in
Rain Dir = K:\JOB\GGB\MUSE\SWM 2017\Haestad\
Rain File -ID = - SFWMD72
Unit Hyd Type = Triangular
HYG Dir = K:\JOB\GGB\MUSE\SWM 2017\Haestad\
HYG File - ID = - RAIN 25Y3D
Tc = .2500 hrs
Drainage Area = 6.108 acres Runoff CN= 55

Computational Time Increment = .03333 hrs
Computed Peak Time = 60.0667 hrs
Computed Peak Flow = 27.24 cfs

Time Increment for HYG File = .5000 hrs
Peak Time, Interpolated Output = 60.0000 hrs
Peak Flow, Interpolated Output = 26.25 cfs
WARNING: The difference between calculated peak flow
and interpolated peak flow is greater than 1.50%

DRAINAGE AREA

ID:RAIN
CN = 55
Area = 6.108 acres
S = 8.1818 in
0.2S = 1.6364 in

Cumulative Runoff
7.6932 in
3.916 ac-ft

HYG Volume... 3.919 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .25000 hrs (ID: RAIN)
Computational Incr, Tm = .03333 hrs = 0.20000 Tp
Unit Hyd. Shape Factor = 256.000 (19.83% under rising limb)
K = 256.00/645.333, K = .3967 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 4.0417 (solved from K = .3967)
Unit peak, qp = 14.66 cfs
Unit peak time Tp = .16667 hrs
Unit receding limb, Tr = .67361 hrs
Total unit time, Tb = .84028 hrs

Type... Design Storms
Name... SFWMD

File... K:\JOB\GGB\MUSE\SWM 2017\Haestad\PreDevt7.ppw

Title... Project Date: 7/1/2009
Project Engineer: USER
Project Title: Watershed
Project Comments:

DESIGN STORMS SUMMARY

Design Storm File, ID = SFWMD

Storm Tag Name = 100Y3D

Data Type, File, ID = Synthetic Storm SFWMD72
Storm Frequency = 100 yr
Total Rainfall Depth= 17.0000 in
Duration Multiplier = 1
Resulting Duration = 72.0000 hrs
Resulting Start Time= .0000 hrs Step= .2500 hrs End= 72.0000 hrs

Storm Tag Name = 25Y3D

Data Type, File, ID = Synthetic Storm SFWMD72
Storm Frequency = 25 yr
Total Rainfall Depth= 14.3000 in
Duration Multiplier = 1
Resulting Duration = 72.0000 hrs
Resulting Start Time= .0000 hrs Step= .2500 hrs End= 72.0000 hrs

Storm Tag Name = 10Y1D

Data Type, File, ID = Synthetic Storm TYPEIIFLMOD
Storm Frequency = 10 yr
Total Rainfall Depth= 8.5000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .5000 hrs End= 24.0000 hrs

Storm Tag Name = 5Y1D

Data Type, File, ID = Synthetic Storm TYPEIIFLMOD
Storm Frequency = 5 yr
Total Rainfall Depth= 7.3000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .5000 hrs End= 24.0000 hrs

Storm Tag Name = 3Y1D

Data Type, File, ID = Synthetic Storm TYPEIIFLMOD
Storm Frequency = 3 yr
Total Rainfall Depth= 6.3000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .5000 hrs End= 24.0000 hrs

Type.... Vol: Elev-Volume
Name.... SITE

File.... K:\JOB\GGB\MUSE\SWM 2017\Haestad\PreDevt7.ppw

USER DEFINED VOLUME RATING TABLE

Elevation (ft)	Volume (ac-ft)
5.00	.000
5.50	3.054
6.00	6.108
6.50	9.162
7.00	12.216
7.50	15.271
8.00	18.325
8.50	21.379
9.00	24.433
9.50	27.487
10.00	30.541

**10-yr, 1-d storm,
Pre-development**

**Peak stage
calculation**

TIME vs. ELEVATION (ft)

Time hrs	Output Time increment = .5000 hrs				
	Time on left represents time for first value in each row.				
9.5000	5.00	5.00	5.00	5.00	5.01
12.0000	5.04	5.10	5.14	5.16	5.17
14.5000	5.18	5.18	5.19	5.20	5.20
17.0000	5.21	5.21	5.22	5.22	5.23
19.5000	5.23	5.24	5.24	5.24	5.25
22.0000	5.25	5.25	5.26	5.26	5.26
24.5000	5.26	5.26			

TIME vs. ELEVATION (ft)

Time hrs	Output Time increment = .5000 hrs				
	Time on left represents time for first value in each row.				
25.0000	5.00	5.00	5.00	5.00	5.00
27.5000	5.00	5.00	5.00	5.00	5.00
30.0000	5.00	5.00	5.00	5.00	5.00
32.5000	5.00	5.00	5.01	5.01	5.01
35.0000	5.01	5.01	5.01	5.01	5.01
37.5000	5.01	5.01	5.01	5.01	5.02
40.0000	5.02	5.02	5.02	5.02	5.02
42.5000	5.02	5.02	5.02	5.03	5.03
45.0000	5.03	5.03	5.03	5.03	5.03
47.5000	5.03	5.04	5.04	5.04	5.04
50.0000	5.04	5.04	5.05	5.05	5.05
52.5000	5.05	5.06	5.06	5.06	5.07
55.0000	5.07	5.08	5.09	5.09	5.10
57.5000	5.11	5.12	5.13	5.15	5.17
60.0000	5.27	5.40	5.45	5.48	5.50
62.5000	5.51	5.53	5.54	5.55	5.56
65.0000	5.56	5.57	5.58	5.58	5.59
67.5000	5.60	5.60	5.61	5.61	5.62
70.0000	5.62	5.63	5.63	5.63	5.64
72.5000	5.64	5.64			

**25-yr, 3-d storm,
Pre-development**

**Peak stage
calculation**

**100-yr, 3-d storm,
Pre-development**

**Peak stage
calculation**

TIME vs. ELEVATION (ft)

Time hrs	Output Time increment = .5000 hrs				
	Time on left represents time for first value in each row.				
21.5000	5.00	5.00	5.00	5.00	5.00
24.0000	5.00	5.00	5.00	5.00	5.00
26.5000	5.00	5.00	5.00	5.00	5.00
29.0000	5.00	5.01	5.01	5.01	5.01
31.5000	5.01	5.01	5.01	5.01	5.01
34.0000	5.01	5.02	5.02	5.02	5.02
36.5000	5.02	5.02	5.02	5.02	5.03
39.0000	5.03	5.03	5.03	5.03	5.03
41.5000	5.04	5.04	5.04	5.04	5.04
44.0000	5.04	5.05	5.05	5.05	5.05
46.5000	5.05	5.06	5.06	5.06	5.06
49.0000	5.06	5.07	5.07	5.07	5.08
51.5000	5.08	5.08	5.09	5.09	5.09
54.0000	5.10	5.11	5.11	5.12	5.13
56.5000	5.14	5.15	5.16	5.18	5.19
59.0000	5.21	5.24	5.37	5.53	5.60
61.5000	5.63	5.66	5.68	5.69	5.71
64.0000	5.72	5.73	5.74	5.75	5.75
66.5000	5.76	5.77	5.78	5.79	5.79
69.0000	5.80	5.80	5.81	5.82	5.82
71.5000	5.83	5.83	5.83	5.84	



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SURFACE WATER MANAGEMENT CALCULATION, POST-DEVELOPMENT CONDITION

GGB PROJECT # 15-1030
 PROJECT NAME Griffin Rd. & US 441 Plaza
 DATE 03/20/07

1) BREAKDOWN BY PROPOSED LAND USE

Building:	37,008 sf	0.8496 ac	13.91%
Pavement:	181,934 sf	4.1766 ac	68.38%
Open space:	47,131 sf	1.0820 ac	17.71%
Pervious:	47,131 sf	1.0820 ac	17.71%
Impervious:	218,942 sf	5.0262 ac	82.29%
Total Site:	266,073 sf	6.1082 ac	100.00%

2) FLOOD AND RAINFALL CRITERIA

3 year, 1 day storm.....	6.30 inches
5 year, 1 day storm.....	7.30 inches
10 year, 1 day storm.....	8.50 inches
25 year, 3 day storm.....	14.00 inches
100 year, 3 day storm.....	17.00 inches
Water control elevation.....	0.50 ft. navd.88
Minimum roadway crown	7.00 ft. navd.88
Finished floor elevation.....	8.28 ft. navd.88
Rainfall distribution	II FL
Hydrograph shape (peak rate) factor	100

3) COMPUTE SOIL MOISTURE STORAGE

High season water table elevation	0.50 ft. ngvd
Average pervious elevation	5.50 ngvd
Depth to the water table	5.00 ft.
Assuming compaction with 25% voids reduction, available ground storage is.....	8.18 inches
Ground Storage available under pervious areas of the site: "green" area x ground stor	0.74 ac.ft.
Converting to equivalent site wide moisture storage, S:	1.45 inches
SCS Curve Number CN = 1000 / (S+10)	87

4) WATER QUALITY REQUIREMENTS

i) Based on the first 1 inch of runoff over the entire site:

Total site area, [A].....	6.1082 ac.
Required detention, [D=A/12].....	0.5090 ac.ft.
ii) Based on 2.5 inches times percent impervious:	
Site area (excluding building), Alb.....	5.2586 ac
Impervious area (excluding building), Ilb.....	4.1766 ac
Percent impervious.....	79.42 %
To be treated, [T].....	1.99 in
Required detention, [D=T*A/12].....	1.0107 ac.ft.
Use bigger number	

5) EXFILTRATION TRENCH FOR WATER QUALITY TREATMENT

Water Control elevation.....	0.50 ft.navd.88
RIM.....	7.00 ft.navd.88
Hydraulic conductivity, K.....	3.20E-05 cfs/sf-fh
Top of exfiltration field elevation.....	6.00 ft.navd.88
Bottom of exfiltration field elevation.....	-1.50 ft.navd.88
Exfiltration field width, W.....	10.00 ft
Pressure head, H2.....	6.50 ft
Non saturated depth, Du.....	5.50 ft
Saturated depth, Ds.....	2.00 ft
Check for conservative formula, W>2x(Du+Ds), Ds>Du	false

$$V = L \times [K(H_2W + 2H_2D_u - D_u^2 + 2H_2D_s) + (1.39 \cdot 10^{-4})WD_u]$$

Total exfiltration field length provided On-Site, L =.....	1660 ft
Total volume exfiltrated from the trench, V=.....	1.6430 ac.ft.
Infiltration over the project area, V/A	3.23 inches

Credit for treatment is taken via reducing the rainfall amount by treated volume over the project area: (R-V/A)

Rainfall amount reduced by exfiltrated volume: (R-V/A)	R	R-V/A
3 year, 1 day storm.....	6.30 inches	3.07 inches
5 year, 1 day storm.....	7.30 inches	4.07 inches
10 year, 1 day storm.....	8.50 inches	5.27 inches
25 year, 3 day storm.....	14.00 inches	10.77 inches
100 year, 3 day storm.....	17.00 inches	13.77 inches

6) WATER QUANTITY CALCULATIONS

Linear storage in the green areas:	
Total area, At:	1.0820 ac
Bottom Elev, Eb	4.00 ft.ngvd.
Top Elev, Et	7.00 ft.ngvd.
Volume	1.6230 ac.ft.

Vertical storage over the green areas:	
Total area, At:	1.0820 ac

Bottom Elev, Eb 7.00 ft.ngvd.
 Top Elev, Et 8.28 ft.ngvd.
 Volume 1.3849 ac.ft.

Linear storage in the paved areas:

Total area, At: 4.1766 ac
 Bottom Elev, Eb 4.00 ft.ngvd.
 Top Elev, Et 7.50 ft.ngvd.
 Volume 7.3091 ac.ft.

Vertical storage over the paved areas:

Total area, At: 4.1766 ac
 Bottom Elev, Eb 7.50 ft.ngvd.
 Top Elev, Et 8.28 ft.ngvd.
 Volume 3.2578 ac.ft.

7) STAGE-STORAGE TABLES

Stage	Storm Chambers		Chamber Model - MC-3500
	cu.ft.	ac.ft.	
low elev, ft.navd.88	0.50	0.50	Number of chambers - 927
high elev, ft.navd.88	6.00	6.00	Voids in the stone (porosity) - 40 %
0.50	0	0.0000	Base of stone elevation - 0.5 ft
1.00	9690	0.2225	Amount of Stone Above Chambers - 12 in
1.50	25240	0.5794	Amount of Stone Below Chambers - 9 in
2.00	46302	1.0629	Area of system - 48454 sf
2.50	66801	1.5335	
3.00	86538	1.9866	
3.50	105239	2.4160	
4.00	122513	2.8125	
4.50	137637	3.1597	
5.00	148818	3.4164	
5.50	158509	3.6389	
6.00	168200	3.8613	
6.50	168200	3.8613	
7.00	168200	3.8613	
7.50	168200	3.8613	
8.00	168200	3.8613	
8.28	168200	3.8613	

Stage	Green Linear	Green Vertical	Pav't Linear	Pav't Vertical	Site Storage
area, ac	1.0820	1.0820	4.1766	4.1766	
low elev, ft.navd.88	4.00	7.00	4.00	7.50	
high elev, ft.navd.88	7.00	8.28	7.50	8.28	
0.50					0.0000
1.00					0.0000
1.50					0.0000
2.00					0.0000

2.50					0.0000
3.00					0.0000
3.50					0.0000
4.00	0.0000		0.0000		0.0000
4.50	0.0451		0.1492		0.1942
5.00	0.1803		0.5967		0.7770
5.50	0.4057		1.3425		1.7482
6.00	0.7213		2.3866		3.1080
6.50	1.1271		3.7291		4.8562
7.00	1.6230	0.0000	5.3700		6.9929
7.50	1.6230	0.5410	7.3091	0.0000	9.4731
8.00	1.6230	1.0820	7.3091	2.0883	12.1024
8.28	1.6230	1.3849	7.3091	3.2578	13.5748

Stage	Chambers	Storage	Total
0.50	0.0000		0.0000
1.00	0.2225		0.2225
1.50	0.5794		0.5794
2.00	1.0629		1.0629
2.50	1.5335		1.5335
3.00	1.9866		1.9866
3.50	2.4160		2.4160
4.00	2.8125	0.0000	2.8125
4.50	3.1597	0.1942	3.3540
5.00	3.4164	0.7770	4.1934
5.50	3.6389	1.7482	5.3871
6.00	3.8613	3.1080	6.9693
6.50	3.8613	4.8562	8.7175
7.00	3.8613	6.9929	10.8543
7.50	3.8613	9.4731	13.3344
8.00	3.8613	12.1024	15.9637
8.28	3.8613	13.5748	17.4361

Project:



Chamber Model -
 Units -
 Number of Chambers -
 Number of End Caps -
 Voids in the stone (porosity) -
 Base of STONE Elevation -
 Amount of Stone Above Chambers -
 Amount of Stone Below Chambers -
 Area of system -

MC-3500
Imperial Click Here for Metric
927
50
40 %
0.50 ft
12 in
9 in
48454 sf

Include Perimeter Stone in Calculations

Min. Area - 48454 sf min. area

Height of System (inches)	Incremental Single Chamber (cubic feet)	Incremental Single End Cap (cubic feet)	Incremental Chambers (cubic feet)	Incremental End Cap (cubic feet)	Incremental Stone (cubic feet)	Incremental Ch. EC and Stone (cubic feet)	Cumulative System (cubic feet)	Elevation (feet)
66	0.00	0.00	0.00	0.00	1615.13	1615.13	168200.10	6.00
65	0.00	0.00	0.00	0.00	1615.13	1615.13	166584.97	5.92
64	0.00	0.00	0.00	0.00	1615.13	1615.13	164969.83	5.83
63	0.00	0.00	0.00	0.00	1615.13	1615.13	163354.70	5.75
62	0.00	0.00	0.00	0.00	1615.13	1615.13	161739.57	5.67
61	0.00	0.00	0.00	0.00	1615.13	1615.13	160124.43	5.58
60	0.00	0.00	0.00	0.00	1615.13	1615.13	158509.30	5.50
59	0.00	0.00	0.00	0.00	1615.13	1615.13	156894.17	5.42
58	0.00	0.00	0.00	0.00	1615.13	1615.13	155279.03	5.33
57	0.00	0.00	0.00	0.00	1615.13	1615.13	153663.90	5.25
56	0.00	0.00	0.00	0.00	1615.13	1615.13	152048.77	5.17
55	0.00	0.00	0.00	0.00	1615.13	1615.13	150433.63	5.08
54	0.06	0.00	53.85	0.00	1593.60	1647.44	148818.50	5.00
53	0.19	0.02	179.93	1.20	1542.68	1723.81	147171.06	4.92
52	0.29	0.04	272.50	1.88	1505.38	1779.76	145447.25	4.83
51	0.40	0.05	374.18	2.58	1464.43	1841.19	143667.49	4.75
50	0.69	0.07	637.02	3.38	1358.98	1999.37	141826.30	4.67
49	1.03	0.09	953.23	4.41	1232.08	2189.72	139826.93	4.58
48	1.25	0.11	1158.31	5.36	1149.67	2313.34	137637.21	4.50
47	1.42	0.13	1318.40	6.32	1085.24	2409.97	135323.88	4.42
46	1.57	0.14	1458.30	7.22	1028.93	2494.44	132913.91	4.33
45	1.71	0.16	1582.53	8.14	978.86	2569.54	130419.47	4.25
44	1.83	0.18	1695.02	9.08	933.49	2637.59	127849.93	4.17
43	1.94	0.20	1796.31	10.03	892.60	2698.94	125212.33	4.08
42	2.04	0.22	1891.84	10.91	854.03	2756.79	122513.40	4.00
41	2.13	0.23	1978.86	11.75	818.89	2809.50	119756.61	3.92
40	2.22	0.25	2061.85	12.53	785.38	2859.76	116947.11	3.83
39	2.31	0.27	2138.40	13.28	754.46	2906.14	114087.35	3.75
38	2.38	0.28	2210.68	14.00	725.26	2949.94	111181.22	3.67
37	2.46	0.29	2279.58	14.70	697.42	2991.70	108231.27	3.58
36	2.53	0.31	2343.62	15.39	671.53	3030.54	105239.57	3.50
35	2.59	0.32	2404.40	16.06	646.95	3067.41	102209.04	3.42
34	2.66	0.33	2462.17	16.72	623.58	3102.47	99141.63	3.33
33	2.72	0.35	2516.90	17.35	601.43	3135.68	96039.16	3.25
32	2.77	0.36	2568.99	18.00	580.34	3167.32	92903.48	3.17
31	2.82	0.37	2618.45	18.61	560.31	3197.37	89736.15	3.08
30	2.88	0.38	2665.55	19.22	541.23	3225.99	86538.78	3.00
29	2.92	0.40	2710.67	19.80	522.94	3253.42	83312.79	2.92
28	2.97	0.41	2753.09	20.38	505.75	3279.21	80059.37	2.83
27	3.01	0.42	2792.54	20.93	489.74	3303.22	76780.15	2.75
26	3.05	0.43	2830.37	21.48	474.39	3326.25	73476.94	2.67
25	3.09	0.44	2868.39	22.02	458.97	3349.38	70150.69	2.58
24	3.13	0.45	2902.03	22.54	445.31	3369.87	66801.31	2.50
23	3.17	0.46	2934.57	23.04	432.09	3389.70	63431.44	2.42
22	3.20	0.47	2965.89	23.53	419.36	3408.79	60041.74	2.33
21	3.23	0.48	2995.24	24.00	407.43	3426.68	56632.95	2.25

20	3.26	0.49	3023.33	24.46	396.02	3443.80	53206.26	2.17
19	3.29	0.50	3050.07	24.90	385.15	3460.11	49762.46	2.08
18	3.32	0.51	3075.75	25.32	374.70	3475.78	46302.34	2.00
17	3.34	0.51	3100.00	25.72	364.84	3490.57	42826.57	1.92
16	3.37	0.52	3122.71	26.11	355.61	3504.42	39336.00	1.83
15	3.39	0.53	3144.85	26.48	346.60	3517.93	35831.57	1.75
14	3.41	0.54	3165.28	26.83	338.29	3530.40	32313.64	1.67
13	3.44	0.54	3186.12	27.16	329.82	3543.10	28783.25	1.58
12	3.46	0.55	3205.30	27.47	322.03	3554.79	25240.15	1.50
11	3.48	0.56	3224.75	27.76	314.13	3566.64	21685.35	1.42
10	3.51	0.59	3249.22	29.75	303.55	3582.51	18118.71	1.33
9	0.00	0.00	0.00	0.00	1615.13	1615.13	14536.20	1.25
8	0.00	0.00	0.00	0.00	1615.13	1615.13	12921.07	1.17
7	0.00	0.00	0.00	0.00	1615.13	1615.13	11305.93	1.08
6	0.00	0.00	0.00	0.00	1615.13	1615.13	9690.80	1.00
5	0.00	0.00	0.00	0.00	1615.13	1615.13	8075.67	0.92
4	0.00	0.00	0.00	0.00	1615.13	1615.13	6460.53	0.83
3	0.00	0.00	0.00	0.00	1615.13	1615.13	4845.40	0.75
2	0.00	0.00	0.00	0.00	1615.13	1615.13	3230.27	0.67
1	0.00	0.00	0.00	0.00	1615.13	1615.13	1615.13	0.58

StormTech MC-3500 Chamber

Designed to meet the most stringent industry performance standards for superior structural integrity while providing designers with a cost-effective method to save valuable land and protect water resources. The StormTech system is designed primarily to be used under parking lots thus maximizing land usage for commercial and municipal applications.



StormTech MC-3500 Chamber (not to scale)

Nominal Chamber Specifications

Size (L x W x H)	90" (2286 mm) x 77" (1956 mm) x 45" (1143 mm)
Chamber Storage	109.9 ft ³ (3.11 m ³)
Min. Installed Storage*	178.9 ft ³ (5.06 m ³)
Weight	134 lbs (60.8 kg)

* This assumes a minimum of 12" (305 mm) of stone above, 9" (229 mm) of stone below chambers, 9" (229 mm) of row spacing, and 40% stone porosity.

StormTech MC-3500 End Cap (not to scale)

Nominal End Cap Specifications

Size (L x W x H)	25.7" (653 mm) x 75" (1905 mm) x 45" (1143 mm)
End Cap Storage	14.9 ft ³ (0.42 m ³)
Min. Installed Storage*	46.0 ft ³ (1.30 m ³)
Weight	49 lbs (22.2 kg)

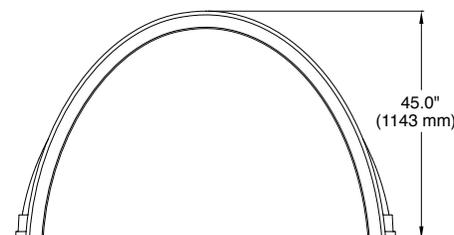
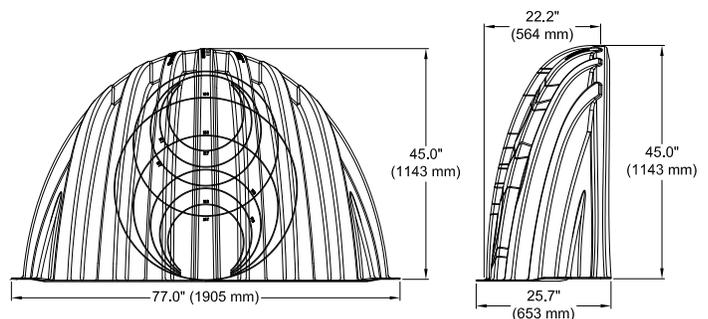
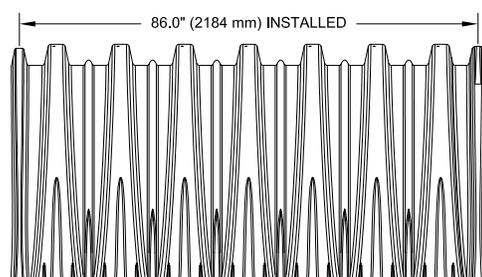
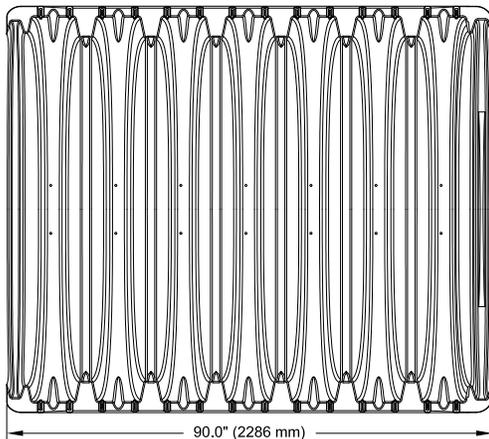
* This assumes a minimum of 12" (305mm) of stone above, 9" (229 mm) of stone below, 9" (229 mm) row spacing, 6" (152 mm) of stone perimeter, and 40% stone porosity.

Shipping

15 chambers/pallet

7 end caps/pallet

7 pallets/truck



Storage Volume Per Chamber/End Cap ft³ (m³)

	Bare Unit Storage ft ³ (m ³)	Chamber/End Cap and Stone Volume — Stone Foundation Depth in. (mm)			
		9 (229)	12 (305)	15 (381)	18 (457)
MC-3500 Chamber	109.9 (3.11)	178.9 (5.06)	184.0 (5.21)	189.2 (5.36)	194.3 (5.5)
MC-3500 End Cap	14.9 (0.42)	46.0 (1.33)	47.7 (1.35)	49.4 (1.40)	51.1 (1.45)

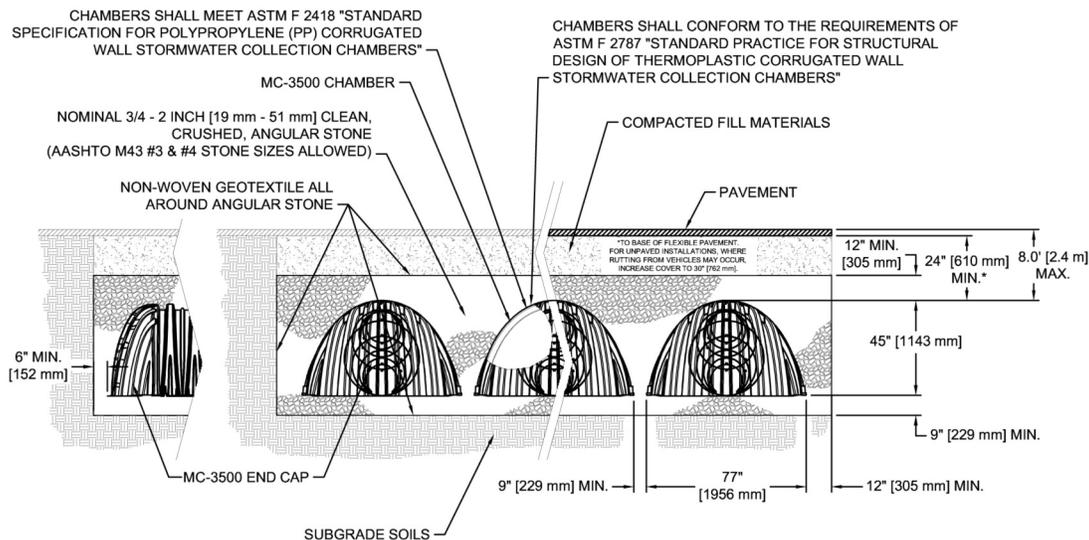
NOTE: Assumes 40% porosity for the stone plus the chamber/end cap volume. End Cap volume assumes 6" (152mm) stone perimeter.

Volume of Excavation Per Chamber/End Cap in yd³ (m³)

	Stone Foundation Depth in. (mm)			
	9 (229)	12 (305)	15 (381)	18 (457)
MC-3500	12.4 (9.5)	12.8 (9.8)	13.3 (10.2)	13.8 (10.5)
End Cap	4.1 (3.1)	4.2 (3.2)	4.4 (3.3)	4.5 (3.5)

NOTE: Assumes 9" (229 mm) of separation between chamber rows, 6" (152 mm) of perimeter in front of end caps, and 24" (610 mm) of cover. The volume of excavation will vary as depth of cover increases.

General Cross Section



NOTES:

1. THIS CROSS SECTION PROVIDES GENERAL INFORMATION FOR THE MC-3500 CHAMBER. STORMTECH MC-3500 CHAMBERS MUST BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THE MC-3500 DESIGN MANUAL AND MC-3500 CONSTRUCTION GUIDE.
2. PROPERLY INSTALLED MC-3500 CHAMBERS PROVIDE THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR EARTH AND LIVE LOADS WITH CONSIDERATION FOR IMPACT AND MULTIPLE PRESENCES.
3. PERIMETER STONE MUST ALWAYS BE BROUGHT UP EVENLY WITH BACKFILL OF BED. PERIMETER STONE MUST EXTEND HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH STRAIGHT OR SLOPED SIDEWALLS.

Amount of Stone Per Chamber

ENGLISH tons (yd ³)	Stone Foundation Depth			
	9 in.	12 in.	15 in.	18 in.
MC-3500	9.1 (6.4)	9.7 (6.9)	10.4 (7.3)	11.1 (7.8)
End Cap	4.1 (2.9)	4.3 (3.0)	4.5 (3.2)	4.7 (3.3)
METRIC kg (m ³)	229 mm	305 mm	381 mm	457 mm
MC-3500	8220 (4.9)	8831 (5.3)	9443 (5.6)	10054 (6.0)
End Cap	3699 (2.2)	3900 (2.3)	4100 (2.4)	4301 (2.6)

NOTE: Assumes 12" (305 mm) of stone above, and 9" (229 mm) row spacing, and 6" (152mm) of perimeter stone in front of end caps.



A division of ADS

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S150909 03/2014





RAIN

FLOOD



SITE

Type.... Design Storms
Name.... SFWMD

File.... K:\JOB\GGB\MUSE\SWM 2017\Haestad\PostDev10.ppw

Title... Project Date: 7/1/2009
Project Engineer: USER
Project Title: Watershed
Project Comments:

DESIGN STORMS SUMMARY

Design Storm File, ID = SFWMD

Storm Tag Name = 100Y3D

Data Type, File, ID = Synthetic Storm SFWMD72
Storm Frequency = 100 yr
Total Rainfall Depth= 13.7700 in
Duration Multiplier = 1
Resulting Duration = 72.0000 hrs
Resulting Start Time= .0000 hrs Step= .2500 hrs End= 72.0000 hrs

Storm Tag Name = 25Y3D

Data Type, File, ID = Synthetic Storm SFWMD72
Storm Frequency = 25 yr
Total Rainfall Depth= 10.7700 in
Duration Multiplier = 1
Resulting Duration = 72.0000 hrs
Resulting Start Time= .0000 hrs Step= .2500 hrs End= 72.0000 hrs

Storm Tag Name = 10Y1D

Data Type, File, ID = Synthetic Storm TYPEIIFLMOD
Storm Frequency = 10 yr
Total Rainfall Depth= 5.2700 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .5000 hrs End= 24.0000 hrs

Storm Tag Name = 5Y1D

Data Type, File, ID = Synthetic Storm TYPEIIFLMOD
Storm Frequency = 5 yr
Total Rainfall Depth= 4.0700 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .5000 hrs End= 24.0000 hrs

Storm Tag Name = 3Y1D

Data Type, File, ID = Synthetic Storm TYPEIIFLMOD
Storm Frequency = 3 yr
Total Rainfall Depth= 3.0700 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .5000 hrs End= 24.0000 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 25 year storm
 Duration = 72.0000 hrs Rain Depth = 10.7700 in
 Rain Dir = K:\JOB\GGB\MUSE\SWM 2017\Haestad\
 Rain File -ID = - SFWMD72
 Unit Hyd Type = Triangular
 HYG Dir = K:\JOB\GGB\MUSE\SWM 2017\Haestad\
 HYG File - ID = - RAIN 25Y3D
 Tc = .2500 hrs
 Drainage Area = 6.108 acres Runoff CN= 87

=====
 Computational Time Increment = .03333 hrs
 Computed Peak Time = 60.0667 hrs
 Computed Peak Flow = 27.39 cfs

Time Increment for HYG File = .5000 hrs
 Peak Time, Interpolated Output = 60.0000 hrs
 Peak Flow, Interpolated Output = 26.69 cfs
 WARNING: The difference between calculated peak flow
 and interpolated peak flow is greater than 1.50%
 =====

DRAINAGE AREA

 ID:RAIN
 CN = 87
 Area = 6.108 acres
 S = 1.4943 in
 0.2S = .2989 in

Cumulative Runoff

 9.1635 in
 4.664 ac-ft

HYG Volume... 4.659 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .25000 hrs (ID: RAIN)
 Computational Incr, Tm = .03333 hrs = 0.20000 Tp
 Unit Hyd. Shape Factor = 256.000 (19.83% under rising limb)
 K = 256.00/645.333, K = .3967 (also, K = 2/(1+(Tr/Tp))
 Receding/Rising, Tr/Tp = 4.0417 (solved from K = .3967)
 Unit peak, qp = 14.66 cfs
 Unit peak time Tp = .16667 hrs
 Unit receding limb, Tr = .67361 hrs
 Total unit time, Tb = .84028 hrs

Type.... Vol: Elev-Volume
Name.... SITE

File.... K:\JOB\GGB\MUSE\SWM 2017\Haestad\PostDev10.ppw

USER DEFINED VOLUME RATING TABLE

Elevation (ft)	Volume (ac-ft)
.50	.000
1.00	.223
1.50	.579
2.00	1.063
2.50	1.534
3.00	1.987
3.50	2.416
4.00	2.813
4.50	3.354
5.00	4.193
5.50	5.387
6.00	6.969
6.50	8.718
7.00	10.854
7.50	13.334
8.00	15.964
8.28	17.436

**10-yr, 1-d storm,
Pre-development**

**Peak stage
calculation**

TIME vs. ELEVATION (ft)

Time hrs	Output Time increment = .5000 hrs				
	Time on left represents time for first value in each row.				

4.0000	.50	.50	.50	.51	.51
6.5000	.52	.54	.56	.58	.61
9.0000	.65	.70	.75	.83	.93
11.5000	1.05	1.50	1.96	2.22	2.32
14.0000	2.39	2.45	2.49	2.54	2.58
16.5000	2.61	2.65	2.68	2.70	2.73
19.0000	2.76	2.78	2.80	2.83	2.84
21.5000	2.86	2.89	2.91	2.92	2.94
24.0000	2.95	2.96	2.96		

**25-yr, 3-d storm,
Post-development**

**Peak stage
calculation**

TIME vs. ELEVATION (ft)

Time hrs	Output Time increment = .5000 hrs				
	Time on left represents time for first value in each row.				
6.0000	.50	.50	.50	.50	.50
8.5000	.51	.51	.52	.52	.53
11.0000	.53	.54	.55	.56	.56
13.5000	.57	.58	.59	.60	.61
16.0000	.62	.63	.64	.65	.67
18.5000	.68	.70	.71	.73	.74
21.0000	.76	.77	.79	.80	.82
23.5000	.84	.85	.87	.90	.92
26.0000	.95	.97	1.00	1.02	1.03
28.5000	1.05	1.07	1.08	1.10	1.12
31.0000	1.14	1.16	1.18	1.19	1.21
33.5000	1.23	1.25	1.27	1.29	1.31
36.0000	1.33	1.35	1.36	1.38	1.40
38.5000	1.42	1.45	1.47	1.49	1.50
41.0000	1.52	1.54	1.55	1.57	1.58
43.5000	1.60	1.61	1.63	1.64	1.66
46.0000	1.68	1.69	1.71	1.72	1.74
48.5000	1.76	1.77	1.79	1.81	1.83
51.0000	1.85	1.87	1.89	1.92	1.95
53.5000	1.99	2.03	2.07	2.12	2.17
56.0000	2.22	2.28	2.35	2.42	2.51
58.5000	2.60	2.71	2.87	3.62	4.45
61.0000	4.66	4.75	4.81	4.86	4.90
63.5000	4.94	4.97	5.00	5.02	5.03
66.0000	5.05	5.06	5.08	5.09	5.11
68.5000	5.12	5.13	5.14	5.15	5.16
71.0000	5.17	5.18	5.19	5.19	5.19

**100-yr, 3-d, storm,
Post-development**

**Peak stage
calculation**

TIME vs. ELEVATION (ft)

Time hrs	Output Time increment = .5000 hrs				
	Time on left represents time for first value in each row.				
5.0000	.50	.50	.50	.50	.51
7.5000	.52	.52	.53	.54	.55
10.0000	.56	.57	.58	.60	.61
12.5000	.63	.64	.65	.67	.68
15.0000	.70	.72	.73	.75	.77
17.5000	.79	.81	.83	.85	.88
20.0000	.90	.92	.94	.97	.99
22.5000	1.01	1.03	1.04	1.06	1.07
25.0000	1.10	1.12	1.14	1.16	1.19
27.5000	1.21	1.24	1.26	1.29	1.31
30.0000	1.34	1.36	1.39	1.41	1.44
32.5000	1.46	1.49	1.51	1.53	1.55
35.0000	1.57	1.59	1.61	1.63	1.65
37.5000	1.67	1.69	1.71	1.73	1.75
40.0000	1.77	1.79	1.81	1.83	1.85
42.5000	1.87	1.89	1.92	1.94	1.96
45.0000	1.98	2.00	2.02	2.04	2.07
47.5000	2.09	2.11	2.13	2.16	2.18
50.0000	2.21	2.23	2.26	2.29	2.32
52.5000	2.36	2.40	2.45	2.50	2.56
55.0000	2.63	2.70	2.77	2.86	2.95
57.5000	3.05	3.17	3.30	3.45	3.69
60.0000	4.53	5.09	5.27	5.35	5.41
62.5000	5.45	5.49	5.51	5.54	5.56
65.0000	5.57	5.59	5.60	5.62	5.63
67.5000	5.64	5.66	5.67	5.68	5.69
70.0000	5.70	5.71	5.72	5.73	5.74
72.5000	5.74	5.75			

Summary

Design storm event peak stage calculations For pre- and post- development condition

(Florida East High Accuracy Reference Network
North American Vertical Datum 1988)

	Pre-development	Post-development
10-years, 1-day	5.26	2.96
25-years, 3-days	5.64	5.19
100-years, 3-days	5.84	5.75

Special Note. In accordance with National Oceanic and Atmospheric Administration Hydrometeorological Design Studies Center, a 100 year storm - is an event that has a 1% chance of occurrence in any year.

TRAFFIC IMPACT ANALYSIS

441 ROC
HOLLYWOOD, FL

PREPARED FOR:
LOJETA GROUP OF
FLORIDA, INC.

Kimley»»Horn

Project #140385000
June 2, 2017
Kimley-Horn and Associates, Inc.
1920 Wekiva Way
West Palm Beach, Florida 33411
561/845-0665 TEL

TRAFFIC IMPACT STATEMENT

441 ROC

HOLLYWOOD, FL

Prepared by:
Kimley-Horn and Associates, Inc.
West Palm Beach, Florida



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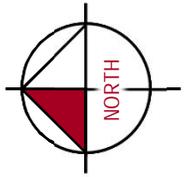
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INTRODUCTION

The 441 ROC multi-use project is a proposed development that consists of an apartment building with 180 units, a 6,119-square foot (SF) gas station with a convenience market that has 16 fueling positions, and a 2,562 SF fast food restaurant with drive through. The site is located at the northeast quadrant of Griffin Road & US 441 in Hollywood, Florida. *Figure 1* illustrates the location of the proposed development. A proposed site plan is included in *Appendix A*.

Kimley-Horn and Associates, Inc. has prepared this traffic impact statement for submittal to the City of Hollywood. The purpose of the study is to assess the project's impact on the surrounding roadway network and to evaluate the capacity available to support future traffic volumes. This report summarizes the data collection, project trip generation, distribution and intersection analyses.



LEGEND
 **PROJECT SITE**

FIGURE 1
SITE LOCATION
441 ROC

DATA COLLECTION

To evaluate traffic conditions on the surrounding network, intersection turning movement counts were performed at the following major intersections listed below.

Intersection Volume Data

Turning movement counts were collected during the AM peak (7:00 a.m. to 9:00 a.m.) and PM peak (4:00 p.m. to 6:00 p.m.) periods at the following intersections:

- Orange Drive & US-441/SR-7
- Griffin Road & US-441/SR-7
- Griffin Road & SW 44th Avenue

The above turning movement counts were conducted during typical weekday conditions on May 25, 2017. The volumes were collected in 15-minute intervals and the peak hour was determined for each intersection. The FDOT peak season conversion factor was applied to the traffic counts to adjust the traffic to peak season volumes. The turning movement counts and FDOT peak season factor category reports are included in *Appendix C*.

PROJECT TRAFFIC

Project traffic used in this analysis is defined as the vehicle trips expected to be generated by the project, and the distribution and assignment of that traffic over the study roadway network.

Existing and Proposed Land Uses

The project is proposed to be built on a vacant land in the northeast quadrant of Griffin Road & US 441. The proposed redevelopment plan will result in the construction of one apartment building with 180 units, a 6,119 SF gas station with a convenience market that has 16 fueling positions, and a 2,562 SF fast food restaurant with drive through.

Trip Generation

The trip generation potential of this facility has been calculated using rates and equations published for Land Use 220 (Apartment), Land Use 934 (Fast Food Restaurant with Drive Through), and Land Use 945 (Gas Station with Convenience Market) by the Institute of Transportation Engineers (ITE) in the *Trip Generation Handbook, Ninth Edition*. For Land Use 945, the daily and PM peak hour trip generation was determined using rates and equations developed by the Florida Department of Transportation (FDOT).

Table 1 summarizes the trip generation potential in the weekday a.m. and p.m. peak hours as well as the project daily trips. As indicated in Table 1, the proposed development is projected to generate 2,949 net new external daily trips, 201 net new external AM peak-hour trips (75 in, 126 out), and 262 net new external PM peak-hour trips (148 in, 114 out).

TABLE 1 441 ROC TRIP GENERATION										
Land Use	Intensity			Daily Trips	AM Peak Hour			PM Peak Hour		
					Total	In	Out	Total	In	Out
<u>Proposed Development</u>										
Apartment	180 units			1,214	92	18	74	117	76	41
Gas Station with Convenience Market	16 FP 6,119 SF			3,223	163	82	81	292	146	146
Fast Food w/ Drive Through	2,562 SF			1,271	116	59	57	84	44	40
<i>Subtotal</i>				5,708	371	159	212	493	266	227
<u>Internal Capture</u>										
	<u>Daily</u>	<u>AM</u>	<u>PM</u>							
Apartment	5.9%	6.5%	4.3%	72	6	1	5	5	3	2
Gas Station with Convenience Market	2.3%	4.3%	1.7%	74	7	4	3	5	3	2
Fast Food w/ Drive Through	5.8%	6.0%	4.8%	74	7	4	3	4	2	2
<i>Subtotal</i>				220	20	9	11	14	8	6
<u>Pass By</u>										
Apartment	0%			0	0	0	0	0	0	0
Gas Station with Convenience Market	62%			1,952	97	48	49	178	89	89
Fast Food w/ Drive Through	49%			587	53	27	26	39	21	18
<i>Subtotal</i>				2,539	150	75	75	217	110	107
<i>Driveway Volumes</i>				5,488	351	150	201	479	258	221
<i>Net New External Trips</i>				2,949	201	75	126	262	148	114

Trip generation was calculated using the following data:

Daily Trip Generation

Apartment	[ITE]	=	$T = 6.06 * (\text{units}) + 123.56$
Gas Station with Convenience Market	[FDOT 2012]	=	$256.7 * X \text{ fuel pumps} - 144.5 * X / 1,000 \text{ SF}$
Fast Food w/ Drive Through	[ITE]	=	$T = 496.12(X)$

AM Peak Hour Trip Generation

Apartment	[ITE]	=	$T = 0.49 * (\text{units}) + 3.73$ (20% inbound, 80% outbound)
Gas Station with Convenience Market	[ITE]	=	$T = 10.16 * X \text{ fuel pumps}$ (50% in, 50% out)
Fast Food w/ Drive Through	[ITE]	=	$T = 45.42(X)$ (51% in, 49% out)

PM Peak Hour Trip Generation

Apartment	[ITE]	=	$T = 0.55 * (\text{units}) + 17.65$ (65% inbound, 35% outbound)
Gas Station with Convenience Market	[FDOT 2012]	=	$T = 12.3 * X \text{ fuel pumps} + 15.5 * X / 1,000 \text{ SF}$ (50% in, 50% out)
Fast Food w/ Drive Through	[ITE]	=	$T = 32.65(X)$ (52% in, 48% out)

Trip Distribution

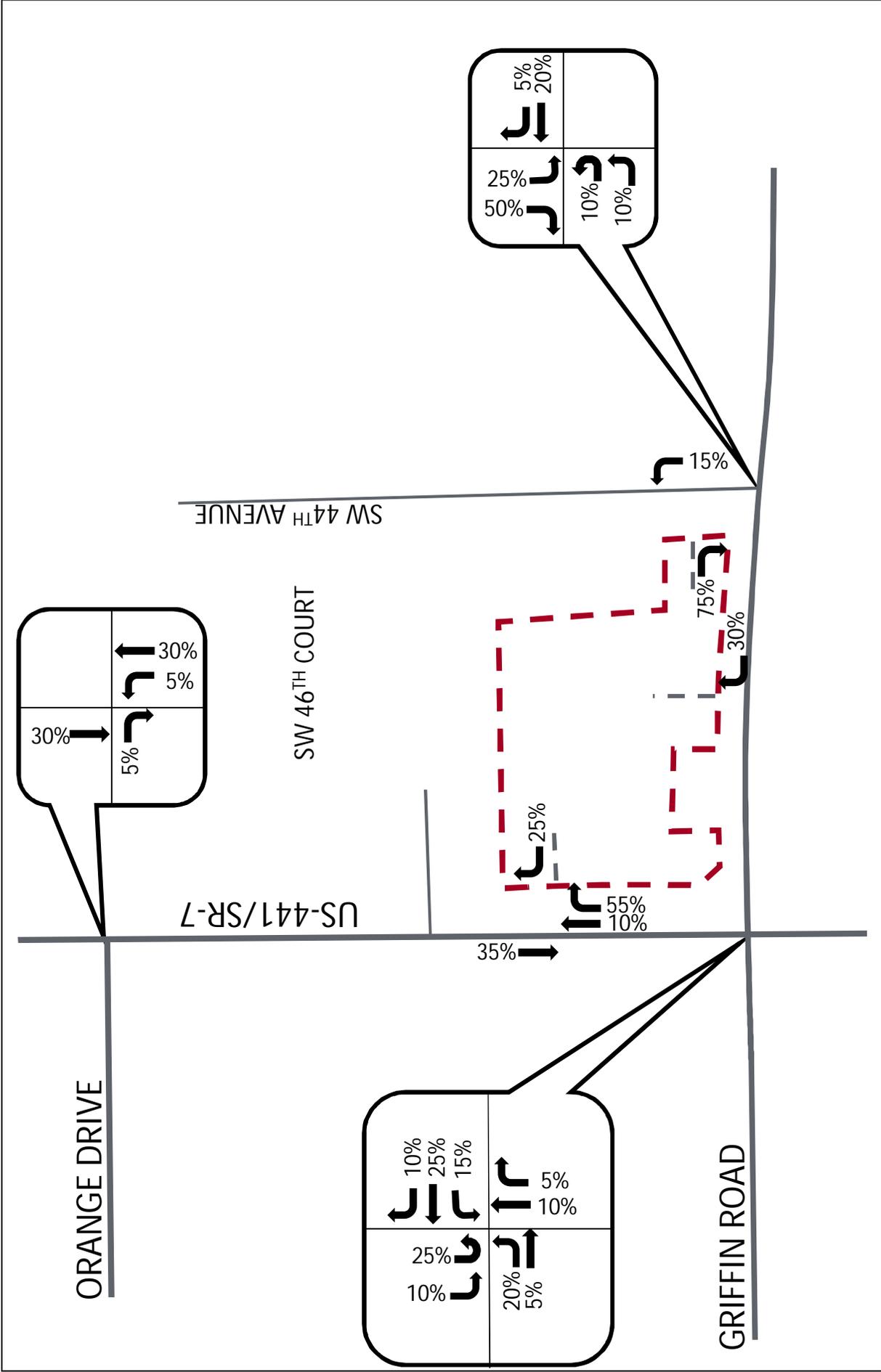
Trip distribution is the pairing of trip ends from the subject site with other land uses in the area. These trips were assigned to the surrounding roadways based upon a review of the roadway network proposed to be in place at the time of buildout and its travel time characteristics.

The distribution according to cardinal directions is:

NORTH	-	35 percent
SOUTH	-	15 percent
EAST	-	25 percent
WEST	-	25 percent

Traffic Assignment

The site traffic was assigned to the surrounding roadway network based upon existing travel patterns and the traffic distribution. *Figure 2* illustrates the roadway link assignment. The AM and PM peak hour trips for the project were then assigned to the surrounding roadway network projected to be in place by 2022. *Figure 3* illustrates the project traffic turning movement counts.



LEGEND
 PROJECT SITE

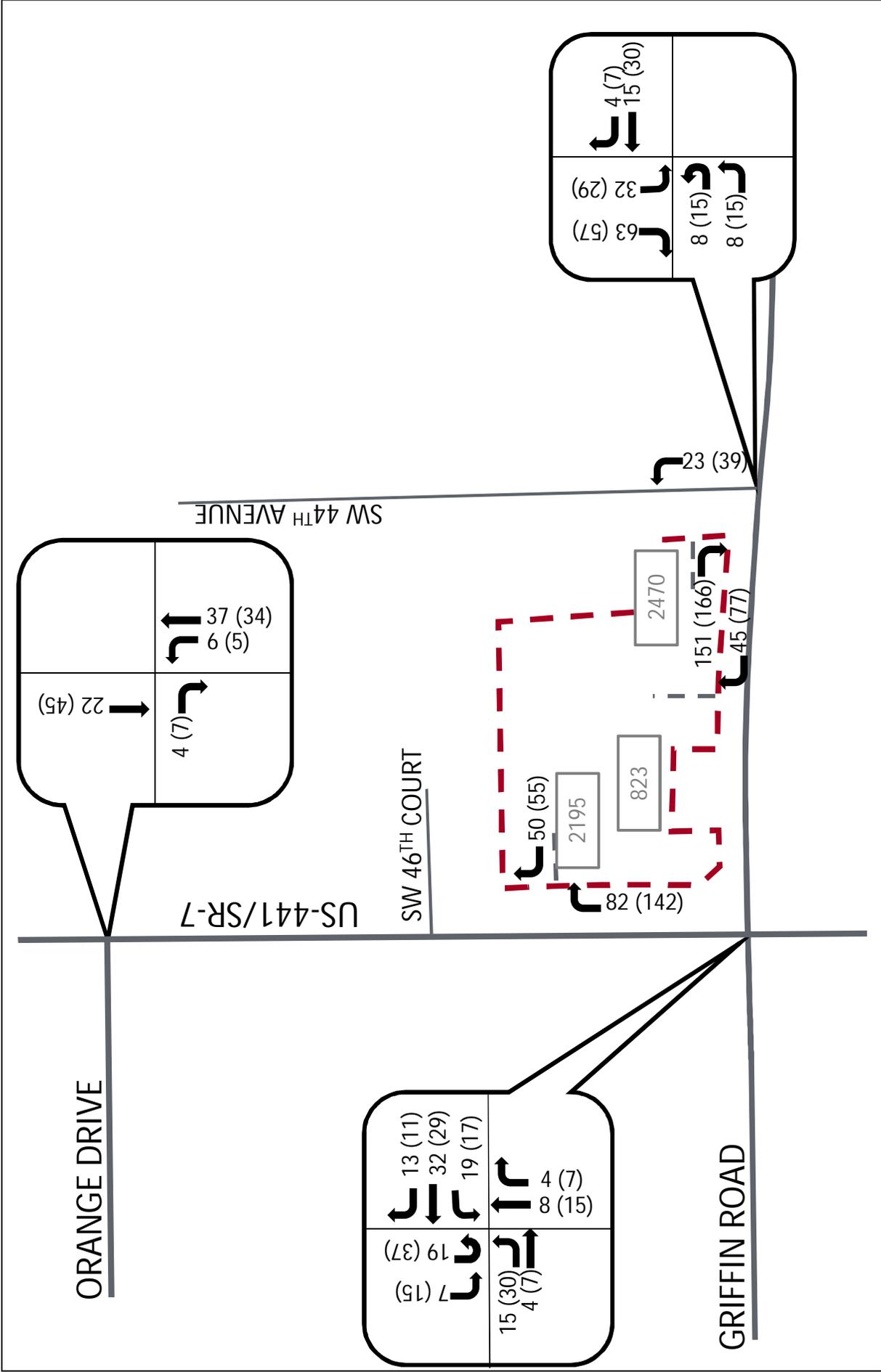


FIGURE 3
PROJECT TRAFFIC
TURNING MOVEMENT COUNTS
441 ROC

LEGEND

PROJECT SITE

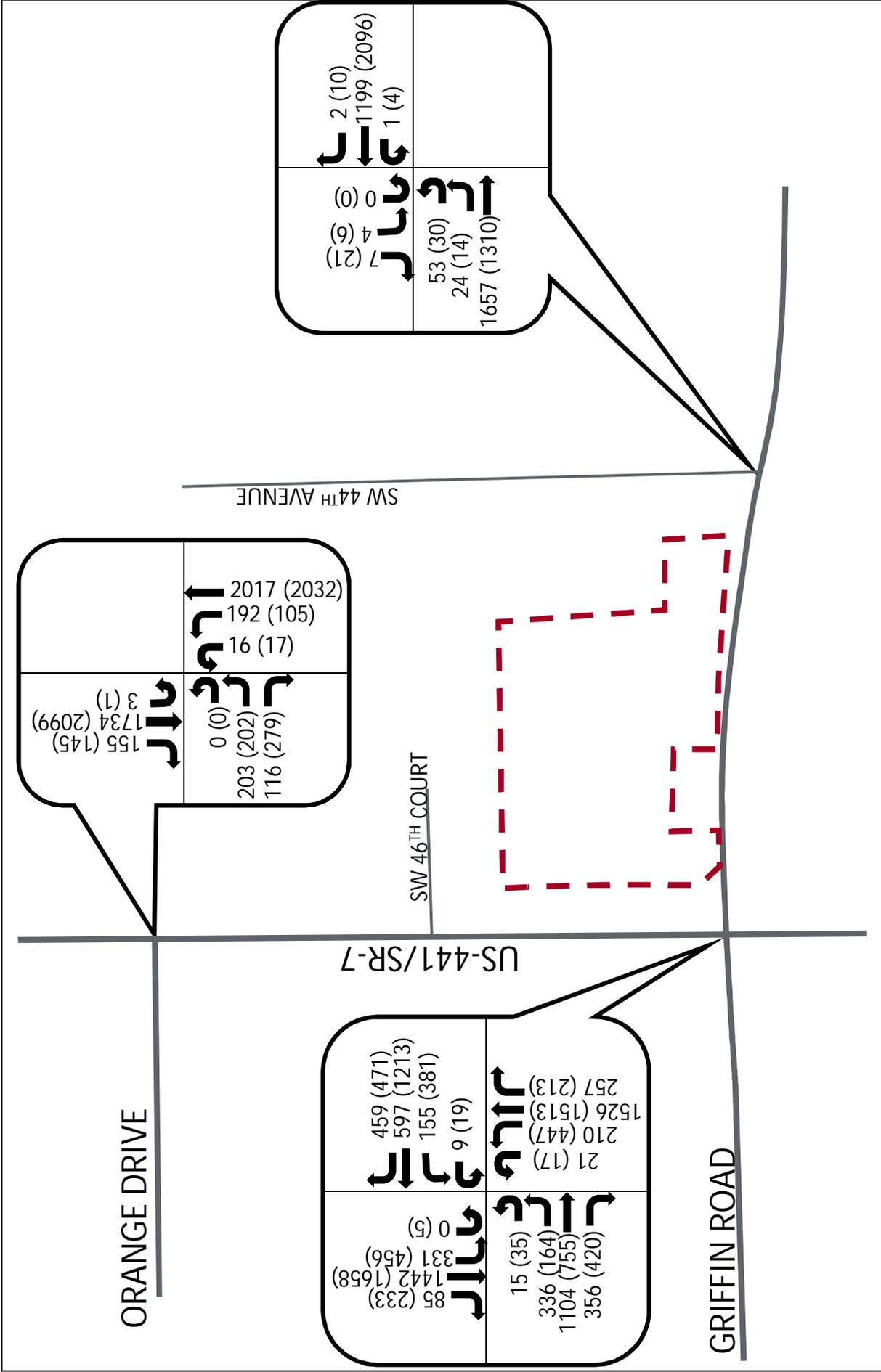


EXISTING TRAFFIC

Existing traffic conditions were determined based upon actual traffic volumes counted at the study intersections with an adjustment to peak season conditions based upon peak season conversion factors published by FDOT. *Figure 4* illustrates the peak season existing turning movement volumes.

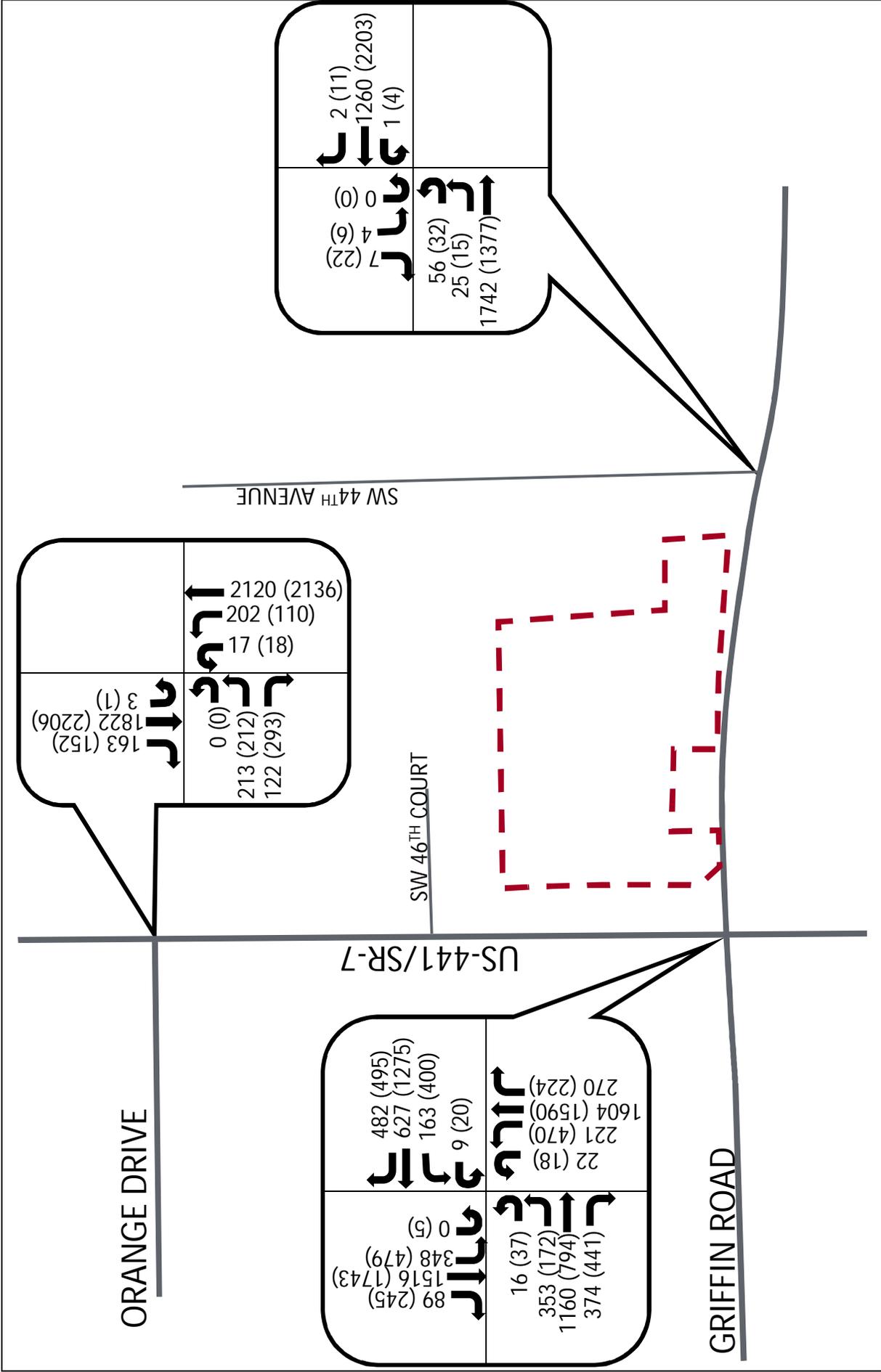
FUTURE TRAFFIC

Future background traffic volumes were calculated as the sum of the existing peak-season adjusted traffic volumes plus an additional amount of traffic to account for future growth in the study area. Total future traffic volumes considered in the analysis for this project are the sum of the 2022 background traffic volumes plus future project traffic volumes at site buildout. *Figure 5* illustrates the peak season 2022 background turning movement counts. *Figure 6* illustrates the peak season 2022 total turning movement counts.

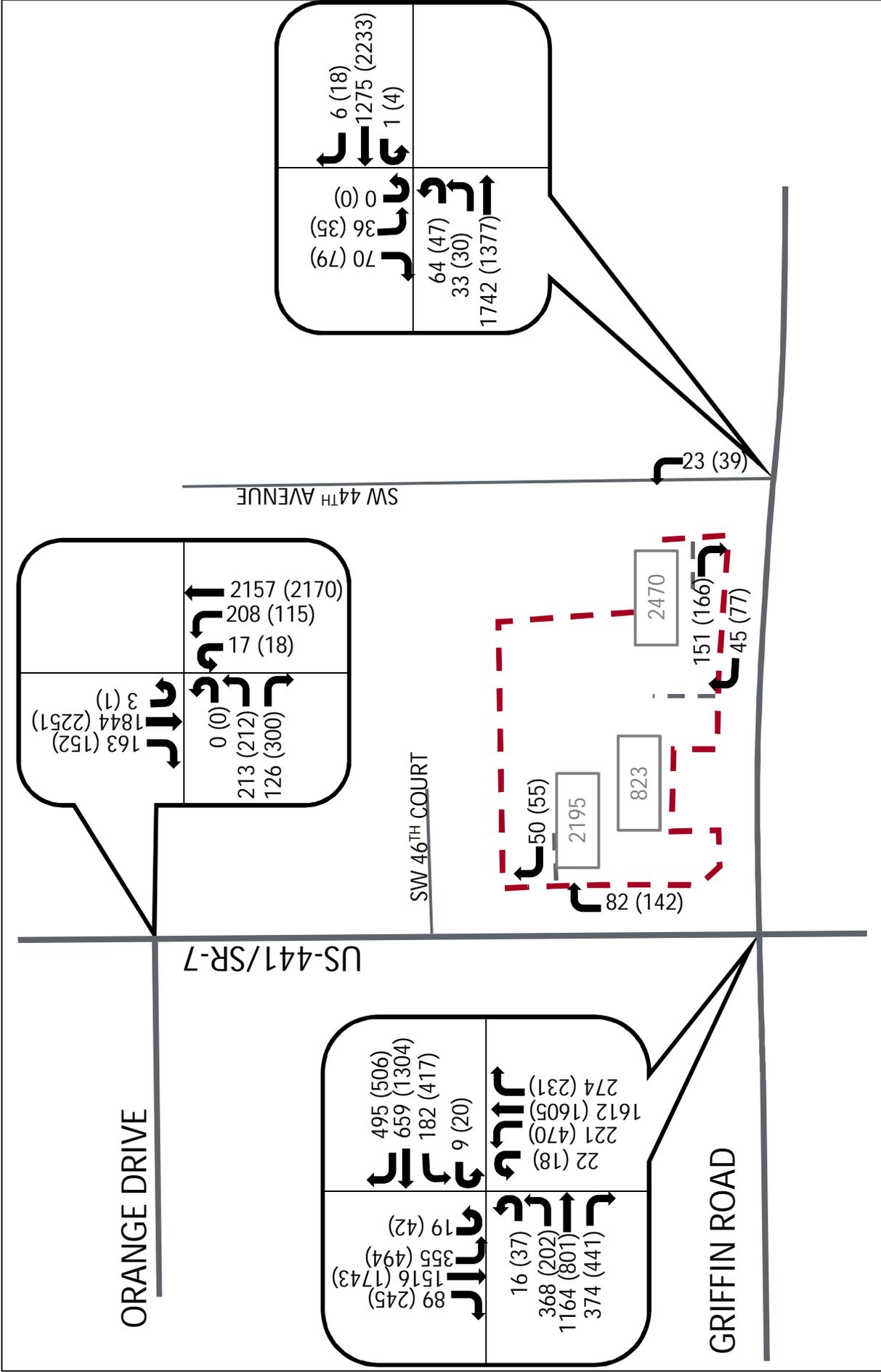


LEGEND
 XX AM VOLUMES
 (XX) PM VOLUMES

FIGURE 4
PEAK SEASON EXISTING
TURNING MOVEMENT VOLUMES
441 ROC
Kimley»Horn



LEGEND
 XX AM VOLUMES
 (XX) PM VOLUMES



LEGEND
 XX AM VOLUMES
 (XX) PM VOLUMES

FIGURE 6
 2022 TOTAL
 TURNING MOVEMENT VOLUMES
 441 ROC



ACCESS MANAGEMENT

The site is proposed to have the following access points:

- Right-In/Right-Out driveway on U.S. 441 approximately 300 feet north of the intersection of Griffin Road & US 441
- Right-In Only driveway on Griffin Road approximately 325 feet east of the intersection of Griffin Road & US 441
- Full Access Driveway on SW 44th Avenue

Additionally, a cross-access connection is proposed with the adjacent Happy Pappy's site.

Both US 441 (SR 7) and Griffin Road (SR 818) are state roadways under the jurisdiction of the Florida Department of Transportation (FDOT). A pre-application meeting was held with FDOT District 4 staff on June 1, 2017 to review the proposed access locations and configurations. FDOT has granted conceptual approval of the driveways with a requirement for exclusive right-turn deceleration lanes to be constructed at both driveways. The right-turn deceleration lane for the Griffin Road driveway will be an extension of the westbound right-turn lane at the intersection of Griffin Road & US 441. The FDOT pre-application approval letter will be forwarded upon receipt.

INTERSECTION AND DRIVEWAY ANALYSIS

The operating conditions for three conditions (existing, background, and future total buildout) were analyzed at the signalized and unsignalized study intersections and the project driveways during the AM peak hour and PM peak hour using Trafficware's Synchro 9.0 Software and HCS Software. These analyses use the methodologies outlined in the *Highway Capacity Manual, 2010 Edition* in order to determine overall intersection level of service and delay.

Existing intersection analyses were based upon existing year (year 2017) turning movement counts conducted at the study intersections. To determine future background volumes, a 1.0% nominal growth rate, compounded annually, was included in order to determine total Year 2022 background traffic volumes. Year 2020 Total volumes were then determined by adding project traffic to the Year 2020 background traffic volumes. *Table 2* summarizes the existing level of service (LOS) at the study intersections. *Table 3* summarizes the Year 2022 background (LOS) at the study intersections. *Table 4* summarizes the Year 2022 future total (LOS) at the study intersections.

As shown in these tables, the signalized intersection of Orange Drive & US-441/SR-7 operates at LOS D or better during existing conditions, 2022 background conditions without the project traffic and 2022 total conditions with project traffic. The signalized intersection of Griffin Road and US-441/SR-7 operates at LOS F during existing conditions, 2022 background conditions without the project traffic and 2022 total conditions with project traffic. Because the unsignalized intersection of Griffin Road and SW 44th Avenue operates under two-way stop control, only the LOS and delay for the southbound approach and the eastbound left-turn movement were reported. The other movements operate under free flow conditions. All approaches for the unsignalized intersections are LOS D or better during existing conditions and 2022 background conditions without the project traffic. During 2022 total conditions that includes the project traffic, the southbound approach operates at LOS E with a delay of 38.6 seconds. The two driveways both operate at LOS C or better during both the AM and PM peak hours during 2022 conditions with the project traffic. The turning movement count data is included in *Appendix B*. Volume development worksheets are included in *Appendix C*. Existing signal timing worksheets are included in *Appendix D*. Synchro output worksheets are included in *Appendix E*. HCS 2010 output worksheets are included in *Appendix F*.

Table 2 2017 Existing Conditions							
Intersection	Traffic Control	Overall Delay / LOS		Approach LOS			
				NB	SB	EB	WB
AM Peak Hour							
Orange Drive & US-441/SR-7	Signalized	31.0	C	D	B	E	-
Griffin Road & US-441/SR-7	Signalized	81.0	F	D	E	E	F
Griffin Road & SW 44th Avenue	Unsignalized	-	-	-	14.6/B	10.1/B	-
PM Peak Hour							
Orange Drive & US-441/SR-7	Signalized	39.1	D	D	C	E	-
Griffin Road & US-441/SR-7	Signalized	99.5	F	F	F	F	F
Griffin Road & SW 44th Avenue	Unsignalized	-	-	-	18.8/C	13.7/B	-

Table 3 2022 Background Conditions							
Intersection	Traffic Control	Overall Delay / LOS		Approach LOS			
				NB	SB	EB	WB
AM Peak Hour							
Orange Drive & US-441/SR-7	Signalized	32.4	C	D	B	E	-
Griffin Road & US-441/SR-7	Signalized	86.8	F	E	E	E	F
Griffin Road & SW 44th Avenue	Unsignalized	-	-	-	15.2/C	10.3/B	-
PM Peak Hour							
Orange Drive & US-441/SR-7	Signalized	41.5	D	D	C	E	-
Griffin Road & US-441/SR-7	Signalized	114.0	F	F	F	F	F
Griffin Road & SW 44th Avenue	Unsignalized	-	-	-	19.8/C	14.4/B	-

Table 4 2022 Future Total Conditions							
Intersection	Traffic Control	Overall Delay / LOS		Approach LOS			
				NB	SB	EB	WB
AM Peak Hour							
Orange Drive & US-441/SR-7	Signalized	33.0	C	D	B	E	-
Griffin Road & US-441/SR-7	Signalized	90.5	F	E	F	E	F
Griffin Road & SW 44th Avenue	Unsignalized	-	-	-	19.6/C	10.6/B	-
US-441/SR-7 Driveway	Unsignalized	-	-	-	-	-	19.2/C
SW 44th Avenue Driveway	Unsignalized	-	-	7.2/A	-	9.2/A	-
PM Peak Hour							
Orange Drive & US-441/SR-7	Signalized	42.9	D	D	C	E	-
Griffin Road & US-441/SR-7	Signalized	123.6	F	F	F	F	F
Griffin Road & SW 44th Avenue	Unsignalized	-	-	-	38.6/E	15.6/C	-
US-441/SR-7 Driveway	Unsignalized	-	-	-	-	-	18.4/C
SW 44th Avenue Driveway	Unsignalized	-	-	7.3/A	-	9.3/A	-

TURN LANE ANALYSIS

The 95th percentile queue lengths for three conditions (existing, background, and future total buildout) were analyzed at the signalized and unsignalized study intersections during the AM peak hour and PM peak hour using Trafficware's Synchro 9.0 Software and HCS Software. These analyses use the methodologies outlined in the *Highway Capacity Manual, 2010 Edition* in order to determine the 95th percentile queue lengths. *Table 5* summarizes the existing queue lengths at the study intersections. *Table 6* summarizes the Year 2022 background queue lengths at the study intersections. *Table 7* summarizes the Year 2022 future total queue lengths at the study intersections.

As shown in these tables, during the AM peak hour the northbound left-turn movement queue length exceeds the storage length for the existing, 2022 background, and 2022 total conditions. During the PM peak hour, the southbound left-turn and westbound left-turn movements queue lengths exceed the respective storage lengths during the existing, 2022 background, and 2022 total conditions. All other movements during existing, 2022 background, and 2022 total conditions have queue lengths that do not exceed the respective storage lengths.

Table 5 2017 Existing Conditions				
Intersection	Traffic Control	Movement	Storage Length (Feet)	95% Queue Length (Feet)
AM Peak Hour				
Orange Drive & US-441/SR-7	Signalized	NBL	225	248
Griffin Road & US-441/SR-7	Signalized	SBL	375	294
Griffin Road & US-441/SR-7	Signalized	WBL	300	135
Griffin Road & US-441/SR-7	Signalized	EBL	300	256
Griffin Road & SW 44th Avenue	Unsignalized	EBL	150	13
PM Peak Hour				
Orange Drive & US-441/SR-7	Signalized	NBL	225	158
Griffin Road & US-441/SR-7	Signalized	SBL	375	441
Griffin Road & US-441/SR-7	Signalized	WBL	300	391
Griffin Road & US-441/SR-7	Signalized	EBL	300	159
Griffin Road & SW 44th Avenue	Unsignalized	EBL	150	9

Table 6 2022 Future Background Conditions				
Intersection	Traffic Control	Movement	Storage Length (Feet)	95% Queue Length (Feet)
AM Peak Hour				
Orange Drive & US-441/SR-7	Signalized	NBL	225	249
Griffin Road & US-441/SR-7	Signalized	SBL	375	317
Griffin Road & US-441/SR-7	Signalized	WBL	300	141
Griffin Road & US-441/SR-7	Signalized	EBL	300	268
Griffin Road & SW 44th Avenue	Unsignalized	EBL	150	14
PM Peak Hour				
Orange Drive & US-441/SR-7	Signalized	NBL	225	158
Griffin Road & US-441/SR-7	Signalized	SBL	375	472
Griffin Road & US-441/SR-7	Signalized	WBL	300	418
Griffin Road & US-441/SR-7	Signalized	EBL	300	167
Griffin Road & SW 44th Avenue	Unsignalized	EBL	150	10

Table 7 2022 Future Total Conditions				
Intersection	Traffic Control	Movement	Storage Length (Feet)	95% Queue Length (Feet)
AM Peak Hour				
Orange Drive & US-441/SR-7	Signalized	NBL	225	253
Griffin Road & US-441/SR-7	Signalized	SBL	375	352
Griffin Road & US-441/SR-7	Signalized	WBL	300	155
Griffin Road & US-441/SR-7	Signalized	EBL	300	278
Griffin Road & SW 44th Avenue	Unsignalized	EBL	150	22
PM Peak Hour				
Orange Drive & US-441/SR-7	Signalized	NBL	225	161
Griffin Road & US-441/SR-7	Signalized	SBL	375	538
Griffin Road & US-441/SR-7	Signalized	WBL	300	439
Griffin Road & US-441/SR-7	Signalized	EBL	300	188
Griffin Road & SW 44th Avenue	Unsignalized	EBL	150	18

CONCLUSION

The 441 ROC multi-use project is a proposed development that consists of an apartment building with 180 units, a 6,119-square foot (SF) gas station with a convenience market that has 16 fueling positions, and a 2,562 SF fast food restaurant with drive through. The site is located at the northeast quadrant of Griffin Road & US 441 in Hollywood, Florida.

The intersection analyses indicate that the signalized intersection of Orange Drive and US-441/SR-7 will operate at LOS D or better with 2022 conditions that include full buildout project traffic. The signalized intersection of Griffin Road and US-441/SR-7 will operate at LOS F for existing, 2022 conditions without project traffic, and 2022 conditions with project traffic. The unsignalized intersection of Griffin Road and SW 44th Avenue will operate at LOS D or better for during existing and 2022 conditions without project, but the southbound approach will operate of LOS E during 2022 conditions with project traffic. Both driveways will operate at LOS C or better during 2022 conditions with project traffic.

The turn-lane analyses indicate that during the AM peak hour, the northbound left-turn movement of the Orange Drive and US-441/SR-7 intersection has a 95th percentile queue length that exceeds the storage length during the existing, 2022 conditions without project traffic, and 2022 conditions with project traffic. During the PM peak hour, the southbound and westbound left-turn movements of the Griffin Road and US-441/SR-7 intersection have a 95th percentile queue length that exceeds the storage length during the existing, 2022 conditions without project traffic, and 2022 conditions with project traffic. All other movements have 95th percentile queue lengths that do not exceed the respective storage lengths.

APPENDIX A: SITE PLAN

CLIENT: Pricap Companies
 7200 W. Camino Real, Suite 200
 Boca Raton, Florida 33433

PROJECT: Giffon Multi-Use
 HOLLYWOOD
 FLORIDA

TASK: CIVIL PRELIMINARY PLAN
 CIVIL ENGINEERING PLAN

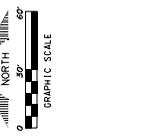
DATE: May 2016
 DESIGNED BY: DRWIN BY: M.M.
 C.G.S.B.
 PROJECT NO.: 151030
 SHEET: PRE

SCALE: 1" = 30'

2099 S.W. 15th Street, Suite 202
 Fort Lauderdale, Florida 33312
 P.O. Box 25000
 Fort Lauderdale, Florida 33322
 G.C.B. ENGINEERS & LAND SURVEYORS
 CONSTRUCTION MANAGERS

REV: 1
 2
 3
 4
 5
 6
 7
 8
 9
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 11
 12

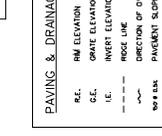
SEWER LEGEND



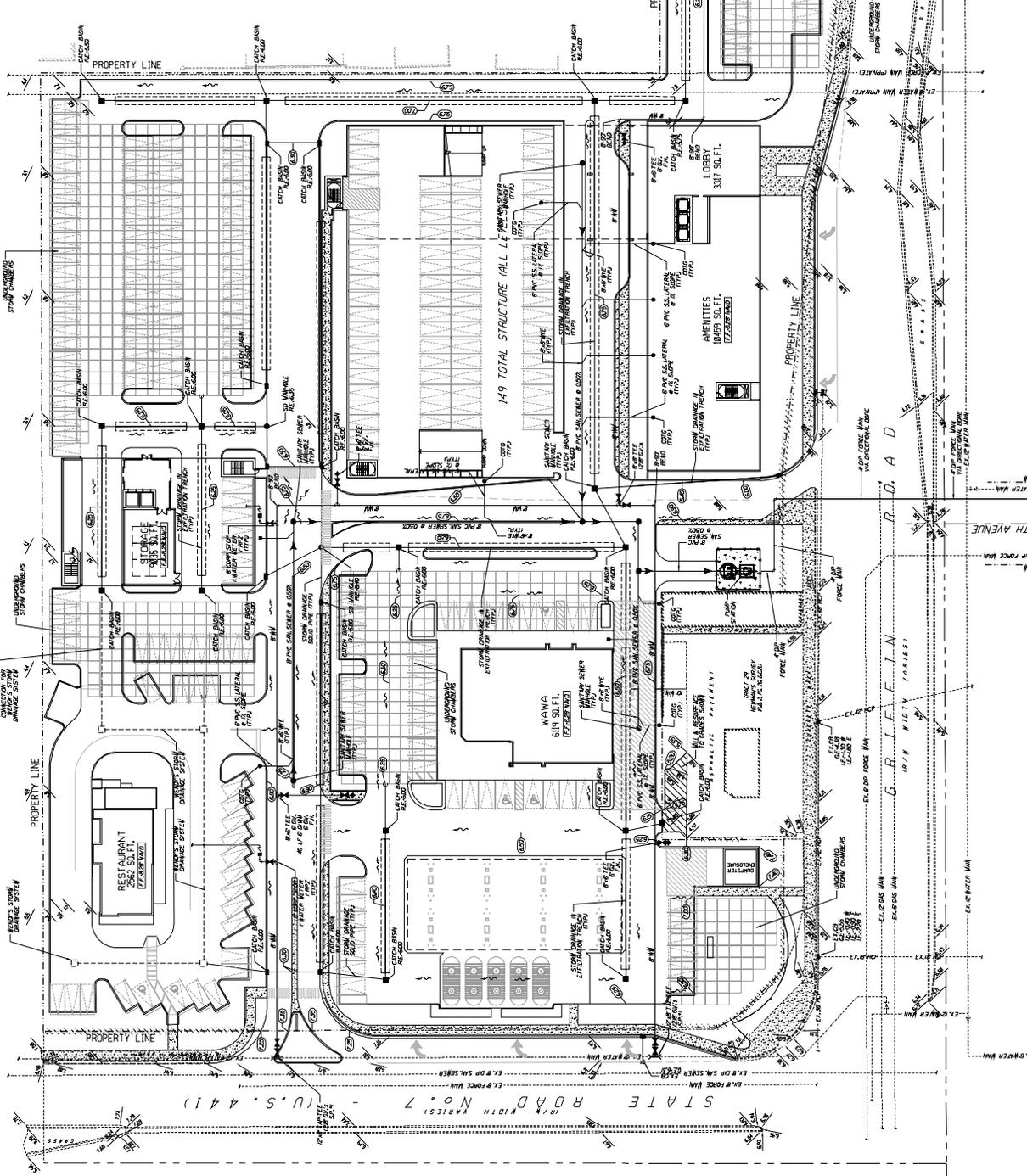
PAVING & DRAINAGE LEGEND



WATER LEGEND



NOTE: ALL UNDERGROUND PIPE MAIN WORK SHALL BE COMPLETED BY A CONTRACTOR HOLDING A CLASS 1110R V LICENSE PER F.S. 883.102



(P.B.2.P.C.2.6.D.C.R.)

STATE ROAD NO. 7 (U.S. 441)

APPENDIX B: INTERSECTION TURNING MOVEMENT VOLUME DATA

ORANGE DRIVE & SR 7
 DAVIE, FLORIDA
 COUNTED BY: D. GONZALEZ & R. MARTINEZ
 SIGNALIZED

TRAFFIC SURVEY SPECIALISTS, INC.
 85 SE 4TH AVENUE, UNIT 109
 DELRAY BEACH, FLORIDA
 PHONE (561)272-3255

Site Code : 00170106
 Start Date: 05/25/17
 File I.D. : ORAN_SR7
 Page : 1

ALL VEHICLES

Date	SR 7 From North				From East				SR 7 From South				ORANGE DRIVE From West				Total
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	
05/25/17	-----																
07:00	0	0	313	38	0	0	0	0	1	35	367	0	0	44	0	21	819
07:15	0	0	356	24	0	0	0	0	2	37	461	0	0	58	0	24	962
07:30	0	0	373	29	0	0	0	0	1	39	501	0	0	57	0	16	1016
07:45	0	0	446	42	0	0	0	0	1	59	519	0	0	34	0	22	1123
Hr Total	0	0	1488	133	0	0	0	0	5	170	1848	0	0	193	0	83	3920
08:00	0	0	371	36	0	0	0	0	4	38	514	0	0	72	0	31	1066
08:15	3	0	449	37	0	0	0	0	3	44	445	0	0	48	0	27	1056
08:30	0	0	401	34	0	0	0	0	7	44	461	0	0	41	0	32	1020
08:45	0	0	394	49	0	0	0	0	8	40	405	0	1	46	0	13	956
Hr Total	3	0	1615	156	0	0	0	0	22	166	1825	0	1	207	0	103	4098
----- * BREAK * -----																	
16:00	0	0	386	18	0	0	0	0	3	25	387	0	0	41	0	44	904
16:15	0	0	450	36	0	0	0	0	1	35	455	0	0	38	0	50	1065
16:30	1	0	502	39	0	0	0	0	2	30	420	0	0	51	0	50	1095
16:45	0	0	401	33	0	0	0	0	1	41	444	0	0	51	0	56	1027
Hr Total	1	0	1739	126	0	0	0	0	7	131	1706	0	0	181	0	200	4091
17:00	1	0	483	35	0	0	0	0	7	17	490	0	0	53	0	82	1168
17:15	0	0	523	22	0	0	0	0	5	19	460	0	0	57	0	75	1161
17:30	0	0	476	44	0	0	0	0	2	36	515	0	0	52	0	63	1188
17:45	0	0	536	38	0	0	0	0	2	29	489	0	0	32	0	48	1174
Hr Total	1	0	2018	139	0	0	0	0	16	101	1954	0	0	194	0	268	4691

TOTAL	5	0	6860	554	0	0	0	0	50	568	7333	0	1	775	0	654	16800

ORANGE DRIVE & SR 7
 DAVIE, FLORIDA
 COUNTED BY: D. GONZALEZ & R. MARTINEZ
 SIGNALIZED

TRAFFIC SURVEY SPECIALISTS, INC.
 85 SE 4TH AVENUE, UNIT 109
 DELRAY BEACH, FLORIDA
 PHONE (561)272-3255

Site Code : 00170106
 Start Date: 05/25/17
 File I.D. : ORAN_SR7
 Page : 3

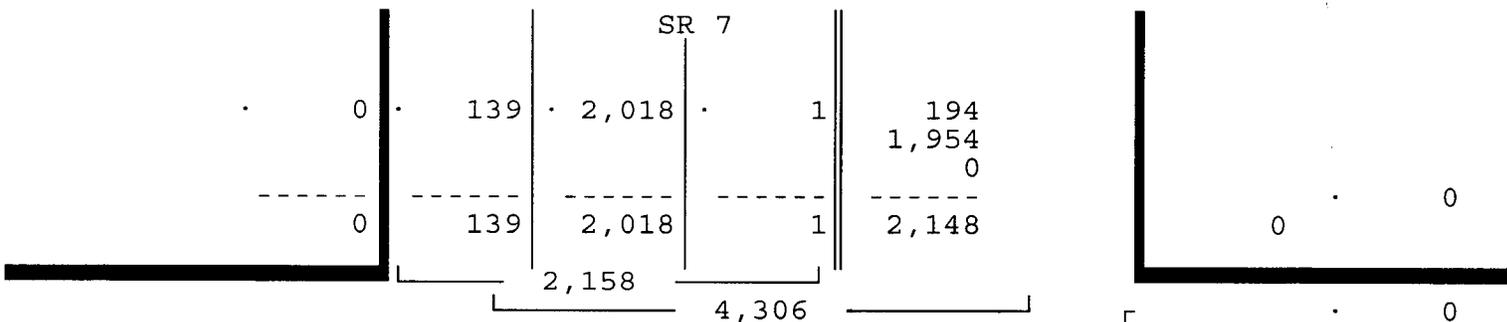
ALL VEHICLES

SR 7 From North				From East				SR 7 From South				ORANGE DRIVE From West				Total
UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	

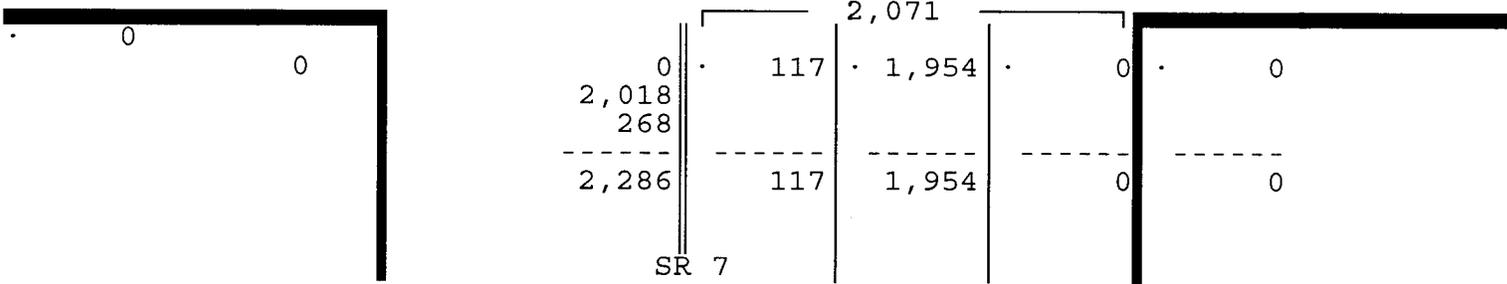
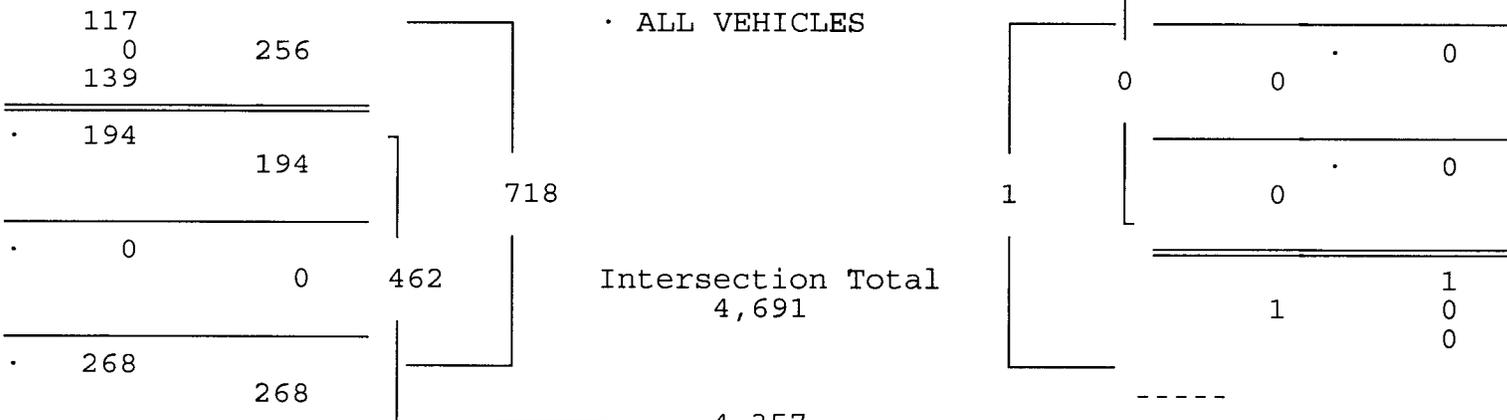
Date 05/25/17

Peak Hour Analysis By Entire Intersection for the Period: 16:00 to 18:00 on 05/25/17

Peak start 17:00				17:00				17:00								
Volume	1	0	2018	139	0	0	0	0	16	101	1954	0	0	194	0	268
Percent	0%	0%	94%	6%	0%	0%	0%	0%	1%	5%	94%	0%	0%	42%	0%	58%
Pk total	2158			0			2071			462						
Highest	17:45			07:00			17:30			17:00						
Volume	0	0	536	38	0	0	0	0	2	36	515	0	0	53	0	82
Hi total	574			0			553			135						
PHF	.94			.0			.94			.86						



ORANGE DRIVE



ORANGE DRIVE & SR 7
 DAVIE, FLORIDA
 COUNTED BY: D. GONZALEZ & R. MARTINEZ
 SIGNALIZED

TRAFFIC SURVEY SPECIALISTS, INC.
 85 SE 4TH AVENUE, UNIT 109
 DELRAY BEACH, FLORIDA
 PHONE (561)272-3255

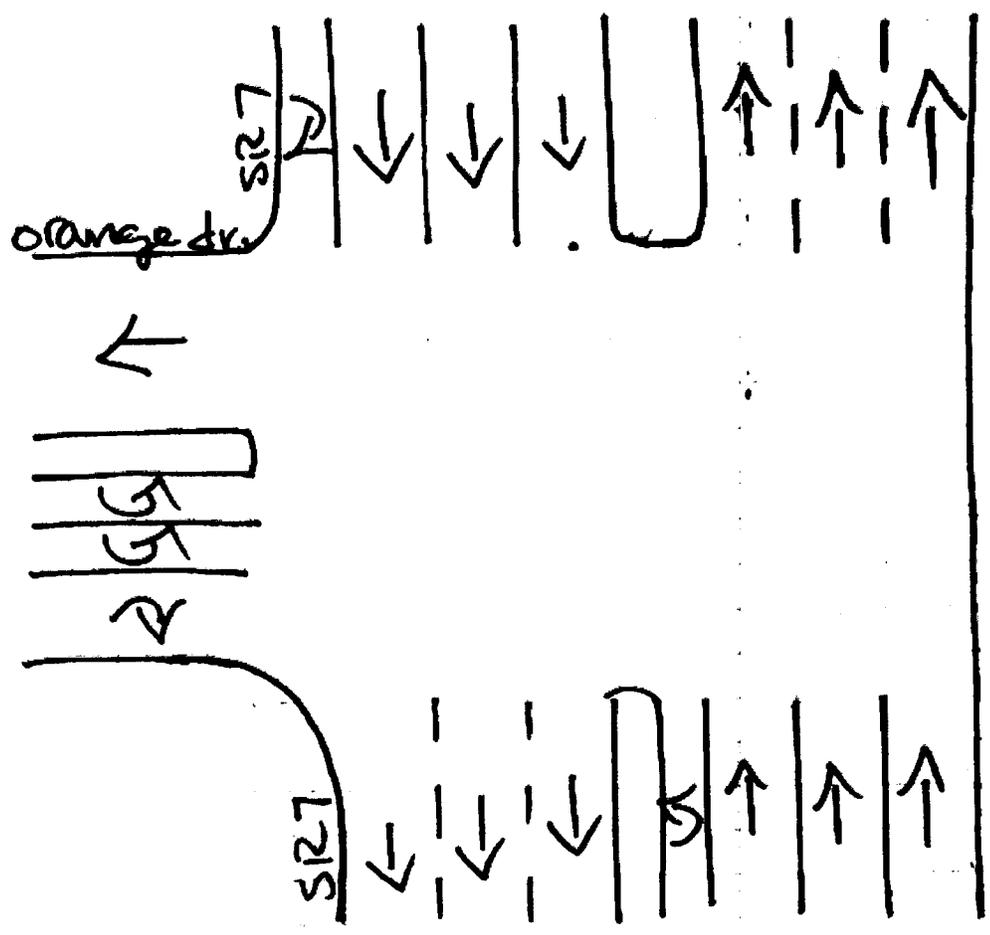
Site Code : 00170106
 Start Date: 05/25/17
 File I.D. : ORAN_SR7
 Page : 1

PEDESTRIANS & BIKES

Date	SR 7 From North				SR 7 From East				SR 7 From South				ORANGE DRIVE From West				Total
	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	
05/25/17	-----																
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	4
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Hr Total	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	5	7
08:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2
08:15	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	3	6
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
08:45	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
Hr Total	0	0	0	0	0	0	0	0	0	1	0	4	0	1	0	5	11
----- * BREAK * -----																	
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	1	0	0	0	0	0	0	0	1	0	3	0	2	0	2	9
16:45	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	3
Hr Total	0	1	0	0	0	0	0	0	0	1	0	4	0	2	0	4	12
17:00	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	2	4
17:15	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	2	5
17:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
Hr Total	0	1	0	0	0	0	0	1	0	0	0	3	0	3	0	4	12

TOTAL	0	2	0	0	0	0	0	1	0	2	0	12	0	7	0	18	42

North



Davie, Florida
May 24, 2017
drawn by: Luis Palomino
Signalized

GRIFFIN ROAD & SR 7
 HOLLYWOOD, FLORIDA
 COUNTED BY: S. SALVO, M. MALONE & I.
 GONZALEZ SIGNALIZED

TRAFFIC SURVEY SPECIALISTS, INC.
 85 SE 4TH AVENUE, UNIT 109
 DELRAY BEACH, FLORIDA
 PHONE (561)272-3255

Site Code : 00170106
 Start Date: 05/25/17
 File I.D. : GRIF_SR7
 Page : 1

ALL VEHICLES

Date	SR 7 From North				GRIFFIN ROAD From East				SR 7 From South				GRIFFIN ROAD From West				Total
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	
05/25/17																	
07:00	0	72	263	18	3	29	77	73	3	39	315	65	4	35	209	55	1260
07:15	0	84	261	20	4	39	141	94	5	50	356	60	2	53	292	77	1538
07:30	0	66	322	17	3	39	164	107	4	46	425	76	3	71	274	81	1698
07:45	0	71	374	24	1	35	162	125	4	65	365	57	3	64	292	84	1726
Hr Total	0	293	1220	79	11	142	544	399	16	200	1461	258	12	223	1067	297	6222
08:00	0	89	284	15	3	43	125	115	7	43	333	56	5	100	270	101	1589
08:15	0	92	407	26	2	32	123	94	5	48	344	58	3	88	226	76	1624
08:30	1	107	289	11	0	31	146	111	5	58	356	58	5	47	281	78	1584
08:45	2	51	346	12	4	41	154	92	2	51	295	51	2	55	226	81	1465
Hr Total	3	339	1326	64	9	147	548	412	19	200	1328	223	15	290	1003	336	6262
* BREAK *																	
16:00	2	70	250	30	2	70	224	71	4	89	256	66	6	37	156	72	1405
16:15	3	80	358	38	9	78	213	95	8	69	348	57	9	47	147	103	1662
16:30	4	98	373	41	4	79	249	106	5	90	317	38	5	31	200	85	1725
16:45	3	88	340	43	3	87	275	104	6	76	299	53	6	45	190	97	1715
Hr Total	12	336	1321	152	18	314	961	376	23	324	1220	214	26	160	693	357	6507
17:00	4	93	349	69	2	99	233	110	5	107	358	50	7	30	172	90	1778
17:15	1	116	396	49	10	68	331	104	2	118	358	75	11	34	205	93	1971
17:30	0	106	398	58	3	101	330	136	4	105	349	35	8	59	189	111	1992
17:45	0	123	451	48	3	98	272	103	5	100	390	45	8	35	160	110	1951
Hr Total	5	438	1594	224	18	366	1166	453	16	430	1455	205	34	158	726	404	7692
TOTAL	20	1406	5461	519	56	969	3219	1640	74	1154	5464	900	87	831	3489	1394	26683

GRIFFIN ROAD & SR 7
 HOLLYWOOD, FLORIDA
 COUNTED BY: S. SALVO, M. MALONE & I.
 GONZALEZ SIGNALIZED

TRAFFIC SURVEY SPECIALISTS, INC.
 85 SE 4TH AVENUE, UNIT 109
 DELRAY BEACH, FLORIDA
 PHONE (561)272-3255

Site Code : 00170106
 Start Date: 05/25/17
 File I.D. : GRIF_SR7
 Page : 2

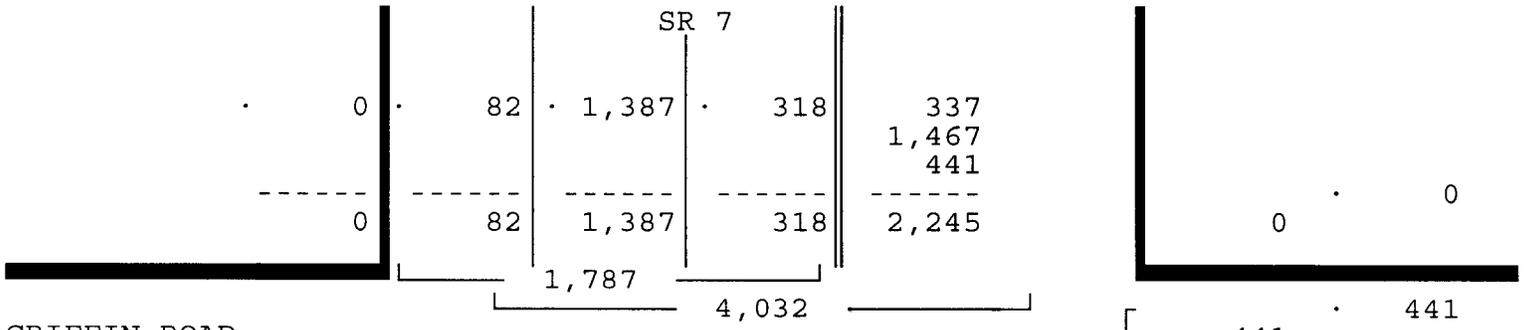
ALL VEHICLES

SR 7				GRIFFIN ROAD				SR 7				GRIFFIN ROAD				Total
From North				From East				From South				From West				
UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	

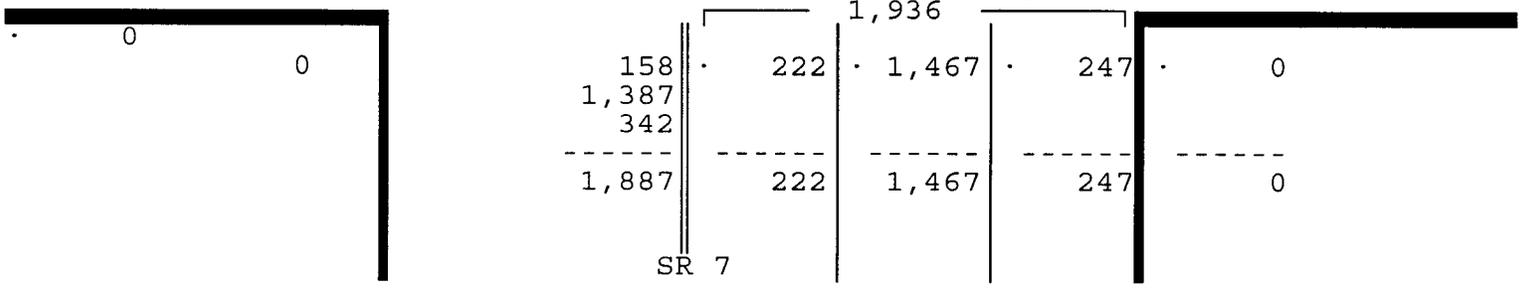
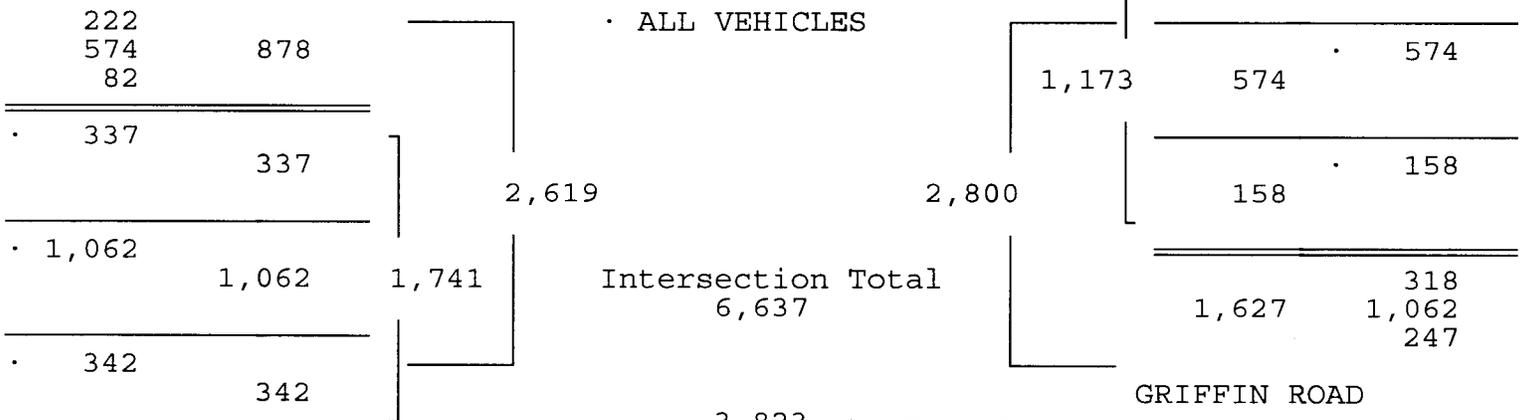
Date 05/25/17

Peak Hour Analysis By Entire Intersection for the Period: 07:00 to 09:00 on 05/25/17

Peak start 07:30				07:30				07:30				07:30				
Volume	0	318	1387	82	9	149	574	441	20	202	1467	247	14	323	1062	342
Percent	0%	18%	78%	5%	1%	13%	49%	38%	1%	10%	76%	13%	1%	19%	61%	20%
Pk total	1787			1173				1936				1741				
Highest	08:15			07:45				07:30				08:00				
Volume	0	92	407	26	1	35	162	125	4	46	425	76	5	100	270	101
Hi total	525			323				551				476				
PHF	.85			.91				.88				.91				



GRIFFIN ROAD



GRIFFIN ROAD & SR 7
 HOLLYWOOD, FLORIDA
 COUNTED BY: S. SALVO, M. MALONE & I.
 GONZALEZ SIGNALIZED

TRAFFIC SURVEY SPECIALISTS, INC.
 85 SE 4TH AVENUE, UNIT 109
 DELRAY BEACH, FLORIDA
 PHONE (561)272-3255

Site Code : 00170106
 Start Date: 05/25/17
 File I.D. : GRIF_SR7
 Page : 3

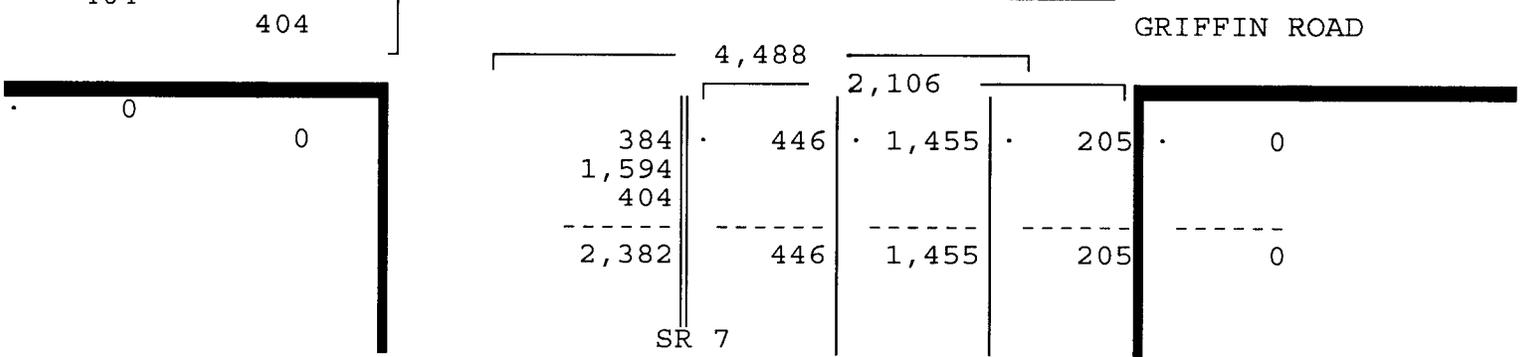
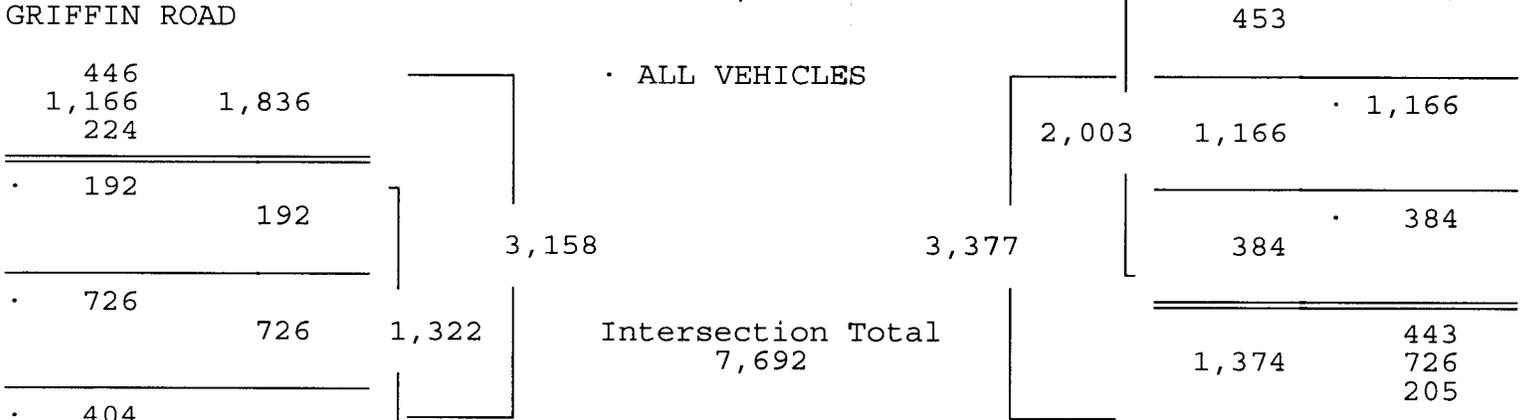
ALL VEHICLES

SR 7 From North				GRIFFIN ROAD From East				SR 7 From South				GRIFFIN ROAD From West				Total
UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	

Date 05/25/17

Peak Hour Analysis By Entire Intersection for the Period: 16:00 to 18:00 on 05/25/17

Peak start 17:00				17:00				17:00				17:00				
Volume	5	438	1594	224	18	366	1166	453	16	430	1455	205	34	158	726	404
Percent	0%	19%	70%	10%	1%	18%	58%	23%	1%	20%	69%	10%	3%	12%	55%	31%
Pk total	2261			2003				2106				1322				
Highest	17:45			17:30				17:15				17:30				
Volume	0	123	451	48	3	101	330	136	2	118	358	75	8	59	189	111
Hi total	622			570				553				367				
PHF	.91			.88				.95				.90				



GRIFFIN ROAD & SR 7
 HOLLYWOOD, FLORIDA
 COUNTED BY: S. SALVO, M. MALONE & I.
 GONZALEZ SIGNALIZED

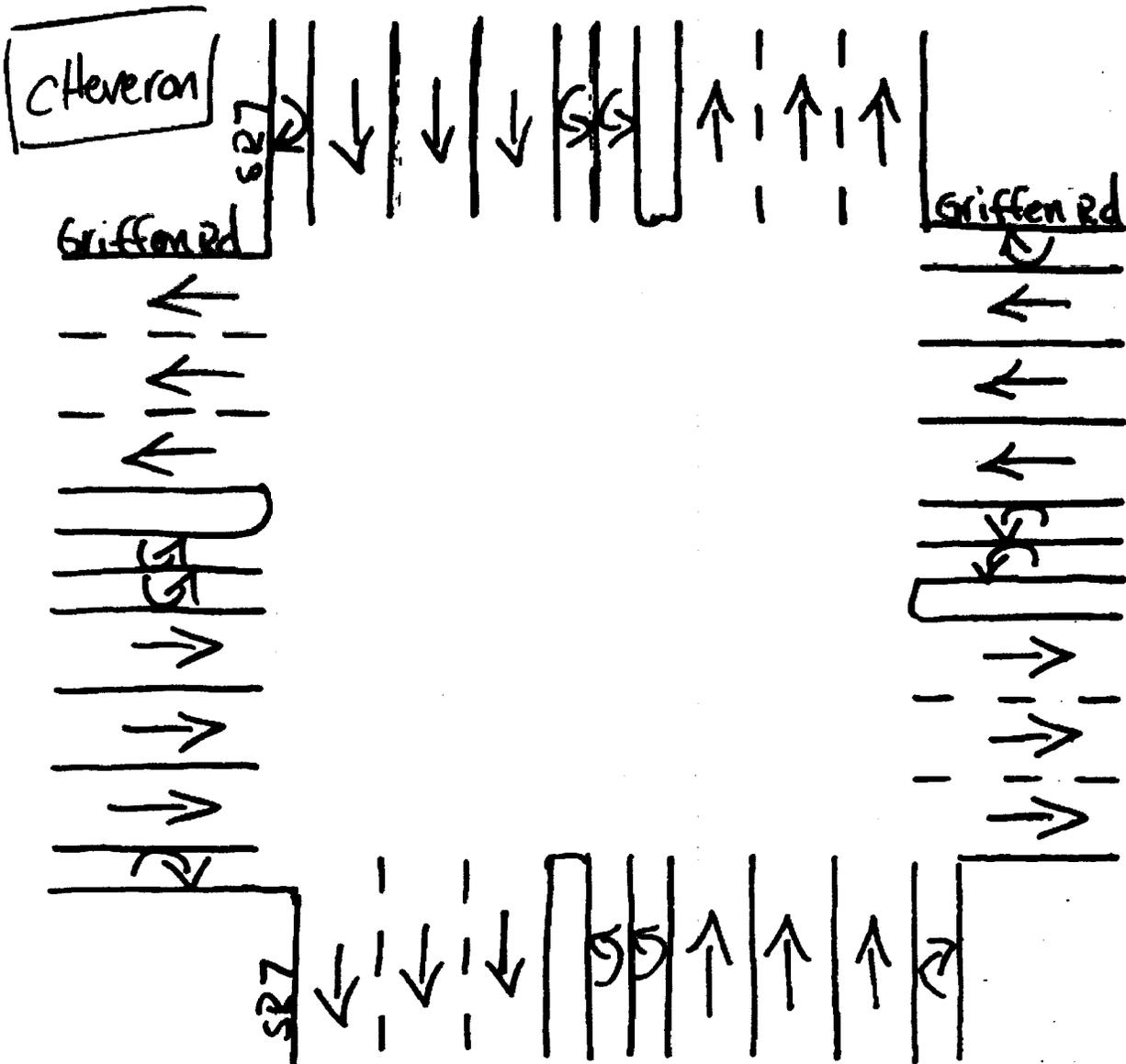
TRAFFIC SURVEY SPECIALISTS, INC.
 85 SE 4TH AVENUE, UNIT 109
 DELRAY BEACH, FLORIDA
 PHONE (561)272-3255

Site Code : 00170106
 Start Date: 05/25/17
 File I.D. : GRIF_SR7
 Page : 1

PEDESTRIANS & BIKES

Date	SR 7 From North				GRIFFIN ROAD From East				SR 7 From South				GRIFFIN ROAD From West				Total
	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	
05/25/17																	
07:00	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	1	0	4	0	1	0	0	0	0	0	0	0	0	0	0	6
Hr Total	0	1	0	5	0	1	0	1	0	0	0	0	0	0	0	0	8
08:00	0	2	0	1	0	1	0	0	0	0	0	0	0	0	0	0	4
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
08:45	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Hr Total	0	2	0	2	0	1	0	1	0	0	0	0	0	0	0	0	6
* BREAK *																	
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	1	0	0	0	0	0	3	0	3	0	1	0	0	8
16:30	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	3
16:45	0	0	0	0	0	1	0	4	0	0	0	0	0	0	0	0	5
Hr Total	0	0	0	2	0	1	0	4	0	3	0	4	0	2	0	0	16
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
17:15	0	0	0	1	0	1	0	2	0	1	0	0	0	0	0	0	5
17:30	0	0	0	0	0	1	0	1	0	1	0	3	0	0	0	1	7
17:45	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
Hr Total	0	1	0	1	0	3	0	3	0	2	0	3	0	1	0	1	15
TOTAL	0	4	0	10	0	6	0	9	0	5	0	7	0	3	0	1	45

↑
North



Hollywood, Florida
November 29, 2012
drawn by: Luis Belomino
signalized ✓

GRIFFIN ROAD & SW 44TH AVENUE
 DAVIE, FLORIDA
 COUNTED BY: ARIEL PEREZ
 NOT SIGNALIZED

TRAFFIC SURVEY SPECIALISTS, INC.
 85 SE 4TH AVENUE, UNIT 109
 DELRAY BEACH, FLORIDA
 PHONE (561)272-3255

Site Code : 00170106
 Start Date: 05/25/17
 File I.D. : GRIF44AV
 Page : 1

ALL VEHICLES

Date	SW 44TH AVENUE From North				GRIFFIN ROAD From East				----- From South				GRIFFIN ROAD From West				Total
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	
05/25/17																	
07:00	0	3	0	1	0	0	194	0	0	0	0	0	8	4	326	0	536
07:15	0	0	0	3	0	0	269	0	0	0	0	0	10	6	408	0	696
07:30	0	0	0	2	0	0	312	0	0	0	0	0	13	4	381	0	712
07:45	0	2	0	0	0	0	318	0	0	0	0	0	14	4	437	0	775
Hr Total	0	5	0	6	0	0	1093	0	0	0	0	0	45	18	1552	0	2719
08:00	0	2	0	2	1	0	254	2	0	0	0	0	14	9	367	0	651
08:15	0	1	0	0	1	0	252	0	0	0	0	0	12	7	402	0	675
08:30	0	2	0	4	0	0	277	1	0	0	0	0	5	4	402	0	695
08:45	0	0	0	1	0	0	251	3	0	0	0	0	13	4	264	0	536
Hr Total	0	5	0	7	2	0	1034	6	0	0	0	0	44	24	1435	0	2557
* BREAK *																	
16:00	0	0	0	10	0	0	401	5	0	0	0	0	6	9	285	0	716
16:15	0	4	0	7	0	0	358	1	0	0	0	0	13	3	277	0	663
16:30	0	2	0	9	1	0	428	4	0	0	0	0	10	7	308	0	769
16:45	0	2	0	10	0	0	404	0	0	0	0	0	7	2	285	0	710
Hr Total	0	8	0	36	1	0	1591	10	0	0	0	0	36	21	1155	0	2858
17:00	0	2	0	9	2	0	470	2	0	0	0	0	8	3	306	0	802
17:15	0	0	0	3	2	0	492	2	0	0	0	0	7	1	341	0	848
17:30	0	1	0	3	0	0	504	1	0	0	0	0	7	6	296	0	818
17:45	0	3	0	5	0	0	549	5	0	0	0	0	7	3	317	0	889
Hr Total	0	6	0	20	4	0	2015	10	0	0	0	0	29	13	1260	0	3357
TOTAL	0	24	0	69	7	0	5733	26	0	0	0	0	154	76	5402	0	11491

GRIFFIN ROAD & SW 44TH AVENUE
 DAVIE, FLORIDA
 COUNTED BY: ARIEL PEREZ
 NOT SIGNALIZED

TRAFFIC SURVEY SPECIALISTS, INC.
 85 SE 4TH AVENUE, UNIT 109
 DELRAY BEACH, FLORIDA
 PHONE (561)272-3255

Site Code : 00170106
 Start Date: 05/25/17
 File I.D. : GRIF44AV
 Page : 2

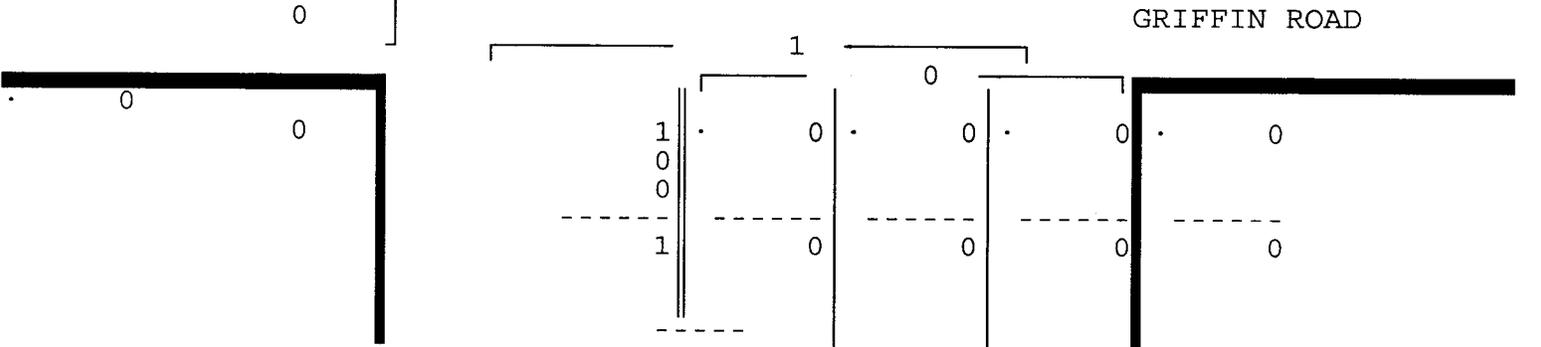
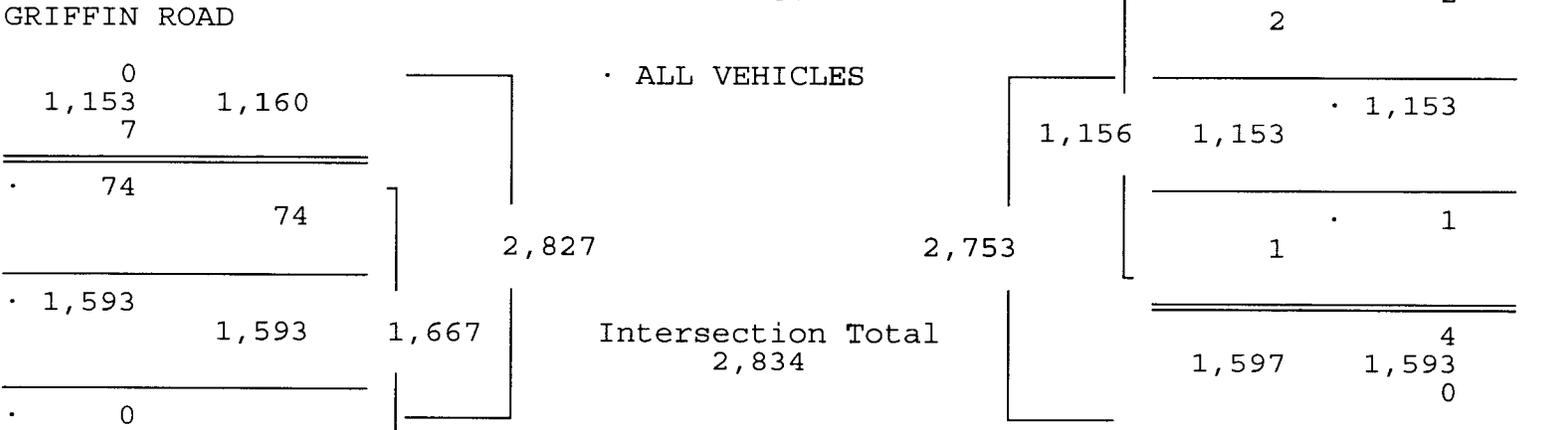
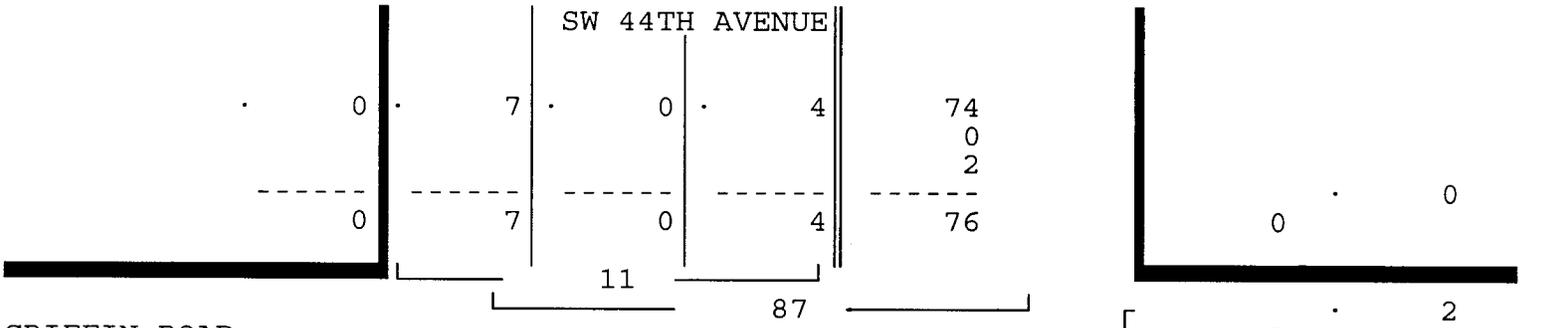
ALL VEHICLES

SW 44TH AVENUE From North				GRIFFIN ROAD From East				----- From South				GRIFFIN ROAD From West				Total
UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	

Date 05/25/17

Peak Hour Analysis By Entire Intersection for the Period: 07:00 to 09:00 on 05/25/17

Peak start 07:15				07:15				07:15				07:15				Total
Volume	0	4	0	7	1	0	1153	2	0	0	0	0	51	23	1593	
Percent	0%	36%	0%	64%	0%	0%	100%	0%	0%	0%	0%	0%	3%	1%	96%	0%
Pk total	11			1156			0			1667						
Highest	08:00			07:45			07:00			07:45						
Volume	0	2	0	2	0	0	318	0	0	0	0	14	4	437	0	
Hi total	4			318			0			455						
PHF	.69			.91			.0			.92						



GRIFFIN ROAD & SW 44TH AVENUE
 DAVIE, FLORIDA
 COUNTED BY: ARIEL PEREZ
 NOT SIGNALIZED

TRAFFIC SURVEY SPECIALISTS, INC.
 85 SE 4TH AVENUE, UNIT 109
 DELRAY BEACH, FLORIDA
 PHONE (561)272-3255

Site Code : 00170106
 Start Date: 05/25/17
 File I.D. : GRIF44AV
 Page : 3

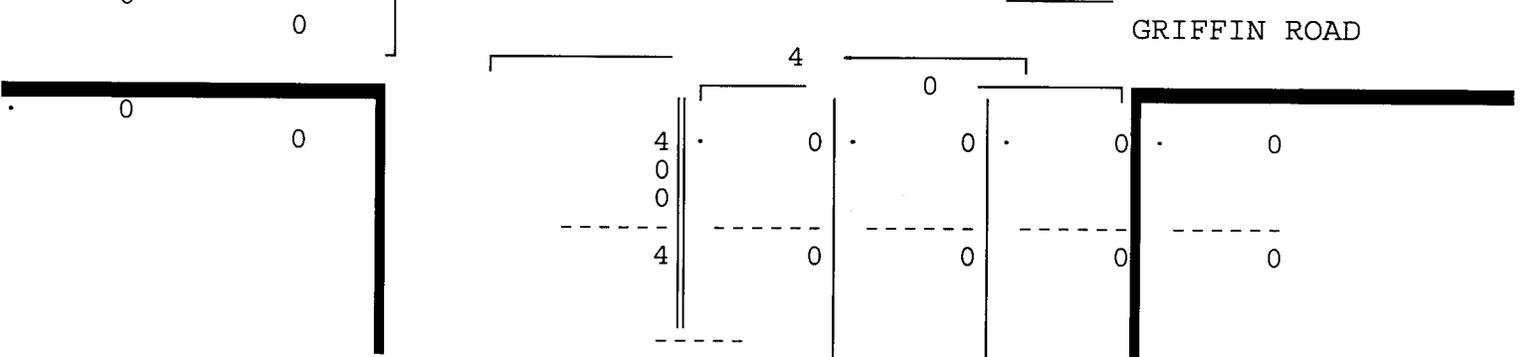
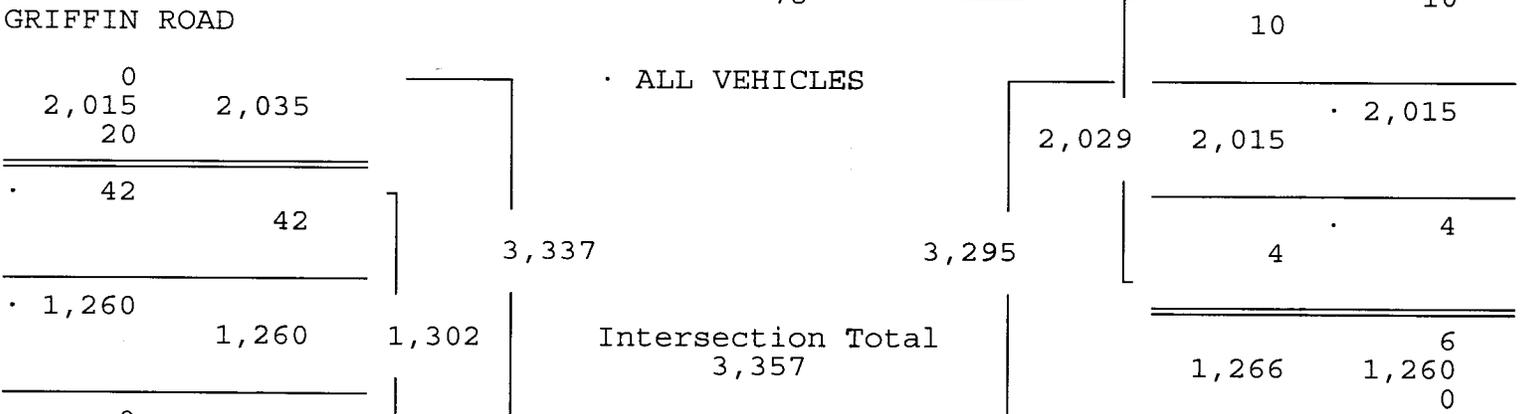
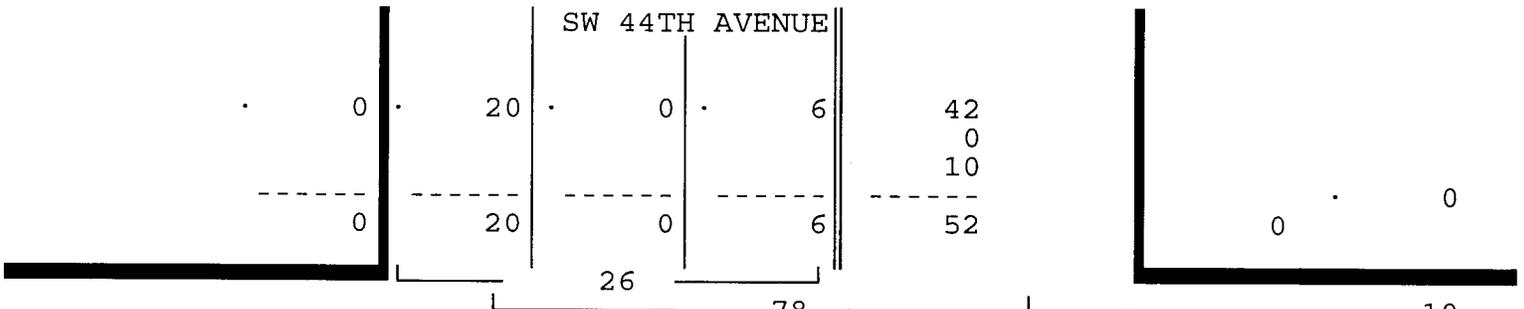
ALL VEHICLES

SW 44TH AVENUE From North				GRIFFIN ROAD From East				----- From South				GRIFFIN ROAD From West				Total
UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	

Date 05/25/17

Peak Hour Analysis By Entire Intersection for the Period: 16:00 to 18:00 on 05/25/17

Peak start 17:00	17:00				17:00				17:00							
Volume	0	6	0	20	4	0	2015	10	0	0	0	0	29	13	1260	0
Percent	0%	23%	0%	77%	0%	0%	99%	0%	0%	0%	0%	0%	2%	1%	97%	0%
Pk total	26				2029				0				1302			
Highest	17:00				17:45				07:00				17:15			
Volume	0	2	0	9	0	0	549	5	0	0	0	0	7	1	341	0
Hi total	11				554				0				349			
PHF	.59				.92				.0				.93			



GRIFFIN ROAD & SW 44TH AVENUE
 DAVIE, FLORIDA
 COUNTED BY: ARIEL PEREZ
 NOT SIGNALIZED

TRAFFIC SURVEY SPECIALISTS, INC.
 85 SE 4TH AVENUE, UNIT 109
 DELRAY BEACH, FLORIDA
 PHONE (561)272-3255

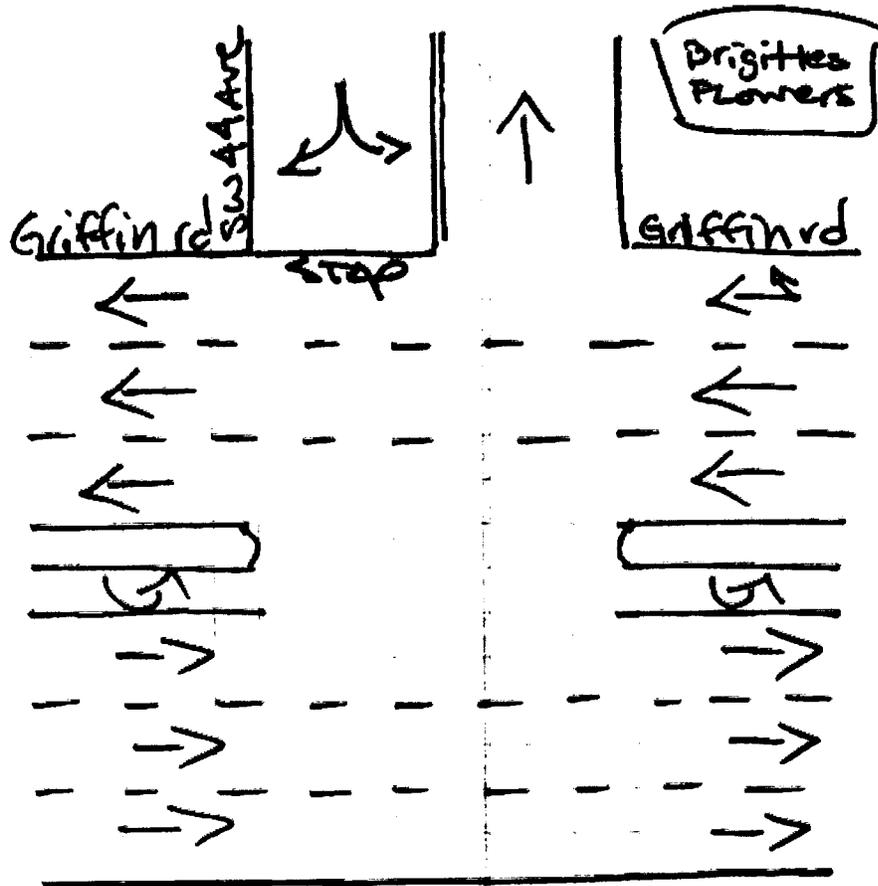
Site Code : 00170106
 Start Date: 05/25/17
 File I.D. : GRIF44AV
 Page : 1

PEDESTRIANS & BIKES

Date	SW 44TH AVENUE From North				GRIFFIN ROAD From East				----- From South				GRIFFIN ROAD From West				Total
	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	
05/25/17	-----																
07:00	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
07:15	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	2
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Hr Total	0	1	0	3	0	0	0	0	0	0	0	0	0	0	1	0	5
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hr Total	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
----- * BREAK * -----																	
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
Hr Total	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
17:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hr Total	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

TOTAL	0	2	0	10	0	0	0	0	0	0	0	0	0	1	0	0	13

↑
North



Davie, Florida

May 24, 2017

Drawn by: Luis Palomero

NOT Signalized

**APPENDIX C: INTERSECTION VOLUME DEVELOPMENT
WORKSHEETS**

VOLUME DEVELOPMENT SHEET
Orange Drive & US-441
441 ROC

Growth Rate = 1.00% 1.00%
 Peak Season = 1.04 1.04
 Buildout Year = 2022 2022
 Years = 5 5

<u>AM Peak Hour</u>									
	Northbound			Southbound			Eastbound		
	UT	LT	Thru	UT	Thru	RT	UT	LT	RT
Existing Volume on 05/25/2017	15	185	1,939	3	1,667	149	0	195	112
Peak Season Volume	16	192	2,017	3	1,734	155	0	203	116
Traffic Volume Growth	17	202	2,120	3	1,822	163	0	213	122
<i>2022 Background Traffic</i>	<i>17</i>	<i>202</i>	<i>2120</i>	<i>3</i>	<i>1822</i>	<i>163</i>	<i>0</i>	<i>213</i>	<i>122</i>
Project Traffic									
Inbound Traffic Assignment					30.0%				5.0%
Inbound Traffic Volumes	0	0	0	0	22	0	0	0	4
Outbound Traffic Assignment		5.0%	30.0%						
Outbound Traffic Volumes	0	6	37	0	0	0	0	0	0
Project Traffic	0	6	37	0	22	0	0	0	4
TOTAL TRAFFIC	17	208	2,157	3	1,844	163	0	213	126
<u>PM Peak Hour</u>									
	Northbound			Southbound			Eastbound		
	UT	LT	Thru	UT	Thru	RT	UT	LT	RT
Existing Volume on 5/25/2017	16	101	1,954	1	2,018	139	0	194	268
Peak Season Volume	17	105	2,032	1	2,099	145	0	202	279
Traffic Volume Growth	18	110	2,136	1	2,206	152	0	212	293
<i>2022 Background Traffic</i>	<i>18</i>	<i>110</i>	<i>2136</i>	<i>1</i>	<i>2206</i>	<i>152</i>	<i>0</i>	<i>212</i>	<i>293</i>
Project Traffic									
Inbound Traffic Assignment					30%				5%
Inbound Traffic Volumes	0	0	0	0	45	0	0	0	7
Outbound Traffic Assignment		5%	30%						
Outbound Traffic Volumes	0	5	34	0	0	0	0	0	0
Project Traffic	0	5	34	0	45	0	0	0	7
TOTAL TRAFFIC	18	115	2,170	1	2,251	152	0	212	300

VOLUME DEVELOPMENT SHEET
Griffin Road & US-441
441 ROC

Growth Rate = 1.00% 1.00%
Peak Season = 1.04 1.04
Buildout Year = 2022 2022
Years = 5 5

AM Peak Hour																
	Northbound				Southbound				Eastbound				Westbound			
	UT	LT	Thru	RT	UT	LT	Thru	RT	UT	LT	Thru	RT	UT	LT	Thru	RT
Existing Volume on 05/25/2017	20	202	1,467	247	0	318	1,387	82	14	323	1,062	342	9	149	574	441
Peak Season Volume	21	210	1,526	257	0	331	1,442	85	15	336	1,104	356	9	155	597	459
Traffic Volume Growth	22	221	1,604	270	0	348	1,516	89	16	353	1,160	374	9	163	627	482
2022 Background Traffic	22	221	1604	270	0	348	1516	89	16	353	1160	374	9	163	627	482
Project Traffic																
Inbound Traffic Assignment	0	0	10.0%	5.0%	19	7	0	0	0	20.0%	5.0%	0	0	0	0	0
Inbound Traffic Volumes			8	4						15	4				0	0
Outbound Traffic Assignment	0	0	0	0	0	0	0	0	0	0	0	0	0	15.0%	25.0%	10.0%
Outbound Traffic Volumes			0	0						0	0			19	32	13
Project Traffic	0	0	8	4	19	7	0	0	0	15	4	0	0	19	32	13
TOTAL TRAFFIC	22	221	1,612	274	19	355	1,516	89	16	368	1,164	374	9	182	659	495

PM Peak Hour																
	Northbound				Southbound				Eastbound				Westbound			
	UT	LT	Thru	RT	UT	LT	Thru	RT	UT	LT	Thru	RT	UT	LT	Thru	RT
Existing Volume on 05/25/2017	16	430	1,455	205	5	438	1,594	224	34	158	726	404	18	366	1,166	453
Peak Season Volume	17	447	1,513	213	5	456	1,658	233	35	164	755	420	19	381	1,213	471
Traffic Volume Growth	18	470	1,590	224	5	479	1,743	245	37	172	794	441	20	400	1,275	495
2022 Background Traffic	18	470	1590	224	5	479	1743	245	37	172	794	441	20	400	1275	495
Project Traffic																
Inbound Traffic Assignment	0	0	10%	5%	37	15	0	0	0	20%	5%	0	0	0	0	0
Inbound Traffic Volumes			15	7						30	7				0	0
Outbound Traffic Assignment	0	0	0	0	0	0	0	0	0	0	0	0	0	15%	25%	10%
Outbound Traffic Volumes			0	0						0	0			17	29	11
Project Traffic	0	0	15	7	37	15	0	0	0	30	7	0	0	17	29	11
TOTAL TRAFFIC	18	470	1,605	231	42	494	1,743	245	37	202	801	441	20	417	1,304	506

VOLUME DEVELOPMENT SHEET
Griffin Road & SW 44th Avenue
441 ROC

Growth Rate = 1.00% 1.00%
 Peak Season = 1.04 1.04
 Buildout Year = 2022 2022
 Years = 5 5

<u>AM Peak Hour</u>									
	Southbound			Eastbound			Westbound		
	UT	LT	RT	UT	LT	Thru	UT	Thru	RT
Existing Volume on 05/25/2017	0	4	7	51	23	1,593	1	1,153	2
Peak Season Volume	0	4	7	53	24	1,657	1	1,199	2
Traffic Volume Growth	0	4	7	56	25	1,742	1	1,260	2
<i>2022 Background Traffic</i>	<i>0</i>	<i>4</i>	<i>7</i>	<i>56</i>	<i>25</i>	<i>1742</i>	<i>1</i>	<i>1260</i>	<i>2</i>
Project Traffic									
Inbound Traffic Assignment				10.0%	10.0%			20.0%	5.0%
Inbound Traffic Volumes	0	0	0	8	8	0	0	15	4
Outbound Traffic Assignment		25.0%	50.0%						
Outbound Traffic Volumes	0	32	63	0	0	0	0	0	0
Project Traffic	0	32	63	8	8	0	0	15	4
TOTAL TRAFFIC	0	36	70	64	33	1,742	1	1,275	6
TOTAL TRAFFIC (Adjusted Thru Vol)	0	36	70	64	33	1,161	1	850	6
<u>PM Peak Hour</u>									
	Southbound			Eastbound			Westbound		
	UT	LT	RT	UT	LT	Thru	UT	Thru	RT
Existing Volume on 05/25/2017	0	6	20	29	13	1,260	4	2,015	10
Peak Season Volume	0	6	21	30	14	1,310	4	2,096	10
Traffic Volume Growth	0	6	22	32	15	1,377	4	2,203	11
<i>2022 Background Traffic</i>	<i>0</i>	<i>6</i>	<i>22</i>	<i>32</i>	<i>15</i>	<i>1377</i>	<i>4</i>	<i>2203</i>	<i>11</i>
Project Traffic									
Inbound Traffic Assignment				10.0%	10.0%			20.0%	5.0%
Inbound Traffic Volumes	0	0	0	15	15	0	0	30	7
Outbound Traffic Assignment		25%	50%						
Outbound Traffic Volumes	0	29	57	0	0	0	0	0	0
Project Traffic	0	29	57	15	15	0	0	30	7
TOTAL TRAFFIC	0	35	79	47	30	1,377	4	2,233	18
TOTAL TRAFFIC (Adjusted Thru Vol)	0	35	79	47	30	918	4	1,489	18

APPENDIX D: EXISTING SIGNAL TIMING WORKSHEETS



BROWARD COUNTY TRAFFIC ENGINEERING
ACTUATED TRAFFIC SIGNAL TIMING SHEET

Intersection Number	3254	Initial Operation Date	2/18/76
Controller Type	2070 LN	System Number	3254
Modification Number	20	Modification Date	01/21/2015
Drawing/Project No	416876-1-52-01	FPL Grid Number	87275021000
Intersection	SR 7 (US 441) and ORANGE DRIVE		
Municipality	DAVIE		

Controller Phase	1	2	3	4	5	6	7	8
Face Number		2		4	5	6		
Direction		NB		EB	NBL	SB		
Initial Green(MIN)		10		6	4	10		
Vehicle Ext.(GAP)		3.0		2.0	1.5	3.0		
Maximum Green I		50		25	15	50		
Maximum Green II								
Yellow Clearance		5.0		4.0	5.0	5.0		
All Red Clearance		2.0		2.0	2.0	2.0		
Phase Recall		MIN		OFF	OFF	MIN		
Detector Delay				20-RT				
Walk		7		5		7		
Pedestrian Clearance				28		11		
Permissive					5-SECT			
Flash Operation		YELLOW		RED		YELLOW		
		1		5	8	2		

Attachment

NOTES:

1. ANTI-BACKDOWN DIODE NORTHBOUND.
2. PHOTO ENFORCEMENT, TOWN OF DAVIE.
3. MOD. 20 UPDATES PHASE 5 YELLOW CLEARANCE VALUE PER FDOT STANDARDS.

Submitted By _____ Approved By _____

Station : 3254 - SR 7 & Orange Dr (Standard File)

Phase	1	2 (NT)	3	4 (ET)	5 (NL)	6 (ST)	7	8	9	10	11	12	13	14	15	16
Walk		7		5		7										
Ped Clearance				28		11										
Min Green		10		6	4	10										
Gap Ext		3		2	1.5	3										
Max1		50		35	15	50										
Max2																
Yellow Clr		5		4	5	5			3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Red Clr		2		2	2	2			1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Red Revert																
Added Initial																
Max Initial																
Time Before Reduce																
Cars Before Reduce																
Time To Reduce																
Reduce By																
Min Gap																
Dynamic Max Limit																
Dynamic Max Step																
Enable		ON		ON	ON	ON										
Auto Flash Entry				ON												
Auto Flash Exit		ON				ON										
Non-Actuated 1																
Non-Actuated 2																
Lock Call									ON							
Min Recall		ON				ON										
Max Recall																
Ped Recall																
Soft Recall																
Dual Entry																
Sim Gap Enable		ON		ON		ON		ON	ON	ON	ON	ON	ON	ON	ON	ON
Guar Passage																
Rest In Walk		ON				ON										
Cond Service																
Add Init Calc																
Concurrent Ps	1	1	1	1	2	2	2	2								

Preemption

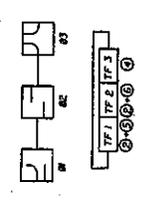
Channel	1	2	3	4	5	6
Lock Input	ON	ON	ON	ON	ON	ON
Override Auto Flash						
Override Higher Preempt						
Flash in Dwell						
Link to Preempt						
Delay						
Min Duration						
Min Green	6				6	6
Min Walk						
Ped Clear						
Track Green					1	
Min Dwell	8				8	8
Max Presence	180				180	180
Track Veh 1					9	
Track Veh 2						
Track Veh 3						
Track Veh 4						
Dwell Cyc Veh 1	2				2	4
Dwell Cyc Veh 2	6				5	
Dwell Cyc Veh 3						
Dwell Cyc Veh 4						
Dwell Cyc Veh 5						
Dwell Cyc Veh 6						
Dwell Cyc Veh 7						
Dwell Cyc Veh 8						
Dwell Cyc Veh 9						
Dwell Cyc Veh 10						
Dwell Cyc Veh 11						
Dwell Cyc Veh 12						
Dwell Cyc Ped1						
Dwell Cyc Ped2						
Dwell Cyc Ped3						
Dwell Cyc Ped4						
Dwell Cyc Ped5						
Dwell Cyc Ped6						
Dwell vPed7						
Dwell Cyc Ped8						
Exit 1	4				2	2
Exit 2					6	5
Exit 3						
Exit 4						

Preempt LP

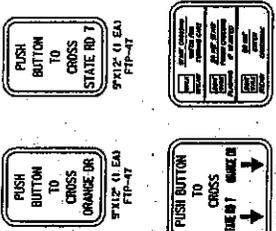
Channel	1	2	3	4
Min				
Max				
Enable				
Lock Mode	MAX	MAX	MAX	MAX
Coord in Preempt				
No Skip				
Priority P1				
Priority P2				
Priority P3				
Priority P4				
Lock				
Headway				
Group Lock				
Queue Jump				
Free Mode				
Alt Table				

ITEM NO.	REVISION	DESCRIPTION	DATE	BY
1		ISSUED FOR CONSTRUCTION		
2		REVISION TO SIGNAL TIMING CHART		
3		REVISION TO MAST ARM SIGN DETAILS		
4		REVISION TO PEDESTRIAN DETECTOR SIGNS		
5		REVISION TO DETECTOR FOR LOOPS		

PHASE	GREEN	YELLOW	RED	ALL RED	START	END	REMARKS
1	4.0	1.5	4.0	4.0	5:00	5:10	
2	3.0	1.5	4.0	4.0	5:10	5:20	
3	3.0	1.5	4.0	4.0	5:20	5:30	
4	3.0	1.5	4.0	4.0	5:30	5:40	
5	3.0	1.5	4.0	4.0	5:40	5:50	



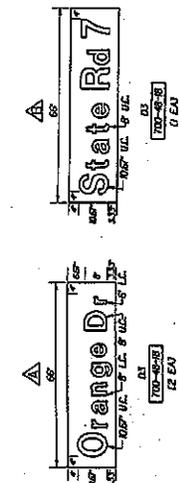
PEDESTRIAN DETECTOR SIGNS



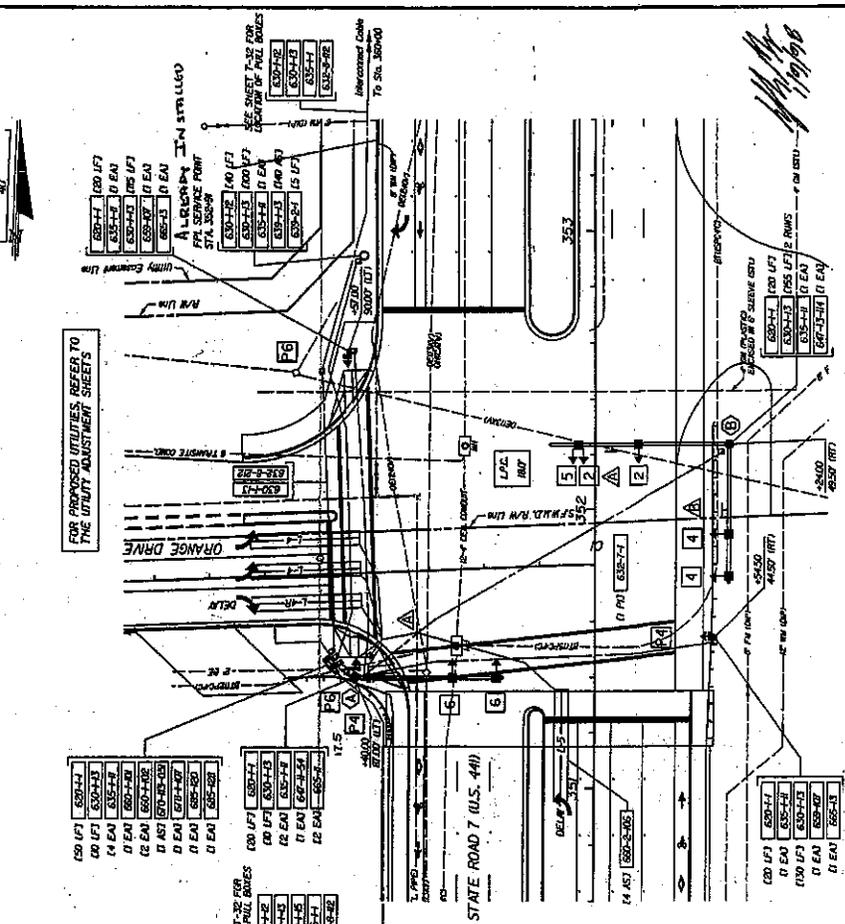
SIGNAL OPERATION NOTES

1. MAIN STREET - STATE ROAD 7
2. TYPE OF CONTROLLER IS A 4-4-4 COORDINATED WITH 8 TIMING FUNCTIONS WITH THE FOLLOWING FEATURES:
a) BENT CABINET
b) PROTECTED LEFT TURNING PHASE 1 AND PERMISSIVE LEFT TURNING PHASE 2
c) TO OPERATE AS SMP #2
3. ALL LOOPS TYPE 'S', OVERSAMPLING
a) 5'x8' PLACED BY HEAD OF STOP BAR
b) FLASHING OPERATION STATE ROAD 7 - YELLOW
c) FLASHING OPERATION STATE ROAD 7 - RED
4. VERIFY SERVICE POINT LOCATION WITH FPL THROUGH THE UTILITY OFFICE.
5. POWER DISCONNECT SHALL BE INSTALLED ON MAST ARM SUPPORT ADJACENT TO THE CONTROLLER CABINET.
6. ALL MAST ARM MOUNTED SIGNS SHALL BE INSTALLED IN ACCORDANCE WITH THE MAST ARM STRUCTURE DETAILS.
7. PEDESTRIAN PUSH BUTTONS AND SIGN PANELS SHALL BE MOUNTED ON THE LEAD SIDE OF THE MAST ARM SUPPORT (SEE DETAILS).
8. ALL SIGNAL AUXILIARY EQUIPMENT MUST BE COMPATIBLE WITH THE BROWARD COUNTY CENTRAL COMPUTER SYSTEM.
9. FOR TRAFFIC CONTROL PLANS, SEE GENERAL NOTE NO. 19.

MAST ARM SIGN DETAILS
(SERIES C MODIFIED LETTERS)

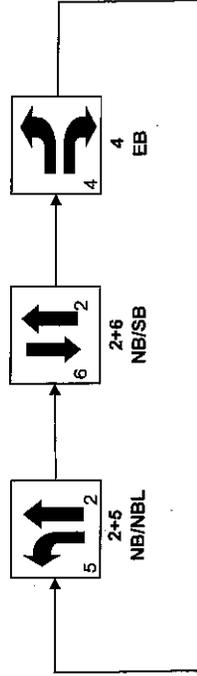


LOOP NO.	TYPE	TRAVEL TIME	LOOPS BEHIND
1	L-1	1.0	1
2	L-2	1.0	1
3	L-3	1.0	1
4	L-4	1.0	1
5	L-5	1.0	1



Sequence of Operation for (3254) SR 7 (SR 441) and Orange Drive

Davie





BROWARD COUNTY TRAFFIC ENGINEERING
ACTUATED TRAFFIC SIGNAL TIMING SHEET

Intersection Number	3077	Initial Operation Date	3/3/58
Controller Type	2070 LN BIU	System Number	3077
Modification Number	21	Modification Date	04/08/2015
Drawing/Project No		FPL Grid Number	8717597820
Intersection	SR 7 (US 441) and GRIFFIN ROAD		
Municipality	DAVIE		

Controller Phase	1	2	3	4	5	6	7	8
Face Number	1	2	3	4	5	6	7	8
Direction	SBL	NB	WBL	EB	NBL	SB	EBL	WB
Initial Green(MIN)	5	7	5	6	5	7	5	6
Vehicle Ext.(GAP)	1.5	0.0	1.5	2.0	1.5	0.0	1.5	2.0
Maximum Green I	25	50	20	40	20	50	20	40
Maximum Green II								
Yellow Clearance	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All Red Clearance	2.5	2.0	2.5	2.0	2.5	2.0	2.5	2.0
Phase Recall	OFF	MAX	OFF	OFF	OFF	MAX	OFF	OFF
Detector Delay	20-RT				20-RT			
Walk	7		7		7		7	
Pedestrian Clearance	36		35		38		38	
Permissive	DUAL		DUAL		DUAL		DUAL	
Flash Operation	RED	RED	RED	RED	RED	RED	RED	RED

Attachment _____

NOTES:

1. DUAL ENTRY HARDWIRED EAST/WEST.
2. DETECTION NORTH/SOUTH NOT USED, SIGNAL OPERATES SEMI-ACTUATED.
3. PHOTO ENFORCEMENT, CITY OF DAVIE.
4. THERMAL VEHICLE DETECTION.
5. MOD. 21 UPDATES WALK TIMES ON PHASES 4 & 8 PER CURRENT STANDARDS.

Submitted By _____ Approved By _____

Station : 3077 - SR 7 & Griffin Rd (Standard File)

Phase	1 (SL)	2 (NT)	3 (WL)	4 (ET)	5 (NL)	6 (ST)	7 (EL)	8 (WT)	9	10	11	12	13	14	15	16
Walk		7		7		7		7								
Ped Clearance		36		35		38		38								
Min Green	5	7	5	6	5	7	5	6								
Gap Ext	1.5		1.5	2	1.5		1.5	2								
Max1	25	50	20	40	20	50	20	40								
Max2																
Yellow Clr	5	5	5	5	5	5	5	5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Red Clr	2.5	2	2.5	2	2.5	2	2.5	2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Red Revert																
Added Initial																
Max Initial																
Time Before Reduce																
Cars Before Reduce																
Time To Reduce																
Reduce By																
Min Gap																
Dynamic Max Limit																
Dynamic Max Step																
Enable	ON															
Auto Flash Entry				ON				ON								
Auto Flash Exit		ON				ON										
Non-Actuated 1																
Non-Actuated 2																
Lock Call	ON		ON		ON		ON		ON							
Min Recall																
Max Recall		ON				ON										
Ped Recall																
Soft Recall																
Dual Entry				ON				ON								
Sim Gap Enable									ON							
Guar Passage																
Rest In Walk		ON				ON										
Cond Service																
Add Init Calc																
Concurrent Ps	1	1	1	1	2	2	2	2								

Preemption

Channel	1	2	3	4	5	6
Lock Input	ON	ON	ON	ON	ON	ON
Override Auto Flash						
Override Higher Preempt						
Flash in Dwell						
Link to Preempt						
Delay						
Min Duration						
Min Green	6	6	6	6	6	6
Min Walk						
Ped Clear						
Track Green						
Min Dwell	8	8	8	8	8	8
Max Presence	180	180	180	180	180	180
Track Veh 1						
Track Veh 2						
Track Veh 3						
Track Veh 4						
Dwell Cyc Veh 1	2	4	1	3	2	4
Dwell Cyc Veh 2	6	8	6	8	5	7
Dwell Cyc Veh 3						
Dwell Cyc Veh 4						
Dwell Cyc Veh 5						
Dwell Cyc Veh 6						
Dwell Cyc Veh 7						
Dwell Cyc Veh 8						
Dwell Cyc Veh 9						
Dwell Cyc Veh 10						
Dwell Cyc Veh 11						
Dwell Cyc Veh 12						
Dwell Cyc Ped1						
Dwell Cyc Ped2						
Dwell Cyc Ped3						
Dwell Cyc Ped4						
Dwell Cyc Ped5						
Dwell Cyc Ped6						
Dwell vPed7						
Dwell Cyc Ped8						
Exit 1	3	1	2	4	2	4
Exit 2	7	5	6	8	6	8
Exit 3						
Exit 4						

Preempt LP

Channel	1	2	3	4
Min				
Max				
Enable				
Lock Mode	MAX	MAX	MAX	MAX
Coord in Preempt				
No Skip				
Priority P1				
Priority P2				
Priority P3				
Priority P4				
Lock				
Headway				
Group Lock				
Queue Jump				
Free Mode				
Alt Table				

BROWARD COUNTY TRAFFIC ENGINEERING DIVISION

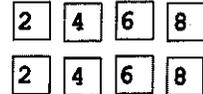
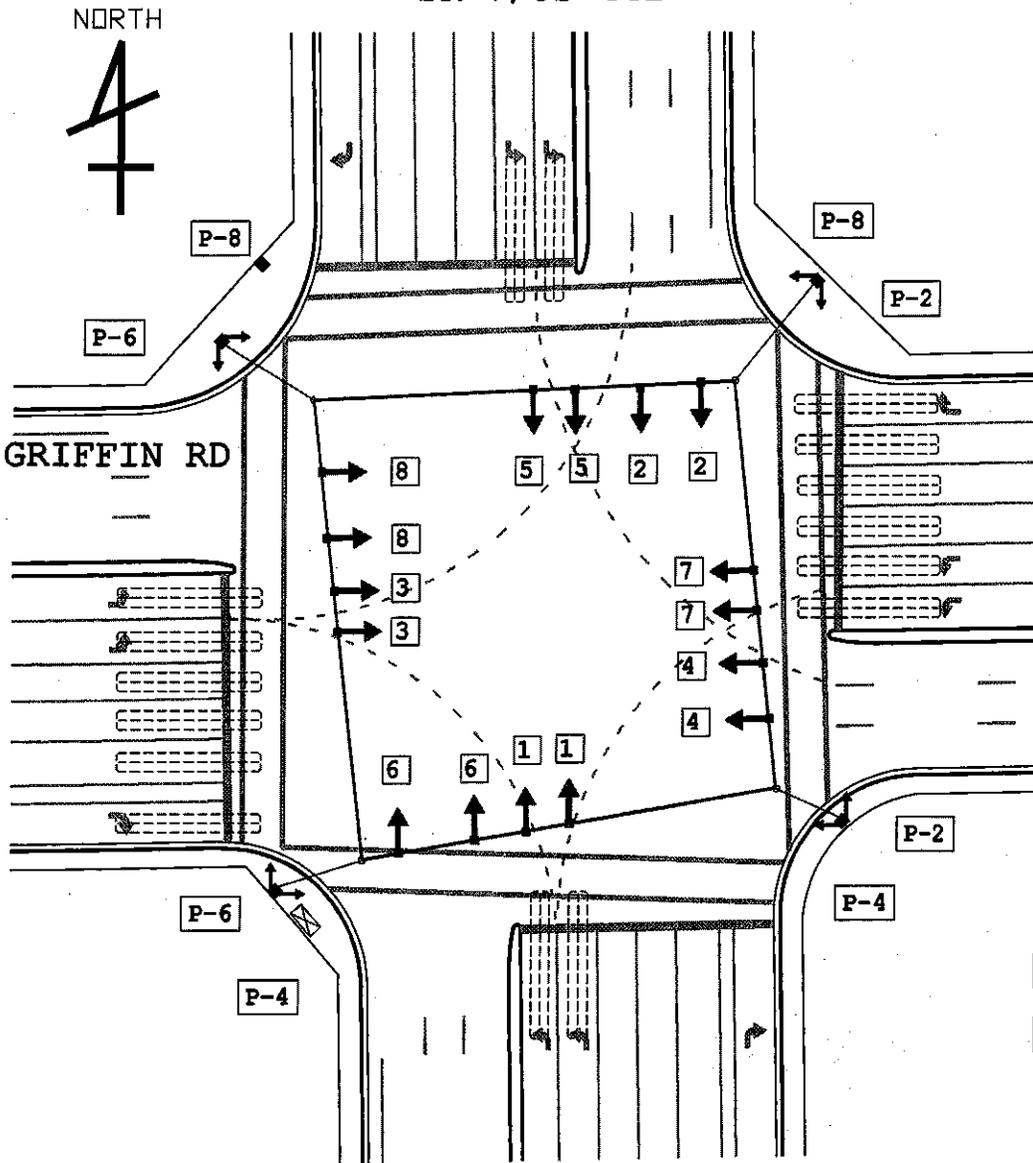
TRAFFIC SIGNAL INSTALLATION ORDER

LOCATION **SR 7 & GRIFFIN RD**

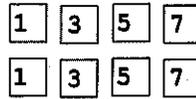
ORDER NO **FDOT** ISSUE DATE **---** REVISION NO. **5** COMPLETION DATE **9/19/01**

DWG. NO. **01-10-02-01** FILE NO. **C-77** CITY **UNINC. FT. LAUD** SCALE: 1' = 50'

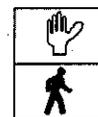
DWN BY: **LARRY** SR 7/US 441



3-SECT
1-WAY
8-REQ'D



3-SECT
1-WAY
8-REQ'D

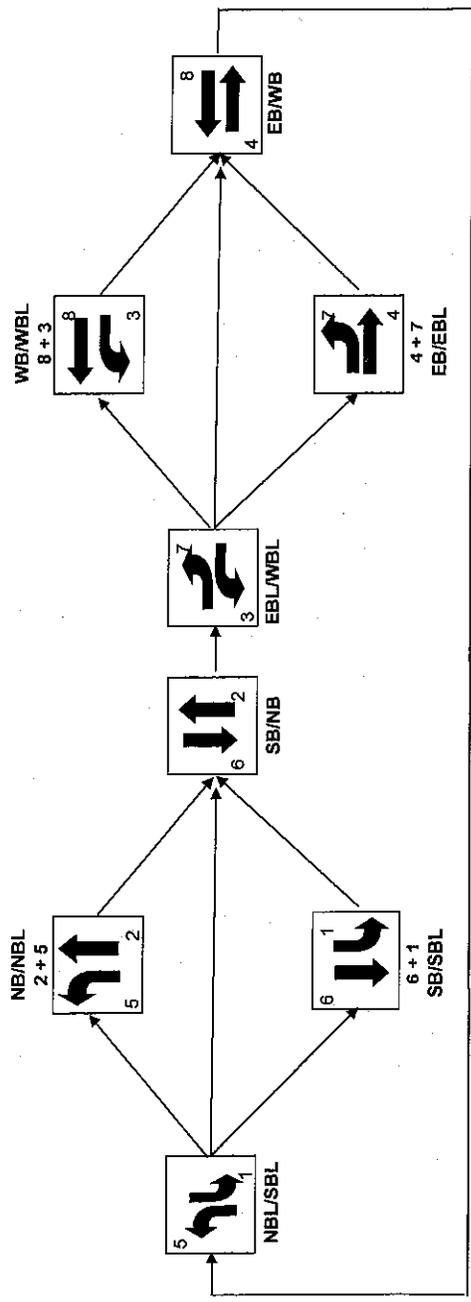


2-SECT
1-WAY
8-REQ'D

REMARKS

Sequence of Operation for (3077), SR 7 (US 441) and Griffin Road

Davie

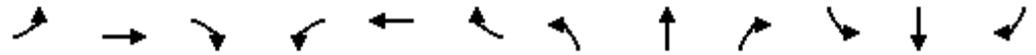


APPENDIX E: SYNCHRO ANALYSIS OUTPUT WORKSHEETS

Queues

1: US-441/SR-7 & Griffin Road

06/02/2017

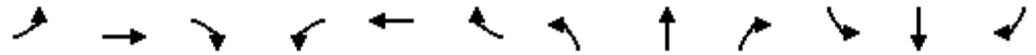


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	351	1104	356	164	597	459	231	1526	257	331	1442	85
Future Volume (vph)	351	1104	356	164	597	459	231	1526	257	331	1442	85
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor										1.00		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3432	5085	1583
Satd. Flow (RTOR)			239			222			263			181
Confl. Peds. (#/hr)										1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	382	1200	387	178	649	499	251	1659	279	360	1567	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	382	1200	387	178	649	499	251	1659	279	360	1567	92
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right									
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex											
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm									
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	26.5	43.0	43.0	16.5	33.0	33.0	17.5	54.0	54.0	17.5	54.0	54.0
Total Split (s)	34.0	50.0	50.0	24.0	40.0	40.0	25.0	61.0	61.0	25.0	61.0	61.0
Total Split (%)	21.3%	31.3%	31.3%	15.0%	25.0%	25.0%	15.6%	38.1%	38.1%	15.6%	38.1%	38.1%

Queues

1: US-441/SR-7 & Griffin Road

06/02/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	26.5	43.0	43.0	16.5	33.0	33.0	17.5	54.0	54.0	17.5	54.0	54.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.5	2.0	2.0	2.5	2.0	2.0	2.5	2.0	2.0	2.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	7.0	7.0	7.5	7.0	7.0	7.5	7.0	7.0	7.5	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	1.5	2.0	2.0	1.5	2.0	2.0	1.5	2.5	2.5	1.5	2.5	2.5
Recall Mode	None	None	None	None	None	None	Min	C-Min	C-Min	Min	C-Min	C-Min
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	21.5	45.9	45.9	12.2	36.6	36.6	15.1	55.3	55.3	17.6	57.8	57.8
Actuated g/C Ratio	0.13	0.29	0.29	0.08	0.23	0.23	0.09	0.35	0.35	0.11	0.36	0.36
v/c Ratio	0.83	0.82	0.62	0.68	0.56	0.94	0.78	0.94	0.39	0.95	0.85	0.13
Control Delay	82.6	58.9	22.9	85.1	57.0	59.0	87.3	62.6	6.8	90.4	41.7	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.6	58.9	22.9	85.1	57.0	59.0	87.3	62.6	6.8	90.4	41.7	4.9
LOS	F	E	C	F	E	E	F	E	A	F	D	A
Approach Delay		56.4			61.6			58.3			48.7	
Approach LOS		E			E			E			D	
90th %ile Green (s)	26.5	43.6	43.6	15.9	33.0	33.0	17.5	54.0	54.0	17.5	54.0	54.0
90th %ile Term Code	Max	Max	Max	Gap	Max	Max	Max	Coord	Coord	Max	Coord	Coord
70th %ile Green (s)	23.9	45.8	45.8	13.7	35.6	35.6	17.3	54.0	54.0	17.5	54.2	54.2
70th %ile Term Code	Gap	Max	Max	Gap	Max	Max	Gap	Coord	Coord	Max	Coord	Coord
50th %ile Green (s)	21.7	47.3	47.3	12.2	37.8	37.8	15.6	54.0	54.0	17.5	55.9	55.9
50th %ile Term Code	Gap	Hold	Hold	Gap	Max	Max	Gap	Coord	Coord	Max	Coord	Coord
30th %ile Green (s)	19.4	48.8	48.8	10.7	40.1	40.1	13.8	54.0	54.0	17.5	57.7	57.7
30th %ile Term Code	Gap	Hold	Hold	Gap	Max	Max	Gap	Coord	Coord	Max	Coord	Coord
10th %ile Green (s)	16.2	44.1	44.1	8.4	36.3	36.3	11.1	60.5	60.5	18.0	67.4	67.4
10th %ile Term Code	Gap	Hold	Hold	Gap	Gap	Gap	Gap	Coord	Coord	Gap	Coord	Coord
Stops (vph)	336	1006	127	158	520	243	222	1394	27	294	1361	15
Fuel Used(gal)	14	38	7	6	17	11	9	49	3	13	42	1
CO Emissions (g/hr)	984	2678	510	396	1155	765	605	3395	187	879	2902	70
NOx Emissions (g/hr)	191	521	99	77	225	149	118	661	36	171	565	14
VOC Emissions (g/hr)	228	621	118	92	268	177	140	787	43	204	672	16
Dilemma Vehicles (#)	0	31	0	0	18	0	0	47	0	0	10	0
Queue Length 50th (ft)	203	426	132	95	219	313	134	626	11	196	613	12
Queue Length 95th (ft)	256	502	260	135	276	#576	183	#731	81	#294	681	42
Internal Link Dist (ft)		1673			726			1110			1237	
Turn Bay Length (ft)	300		300	300		350	400		425	375		425
Base Capacity (vph)	568	1459	624	354	1161	532	375	1757	719	377	1838	687
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.82	0.62	0.50	0.56	0.94	0.67	0.94	0.39	0.95	0.85	0.13

Intersection Summary

Cycle Length: 160

Queues

1: US-441/SR-7 & Griffin Road

06/02/2017

Actuated Cycle Length: 160

Offset: 25 (16%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 135

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 55.8

Intersection LOS: E

Intersection Capacity Utilization 89.1%

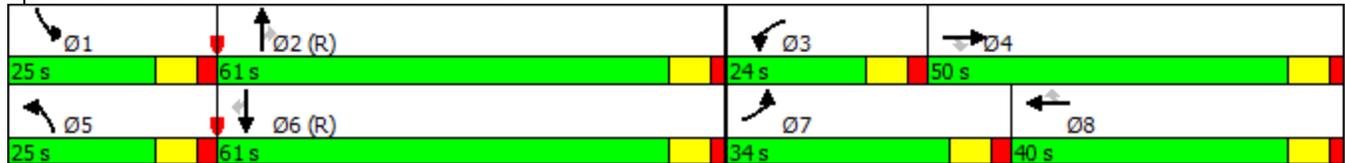
ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: US-441/SR-7 & Griffin Road



HCM 2010 Signalized Intersection Summary

1: US-441/SR-7 & Griffin Road

06/02/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	351	1104	356	164	597	459	231	1526	257	331	1442	85
Future Volume (veh/h)	351	1104	356	164	597	459	231	1526	257	331	1442	85
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	382	1200	387	178	649	499	251	1659	279	360	1567	92
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	426	1352	421	221	1049	327	293	1929	601	376	2052	638
Arrive On Green	0.12	0.27	0.27	0.06	0.21	0.21	0.09	0.38	0.38	0.04	0.13	0.13
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1583	3442	5085	1582
Grp Volume(v), veh/h	382	1200	387	178	649	499	251	1659	279	360	1567	92
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1583	1721	1695	1582
Q Serve(g_s), s	17.5	36.3	38.0	8.2	18.6	33.0	11.5	48.1	21.2	16.7	47.6	8.2
Cycle Q Clear(g_c), s	17.5	36.3	38.0	8.2	18.6	33.0	11.5	48.1	21.2	16.7	47.6	8.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	426	1352	421	221	1049	327	293	1929	601	376	2052	638
V/C Ratio(X)	0.90	0.89	0.92	0.81	0.62	1.53	0.86	0.86	0.46	0.96	0.76	0.14
Avail Cap(c_a), veh/h	570	1367	426	355	1049	327	376	1929	601	376	2052	638
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.77	0.77	0.77
Uniform Delay (d), s/veh	69.1	56.4	57.1	73.9	57.8	63.5	72.2	45.7	37.4	76.7	62.0	44.9
Incr Delay (d2), s/veh	11.5	7.1	24.3	2.7	0.8	252.6	11.9	5.3	2.6	29.7	2.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	17.9	19.4	4.0	8.8	37.3	6.0	23.5	9.8	9.5	22.8	3.7
LnGrp Delay(d),s/veh	80.6	63.6	81.4	76.6	58.6	316.1	84.1	51.0	40.0	106.4	64.1	45.3
LnGrp LOS	F	E	F	E	E	F	F	D	D	F	E	D
Approach Vol, veh/h		1969			1326			2189			2019	
Approach Delay, s/veh		70.4			157.9			53.4			70.8	
Approach LOS		E			F			D			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.0	67.7	17.8	49.5	21.1	71.6	27.3	40.0				
Change Period (Y+Rc), s	7.5	7.0	7.5	7.0	7.5	7.0	7.5	7.0				
Max Green Setting (Gmax), s	17.5	54.0	16.5	43.0	17.5	54.0	26.5	33.0				
Max Q Clear Time (g_c+I1), s	18.7	50.1	10.2	40.0	13.5	49.6	19.5	35.0				
Green Ext Time (p_c), s	0.0	3.8	0.1	2.5	0.1	4.2	0.3	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			81.0									
HCM 2010 LOS			F									

Queues

9: US-441/SR-7 & Orange Drive

06/02/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	203	116	208	2017	1737	155
Future Volume (vph)	203	116	208	2017	1737	155
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	3433	1583	1770	5085	5085	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	3433	1583	1770	5085	5085	1583
Satd. Flow (RTOR)		126				76
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	221	126	226	2192	1888	168
Shared Lane Traffic (%)						
Lane Group Flow (vph)	221	126	226	2192	1888	168
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			24	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm	Prot	Prot	NA	NA	Perm
Protected Phases		4	5		6	
Permitted Phases	4			2		6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	49.0	49.0	41.0	98.0	50.0	50.0
Total Split (s)	55.0	55.0	48.0	105.0	57.0	57.0
Total Split (%)	34.4%	34.4%	30.0%	65.6%	35.6%	35.6%
Maximum Green (s)	49.0	49.0	41.0	98.0	50.0	50.0
Yellow Time (s)	4.0	4.0	5.0	5.0	5.0	5.0

Queues

9: US-441/SR-7 & Orange Drive

06/02/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	7.0	7.0	7.0	7.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Min	Min	None	C-Max	C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effect Green (s)	15.7	15.7	25.8	131.3	98.5	98.5
Actuated g/C Ratio	0.10	0.10	0.16	0.82	0.62	0.62
v/c Ratio	0.66	0.47	0.79	0.53	0.60	0.17
Control Delay	78.6	15.6	55.5	18.6	21.0	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.6	15.6	55.5	18.6	21.0	8.7
LOS	E	B	E	B	C	A
Approach Delay	55.7			22.1	20.0	
Approach LOS	E			C	B	
90th %ile Green (s)	20.0	20.0	33.9	127.0	86.1	86.1
90th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Coord
70th %ile Green (s)	17.5	17.5	29.1	129.5	93.4	93.4
70th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Coord
50th %ile Green (s)	15.7	15.7	25.8	131.3	98.5	98.5
50th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Coord
30th %ile Green (s)	14.0	14.0	22.5	133.0	103.5	103.5
30th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Coord
10th %ile Green (s)	11.5	11.5	17.6	135.5	110.9	110.9
10th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Coord
Stops (vph)	194	17	200	1498	1043	38
Fuel Used(gal)	7	2	7	44	29	2
CO Emissions (g/hr)	495	129	463	3042	2032	106
NOx Emissions (g/hr)	96	25	90	592	395	21
VOC Emissions (g/hr)	115	30	107	705	471	25
Dilemma Vehicles (#)	0	0	0	136	54	0
Queue Length 50th (ft)	117	0	232	698	424	38
Queue Length 95th (ft)	159	65	m248	738	571	89
Internal Link Dist (ft)	1539			1237	689	
Turn Bay Length (ft)	175		225			215
Base Capacity (vph)	1051	572	453	4171	3129	1003
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.22	0.50	0.53	0.60	0.17

Intersection Summary

Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Queues

9: US-441/SR-7 & Orange Drive

06/02/2017

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 23.6

Intersection LOS: C

Intersection Capacity Utilization 67.5%

ICU Level of Service C

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: US-441/SR-7 & Orange Drive



HCM 2010 Signalized Intersection Summary

9: US-441/SR-7 & Orange Drive

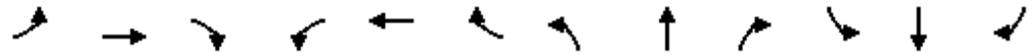
06/02/2017

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	 			  	  			
Traffic Volume (veh/h)	203	116	208	2017	1737	155		
Future Volume (veh/h)	203	116	208	2017	1737	155		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	221	126	226	2192	1888	168		
Adj No. of Lanes	2	1	1	3	3	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	337	155	253	4174	3226	1004		
Arrive On Green	0.10	0.10	0.05	0.27	0.63	0.63		
Sat Flow, veh/h	3442	1583	1774	5253	5253	1583		
Grp Volume(v), veh/h	221	126	226	2192	1888	168		
Grp Sat Flow(s),veh/h/ln	1721	1583	1774	1695	1695	1583		
Q Serve(g_s), s	9.9	12.5	20.3	58.6	34.5	6.9		
Cycle Q Clear(g_c), s	9.9	12.5	20.3	58.6	34.5	6.9		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	337	155	253	4174	3226	1004		
V/C Ratio(X)	0.66	0.81	0.89	0.53	0.59	0.17		
Avail Cap(c_a), veh/h	1054	485	455	4174	3226	1004		
HCM Platoon Ratio	1.00	1.00	0.33	0.33	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.26	0.26	1.00	1.00		
Uniform Delay (d), s/veh	69.6	70.7	75.0	31.8	17.0	12.0		
Incr Delay (d2), s/veh	2.2	9.7	3.1	0.1	0.8	0.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	4.8	11.0	10.2	27.7	16.3	3.1		
LnGrp Delay(d),s/veh	71.7	80.5	78.1	32.0	17.8	12.3		
LnGrp LOS	E	F	E	C	B	B		
Approach Vol, veh/h	347			2418	2056			
Approach Delay, s/veh	74.9			36.3	17.3			
Approach LOS	E			D	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	2		4		5	6		
Phs Duration (G+Y+Rc), s	138.3		21.7		29.8	108.5		
Change Period (Y+Rc), s	7.0		6.0		7.0	7.0		
Max Green Setting (Gmax), s	98.0		49.0		41.0	50.0		
Max Q Clear Time (g_c+I1), s	60.6		14.5		22.3	36.5		
Green Ext Time (p_c), s	35.6		1.2		0.6	13.2		
Intersection Summary								
HCM 2010 Ctrl Delay			31.0					
HCM 2010 LOS			C					

Queues

1: US-441/SR-7 & Griffin Road

06/02/2017

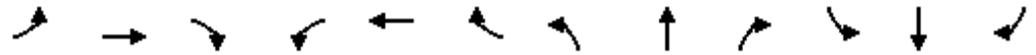


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	199	755	420	400	1213	471	464	1513	213	461	1658	233
Future Volume (vph)	199	755	420	400	1213	471	464	1513	213	461	1658	233
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor										1.00		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3432	5085	1583
Satd. Flow (RTOR)			235			250			232			234
Confl. Peds. (#/hr)										1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	216	821	457	435	1318	512	504	1645	232	501	1802	253
Shared Lane Traffic (%)												
Lane Group Flow (vph)	216	821	457	435	1318	512	504	1645	232	501	1802	253
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right									
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex											
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm									
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	17.5	40.0	40.0	17.5	40.0	40.0	19.5	54.0	54.0	19.5	54.0	54.0
Total Split (s)	25.0	47.0	47.0	25.0	47.0	47.0	27.0	61.0	61.0	27.0	61.0	61.0
Total Split (%)	15.6%	29.4%	29.4%	15.6%	29.4%	29.4%	16.9%	38.1%	38.1%	16.9%	38.1%	38.1%

Queues

1: US-441/SR-7 & Griffin Road

06/02/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	17.5	40.0	40.0	17.5	40.0	40.0	19.5	54.0	54.0	19.5	54.0	54.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.5	2.0	2.0	2.5	2.0	2.0	2.5	2.0	2.0	2.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	7.0	7.0	7.5	7.0	7.0	7.5	7.0	7.0	7.5	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.5	2.0	2.0	1.5	2.0	2.0	1.5	2.5	2.5	1.5	2.5	2.5
Recall Mode	None	None	None	None	None	None	Min	C-Min	C-Min	Min	C-Min	C-Min
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	13.8	40.0	40.0	17.5	43.7	43.7	19.5	54.0	54.0	19.5	54.0	54.0
Actuated g/C Ratio	0.09	0.25	0.25	0.11	0.27	0.27	0.12	0.34	0.34	0.12	0.34	0.34
v/c Ratio	0.73	0.65	0.80	1.16	0.95	0.83	1.21	0.96	0.34	1.20	1.05	0.37
Control Delay	85.6	56.4	38.2	157.2	71.3	40.5	169.7	65.6	5.5	166.6	71.3	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.6	56.4	38.2	157.2	71.3	40.5	169.7	65.6	5.5	166.6	71.3	5.3
LOS	F	E	D	F	E	D	F	E	A	F	E	A
Approach Delay		55.1			80.8			81.8			83.4	
Approach LOS		E			F			F			F	
90th %ile Green (s)	17.5	40.0	40.0	17.5	40.0	40.0	19.5	54.0	54.0	19.5	54.0	54.0
90th %ile Term Code	Max	Max	Max	Max	Max	Max	Max	Coord	Coord	Max	Coord	Coord
70th %ile Green (s)	15.6	40.0	40.0	17.5	41.9	41.9	19.5	54.0	54.0	19.5	54.0	54.0
70th %ile Term Code	Gap	Hold	Hold	Max	Max	Max	Max	Coord	Coord	Max	Coord	Coord
50th %ile Green (s)	13.9	40.0	40.0	17.5	43.6	43.6	19.5	54.0	54.0	19.5	54.0	54.0
50th %ile Term Code	Gap	Hold	Hold	Max	Max	Max	Max	Coord	Coord	Max	Coord	Coord
30th %ile Green (s)	12.2	40.0	40.0	17.5	45.3	45.3	19.5	54.0	54.0	19.5	54.0	54.0
30th %ile Term Code	Gap	Hold	Hold	Max	Max	Max	Max	Coord	Coord	Max	Coord	Coord
10th %ile Green (s)	9.8	40.0	40.0	17.5	47.7	47.7	19.5	54.0	54.0	19.5	54.0	54.0
10th %ile Term Code	Gap	Hold	Hold	Max	Max	Max	Max	Coord	Coord	Max	Coord	Coord
Stops (vph)	190	662	209	337	1088	241	382	1399	17	371	1499	58
Fuel Used(gal)	8	26	11	19	37	9	24	49	2	24	57	3
CO Emissions (g/hr)	566	1782	744	1334	2620	653	1703	3445	147	1691	3975	207
NOx Emissions (g/hr)	110	347	145	260	510	127	331	670	29	329	773	40
VOC Emissions (g/hr)	131	413	172	309	607	151	395	798	34	392	921	48
Dilemma Vehicles (#)	0	20	0	0	36	0	0	46	0	0	47	0
Queue Length 50th (ft)	115	284	233	~276	499	282	~329	618	0	~319	~752	67
Queue Length 95th (ft)	159	335	386	#391	#639	#504	#448	#720	62	#441	#846	48
Internal Link Dist (ft)		1673			726			1110			1237	
Turn Bay Length (ft)	300		300	300		350	400		425	375		425
Base Capacity (vph)	375	1271	572	375	1388	614	418	1716	687	418	1716	689
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.65	0.80	1.16	0.95	0.83	1.21	0.96	0.34	1.20	1.05	0.37

Intersection Summary

Cycle Length: 160

Queues

1: US-441/SR-7 & Griffin Road

06/02/2017

Actuated Cycle Length: 160

Offset: 25 (16%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.21

Intersection Signal Delay: 77.4

Intersection LOS: E

Intersection Capacity Utilization 98.6%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: US-441/SR-7 & Griffin Road

 Ø1	 Ø2 (R)	 Ø3	 Ø4
27 s	61 s	25 s	47 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
27 s	61 s	25 s	47 s

HCM 2010 Signalized Intersection Summary

1: US-441/SR-7 & Griffin Road

06/02/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	199	755	420	400	1213	471	464	1513	213	461	1658	233
Future Volume (veh/h)	199	755	420	400	1213	471	464	1513	213	461	1658	233
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	216	821	457	435	1318	512	504	1645	232	501	1802	253
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	259	1271	396	376	1445	450	419	1716	534	419	1716	534
Arrive On Green	0.08	0.25	0.25	0.11	0.28	0.28	0.12	0.34	0.34	0.04	0.11	0.11
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1583	3442	5085	1582
Grp Volume(v), veh/h	216	821	457	435	1318	512	504	1645	232	501	1802	253
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1583	1721	1695	1582
Q Serve(g_s), s	9.9	23.1	40.0	17.5	40.1	45.5	19.5	50.7	18.2	19.5	54.0	24.0
Cycle Q Clear(g_c), s	9.9	23.1	40.0	17.5	40.1	45.5	19.5	50.7	18.2	19.5	54.0	24.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	259	1271	396	376	1445	450	419	1716	534	419	1716	534
V/C Ratio(X)	0.83	0.65	1.15	1.16	0.91	1.14	1.20	0.96	0.43	1.19	1.05	0.47
Avail Cap(c_a), veh/h	376	1271	396	376	1445	450	419	1716	534	419	1716	534
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Uniform Delay (d), s/veh	73.0	53.7	60.0	71.3	55.3	57.3	70.3	51.9	41.1	76.8	71.1	57.8
Incr Delay (d2), s/veh	6.9	0.9	94.5	95.9	8.8	85.9	111.5	13.9	2.6	102.5	32.6	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	10.9	27.9	13.3	20.0	30.7	15.8	26.0	8.4	15.3	30.6	10.8
LnGrp Delay(d),s/veh	79.9	54.6	154.5	167.2	64.2	143.2	181.8	65.8	43.7	179.3	103.7	59.8
LnGrp LOS	E	D	F	F	E	F	F	E	D	F	F	E
Approach Vol, veh/h		1494			2265			2381			2556	
Approach Delay, s/veh		88.8			101.8			88.2			114.2	
Approach LOS		F			F			F			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.0	61.0	25.0	47.0	27.0	61.0	19.5	52.5				
Change Period (Y+Rc), s	7.5	7.0	7.5	7.0	7.5	7.0	7.5	7.0				
Max Green Setting (Gmax), s	19.5	54.0	17.5	40.0	19.5	54.0	17.5	40.0				
Max Q Clear Time (g_c+I1), s	21.5	52.7	19.5	42.0	21.5	56.0	11.9	47.5				
Green Ext Time (p_c), s	0.0	1.3	0.0	0.0	0.0	0.0	0.1	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			99.5									
HCM 2010 LOS			F									

Queues

9: US-441/SR-7 & Orange Drive

06/02/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	202	279	122	2032	2100	145
Future Volume (vph)	202	279	122	2032	2100	145
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	3433	1583	1770	5085	5085	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	3433	1583	1770	5085	5085	1583
Satd. Flow (RTOR)		263				81
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	220	303	133	2209	2283	158
Shared Lane Traffic (%)						
Lane Group Flow (vph)	220	303	133	2209	2283	158
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			24	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm	Prot	Prot	NA	NA	Perm
Protected Phases		4	5		6	
Permitted Phases	4			2		6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	36.0	36.0	25.0	111.0	81.0	81.0
Total Split (s)	42.0	42.0	32.0	118.0	86.0	86.0
Total Split (%)	26.3%	26.3%	20.0%	73.8%	53.8%	53.8%
Maximum Green (s)	36.0	36.0	25.0	111.0	79.0	79.0
Yellow Time (s)	4.0	4.0	5.0	5.0	5.0	5.0

Queues

9: US-441/SR-7 & Orange Drive

06/02/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	7.0	7.0	7.0	7.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Min	Min	None	C-Max	C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effect Green (s)	16.2	16.2	17.3	130.8	106.5	106.5
Actuated g/C Ratio	0.10	0.10	0.11	0.82	0.67	0.67
v/c Ratio	0.63	0.77	0.70	0.53	0.67	0.15
Control Delay	76.8	25.0	61.4	10.0	18.7	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.8	25.0	61.4	10.0	18.7	6.1
LOS	E	C	E	A	B	A
Approach Delay	46.8			12.9	17.9	
Approach LOS	D			B	B	
90th %ile Green (s)	23.0	23.0	23.5	124.0	93.5	93.5
90th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Coord
70th %ile Green (s)	17.3	17.3	19.9	129.7	102.8	102.8
70th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Coord
50th %ile Green (s)	15.6	15.6	17.3	131.4	107.1	107.1
50th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Coord
30th %ile Green (s)	13.9	13.9	14.7	133.1	111.4	111.4
30th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Coord
10th %ile Green (s)	11.4	11.4	11.1	135.6	117.5	117.5
10th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Coord
Stops (vph)	192	53	118	736	1251	28
Fuel Used(gal)	7	5	4	31	34	1
CO Emissions (g/hr)	487	355	282	2143	2379	88
NOx Emissions (g/hr)	95	69	55	417	463	17
VOC Emissions (g/hr)	113	82	65	497	551	20
Dilemma Vehicles (#)	0	0	0	147	65	0
Queue Length 50th (ft)	116	40	143	323	495	26
Queue Length 95th (ft)	155	145	m159	m379	694	69
Internal Link Dist (ft)	1539			1237	689	
Turn Bay Length (ft)	175		225			215
Base Capacity (vph)	772	560	276	4155	3383	1080
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.54	0.48	0.53	0.67	0.15

Intersection Summary

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Queues

9: US-441/SR-7 & Orange Drive

06/02/2017

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 18.5

Intersection LOS: B

Intersection Capacity Utilization 69.8%

ICU Level of Service C

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: US-441/SR-7 & Orange Drive



HCM 2010 Signalized Intersection Summary

9: US-441/SR-7 & Orange Drive

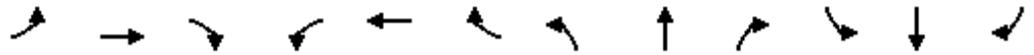
06/02/2017

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	 			  	  			
Traffic Volume (veh/h)	202	279	122	2032	2100	145		
Future Volume (veh/h)	202	279	122	2032	2100	145		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	220	303	133	2209	2283	158		
Adj No. of Lanes	2	1	1	3	3	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	707	325	157	3628	2956	920		
Arrive On Green	0.21	0.21	0.03	0.24	0.58	0.58		
Sat Flow, veh/h	3442	1583	1774	5253	5253	1583		
Grp Volume(v), veh/h	220	303	133	2209	2283	158		
Grp Sat Flow(s),veh/h/ln	1721	1583	1774	1695	1695	1583		
Q Serve(g_s), s	8.7	30.1	11.9	62.0	54.6	7.4		
Cycle Q Clear(g_c), s	8.7	30.1	11.9	62.0	54.6	7.4		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	707	325	157	3628	2956	920		
V/C Ratio(X)	0.31	0.93	0.85	0.61	0.77	0.17		
Avail Cap(c_a), veh/h	774	356	277	3628	2956	920		
HCM Platoon Ratio	1.00	1.00	0.33	0.33	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.29	0.29	1.00	1.00		
Uniform Delay (d), s/veh	54.0	62.5	76.6	41.2	25.5	15.6		
Incr Delay (d2), s/veh	0.2	29.6	3.8	0.2	2.0	0.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	4.1	26.8	6.0	29.2	25.9	3.4		
LnGrp Delay(d),s/veh	54.2	92.0	80.4	41.5	27.5	16.0		
LnGrp LOS	D	F	F	D	C	B		
Approach Vol, veh/h	523			2342	2441			
Approach Delay, s/veh	76.1			43.7	26.7			
Approach LOS	E			D	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		121.1		38.9	21.2	100.0		
Change Period (Y+Rc), s		7.0		6.0	7.0	7.0		
Max Green Setting (Gmax), s		111.0		36.0	25.0	79.0		
Max Q Clear Time (g_c+I1), s		64.0		32.1	13.9	56.6		
Green Ext Time (p_c), s		45.4		0.8	0.2	22.0		
Intersection Summary								
HCM 2010 Ctrl Delay			39.1					
HCM 2010 LOS			D					

Queues

1: US-441/SR-7 & Griffin Road

06/02/2017

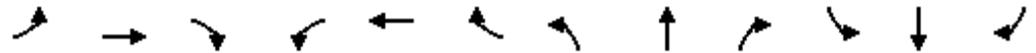


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	369	1160	374	172	627	482	243	1604	270	348	1516	89
Future Volume (vph)	369	1160	374	172	627	482	243	1604	270	348	1516	89
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor										1.00		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3432	5085	1583
Satd. Flow (RTOR)			236			220			262			181
Confl. Peds. (#/hr)										1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	401	1261	407	187	682	524	264	1743	293	378	1648	97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	401	1261	407	187	682	524	264	1743	293	378	1648	97
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right									
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex											
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm									
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	26.5	43.0	43.0	16.5	33.0	33.0	17.5	54.0	54.0	17.5	54.0	54.0
Total Split (s)	34.0	50.0	50.0	24.0	40.0	40.0	25.0	61.0	61.0	25.0	61.0	61.0
Total Split (%)	21.3%	31.3%	31.3%	15.0%	25.0%	25.0%	15.6%	38.1%	38.1%	15.6%	38.1%	38.1%

Queues

1: US-441/SR-7 & Griffin Road

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	26.5	43.0	43.0	16.5	33.0	33.0	17.5	54.0	54.0	17.5	54.0	54.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.5	2.0	2.0	2.5	2.0	2.0	2.5	2.0	2.0	2.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	7.0	7.0	7.5	7.0	7.0	7.5	7.0	7.0	7.5	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	1.5	2.0	2.0	1.5	2.0	2.0	1.5	2.5	2.5	1.5	2.5	2.5
Recall Mode	None	None	None	None	None	None	Min	C-Min	C-Min	Min	C-Min	C-Min
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	22.2	46.9	46.9	12.6	37.3	37.3	15.4	54.0	54.0	17.5	56.1	56.1
Actuated g/C Ratio	0.14	0.29	0.29	0.08	0.23	0.23	0.10	0.34	0.34	0.11	0.35	0.35
v/c Ratio	0.84	0.85	0.65	0.69	0.58	0.98	0.80	1.02	0.41	1.01	0.92	0.14
Control Delay	83.4	59.6	25.6	85.1	57.2	67.6	88.7	77.4	8.0	103.0	46.3	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.4	59.6	25.6	85.1	57.2	67.6	88.7	77.4	8.0	103.0	46.3	4.6
LOS	F	E	C	F	E	E	F	E	A	F	D	A
Approach Delay		57.5			64.8			69.9			54.5	
Approach LOS		E			E			E			D	
90th %ile Green (s)	26.5	43.1	43.1	16.4	33.0	33.0	17.5	54.0	54.0	17.5	54.0	54.0
90th %ile Term Code	Max	Max	Max	Gap	Max	Max	Max	Coord	Coord	Max	Coord	Coord
70th %ile Green (s)	24.8	45.3	45.3	14.2	34.7	34.7	17.5	54.0	54.0	17.5	54.0	54.0
70th %ile Term Code	Gap	Max	Max	Gap	Max	Max	Max	Coord	Coord	Max	Coord	Coord
50th %ile Green (s)	22.5	46.9	46.9	12.6	37.0	37.0	16.2	54.0	54.0	17.5	55.3	55.3
50th %ile Term Code	Gap	Max	Max	Gap	Max	Max	Gap	Coord	Coord	Max	Coord	Coord
30th %ile Green (s)	20.2	48.5	48.5	11.0	39.3	39.3	14.3	54.0	54.0	17.5	57.2	57.2
30th %ile Term Code	Gap	Hold	Hold	Gap	Max	Max	Gap	Coord	Coord	Max	Coord	Coord
10th %ile Green (s)	16.9	50.7	50.7	8.8	42.6	42.6	11.6	54.0	54.0	17.5	59.9	59.9
10th %ile Term Code	Gap	Hold	Hold	Gap	Max	Max	Gap	Coord	Coord	Max	Coord	Coord
Stops (vph)	354	1048	150	166	546	258	235	1471	34	307	1446	16
Fuel Used(gal)	15	40	8	6	17	12	9	56	3	14	45	1
CO Emissions (g/hr)	1039	2818	564	415	1214	864	642	3912	206	985	3162	73
NOx Emissions (g/hr)	202	548	110	81	236	168	125	761	40	192	615	14
VOC Emissions (g/hr)	241	653	131	96	281	200	149	907	48	228	733	17
Dilemma Vehicles (#)	0	33	0	0	19	0	0	48	0	0	10	0
Queue Length 50th (ft)	213	456	158	100	234	356	141	~702	22	~203	665	14
Queue Length 95th (ft)	268	#544	294	141	291	#638	191	#797	97	#317	#736	m37
Internal Link Dist (ft)		1673			726			1110			1237	
Turn Bay Length (ft)	300		300	300		350	400		425	375		425
Base Capacity (vph)	568	1490	630	354	1185	537	375	1716	707	375	1782	672
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.85	0.65	0.53	0.58	0.98	0.70	1.02	0.41	1.01	0.92	0.14

Intersection Summary

Cycle Length: 160

Queues

1: US-441/SR-7 & Griffin Road

06/02/2017

Actuated Cycle Length: 160

Offset: 25 (16%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 135

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay: 61.6

Intersection LOS: E

Intersection Capacity Utilization 92.4%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

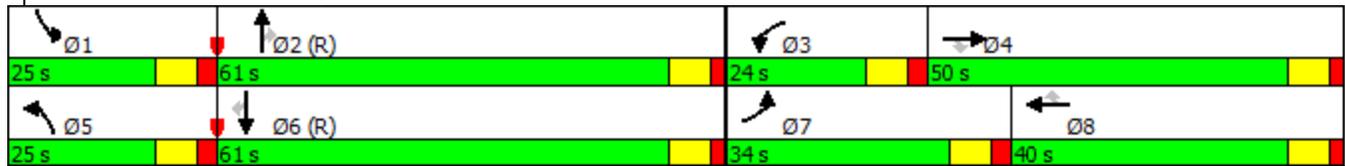
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: US-441/SR-7 & Griffin Road



HCM 2010 Signalized Intersection Summary

1: US-441/SR-7 & Griffin Road

06/02/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	369	1160	374	172	627	482	243	1604	270	348	1516	89
Future Volume (veh/h)	369	1160	374	172	627	482	243	1604	270	348	1516	89
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	401	1261	407	187	682	524	264	1743	293	378	1648	97
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	445	1366	425	230	1049	327	306	1901	592	376	2006	624
Arrive On Green	0.13	0.27	0.27	0.07	0.21	0.21	0.09	0.37	0.37	0.04	0.13	0.13
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1583	3442	5085	1582
Grp Volume(v), veh/h	401	1261	407	187	682	524	264	1743	293	378	1648	97
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1583	1721	1695	1582
Q Serve(g_s), s	18.4	38.6	40.5	8.6	19.7	33.0	12.1	52.2	22.7	17.5	50.5	8.7
Cycle Q Clear(g_c), s	18.4	38.6	40.5	8.6	19.7	33.0	12.1	52.2	22.7	17.5	50.5	8.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	445	1366	425	230	1049	327	306	1901	592	376	2006	624
V/C Ratio(X)	0.90	0.92	0.96	0.81	0.65	1.60	0.86	0.92	0.49	1.00	0.82	0.16
Avail Cap(c_a), veh/h	570	1367	426	355	1049	327	376	1901	592	376	2006	624
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.73	0.73	0.73
Uniform Delay (d), s/veh	68.7	56.9	57.6	73.7	58.2	63.5	71.9	47.7	38.5	77.1	64.1	45.9
Incr Delay (d2), s/veh	13.0	10.4	32.3	4.2	1.1	286.0	13.7	8.5	2.9	40.7	2.9	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.5	19.4	21.6	4.2	9.3	40.4	6.3	25.9	10.4	10.5	24.3	3.9
LnGrp Delay(d),s/veh	81.7	67.3	89.9	77.9	59.3	349.5	85.6	56.2	41.4	117.8	67.0	46.3
LnGrp LOS	F	E	F	E	E	F	F	E	D	F	E	D
Approach Vol, veh/h		2069			1393			2300			2123	
Approach Delay, s/veh		74.5			171.0			57.7			75.1	
Approach LOS		E			F			E			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.0	66.8	18.2	50.0	21.7	70.1	28.2	40.0				
Change Period (Y+Rc), s	7.5	7.0	7.5	7.0	7.5	7.0	7.5	7.0				
Max Green Setting (Gmax), s	17.5	54.0	16.5	43.0	17.5	54.0	26.5	33.0				
Max Q Clear Time (g_c+I1), s	19.5	54.2	10.6	42.5	14.1	52.5	20.4	35.0				
Green Ext Time (p_c), s	0.0	0.0	0.1	0.5	0.1	1.5	0.3	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			86.8									
HCM 2010 LOS			F									

Queues

9: US-441/SR-7 & Orange Drive

06/02/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	213	122	219	2120	1825	163
Future Volume (vph)	213	122	219	2120	1825	163
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	3433	1583	1770	5085	5085	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	3433	1583	1770	5085	5085	1583
Satd. Flow (RTOR)		133				76
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	232	133	238	2304	1984	177
Shared Lane Traffic (%)						
Lane Group Flow (vph)	232	133	238	2304	1984	177
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			24	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm	Prot	Prot	NA	NA	Perm
Protected Phases		4	5		6	
Permitted Phases	4			2		6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	49.0	49.0	41.0	98.0	50.0	50.0
Total Split (s)	55.0	55.0	48.0	105.0	57.0	57.0
Total Split (%)	34.4%	34.4%	30.0%	65.6%	35.6%	35.6%
Maximum Green (s)	49.0	49.0	41.0	98.0	50.0	50.0
Yellow Time (s)	4.0	4.0	5.0	5.0	5.0	5.0

Queues

9: US-441/SR-7 & Orange Drive

06/02/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	7.0	7.0	7.0	7.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Min	Min	None	C-Max	C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effect Green (s)	16.2	16.2	26.9	130.8	96.9	96.9
Actuated g/C Ratio	0.10	0.10	0.17	0.82	0.61	0.61
v/c Ratio	0.67	0.47	0.80	0.55	0.64	0.18
Control Delay	78.6	15.2	52.4	20.4	22.9	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.6	15.2	52.4	20.4	22.9	9.6
LOS	E	B	D	C	C	A
Approach Delay	55.5			23.4	21.8	
Approach LOS	E			C	C	
90th %ile Green (s)	20.6	20.6	35.2	126.4	84.2	84.2
90th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Coord
70th %ile Green (s)	18.0	18.0	30.3	129.0	91.7	91.7
70th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Coord
50th %ile Green (s)	16.2	16.2	26.9	130.8	96.9	96.9
50th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Coord
30th %ile Green (s)	14.5	14.5	23.5	132.5	102.0	102.0
30th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Coord
10th %ile Green (s)	11.9	11.9	18.4	135.1	109.7	109.7
10th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Coord
Stops (vph)	202	17	206	1684	1162	41
Fuel Used(gal)	7	2	7	48	32	2
CO Emissions (g/hr)	518	135	473	3346	2241	115
NOx Emissions (g/hr)	101	26	92	651	436	22
VOC Emissions (g/hr)	120	31	110	776	519	27
Dilemma Vehicles (#)	0	0	0	139	57	0
Queue Length 50th (ft)	122	0	244	735	472	43
Queue Length 95th (ft)	166	66	m249	m741	634	98
Internal Link Dist (ft)	1539			1237	689	
Turn Bay Length (ft)	175		225			215
Base Capacity (vph)	1051	577	453	4155	3079	988
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.23	0.53	0.55	0.64	0.18

Intersection Summary

Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Queues

9: US-441/SR-7 & Orange Drive

06/02/2017

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 25.0

Intersection LOS: C

Intersection Capacity Utilization 70.1%

ICU Level of Service C

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: US-441/SR-7 & Orange Drive



HCM 2010 Signalized Intersection Summary
 9: US-441/SR-7 & Orange Drive

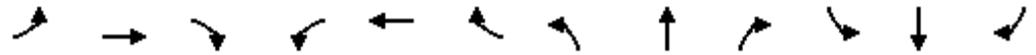
06/02/2017

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	 			  	  			
Traffic Volume (veh/h)	213	122	219	2120	1825	163		
Future Volume (veh/h)	213	122	219	2120	1825	163		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	232	133	238	2304	1984	177		
Adj No. of Lanes	2	1	1	3	3	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	353	163	265	4150	3167	986		
Arrive On Green	0.10	0.10	0.05	0.27	0.62	0.62		
Sat Flow, veh/h	3442	1583	1774	5253	5253	1583		
Grp Volume(v), veh/h	232	133	238	2304	1984	177		
Grp Sat Flow(s),veh/h/ln	1721	1583	1774	1695	1695	1583		
Q Serve(g_s), s	10.4	13.2	21.4	62.3	38.6	7.6		
Cycle Q Clear(g_c), s	10.4	13.2	21.4	62.3	38.6	7.6		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	353	163	265	4150	3167	986		
V/C Ratio(X)	0.66	0.82	0.90	0.56	0.63	0.18		
Avail Cap(c_a), veh/h	1054	485	455	4150	3167	986		
HCM Platoon Ratio	1.00	1.00	0.33	0.33	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.13	0.13	1.00	1.00		
Uniform Delay (d), s/veh	69.1	70.3	74.8	33.5	18.7	12.8		
Incr Delay (d2), s/veh	2.1	9.6	1.9	0.1	0.9	0.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	5.0	11.6	10.7	29.4	18.3	3.4		
LnGrp Delay(d),s/veh	71.2	80.0	76.7	33.6	19.6	13.2		
LnGrp LOS	E	E	E	C	B	B		
Approach Vol, veh/h	365			2542	2161			
Approach Delay, s/veh	74.4			37.6	19.1			
Approach LOS	E			D	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	2		4		5	6		
Phs Duration (G+Y+Rc), s	137.6		22.4		30.9	106.6		
Change Period (Y+Rc), s	7.0		6.0		7.0	7.0		
Max Green Setting (Gmax), s	98.0		49.0		41.0	50.0		
Max Q Clear Time (g_c+I1), s	64.3		15.2		23.4	40.6		
Green Ext Time (p_c), s	32.6		1.3		0.6	9.3		
Intersection Summary								
HCM 2010 Ctrl Delay			32.4					
HCM 2010 LOS			C					

Queues

1: US-441/SR-7 & Griffin Road

06/02/2017

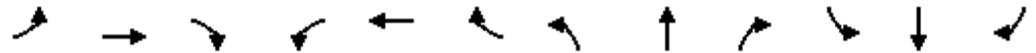


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	209	794	441	420	1275	495	488	1590	224	484	1743	245
Future Volume (vph)	209	794	441	420	1275	495	488	1590	224	484	1743	245
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor										1.00		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3432	5085	1583
Satd. Flow (RTOR)			235			247			235			234
Confl. Peds. (#/hr)										1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	227	863	479	457	1386	538	530	1728	243	526	1895	266
Shared Lane Traffic (%)												
Lane Group Flow (vph)	227	863	479	457	1386	538	530	1728	243	526	1895	266
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right									
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex											
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm									
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	17.5	40.0	40.0	17.5	40.0	40.0	19.5	54.0	54.0	19.5	54.0	54.0
Total Split (s)	25.0	47.0	47.0	25.0	47.0	47.0	27.0	61.0	61.0	27.0	61.0	61.0
Total Split (%)	15.6%	29.4%	29.4%	15.6%	29.4%	29.4%	16.9%	38.1%	38.1%	16.9%	38.1%	38.1%

Queues

1: US-441/SR-7 & Griffin Road

06/02/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	17.5	40.0	40.0	17.5	40.0	40.0	19.5	54.0	54.0	19.5	54.0	54.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.5	2.0	2.0	2.5	2.0	2.0	2.5	2.0	2.0	2.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	7.0	7.0	7.5	7.0	7.0	7.5	7.0	7.0	7.5	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.5	2.0	2.0	1.5	2.0	2.0	1.5	2.5	2.5	1.5	2.5	2.5
Recall Mode	None	None	None	None	None	None	Min	C-Min	C-Min	Min	C-Min	C-Min
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	14.2	40.0	40.0	17.5	43.3	43.3	19.5	54.0	54.0	19.5	54.0	54.0
Actuated g/C Ratio	0.09	0.25	0.25	0.11	0.27	0.27	0.12	0.34	0.34	0.12	0.34	0.34
v/c Ratio	0.74	0.68	0.84	1.22	1.01	0.88	1.27	1.01	0.35	1.26	1.10	0.39
Control Delay	86.0	57.4	42.3	176.7	83.1	47.2	191.8	75.5	6.3	188.4	90.5	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.0	57.4	42.3	176.7	83.1	47.2	191.8	75.5	6.3	188.4	90.5	5.5
LOS	F	E	D	F	F	D	F	E	A	F	F	A
Approach Delay		56.9			92.9			93.4			101.2	
Approach LOS		E			F			F			F	
90th %ile Green (s)	17.5	40.0	40.0	17.5	40.0	40.0	19.5	54.0	54.0	19.5	54.0	54.0
90th %ile Term Code	Max	Max	Max	Max	Max	Max	Max	Coord	Coord	Max	Coord	Coord
70th %ile Green (s)	16.2	40.0	40.0	17.5	41.3	41.3	19.5	54.0	54.0	19.5	54.0	54.0
70th %ile Term Code	Gap	Max	Max	Max	Max	Max	Max	Coord	Coord	Max	Coord	Coord
50th %ile Green (s)	14.5	40.0	40.0	17.5	43.0	43.0	19.5	54.0	54.0	19.5	54.0	54.0
50th %ile Term Code	Gap	Hold	Hold	Max	Max	Max	Max	Coord	Coord	Max	Coord	Coord
30th %ile Green (s)	12.7	40.0	40.0	17.5	44.8	44.8	19.5	54.0	54.0	19.5	54.0	54.0
30th %ile Term Code	Gap	Hold	Hold	Max	Max	Max	Max	Coord	Coord	Max	Coord	Coord
10th %ile Green (s)	10.2	40.0	40.0	17.5	47.3	47.3	19.5	54.0	54.0	19.5	54.0	54.0
10th %ile Term Code	Gap	Hold	Hold	Max	Max	Max	Max	Coord	Coord	Max	Coord	Coord
Stops (vph)	201	705	230	343	1131	267	391	1461	22	380	1525	61
Fuel Used(gal)	9	27	12	22	42	11	28	55	2	27	66	3
CO Emissions (g/hr)	597	1893	816	1508	2957	746	1936	3837	160	1918	4612	219
NOx Emissions (g/hr)	116	368	159	293	575	145	377	746	31	373	897	43
VOC Emissions (g/hr)	138	439	189	350	685	173	449	889	37	444	1069	51
Dilemma Vehicles (#)	0	22	0	0	37	0	0	48	0	0	56	0
Queue Length 50th (ft)	121	301	263	~301	~557	324	~358	~672	6	~348	~826	64
Queue Length 95th (ft)	167	353	#453	#418	#692	#569	#480	#784	70	#472	#905	35
Internal Link Dist (ft)		1673			726			1110			1237	
Turn Bay Length (ft)	300		300	300		350	400		425	375		425
Base Capacity (vph)	375	1271	572	375	1375	608	418	1716	689	418	1716	689
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.68	0.84	1.22	1.01	0.88	1.27	1.01	0.35	1.26	1.10	0.39

Intersection Summary

Cycle Length: 160

Queues

1: US-441/SR-7 & Griffin Road

06/02/2017

Actuated Cycle Length: 160

Offset: 25 (16%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.27

Intersection Signal Delay: 89.3

Intersection LOS: F

Intersection Capacity Utilization 102.4%

ICU Level of Service G

Analysis Period (min) 15

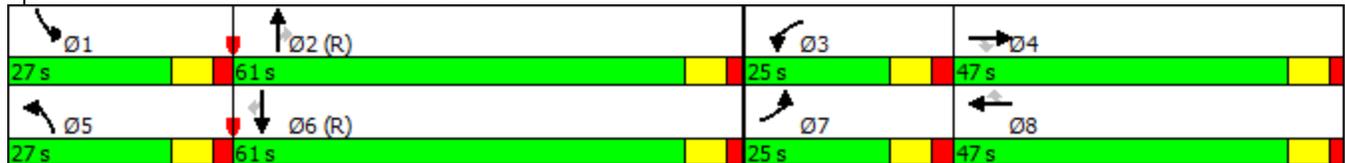
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: US-441/SR-7 & Griffin Road



HCM 2010 Signalized Intersection Summary

1: US-441/SR-7 & Griffin Road

06/02/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	209	794	441	420	1275	495	488	1590	224	484	1743	245
Future Volume (veh/h)	209	794	441	420	1275	495	488	1590	224	484	1743	245
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	227	863	479	457	1386	538	530	1728	243	526	1895	266
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	270	1271	396	376	1429	445	419	1716	534	419	1716	534
Arrive On Green	0.08	0.25	0.25	0.11	0.28	0.28	0.12	0.34	0.34	0.04	0.11	0.11
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1583	3442	5085	1582
Grp Volume(v), veh/h	227	863	479	457	1386	538	530	1728	243	526	1895	266
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1583	1721	1695	1582
Q Serve(g_s), s	10.4	24.5	40.0	17.5	43.1	45.0	19.5	54.0	19.2	19.5	54.0	25.3
Cycle Q Clear(g_c), s	10.4	24.5	40.0	17.5	43.1	45.0	19.5	54.0	19.2	19.5	54.0	25.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	270	1271	396	376	1429	445	419	1716	534	419	1716	534
V/C Ratio(X)	0.84	0.68	1.21	1.21	0.97	1.21	1.26	1.01	0.45	1.25	1.10	0.50
Avail Cap(c_a), veh/h	376	1271	396	376	1429	445	419	1716	534	419	1716	534
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.61	0.61	0.61
Uniform Delay (d), s/veh	72.8	54.2	60.0	71.3	56.8	57.5	70.3	53.0	41.5	76.8	71.1	58.3
Incr Delay (d2), s/veh	8.6	1.2	115.9	118.4	17.0	113.5	136.5	23.4	2.8	126.1	52.9	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	11.6	30.2	14.5	22.4	33.7	17.2	29.0	8.8	16.6	33.8	11.4
LnGrp Delay(d),s/veh	81.3	55.4	175.9	189.6	73.8	171.0	206.7	76.4	44.3	202.9	124.0	60.4
LnGrp LOS	F	E	F	F	E	F	F	F	D	F	F	E
Approach Vol, veh/h		1569			2381			2501			2687	
Approach Delay, s/veh		95.9			118.0			100.9			133.1	
Approach LOS		F			F			F			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.0	61.0	25.0	47.0	27.0	61.0	20.0	52.0				
Change Period (Y+Rc), s	7.5	7.0	7.5	7.0	7.5	7.0	7.5	7.0				
Max Green Setting (Gmax), s	19.5	54.0	17.5	40.0	19.5	54.0	17.5	40.0				
Max Q Clear Time (g_c+I1), s	21.5	56.0	19.5	42.0	21.5	56.0	12.4	47.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			114.0									
HCM 2010 LOS			F									

Queues

9: US-441/SR-7 & Orange Drive

06/02/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	212	293	128	2136	2207	152
Future Volume (vph)	212	293	128	2136	2207	152
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	3433	1583	1770	5085	5085	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	3433	1583	1770	5085	5085	1583
Satd. Flow (RTOR)		263				80
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	230	318	139	2322	2399	165
Shared Lane Traffic (%)						
Lane Group Flow (vph)	230	318	139	2322	2399	165
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			24	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm	Prot	Prot	NA	NA	Perm
Protected Phases		4	5		6	
Permitted Phases	4			2		6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	36.0	36.0	25.0	111.0	81.0	81.0
Total Split (s)	42.0	42.0	32.0	118.0	86.0	86.0
Total Split (%)	26.3%	26.3%	20.0%	73.8%	53.8%	53.8%
Maximum Green (s)	36.0	36.0	25.0	111.0	79.0	79.0
Yellow Time (s)	4.0	4.0	5.0	5.0	5.0	5.0

Queues

9: US-441/SR-7 & Orange Drive

06/02/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	7.0	7.0	7.0	7.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Min	Min	None	C-Max	C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effect Green (s)	17.2	17.2	17.8	129.8	105.0	105.0
Actuated g/C Ratio	0.11	0.11	0.11	0.81	0.66	0.66
v/c Ratio	0.62	0.79	0.71	0.56	0.72	0.15
Control Delay	75.3	27.9	60.3	11.8	20.9	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.3	27.9	60.3	11.8	20.9	6.9
LOS	E	C	E	B	C	A
Approach Delay	47.8			14.5	20.0	
Approach LOS	D			B	C	
90th %ile Green (s)	25.9	25.9	24.2	121.1	89.9	89.9
90th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Coord
70th %ile Green (s)	17.8	17.8	20.4	129.2	101.8	101.8
70th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Coord
50th %ile Green (s)	16.1	16.1	17.8	130.9	106.1	106.1
50th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Coord
30th %ile Green (s)	14.3	14.3	15.3	132.7	110.4	110.4
30th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Coord
10th %ile Green (s)	11.8	11.8	11.4	135.2	116.8	116.8
10th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Coord
Stops (vph)	198	64	124	881	1416	31
Fuel Used(gal)	7	6	4	34	38	1
CO Emissions (g/hr)	504	390	294	2400	2659	95
NOx Emissions (g/hr)	98	76	57	467	517	18
VOC Emissions (g/hr)	117	90	68	556	616	22
Dilemma Vehicles (#)	0	0	0	150	69	0
Queue Length 50th (ft)	121	55	151	366	553	30
Queue Length 95th (ft)	157	163	m158	m401	804	79
Internal Link Dist (ft)	1539			1237	689	
Turn Bay Length (ft)	175		225			215
Base Capacity (vph)	772	560	276	4125	3337	1066
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.57	0.50	0.56	0.72	0.15

Intersection Summary

Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Queues

9: US-441/SR-7 & Orange Drive

06/02/2017

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 20.3

Intersection LOS: C

Intersection Capacity Utilization 72.4%

ICU Level of Service C

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: US-441/SR-7 & Orange Drive



HCM 2010 Signalized Intersection Summary
 9: US-441/SR-7 & Orange Drive

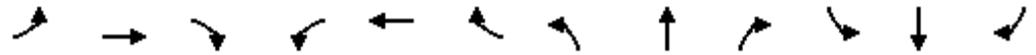
06/02/2017

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	 			  	  			
Traffic Volume (veh/h)	212	293	128	2136	2207	152		
Future Volume (veh/h)	212	293	128	2136	2207	152		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	230	318	139	2322	2399	165		
Adj No. of Lanes	2	1	1	3	3	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	735	338	163	3586	2897	902		
Arrive On Green	0.21	0.21	0.03	0.23	0.57	0.57		
Sat Flow, veh/h	3442	1583	1774	5253	5253	1583		
Grp Volume(v), veh/h	230	318	139	2322	2399	165		
Grp Sat Flow(s),veh/h/ln	1721	1583	1774	1695	1695	1583		
Q Serve(g_s), s	9.0	31.6	12.5	66.0	61.5	8.0		
Cycle Q Clear(g_c), s	9.0	31.6	12.5	66.0	61.5	8.0		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	735	338	163	3586	2897	902		
V/C Ratio(X)	0.31	0.94	0.85	0.65	0.83	0.18		
Avail Cap(c_a), veh/h	774	356	277	3586	2897	902		
HCM Platoon Ratio	1.00	1.00	0.33	0.33	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.19	0.19	1.00	1.00		
Uniform Delay (d), s/veh	53.0	61.9	76.5	43.4	28.1	16.5		
Incr Delay (d2), s/veh	0.2	32.0	2.6	0.2	2.9	0.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	4.3	28.2	6.3	31.1	29.4	3.6		
LnGrp Delay(d),s/veh	53.3	93.9	79.1	43.6	30.9	17.0		
LnGrp LOS	D	F	E	D	C	B		
Approach Vol, veh/h	548			2461	2564			
Approach Delay, s/veh	76.8			45.6	30.0			
Approach LOS	E			D	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		119.8		40.2	21.7	98.1		
Change Period (Y+Rc), s		7.0		6.0	7.0	7.0		
Max Green Setting (Gmax), s		111.0		36.0	25.0	79.0		
Max Q Clear Time (g_c+I1), s		68.0		33.6	14.5	63.5		
Green Ext Time (p_c), s		42.1		0.5	0.2	15.4		
Intersection Summary								
HCM 2010 Ctrl Delay			41.5					
HCM 2010 LOS			D					

Queues

1: US-441/SR-7 & Griffin Road

06/02/2017

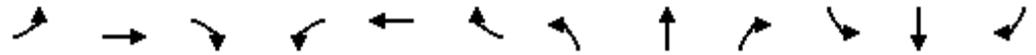


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	384	1164	374	191	659	495	243	1612	274	374	1516	89
Future Volume (vph)	384	1164	374	191	659	495	243	1612	274	374	1516	89
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor										1.00		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3432	5085	1583
Satd. Flow (RTOR)			232			219			261			181
Confl. Peds. (#/hr)										1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	417	1265	407	208	716	538	264	1752	298	407	1648	97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	417	1265	407	208	716	538	264	1752	298	407	1648	97
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right									
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex											
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm									
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	26.5	43.0	43.0	16.5	33.0	33.0	17.5	54.0	54.0	17.5	54.0	54.0
Total Split (s)	34.0	50.0	50.0	24.0	40.0	40.0	25.0	61.0	61.0	25.0	61.0	61.0
Total Split (%)	21.3%	31.3%	31.3%	15.0%	25.0%	25.0%	15.6%	38.1%	38.1%	15.6%	38.1%	38.1%

Queues

1: US-441/SR-7 & Griffin Road

06/02/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	26.5	43.0	43.0	16.5	33.0	33.0	17.5	54.0	54.0	17.5	54.0	54.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.5	2.0	2.0	2.5	2.0	2.0	2.5	2.0	2.0	2.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	7.0	7.0	7.5	7.0	7.0	7.5	7.0	7.0	7.5	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	1.5	2.0	2.0	1.5	2.0	2.0	1.5	2.5	2.5	1.5	2.5	2.5
Recall Mode	None	None	None	None	None	None	Min	C-Min	C-Min	Min	C-Min	C-Min
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	22.8	46.2	46.2	13.3	36.7	36.7	15.4	54.0	54.0	17.5	56.1	56.1
Actuated g/C Ratio	0.14	0.29	0.29	0.08	0.23	0.23	0.10	0.34	0.34	0.11	0.35	0.35
v/c Ratio	0.85	0.86	0.66	0.73	0.61	1.01	0.80	1.02	0.42	1.09	0.92	0.14
Control Delay	83.8	61.1	26.6	86.2	58.5	77.2	88.7	78.7	8.5	121.9	45.7	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.8	61.1	26.6	86.2	58.5	77.2	88.7	78.7	8.5	121.9	45.7	4.3
LOS	F	E	C	F	E	E	F	E	A	F	D	A
Approach Delay		58.9			69.3			70.8			58.3	
Approach LOS		E			E			E			E	
90th %ile Green (s)	26.5	43.0	43.0	16.5	33.0	33.0	17.5	54.0	54.0	17.5	54.0	54.0
90th %ile Term Code	Max	Coord	Coord	Max	Coord	Coord						
70th %ile Green (s)	25.6	44.3	44.3	15.2	33.9	33.9	17.5	54.0	54.0	17.5	54.0	54.0
70th %ile Term Code	Gap	Max	Max	Gap	Max	Max	Max	Coord	Coord	Max	Coord	Coord
50th %ile Green (s)	23.3	45.9	45.9	13.6	36.2	36.2	16.2	54.0	54.0	17.5	55.3	55.3
50th %ile Term Code	Gap	Max	Max	Gap	Max	Max	Gap	Coord	Coord	Max	Coord	Coord
30th %ile Green (s)	20.9	47.6	47.6	11.9	38.6	38.6	14.3	54.0	54.0	17.5	57.2	57.2
30th %ile Term Code	Gap	Hold	Hold	Gap	Max	Max	Gap	Coord	Coord	Max	Coord	Coord
10th %ile Green (s)	17.6	50.0	50.0	9.5	41.9	41.9	11.6	54.0	54.0	17.5	59.9	59.9
10th %ile Term Code	Gap	Hold	Hold	Gap	Max	Max	Gap	Coord	Coord	Max	Coord	Coord
Stops (vph)	369	1056	154	185	582	266	235	1474	37	317	1445	16
Fuel Used(gal)	16	41	8	7	19	14	9	57	3	16	45	1
CO Emissions (g/hr)	1084	2856	573	465	1295	956	642	3957	213	1148	3148	73
NOx Emissions (g/hr)	211	556	111	90	252	186	125	770	41	223	613	14
VOC Emissions (g/hr)	251	662	133	108	300	222	149	917	49	266	730	17
Dilemma Vehicles (#)	0	33	0	0	20	0	0	48	0	0	10	0
Queue Length 50th (ft)	222	463	164	111	249	~406	141	~709	26	~241	664	14
Queue Length 95th (ft)	278	#560	299	155	306	#671	191	#804	104	#351	#737	m33
Internal Link Dist (ft)		1673			726			1110			1237	
Turn Bay Length (ft)	300		300	300		350	400		425	375		425
Base Capacity (vph)	568	1466	621	354	1166	532	375	1716	707	375	1782	672
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.86	0.66	0.59	0.61	1.01	0.70	1.02	0.42	1.09	0.92	0.14

Intersection Summary

Cycle Length: 160

Queues

1: US-441/SR-7 & Griffin Road

06/02/2017

Actuated Cycle Length: 160

Offset: 25 (16%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 135

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.09

Intersection Signal Delay: 64.1

Intersection LOS: E

Intersection Capacity Utilization 93.9%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

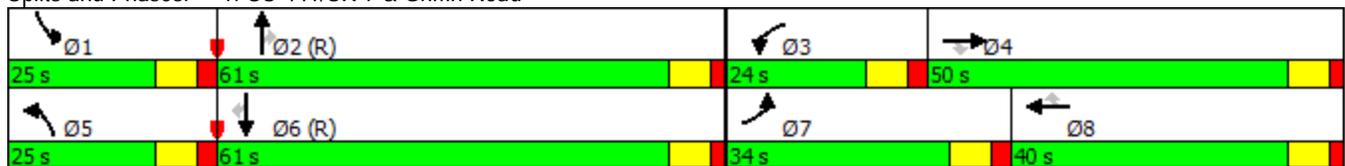
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: US-441/SR-7 & Griffin Road



HCM 2010 Signalized Intersection Summary

1: US-441/SR-7 & Griffin Road

06/02/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	384	1164	374	191	659	495	243	1612	274	374	1516	89
Future Volume (veh/h)	384	1164	374	191	659	495	243	1612	274	374	1516	89
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	417	1265	407	208	716	538	264	1752	298	407	1648	97
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	460	1362	424	251	1052	328	306	1875	584	376	1979	616
Arrive On Green	0.13	0.27	0.27	0.07	0.21	0.21	0.09	0.37	0.37	0.04	0.13	0.13
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1583	3442	5085	1582
Grp Volume(v), veh/h	417	1265	407	208	716	538	264	1752	298	407	1648	97
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1583	1721	1695	1582
Q Serve(g_s), s	19.1	38.8	40.5	9.5	20.8	33.1	12.1	53.1	23.4	17.5	50.6	8.7
Cycle Q Clear(g_c), s	19.1	38.8	40.5	9.5	20.8	33.1	12.1	53.1	23.4	17.5	50.6	8.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	460	1362	424	251	1052	328	306	1875	584	376	1979	616
V/C Ratio(X)	0.91	0.93	0.96	0.83	0.68	1.64	0.86	0.93	0.51	1.08	0.83	0.16
Avail Cap(c_a), veh/h	570	1367	426	355	1052	328	376	1875	584	376	1979	616
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.72	0.72	0.72
Uniform Delay (d), s/veh	68.3	57.1	57.7	73.2	58.6	63.4	71.9	48.6	39.3	77.1	64.6	46.4
Incr Delay (d2), s/veh	14.2	11.0	32.9	7.6	1.5	302.2	13.7	10.2	3.2	63.1	3.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.0	19.5	21.6	4.8	9.9	42.0	6.3	26.6	10.8	11.6	24.4	3.9
LnGrp Delay(d),s/veh	82.6	68.1	90.6	80.8	60.0	365.7	85.6	58.8	42.5	140.2	67.8	46.8
LnGrp LOS	F	E	F	F	E	F	F	E	D	F	E	D
Approach Vol, veh/h		2089			1462			2314			2152	
Approach Delay, s/veh		75.4			175.5			59.8			80.5	
Approach LOS		E			F			E			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.0	66.0	19.1	49.9	21.7	69.3	28.9	40.1				
Change Period (Y+Rc), s	7.5	7.0	7.5	7.0	7.5	7.0	7.5	7.0				
Max Green Setting (Gmax), s	17.5	54.0	16.5	43.0	17.5	54.0	26.5	33.0				
Max Q Clear Time (g_c+I1), s	19.5	55.1	11.5	42.5	14.1	52.6	21.1	35.1				
Green Ext Time (p_c), s	0.0	0.0	0.1	0.3	0.1	1.4	0.3	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			90.5									
HCM 2010 LOS			F									

Queues

9: US-441/SR-7 & Orange Drive

06/02/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	213	126	225	2157	1847	163
Future Volume (vph)	213	126	225	2157	1847	163
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Fr't		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	3433	1583	1770	5085	5085	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	3433	1583	1770	5085	5085	1583
Satd. Flow (RTOR)		137				76
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	232	137	245	2345	2008	177
Shared Lane Traffic (%)						
Lane Group Flow (vph)	232	137	245	2345	2008	177
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			24	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm	Prot	Prot	NA	NA	Perm
Protected Phases		4	5		6	
Permitted Phases	4			2		6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	49.0	49.0	41.0	98.0	50.0	50.0
Total Split (s)	55.0	55.0	48.0	105.0	57.0	57.0
Total Split (%)	34.4%	34.4%	30.0%	65.6%	35.6%	35.6%
Maximum Green (s)	49.0	49.0	41.0	98.0	50.0	50.0
Yellow Time (s)	4.0	4.0	5.0	5.0	5.0	5.0

Queues

9: US-441/SR-7 & Orange Drive

06/02/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	7.0	7.0	7.0	7.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Min	Min	None	C-Max	C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effect Green (s)	16.2	16.2	27.5	130.8	96.3	96.3
Actuated g/C Ratio	0.10	0.10	0.17	0.82	0.60	0.60
v/c Ratio	0.67	0.48	0.81	0.56	0.66	0.18
Control Delay	78.6	15.1	52.1	20.5	23.6	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.6	15.1	52.1	20.5	23.6	9.7
LOS	E	B	D	C	C	A
Approach Delay	55.0			23.5	22.4	
Approach LOS	E			C	C	
90th %ile Green (s)	20.6	20.6	35.9	126.4	83.5	83.5
90th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Coord
70th %ile Green (s)	18.0	18.0	31.0	129.0	91.0	91.0
70th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Coord
50th %ile Green (s)	16.2	16.2	27.5	130.8	96.3	96.3
50th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Coord
30th %ile Green (s)	14.5	14.5	24.0	132.5	101.5	101.5
30th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Coord
10th %ile Green (s)	11.9	11.9	19.0	135.1	109.1	109.1
10th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Coord
Stops (vph)	202	17	213	1714	1197	42
Fuel Used(gal)	7	2	7	49	33	2
CO Emissions (g/hr)	518	139	486	3407	2304	116
NOx Emissions (g/hr)	101	27	95	663	448	23
VOC Emissions (g/hr)	120	32	113	790	534	27
Dilemma Vehicles (#)	0	0	0	140	58	0
Queue Length 50th (ft)	122	0	251	747	487	43
Queue Length 95th (ft)	166	66	m253	m745	653	99
Internal Link Dist (ft)	1539			1237	689	
Turn Bay Length (ft)	175		225			215
Base Capacity (vph)	1051	579	453	4155	3059	983
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.24	0.54	0.56	0.66	0.18

Intersection Summary

Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Queues

9: US-441/SR-7 & Orange Drive

06/02/2017

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 25.3

Intersection LOS: C

Intersection Capacity Utilization 70.9%

ICU Level of Service C

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: US-441/SR-7 & Orange Drive



HCM 2010 Signalized Intersection Summary
 9: US-441/SR-7 & Orange Drive

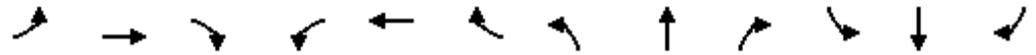
06/02/2017

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	 			  	  			
Traffic Volume (veh/h)	213	126	225	2157	1847	163		
Future Volume (veh/h)	213	126	225	2157	1847	163		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	232	137	245	2345	2008	177		
Adj No. of Lanes	2	1	1	3	3	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	362	167	272	4137	3134	976		
Arrive On Green	0.11	0.11	0.05	0.27	0.62	0.62		
Sat Flow, veh/h	3442	1583	1774	5253	5253	1583		
Grp Volume(v), veh/h	232	137	245	2345	2008	177		
Grp Sat Flow(s),veh/h/ln	1721	1583	1774	1695	1695	1583		
Q Serve(g_s), s	10.3	13.6	22.0	63.7	40.1	7.7		
Cycle Q Clear(g_c), s	10.3	13.6	22.0	63.7	40.1	7.7		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	362	167	272	4137	3134	976		
V/C Ratio(X)	0.64	0.82	0.90	0.57	0.64	0.18		
Avail Cap(c_a), veh/h	1054	485	455	4137	3134	976		
HCM Platoon Ratio	1.00	1.00	0.33	0.33	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.11	0.11	1.00	1.00		
Uniform Delay (d), s/veh	68.7	70.1	74.7	34.2	19.5	13.3		
Incr Delay (d2), s/veh	1.9	9.6	1.7	0.1	1.0	0.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	5.0	11.9	11.0	30.0	18.9	3.5		
LnGrp Delay(d),s/veh	70.6	79.8	76.4	34.3	20.5	13.7		
LnGrp LOS	E	E	E	C	C	B		
Approach Vol, veh/h	369			2590	2185			
Approach Delay, s/veh	74.0			38.2	19.9			
Approach LOS	E			D	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	2		4		5	6		
Phs Duration (G+Y+Rc), s	137.2		22.8		31.6	105.6		
Change Period (Y+Rc), s	7.0		6.0		7.0	7.0		
Max Green Setting (Gmax), s	98.0		49.0		41.0	50.0		
Max Q Clear Time (g_c+I1), s	65.7		15.6		24.0	42.1		
Green Ext Time (p_c), s	31.4		1.3		0.6	7.9		
Intersection Summary								
HCM 2010 Ctrl Delay			33.0					
HCM 2010 LOS			C					

Queues

1: US-441/SR-7 & Griffin Road

06/02/2017

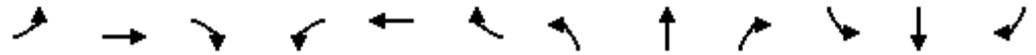


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	239	801	441	437	1304	506	488	1605	231	536	1743	245
Future Volume (vph)	239	801	441	437	1304	506	488	1605	231	536	1743	245
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor										1.00		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3432	5085	1583
Satd. Flow (RTOR)			234			243			240			234
Confl. Peds. (#/hr)										1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	260	871	479	475	1417	550	530	1745	251	583	1895	266
Shared Lane Traffic (%)												
Lane Group Flow (vph)	260	871	479	475	1417	550	530	1745	251	583	1895	266
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right									
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex											
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm									
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	17.5	40.0	40.0	17.5	40.0	40.0	19.5	54.0	54.0	19.5	54.0	54.0
Total Split (s)	25.0	47.0	47.0	25.0	47.0	47.0	27.0	61.0	61.0	27.0	61.0	61.0
Total Split (%)	15.6%	29.4%	29.4%	15.6%	29.4%	29.4%	16.9%	38.1%	38.1%	16.9%	38.1%	38.1%

Queues

1: US-441/SR-7 & Griffin Road

06/02/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	17.5	40.0	40.0	17.5	40.0	40.0	19.5	54.0	54.0	19.5	54.0	54.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.5	2.0	2.0	2.5	2.0	2.0	2.5	2.0	2.0	2.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	7.0	7.0	7.5	7.0	7.0	7.5	7.0	7.0	7.5	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.5	2.0	2.0	1.5	2.0	2.0	1.5	2.5	2.5	1.5	2.5	2.5
Recall Mode	None	None	None	None	None	None	Min	C-Min	C-Min	Min	C-Min	C-Min
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	15.3	40.0	40.0	17.5	42.2	42.2	19.5	54.0	54.0	19.5	54.0	54.0
Actuated g/C Ratio	0.10	0.25	0.25	0.11	0.26	0.26	0.12	0.34	0.34	0.12	0.34	0.34
v/c Ratio	0.79	0.69	0.84	1.27	1.06	0.92	1.27	1.02	0.36	1.39	1.10	0.39
Control Delay	88.3	57.6	42.6	193.7	96.1	53.6	191.8	77.7	6.5	240.2	90.4	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	88.3	57.6	42.6	193.7	96.1	53.6	191.8	77.7	6.5	240.2	90.4	5.5
LOS	F	E	D	F	F	D	F	E	A	F	F	A
Approach Delay		58.1			105.6			94.6			114.0	
Approach LOS		E			F			F			F	
90th %ile Green (s)	17.5	40.0	40.0	17.5	40.0	40.0	19.5	54.0	54.0	19.5	54.0	54.0
90th %ile Term Code	Max	Max	Max	Max	Max	Max	Max	Coord	Coord	Max	Coord	Coord
70th %ile Green (s)	17.5	40.0	40.0	17.5	40.0	40.0	19.5	54.0	54.0	19.5	54.0	54.0
70th %ile Term Code	Max	Max	Max	Max	Max	Max	Max	Coord	Coord	Max	Coord	Coord
50th %ile Green (s)	16.0	40.0	40.0	17.5	41.5	41.5	19.5	54.0	54.0	19.5	54.0	54.0
50th %ile Term Code	Gap	Hold	Hold	Max	Max	Max	Max	Coord	Coord	Max	Coord	Coord
30th %ile Green (s)	14.1	40.0	40.0	17.5	43.4	43.4	19.5	54.0	54.0	19.5	54.0	54.0
30th %ile Term Code	Gap	Hold	Hold	Max	Max	Max	Max	Coord	Coord	Max	Coord	Coord
10th %ile Green (s)	11.4	40.0	40.0	17.5	46.1	46.1	19.5	54.0	54.0	19.5	54.0	54.0
10th %ile Term Code	Gap	Hold	Hold	Max	Max	Max	Max	Coord	Coord	Max	Coord	Coord
Stops (vph)	231	713	230	350	1139	277	391	1471	23	398	1528	57
Fuel Used(gal)	10	27	12	24	47	12	28	56	2	36	66	3
CO Emissions (g/hr)	691	1913	818	1669	3251	812	1936	3920	166	2499	4613	215
NOx Emissions (g/hr)	134	372	159	325	633	158	377	763	32	486	898	42
VOC Emissions (g/hr)	160	443	190	387	753	188	449	909	38	579	1069	50
Dilemma Vehicles (#)	0	22	0	0	37	0	0	48	0	0	55	0
Queue Length 50th (ft)	139	305	264	~321	~601	352	~358	~704	8	~412	~826	60
Queue Length 95th (ft)	188	357	#454	#439	#717	#604	#480	#798	74	#538	#905	43
Internal Link Dist (ft)		1673			726			1110			1237	
Turn Bay Length (ft)	300		300	300		350	400		425	375		425
Base Capacity (vph)	375	1271	571	375	1341	596	418	1716	693	418	1716	689
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.69	0.84	1.27	1.06	0.92	1.27	1.02	0.36	1.39	1.10	0.39

Intersection Summary

Cycle Length: 160

Queues

1: US-441/SR-7 & Griffin Road

06/02/2017

Actuated Cycle Length: 160

Offset: 25 (16%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.39

Intersection Signal Delay: 96.9

Intersection LOS: F

Intersection Capacity Utilization 103.8%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: US-441/SR-7 & Griffin Road

 Ø1	 Ø2 (R)	 Ø3	 Ø4
27 s	61 s	25 s	47 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
27 s	61 s	25 s	47 s

HCM 2010 Signalized Intersection Summary

1: US-441/SR-7 & Griffin Road

06/02/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	239	801	441	437	1304	506	488	1605	231	536	1743	245
Future Volume (veh/h)	239	801	441	437	1304	506	488	1605	231	536	1743	245
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	260	871	479	475	1417	550	530	1745	251	583	1895	266
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	302	1271	396	376	1381	430	419	1716	534	419	1716	534
Arrive On Green	0.09	0.25	0.25	0.11	0.27	0.27	0.12	0.34	0.34	0.04	0.11	0.11
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1583	3442	5085	1582
Grp Volume(v), veh/h	260	871	479	475	1417	550	530	1745	251	583	1895	266
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1583	1721	1695	1582
Q Serve(g_s), s	11.9	24.8	40.0	17.5	43.5	43.5	19.5	54.0	20.0	19.5	54.0	25.3
Cycle Q Clear(g_c), s	11.9	24.8	40.0	17.5	43.5	43.5	19.5	54.0	20.0	19.5	54.0	25.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	302	1271	396	376	1381	430	419	1716	534	419	1716	534
V/C Ratio(X)	0.86	0.69	1.21	1.26	1.03	1.28	1.26	1.02	0.47	1.39	1.10	0.50
Avail Cap(c_a), veh/h	376	1271	396	376	1381	430	419	1716	534	419	1716	534
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.58	0.58	0.58
Uniform Delay (d), s/veh	72.0	54.3	60.0	71.3	58.3	58.3	70.3	53.0	41.7	76.8	71.1	58.3
Incr Delay (d2), s/veh	13.1	1.3	115.9	137.6	31.0	142.4	136.5	26.0	2.9	184.0	52.6	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	11.8	30.2	15.5	24.3	36.1	17.2	29.4	9.2	20.0	33.7	11.4
LnGrp Delay(d),s/veh	85.1	55.6	175.9	208.8	89.3	200.7	206.7	79.0	44.7	260.8	123.7	60.3
LnGrp LOS	F	E	F	F	F	F	F	F	D	F	F	E
Approach Vol, veh/h		1610			2442			2526			2744	
Approach Delay, s/veh		96.2			137.6			102.4			146.7	
Approach LOS		F			F			F			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.0	61.0	25.0	47.0	27.0	61.0	21.5	50.5				
Change Period (Y+Rc), s	7.5	7.0	7.5	7.0	7.5	7.0	7.5	7.0				
Max Green Setting (Gmax), s	19.5	54.0	17.5	40.0	19.5	54.0	17.5	40.0				
Max Q Clear Time (g_c+I1), s	21.5	56.0	19.5	42.0	21.5	56.0	13.9	45.5				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			123.6									
HCM 2010 LOS			F									

Queues

9: US-441/SR-7 & Orange Drive

06/02/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	212	300	133	2170	2252	152
Future Volume (vph)	212	300	133	2170	2252	152
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	3433	1583	1770	5085	5085	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	3433	1583	1770	5085	5085	1583
Satd. Flow (RTOR)		263				78
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	230	326	145	2359	2448	165
Shared Lane Traffic (%)						
Lane Group Flow (vph)	230	326	145	2359	2448	165
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			24	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm	Prot	Prot	NA	NA	Perm
Protected Phases		4	5		6	
Permitted Phases	4			2		6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	36.0	36.0	25.0	111.0	81.0	81.0
Total Split (s)	42.0	42.0	32.0	118.0	86.0	86.0
Total Split (%)	26.3%	26.3%	20.0%	73.8%	53.8%	53.8%
Maximum Green (s)	36.0	36.0	25.0	111.0	79.0	79.0
Yellow Time (s)	4.0	4.0	5.0	5.0	5.0	5.0

Queues

9: US-441/SR-7 & Orange Drive

06/02/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	7.0	7.0	7.0	7.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Min	Min	None	C-Max	C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effect Green (s)	17.5	17.5	18.4	129.5	104.1	104.1
Actuated g/C Ratio	0.11	0.11	0.12	0.81	0.65	0.65
v/c Ratio	0.61	0.80	0.71	0.57	0.74	0.16
Control Delay	74.3	29.8	59.3	12.1	22.2	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.3	29.8	59.3	12.1	22.2	7.3
LOS	E	C	E	B	C	A
Approach Delay	48.2			14.8	21.3	
Approach LOS	D			B	C	
90th %ile Green (s)	27.1	27.1	24.8	119.9	88.1	88.1
90th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Coord
70th %ile Green (s)	18.4	18.4	21.0	128.6	100.6	100.6
70th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Coord
50th %ile Green (s)	16.1	16.1	18.4	130.9	105.5	105.5
50th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Coord
30th %ile Green (s)	14.3	14.3	15.7	132.7	110.0	110.0
30th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Coord
10th %ile Green (s)	11.8	11.8	11.9	135.2	116.3	116.3
10th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Coord
Stops (vph)	196	71	129	918	1499	31
Fuel Used(gal)	7	6	4	35	40	1
CO Emissions (g/hr)	500	410	304	2467	2801	96
NOx Emissions (g/hr)	97	80	59	480	545	19
VOC Emissions (g/hr)	116	95	70	572	649	22
Dilemma Vehicles (#)	0	0	0	149	70	0
Queue Length 50th (ft)	121	63	156	375	582	31
Queue Length 95th (ft)	156	174	m161	m421	858	83
Internal Link Dist (ft)	1539			1237	689	
Turn Bay Length (ft)	175		225			215
Base Capacity (vph)	772	560	276	4114	3308	1057
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.58	0.53	0.57	0.74	0.16

Intersection Summary

Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Queues

9: US-441/SR-7 & Orange Drive

06/02/2017

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 21.1

Intersection LOS: C

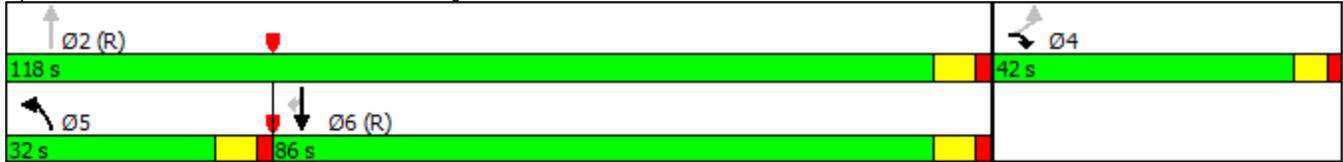
Intersection Capacity Utilization 73.6%

ICU Level of Service D

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: US-441/SR-7 & Orange Drive



HCM 2010 Signalized Intersection Summary
 9: US-441/SR-7 & Orange Drive

06/02/2017

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	 			  	  			
Traffic Volume (veh/h)	212	300	133	2170	2252	152		
Future Volume (veh/h)	212	300	133	2170	2252	152		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	230	326	145	2359	2448	165		
Adj No. of Lanes	2	1	1	3	3	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	749	345	169	3565	2858	890		
Arrive On Green	0.22	0.22	0.03	0.23	0.56	0.56		
Sat Flow, veh/h	3442	1583	1774	5253	5253	1583		
Grp Volume(v), veh/h	230	326	145	2359	2448	165		
Grp Sat Flow(s),veh/h/ln	1721	1583	1774	1695	1695	1583		
Q Serve(g_s), s	9.0	32.5	13.0	67.4	65.0	8.2		
Cycle Q Clear(g_c), s	9.0	32.5	13.0	67.4	65.0	8.2		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	749	345	169	3565	2858	890		
V/C Ratio(X)	0.31	0.95	0.86	0.66	0.86	0.19		
Avail Cap(c_a), veh/h	774	356	277	3565	2858	890		
HCM Platoon Ratio	1.00	1.00	0.33	0.33	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.15	0.15	1.00	1.00		
Uniform Delay (d), s/veh	52.5	61.7	76.4	44.3	29.6	17.1		
Incr Delay (d2), s/veh	0.2	33.4	2.4	0.2	3.6	0.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	4.3	28.9	6.5	31.8	31.3	3.7		
LnGrp Delay(d),s/veh	52.7	95.0	78.8	44.4	33.2	17.6		
LnGrp LOS	D	F	E	D	C	B		
Approach Vol, veh/h	556			2504	2613			
Approach Delay, s/veh	77.5			46.4	32.2			
Approach LOS	E			D	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	2		4		5	6		
Phs Duration (G+Y+Rc), s	119.2		40.8		22.2	96.9		
Change Period (Y+Rc), s	7.0		6.0		7.0	7.0		
Max Green Setting (Gmax), s	111.0		36.0		25.0	79.0		
Max Q Clear Time (g_c+I1), s	69.4		34.5		15.0	67.0		
Green Ext Time (p_c), s	40.9		0.4		0.2	11.9		
Intersection Summary								
HCM 2010 Ctrl Delay			42.9					
HCM 2010 LOS			D					

APPENDIX F: HCS 2010 OUTPUT WORKSHEETS

TWO-WAY STOP CONTROL SUMMARY								
General Information					Site Information			
Analyst:	JBF				Intersection:	Griffin Road & SW 44th		
Agency/Co.:	Kimley Horn				Jurisdiction:			
Date Performed:	6/1/2017				Analysis Year:	2017		
Analysis Time Period:	2017				Peak Hour Factor:			
Project Description: 2017 AM Existing								
East/West Street: Griffin Road					North/South Street: SW 44th			
Intersection Orientation: East-West					Study Period (hrs): 1.00			
Vehicle Volumes and Adjustments								
Major Street	Eastbound				Westbound			
Movement	1U	1	2	3	4U	4	5	6
	U	L	T	R	U	L	T	R
Volume (veh/h)		77	1105				800	2
Percent Heavy Vehicles		0	0	0		0	0	0
Median Type	Raised curb							
Storage	1							
RT Channelized			0					0
Lanes	1	2	0		0	2		0
Configuration	L	T				T		TR
Proportion Time Blocked								
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)				4		7		
Percent Heavy Vehicles	0	0	0	0	0	0		
Left-Turn Lane Storage								
Percent Grade (%)	0			0				
Flared Approach			N				N	
Storage			0				0	
Lanes	0	0	0	0	0	0	0	
Configuration						LR		
Proportion Time Blocked								
Delay, Queue Length, and Level of Service								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L						LR	
v (veh/h)	118						12	
C (m) (veh/h)	830						386	
v/c Ratio	0.14						0.03	
95% Queue Length	0.50						0.10	
Control Delay (s/veh)	10.1						14.6	
Movement LOS	B						B	
Approach Delay (s/veh)							14.6	
Approach LOS							B	

TWO-WAY STOP CONTROL SUMMARY								
General Information					Site Information			
Analyst:	JBF				Intersection:	Griffin Road and SW 44th		
Agency/Co.:	Kimley Horn				Jurisdiction:			
Date Performed:	6/1/2017				Analysis Year:	2017		
Analysis Time Period:	2017				Peak Hour Factor:			
Project Description: 2017 PM Existing Griffin and SW 44th								
East/West Street: Griffin Road					North/South Street: SW 44th			
Intersection Orientation: East-West					Study Period (hrs): 1.00			
Vehicle Volumes and Adjustments								
Major Street	Eastbound				Westbound			
Movement	1U	1	2	3	4U	4	5	6
	U	L	T	R	U	L	T	R
Volume (veh/h)		44	874				1400	10
Percent Heavy Vehicles		0	0	0		0	0	0
Median Type	Raised curb							
Storage	1							
RT Channelized			0					0
Lanes	1	2	0		0	2		0
Configuration	L	T				T		TR
Proportion Time Blocked								
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)				6		21		
Percent Heavy Vehicles	0	0	0	0	0	0		
Left-Turn Lane Storage								
Percent Grade (%)	0			0				
Flared Approach			N			N		
Storage			0			0		
Lanes	0	0	0	0	0	0		
Configuration					LR			
Proportion Time Blocked								
Delay, Queue Length, and Level of Service								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L						LR	
v (veh/h)	46						28	
C (m) (veh/h)	460						289	
v/c Ratio	0.10						0.10	
95% Queue Length	0.33						0.32	
Control Delay (s/veh)	13.7						18.8	
Movement LOS	B						C	
Approach Delay (s/veh)							18.8	
Approach LOS							C	

TWO-WAY STOP CONTROL SUMMARY								
General Information					Site Information			
Analyst:	JBF				Intersection:	Griffin Road & SW 44th		
Agency/Co.:	Kimley Horn				Jurisdiction:			
Date Performed:	6/1/2017				Analysis Year:	2022		
Analysis Time Period:	2022				Peak Hour Factor:			
Project Description: 2022 AM Future Background								
East/West Street: Griffin Road					North/South Street: SW 44th			
Intersection Orientation: East-West					Study Period (hrs): 1.00			
Vehicle Volumes and Adjustments								
Major Street	Eastbound				Westbound			
Movement	1U	1	2	3	4U	4	5	6
	U	L	T	R	U	L	T	R
Volume (veh/h)		81	1161				840	2
Percent Heavy Vehicles		0	0	0		0	0	0
Median Type	Raised curb							
Storage	1							
RT Channelized			0					0
Lanes	1	2	0		0	2		0
Configuration	L	T				T		TR
Proportion Time Blocked								
Minor Street	Northbound				Southbound			
Movement	7	8	9		10	11	12	
	L	T	R		L	T	R	
Volume (veh/h)					4		7	
Percent Heavy Vehicles	0	0	0		0	0	0	
Left-Turn Lane Storage								
Percent Grade (%)	0				0			
Flared Approach			N					N
Storage			0					0
Lanes	0	0	0		0	0	0	
Configuration						LR		
Proportion Time Blocked								
Delay, Queue Length, and Level of Service								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L						LR	
v (veh/h)	124						12	
C (m) (veh/h)	802						366	
v/c Ratio	0.15						0.03	
95% Queue Length	0.55						0.10	
Control Delay (s/veh)	10.3						15.2	
Movement LOS	B						C	
Approach Delay (s/veh)							15.2	
Approach LOS							C	

TWO-WAY STOP CONTROL SUMMARY									
General Information					Site Information				
Analyst:	JBF				Intersection:	Griffin Road and SW 44th			
Agency/Co.:	Kimley Horn				Jurisdiction:				
Date Performed:	6/1/2017				Analysis Year:	2022			
Analysis Time Period:	2022				Peak Hour Factor:				
Project Description: 2022 PM Future Background									
East/West Street: Griffin Road					North/South Street: SW 44th				
Intersection Orientation: East-West					Study Period (hrs): 1.00				
Vehicle Volumes and Adjustments									
Major Street	Eastbound				Westbound				
Movement	1U	1	2	3	4U	4	5	6	
	U	L	T	R	U	L	T	R	
Volume (veh/h)		47	918				1469	11	
Percent Heavy Vehicles		0	0	0		0	0	0	
Median Type	Raised curb								
Storage	1								
RT Channelized			0					0	
Lanes	1	2	0		0	2		0	
Configuration	L	T				T		TR	
Proportion Time Blocked									
Minor Street	Northbound			Southbound					
Movement	7	8	9	10	11	12			
	L	T	R	L	T	R			
Volume (veh/h)				6		22			
Percent Heavy Vehicles	0	0	0	0	0	0			
Left-Turn Lane Storage									
Percent Grade (%)	0			0					
Flared Approach			N			N			
Storage			0			0			
Lanes	0	0	0	0	0	0			
Configuration					LR				
Proportion Time Blocked									
Delay, Queue Length, and Level of Service									
Approach	Eastbound	Westbound	Northbound			Southbound			
Movement	1	4	7	8	9	10	11	12	
Lane Configuration	L						LR		
v (veh/h)	49						29		
C (m) (veh/h)	431						273		
v/c Ratio	0.11						0.11		
95% Queue Length	0.38						0.36		
Control Delay (s/veh)	14.4						19.8		
Movement LOS	B						C		
Approach Delay (s/veh)							19.8		
Approach LOS							C		

TWO-WAY STOP CONTROL SUMMARY								
General Information					Site Information			
Analyst:	JBF				Intersection:	Griffin Road and SW 44th		
Agency/Co.:	Kimley Horn				Jurisdiction:			
Date Performed:	2/23/2017				Analysis Year:	2022		
Analysis Time Period:	2022				Peak Hour Factor:			
Project Description: 2022 AM Future Total								
East/West Street: Griffin Road					North/South Street: SW 44th Avenue			
Intersection Orientation: East-West					Study Period (hrs): 1.00			
Vehicle Volumes and Adjustments								
Major Street	Eastbound				Westbound			
Movement	1U	1	2	3	4U	4	5	6
	U	L	T	R	U	L	T	R
Volume (veh/h)		97	1161				851	6
Percent Heavy Vehicles		0	0	0		0	0	0
Median Type	Raised curb							
Storage	1							
RT Channelized			0					0
Lanes	1	2	0		0	2		0
Configuration	L	T				T		TR
Proportion Time Blocked								
Minor Street	Northbound				Southbound			
Movement	7	8	9		10	11	12	
	L	T	R		L	T	R	
Volume (veh/h)					36		70	
Percent Heavy Vehicles	0	0	0		0	0	0	
Left-Turn Lane Storage								
Percent Grade (%)	0				0			
Flared Approach			N					N
Storage			0					0
Lanes	0	0	0		0	0	0	
Configuration						LR		
Proportion Time Blocked								
Delay, Queue Length, and Level of Service								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L						LR	
v (veh/h)	149						125	
C (m) (veh/h)	792						371	
v/c Ratio	0.19						0.34	
95% Queue Length	0.69						1.51	
Control Delay (s/veh)	10.6						19.6	
Movement LOS	B						C	
Approach Delay (s/veh)							19.6	
Approach LOS							C	

TWO-WAY STOP CONTROL SUMMARY								
General Information					Site Information			
Analyst:	JBF				Intersection:	Griffin Road and SW 44th		
Agency/Co.:	Kimley Horn				Jurisdiction:			
Date Performed:	2/23/2017				Analysis Year:	2022		
Analysis Time Period:	2022				Peak Hour Factor:			
Project Description: 2022 PM Total Griffin and SW 44th								
East/West Street: Griffin Road					North/South Street: SW 44th			
Intersection Orientation: East-West					Study Period (hrs): 1.00			
Vehicle Volumes and Adjustments								
Major Street	Eastbound				Westbound			
Movement	1U	1	2	3	4U	4	5	6
	U	L	T	R	U	L	T	R
Volume (veh/h)		77	918				1493	18
Percent Heavy Vehicles		0	0	0		0	0	0
Median Type	Raised curb							
Storage	1							
RT Channelized			0					0
Lanes	1	2	0		0	2		0
Configuration	L	T				T		TR
Proportion Time Blocked								
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)				35		79		
Percent Heavy Vehicles	0	0	0	0	0	0		
Left-Turn Lane Storage								
Percent Grade (%)	0			0				
Flared Approach			N				N	
Storage			0				0	
Lanes	0	0	0	0	0	0	0	
Configuration						LR		
Proportion Time Blocked								
Delay, Queue Length, and Level of Service								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L						LR	
v (veh/h)	81						119	
C (m) (veh/h)	419						225	
v/c Ratio	0.19						0.53	
95% Queue Length	0.72						3.18	
Control Delay (s/veh)	15.6						38.6	
Movement LOS	C						E	
Approach Delay (s/veh)							38.6	
Approach LOS							E	

TWO-WAY STOP CONTROL SUMMARY								
General Information					Site Information			
Analyst:	JBF				Intersection:	441 Driveway		
Agency/Co.:	Kimley Horn				Jurisdiction:			
Date Performed:	6/1/2017				Analysis Year:	2022		
Analysis Time Period:	2022				Peak Hour Factor:			
Project Description: 2022 AM Future Total								
East/West Street: Driveway					North/South Street: US-441/SR-7			
Intersection Orientation: North-South					Study Period (hrs): 1.00			
Vehicle Volumes and Adjustments								
Major Street	Northbound				Southbound			
Movement	1U	1	2	3	4U	4	5	6
	U	L	T	R	U	L	T	R
Volume (veh/h)			1608	82				
Percent Heavy Vehicles		0	0	0		0	0	0
Median Type	Raised curb							
Storage	1							
RT Channelized			0					0
Lanes	0	2	0		0	0		0
Configuration		T	TR					
Proportion Time Blocked								
Minor Street	Eastbound			Westbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)						50		
Percent Heavy Vehicles	0			0	0	0		
Left-Turn Lane Storage								
Percent Grade (%)	0			0				
Flared Approach			N			N		
Storage			0			0		
Lanes	0	0	0	0	0	1		
Configuration						R		
Proportion Time Blocked								
Delay, Queue Length, and Level of Service								
Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration					R			
v (veh/h)					50			
C (m) (veh/h)					303			
v/c Ratio					0.17			
95% Queue Length					0.59			
Control Delay (s/veh)					19.2			
Movement LOS					C			
Approach Delay (s/veh)			19.2					
Approach LOS			C					

TWO-WAY STOP CONTROL SUMMARY								
General Information					Site Information			
Analyst:	JBF				Intersection:	441 Driveway		
Agency/Co.:	Kimley Horn				Jurisdiction:			
Date Performed:	6/1/2017				Analysis Year:	2022		
Analysis Time Period:	2022				Peak Hour Factor:			
Project Description: 2022 PM Future Total								
East/West Street: Driveway					North/South Street: US-441/SR-7			
Intersection Orientation: North-South					Study Period (hrs): 1.00			
Vehicle Volumes and Adjustments								
Major Street	Northbound				Southbound			
Movement	1U	1	2	3	4U	4	5	6
	U	L	T	R	U	L	T	R
Volume (veh/h)			1476	142				
Percent Heavy Vehicles		0	0	0		0	0	0
Median Type	Raised curb							
Storage	1							
RT Channelized				0				0
Lanes	0	2	0	0	0	0	0	0
Configuration		T	TR					
Proportion Time Blocked								
Minor Street	Eastbound			Westbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)						55		
Percent Heavy Vehicles	0			0	0	0		
Left-Turn Lane Storage								
Percent Grade (%)	0			0				
Flared Approach			N			N		
Storage			0			0		
Lanes	0	0	0	0	0	1		
Configuration						R		
Proportion Time Blocked								
Delay, Queue Length, and Level of Service								
Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration					R			
v (veh/h)					55			
C (m) (veh/h)					323			
v/c Ratio					0.17			
95% Queue Length					0.61			
Control Delay (s/veh)					18.4			
Movement LOS					C			
Approach Delay (s/veh)			18.4					
Approach LOS			C					

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst:	JBF			Intersection:	SW 44th Avenue Driveway			
Agency/Co.:	Kimley Horn			Jurisdiction:				
Date Performed:	6/1/2017			Analysis Year:	2022			
Analysis Time Period:	2022			Peak Hour Factor:				
Project Description: 2022 AM Future Total								
East/West Street: Driveway				North/South Street: SW 44th Avenue				
Intersection Orientation: North-South				Study Period (hrs): 1.00				
Vehicle Volumes and Adjustments								
Major Street	Northbound				Southbound			
Movement	1U	1	2	3	4U	4	5	6
	U	L	T	R	U	L	T	R
Volume (veh/h)		23	16				0	
Percent Heavy Vehicles		0	0	0		0	0	0
Median Type	Raised curb							
Storage	1							
RT Channelized			0					0
Lanes	0	1	0		0	1		0
Configuration	LT					T		
Proportion Time Blocked								
Minor Street	Eastbound				Westbound			
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)			151					
Percent Heavy Vehicles	0			0	0	0		
Left-Turn Lane Storage								
Percent Grade (%)	0				0			
Flared Approach			N					N
Storage			0					0
Lanes	0	0	1	0	0	0		0
Configuration			R					
Proportion Time Blocked								
Delay, Queue Length, and Level of Service								
Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT							R
v (veh/h)	27							232
C (m) (veh/h)	1636							1091
v/c Ratio	0.02							0.21
95% Queue Length	0.05							0.81
Control Delay (s/veh)	7.2							9.2
Movement LOS	A							A
Approach Delay (s/veh)						9.2		
Approach LOS						A		

TWO-WAY STOP CONTROL SUMMARY								
General Information					Site Information			
Analyst:	JBF				Intersection:	SW 44th Avenue Driveway		
Agency/Co.:	Kimley Horn				Jurisdiction:			
Date Performed:	6/1/2017				Analysis Year:	2022		
Analysis Time Period:	2022				Peak Hour Factor:			
Project Description: 2022 PM Future Total								
East/West Street: Driveway					North/South Street: SW 44th Avenue			
Intersection Orientation: North-South					Study Period (hrs): 1.00			
Vehicle Volumes and Adjustments								
Major Street	Northbound				Southbound			
Movement	1U	1	2	3	4U	4	5	6
	U	L	T	R	U	L	T	R
Volume (veh/h)		39	26				0	
Percent Heavy Vehicles		0	0	0		0	0	0
Median Type	Raised curb							
Storage	1							
RT Channelized			0					0
Lanes	0	1	0		0	1		0
Configuration	LT					T		
Proportion Time Blocked								
Minor Street	Eastbound				Westbound			
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)			166					
Percent Heavy Vehicles	0			0	0	0		
Left-Turn Lane Storage								
Percent Grade (%)	0				0			
Flared Approach			N					N
Storage			0					0
Lanes	0	0	1	0	0	0		0
Configuration			R					
Proportion Time Blocked								
Delay, Queue Length, and Level of Service								
Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT							R
v (veh/h)	45							255
C (m) (veh/h)	1636							1091
v/c Ratio	0.03							0.23
95% Queue Length	0.08							0.91
Control Delay (s/veh)	7.3							9.3
Movement LOS	A							A
Approach Delay (s/veh)						9.3		
Approach LOS						A		

PARCEL 'A' - 441 ROC - GRIFFIN & 441 PLAZA

NE CORNER OF 441 AND GRIFFIN RD, HOLLYWOOD, FL
04-03-2017

ISSUED FOR SITE PLAN APPROVAL

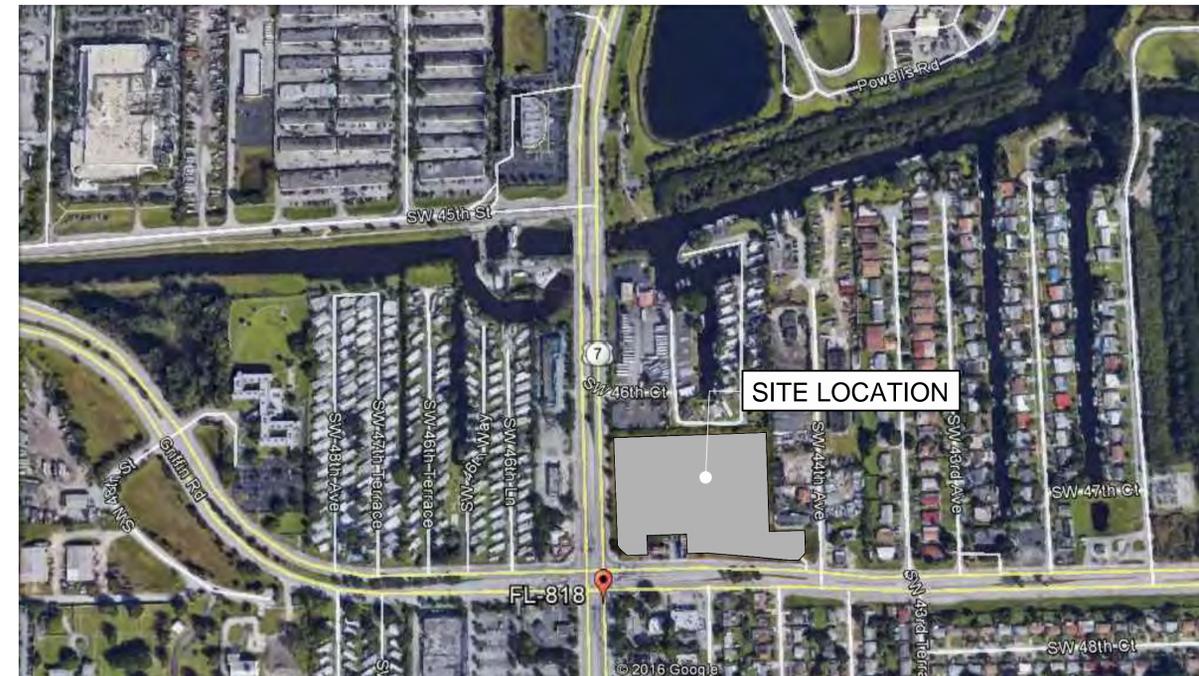
MEETING DATES:

PRELIMINARY TAC - 04-03-2017

FINAL TAC - 06-15-2017

Drawing index:

			ISSUED	ISSUED
			04-03-2017	06-05-2017
ARCHITECTURAL DRAWINGS				
	NAME	REQUIREMENTS		
COVER	PROJECT TITLE & DRAWING LIST	A. SITE PLAN	✓	✓
Survey	COPY OF SURVEY	SURVEY	✓	✓
A-1	CODE STUDY	A. SITE PLAN	✓	✓
A-2	RESIDENTIAL TOWER PROGRAM	A. SITE PLAN	✓	✓
A-3	SITE PLAN	A. SITE PLAN	✓	✓
A-3.1	SITE DIAGRAMS AND SIGNAGE ELEVATIONS	A. SITE PLAN	✓	✓
A-4	SITE PROFILES AND PHASING PLAN	A. SITE PLAN	✓	✓
A-4.1	RESIDENTIAL BUILDING GROUND FLOOR LEVEL	A. SITE PLAN	✓	✓
A-4.2	RESIDENTIAL BUILDING SECOND PARKING LEVEL	A. SITE PLAN	✓	✓
A-5	RESIDENTIAL BUILDING POOL LEVEL FLOOR PLAN	A. SITE PLAN	✓	✓
A-6	RESIDENTIAL BUILDING TYPICAL LEVEL FLOOR PLAN	A. SITE PLAN	✓	✓
A-7	RESIDENTIAL BUILDING ELEVATIONS	A. SITE PLAN	✓	✓
A-8	RESIDENTIAL BUILDING ELEVATIONS	A. SITE PLAN	✓	✓
A-9	RESIDENTIAL BUILDING ELEVATION AND SECTIONS	A. SITE PLAN	✓	✓
A-10	RESIDENTIAL BUILDING 3D SCHEMATIC IMAGES	A. SITE PLAN	✓	✓
A-11	RESIDENTIAL BUILDING ROOM TYPOLOGIES	A. SITE PLAN	✓	✓
A-12	STORAGE BUILDING FLOOR PLANS AND ELEVATIONS	A. SITE PLAN	✓	✓
A-13	NOT USED	A. SITE PLAN	✓	✓
CIVIL DRAWINGS				
			04-03-2017	06-05-2017
PRE	PRELIMINARY CIVIL PLAN	C. CIVIL PLAN	✓	✓
SITE	PRELIMINARY CIVIL PLAN	C. CIVIL PLAN	✓	✓
LANDSCAPE DRAWINGS				
			04-03-2017	06-05-2017
PLA-1	PRELIMINARY LANDSCAPE PLAN	B. LANDSCAPE	✓	✓
PLA-2	PRELIMINARY LANDSCAPE DETAILS	B. LANDSCAPE	✓	✓
WENDY'S DRAWINGS				
			04-03-2017	06-05-2017
A1.1	WENDY'S FLOOR PLAN	D. WENDY'S	✓	✓
A1.3	WENDY'S ROOF PLAN	D. WENDY'S	✓	✓
A2.1	WENDY'S EXTERIOR ELEVATIONS	D. WENDY'S	✓	✓
TE-1	TRASH ENCLOSURE PLANS, ELEVATIONS AND DETAILS	D. WENDY'S	✓	✓
C-1	WENDY'S ENLARGED SITE PLAN	D. WENDY'S	✓	✓
C-2	WENDY'S PAVING AND DRAINAGE PLAN	D. WENDY'S	✓	✓
C-3	WENDY'S UTILITY PLAN	D. WENDY'S	✓	✓
C-4	WENDY'S SIDEWALK DETAILS	D. WENDY'S	✓	✓
PM-1	SITE DETAILS	D. WENDY'S	✓	✓
WAWA DRAWINGS				
			04-03-2017	06-05-2017
A1	WAWA ENLARGED FLOOR PLAN	E. WAWA	✓	✓
A4	WAWA EXTERIOR ELEVATIONS	E. WAWA	✓	✓
A4.1	WAWA EXTERIOR ELEVATIONS	E. WAWA	✓	✓
WAWA F85 FBL	STORE	E. WAWA	✓	✓
GAS CANOPY STACKED 8	TRASH COMPOUND FLSQ17-R	E. WAWA	✓	✓



LOCATION MAP
SCALE: N.T.S.



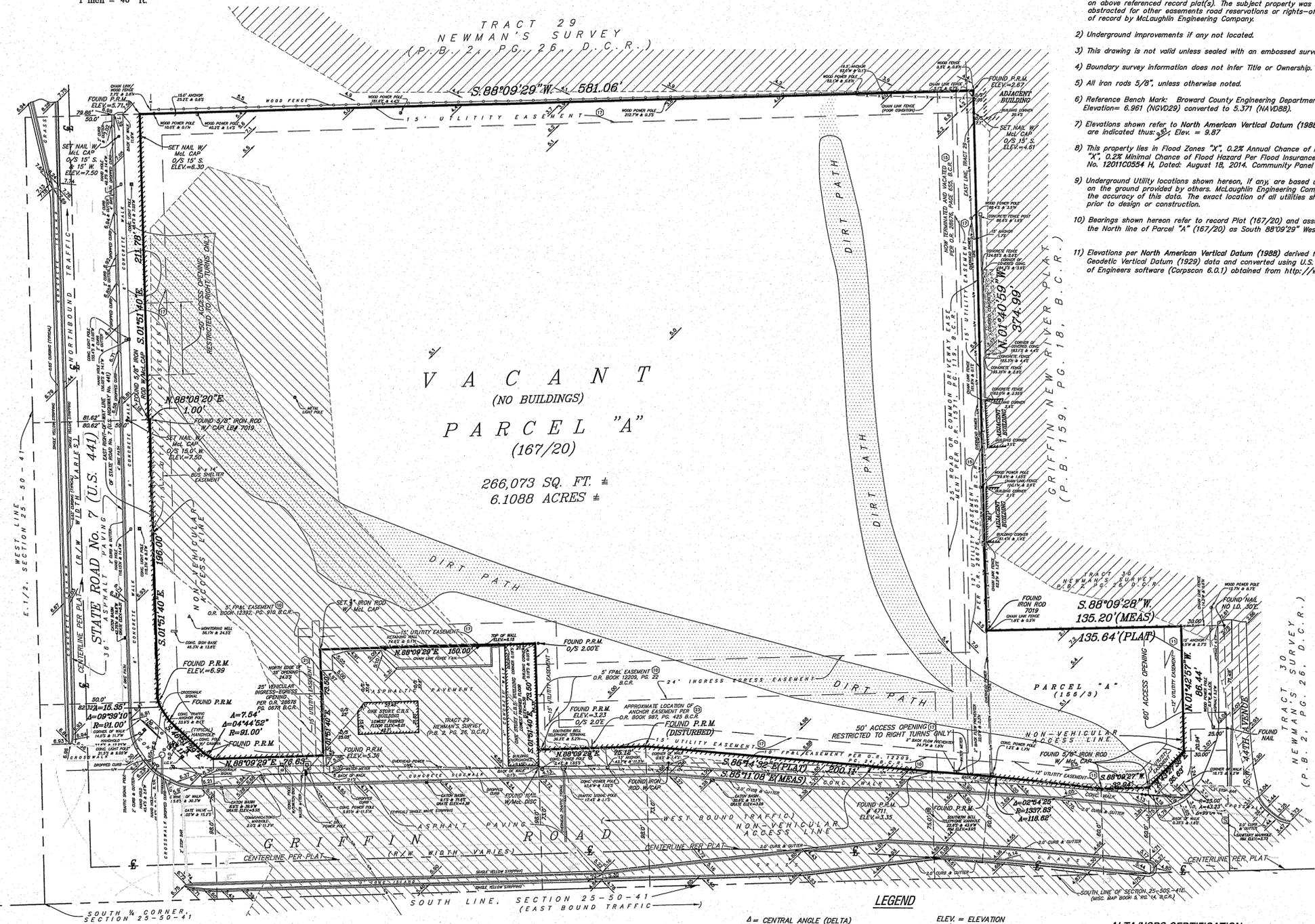
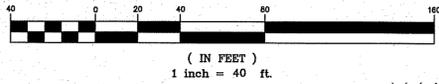
prepared by
McLAUGHLIN ENGINEERING COMPANY (LB#285)
 1700 N.W. 64th STREET, SUITE 400
 FORT LAUDERDALE, FLORIDA, 33309
 PHONE: (954) 763-7611 FAX: (954) 763-7615

ALTA/NSPS LAND TITLE SURVEY

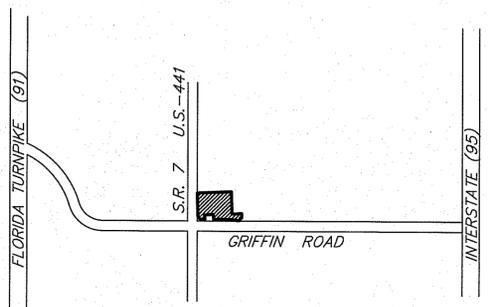
P ARCEL "A", GRIFFIN - 441 PLAZA, P.B. 167, PG. 20, B.C.R.

P ARCEL "A", MARLENE PLAZA, P.B. 155, PG. 3, B.C.R.

GRAPHIC SCALE



- NOTES:**
- 1) This survey reflects all easements and rights-of-way, as shown on above referenced record plat(s). The subject property was not abstracted for other easements road reservations or rights-of-way of record by McLaughlin Engineering Company.
 - 2) Underground improvements if any not located.
 - 3) This drawing is not valid unless sealed with an embossed surveyors seal.
 - 4) Boundary survey information does not infer Title or Ownership.
 - 5) All iron rods 5/8", unless otherwise noted.
 - 6) Reference Bench Mark: Broward County Engineering Department, Bench Mark # 1478, Elevation= 6.961 (NGVD29) converted to 5.371 (NAVD88).
 - 7) Elevations shown refer to North American Vertical Datum (1988), and are indicated thus: Elev. = 9.87
 - 8) This property lies in Flood Zones "X", 0.2% Annual Chance of Flood Hazard & "X", 0.2% Minimal Chance of Flood Hazard Per Flood Insurance Rate Map No. 1201100554 H, Dated: August 18, 2014, Community Panel No. 125113.
 - 9) Underground Utility locations shown hereon, if any, are based upon paint marks on the ground provided by others. McLaughlin Engineering Company did not confirm the accuracy of this data. The exact location of all utilities should be confirmed prior to design or construction.
 - 10) Bearings shown hereon refer to record Plat (167/20) and assume the North line of Parcel "A" (167/20) as South 88°09'29" West.
 - 11) Elevations per North American Vertical Datum (1988) derived from National Geodetic Vertical Datum (1929) data and converted using U.S. Army Corps of Engineers software (Corpscon 6.0.1) obtained from <http://www.tech.army.mil/>



Location Sketch
 Not To Scale

Legal Description

Parcel "A" of GRIFFIN - 441 PLAZA, according to the plat thereof, as recorded in Plat Book 167, Page 20, of the public records of Broward County, Florida.

TOGETHER WITH:

Parcel "A" of MARLENE PLAZA, according to the plat thereof, as recorded in Plat Book 155, Page 3, of the public records of Broward County, Florida.

This description describes the same real property as described in Special Warranty Deed recorded in O.R. Book 29737, Page 0904, B.C.R. Less right-of-way dedicated by recorded Plat Book 167, Page 20, B.C.R. and Plat Book 155, Page 3, B.C.R.

- Title Notes**
- This survey reflects any easement, road reservations or rights-of-ways of record affecting this property per Chicago Title Insurance Company Ownership Encumbrance Report 6300288, effective date March 30, 2017 at 6:00AM.
- 5) Easements per Plat Book 155, Page 3 of the Public Records of Broward County, Florida affects this property as shown.
 - 6) Easements per Plat Book 167, Page 20 of the Public Records of Broward County, Florida affects this property as shown.
 - 7) Easement per O.R. Book 12209, Page 22 of the Public Records of Broward County, Florida affects this property as shown.
 - 8) Easement per O.R. Book 12209, Page 24 of the Public Records of Broward County, Florida affects this property as shown.
 - 9) Easement per O.R. Book 12392, Page 910 of the Public Records of Broward County, Florida affects this property as shown.
 - 10) Agreement per O.R. Book 19448, Page 407 of the Public Records of Broward County, Florida affects this property (no other easements contained therein).
 - 11) Agreement per O.R. Book 21811, Page 263 of the Public Records of Broward County, Florida affects this property (nothing plottable).
 - 12) Agreement per O.R. Book 21304, Page 31 of the Public Records of Broward County, Florida affects this property (nothing plottable).
 - 13) Easement per O.R. Book 28676, Page 655 of the Public Records of Broward County, Florida affects this property as shown.
 - 14) Easement per O.R. Book 28676, Page 678 of the Public Records of Broward County, Florida affects this property as shown.
 - 15) Agreement per O.R. Book 28918, Page 1515 of the Public Records of Broward County, Florida restricts Parcel "A" of MARLENE PLAZA to a parking lot.
 - 16) Agreement per O.R. Book 29689, Page 979 of the Public Records of Broward County, Florida affects this property (no easements contained therein).
 - 17) Agreement per O.R. Book 29689, Page 991 of the Public Records of Broward County, Florida affects this property (no easements contained therein).
 - 18) Amendment per Instrument No. 114271438 of the Public Records of Broward County, Florida affects this property (nothing plottable).

CERTIFICATION

We hereby certify that this survey meets the "Standards of Practice" as set forth by the Florida Board of Professional Surveyors and Mappers in Chapter 5J-17.05 Florida Administrative Code, pursuant to Section 472.027, Florida Statutes.

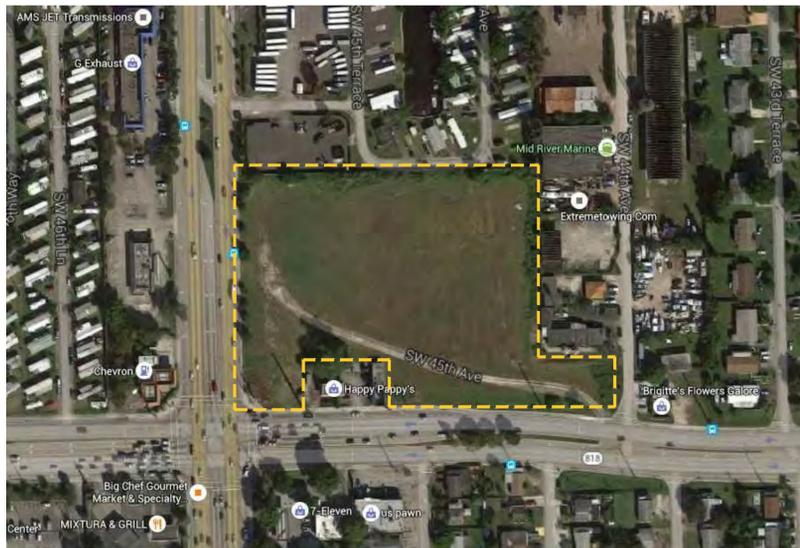
Dated at Fort Lauderdale, Florida this 24th day of August, 2005.
 Revised and additional certifications added this 26th day of January, 2006.
 General revisions made this 20th day of July, 2006.
 Revised certifications this 23rd day of August, 2006.
 Resurveyed this 9th day of January, 2008.
 Resurveyed this 19th day of August, 2016.
 Resurveyed this 31st day of March, 2017.

OFFICE NOTES

FIELD BOOK NO. TDS-48, Print, LB# 260A/37.38, EFB, PRINT
 JOB ORDER NO. U-1281, U-4107, V-1683, V2260
 CHECKED BY: S.P., RDR, JMM
 DRAWN BY: S.P., RDR, JMM

McLAUGHLIN ENGINEERING COMPANY
 JERALD A. McLAUGHLIN
 Registered Land Surveyor No. 5269
 State of Florida.

1 AERIAL IMAGES



2 GENERAL SITE INFORMATION



SELECTED PROPERTY-FOLIO: 504125300010 2015 AERIALS

Source: Broward County Property Appraiser

Site Address	US 441, HOLLYWOOD	Parcel #	5041 25 30 0010
Property Owner	LL HART DEVELOPMENT LLC	Millage	0513
Mailing Address	PO BOX 801931 MIAMI FL 33280	Use	10
Abbreviated Legal Description	GRIFFIN-441 PLAZA 167-20 B PARCEL A		

LOT SIZE	266,073 SQ. FT. (6.1088 ACRES)	FOLIO: 5041-25-30-0010
----------	--------------------------------	------------------------

DESCRIPTION	VALUE	CHARTER CODE	PROVIDED
ZONING	CURRENT ZONING SR7 CCD - RC (C-4) THE PROJECT WILL BE DEVELOPED AS A PLANNED DEVELOPMENT (PD)	4.20 / 4.3	N/A
CATEGORY	US 441/SR 7 COMMERCIAL SUB-AREA		N/A
DENSITY	29.5 UNITS PER NET ACRE.	4.3 (D/2)	180 APT ROOMS

2 GENERAL INFORMATION CONTINUED

DESCRIPTION	PROVIDED
LIVING AREAS	STUDIOS 677 - 683 SQ. FT. MIN.
	1 BEDROOM 677 - 683 SQ. FT. MIN.
	2 BEDROOM 982 - 1082 SQ. FT. MIN.
	3 BEDROOM 1304 SQ. FT. MIN.
PERVIOUS AREA	41,478 SF = 15.6% OF SITE = 0.95 ACRES

3 SETBACKS

DESCRIPTION	PROVIDED
FRONT	69'-8"
REAR	31'-8"
SIDE	13'-0"
SIDE	15'-1"

4 HEIGHTS PROVIDED

DESCRIPTION	PROVIDED
HEIGHT	95'-4"

7 PARKING DATA

DESCRIPTION	VALUE	REQUIRED	PROVIDED
RESIDENTIAL	USE : APARTMENT UNITS - 1.5 SPACES PER UNIT BREAK DOWN OF PROVIDED (1.3 SPACES PER UNIT): STANDARD PARKING SPACES 207 ACCESSIBLE PARKING SPACES 2 GUEST PARKING 23 LOADING 2	180units x 1.5 = 270 SPACES GUEST 270 / 1.5 = 36 SPACES 270+36 = 306 SPACES	230 SPACES
RESTAURANT (TAKE OUT)	1 PER 150 SQ. FT. BREAK DOWN OF PROVIDED: STANDARD PARKING SPACES 34 ACCESSIBLE PARKING SPACES 2 LOADING 1	2562sf / 150 = 17 SPACES	36 SPACES
WAREHOUSE/STORAGE	1 PER 1000 SQ. FT. BREAK DOWN OF PROVIDED: STANDARD PARKING SPACES 17 ACCESSIBLE PARKING SPACES 2 LOADING 2	19520sf / 1000 = 19 SPACES	19 SPACES
SERVICE STATION	1 PER 250 SQ. FT. BREAK DOWN OF PROVIDED: STANDARD PARKING SPACES 46 ACCESSIBLE PARKING SPACES 3 LOADING 2	6119 sf / 250 = 24 SPACES	49 SPACES
TOTAL PARKING SPACES		REQUIRED TOTAL - 366	PROVIDED TOTAL - 334

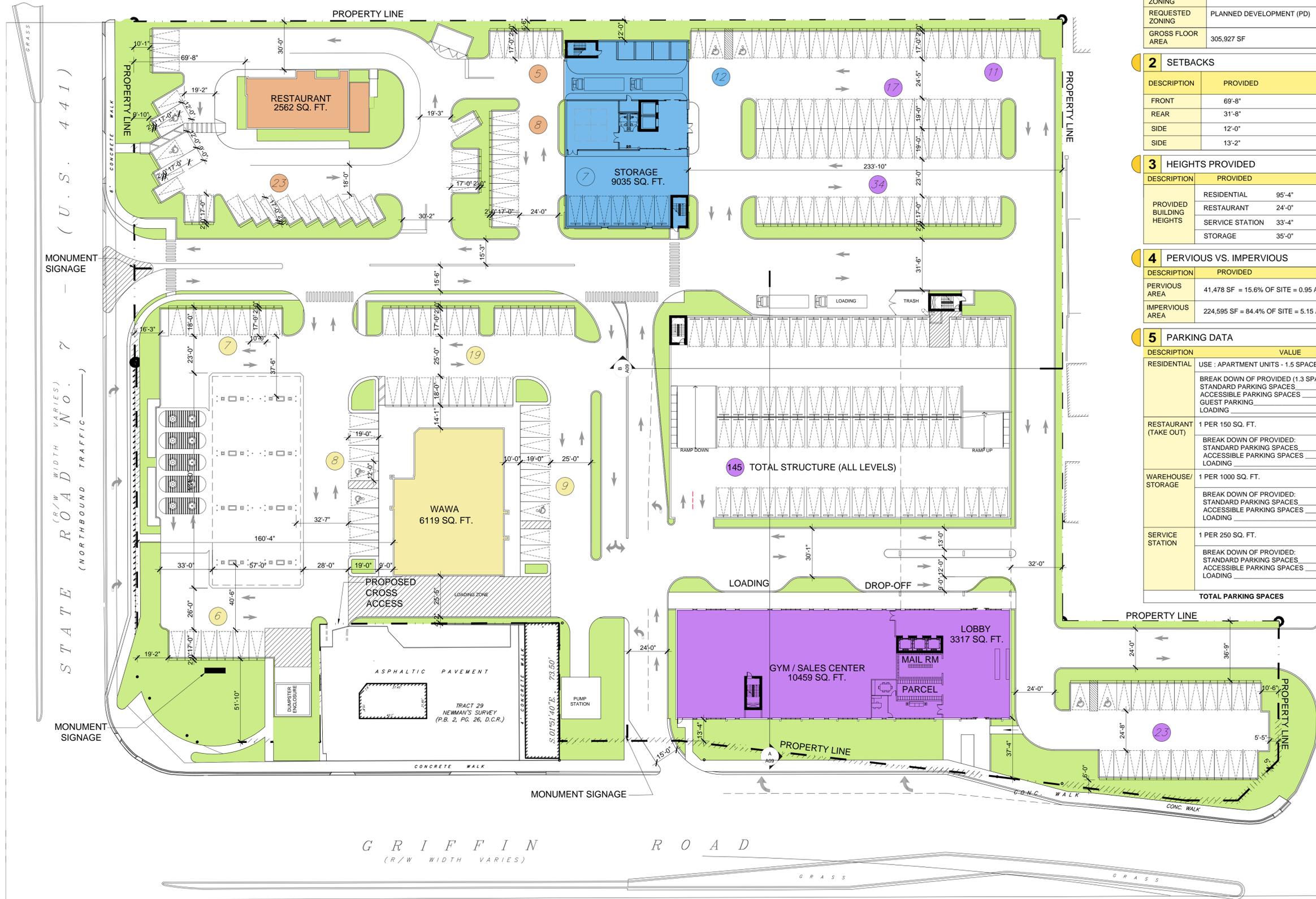
DESCRIPTION	VALUE	ORDINANCE	REQUIRED	PROVIDED
STALL DIMENSIONS	9'-0" WIDE x 19'-0" LONG (90 DEGREE PARKING ANGLE) COMPACT: 8'-6" WIDE x 19'-0" LONG	152.042	9'-0" x 18'-0" AND 8'-0" x 16'-0"	9'-0" x 18'-0" AND 9'-0" x 19'-0"
aisle DIMENSIONS	24'-0" WIDE (90 DEGREE PARKING ANGLE) TWO-WAY TRAFFIC 12'-0" WIDE ONE-WAY TRAFFIC			
ADA	12'-0" x 19'-0" W/ 60" AISLE	FBCB 11-4.1.2		12'-0" x 17'-0" W/ 60" AISLE

PARKING REQUIREMENT: 1 SPACE PER 250 SQ. FT. FOR SITES GREATER THAN 0.25 ACRES IN SIZE, 1 SPACE PER 500 SQ. FT., TO A MAXIMUM OF 5 SPACES FOR SITES LESS THAN OR EQUAL TO 0.25 ACRES IN SIZE (REQUIREMENT APPLIES TO PERMITTED USES FOR O-1 AS LISTED ABOVE).

THE DESIGN OF THE PARKING LOT SHALL BE APPROVED BY THE DIRECTOR BASED UPON THE FOLLOWING REGULATIONS:

- A. TWO WAY DRIVE MINIMUM WIDTH: 12 FT.
- B. PARKING LOT SETBACK: 5 FT. SETBACK FROM ANY LOT LINE
- C. DRIVEWAY SETBACK: 3 FT. SETBACK FROM ANY LOT LINE.
- D. HEAD-IN/BACK-OUT PARKING: NOT PERMITTED.
- E. REQUIRED PARKING SPACES (TANDEM) MAY BE DESIGNED ON A CIRCULAR DRIVE WITH AN INTERIOR LANDSCAPED ISLAND.

TRACT 29
NEWMAN'S SURVEY
(P.B. 2, PG. 26, D.C.R.)



1 GENERAL

DESCRIPTION	VALUE
LEGAL DESCRIPTION	GRIFFIN-441 PLAZA 167-20 B PARCEL A
PARCEL ID	5041-25-30-0010
LOT SIZE	266,073 SQ. FT. (6.1088 ACRES)
CURRENT ZONING	SR7 CCD - RC (C-4)
REQUESTED ZONING	PLANNED DEVELOPMENT (PD)
GROSS FLOOR AREA	305,927 SF

2 SETBACKS

DESCRIPTION	PROVIDED
FRONT	69'-8"
REAR	31'-8"
SIDE	12'-0"
SIDE	13'-2"

3 HEIGHTS PROVIDED

DESCRIPTION	PROVIDED
RESIDENTIAL	95'-4"
RESTAURANT	24'-0"
SERVICE STATION	33'-4"
STORAGE	35'-0"

4 PERVIOUS VS. IMPERVIOUS

DESCRIPTION	PROVIDED
PERVIOUS AREA	41,478 SF = 15.6% OF SITE = 0.95 ACRES
IMPERVIOUS AREA	224,595 SF = 84.4% OF SITE = 5.15 ACRES

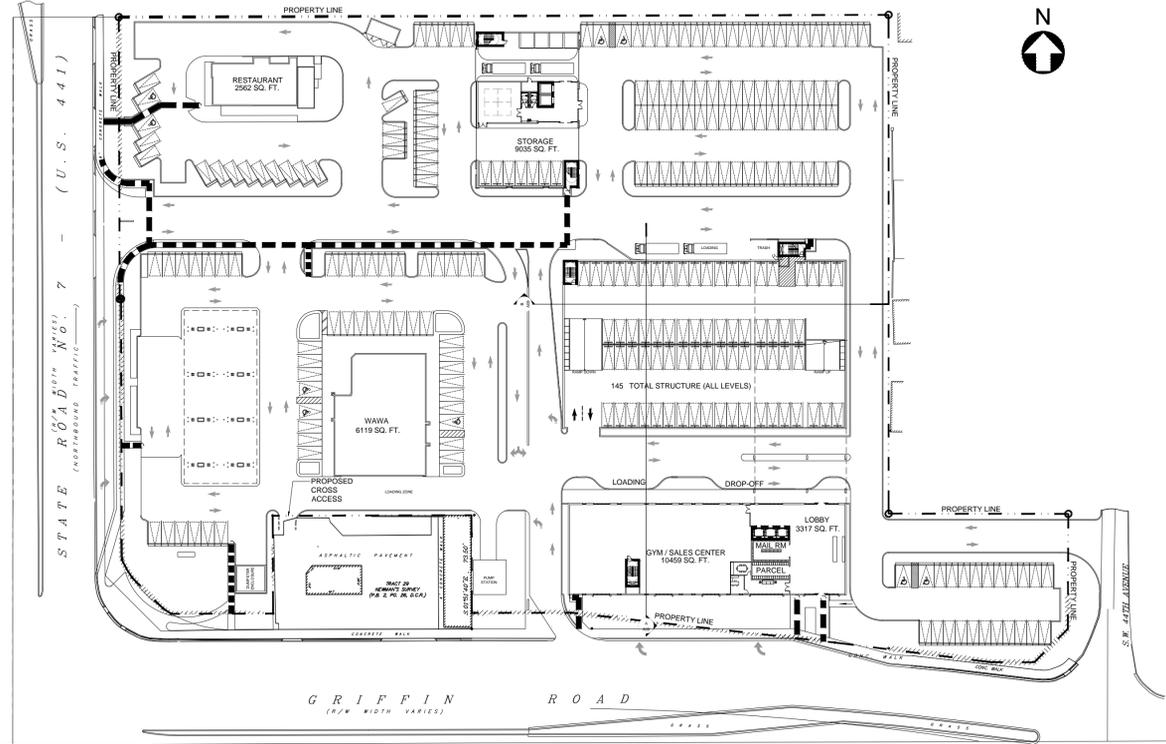
5 PARKING DATA

DESCRIPTION	VALUE	REQUIRED	PROVIDED
RESIDENTIAL	USE : APARTMENT UNITS - 1.5 SPACES PER UNIT	160units x 1.5 = 270 SPACES	230 SPACES
	BREAK DOWN OF PROVIDED (1.3 SPACES PER UNIT):		
	STANDARD PARKING SPACES	207	36 SPACES
	ACCESSIBLE PARKING SPACES	2	
	GUEST PARKING	23	
	LOADING	2	
		306 SPACES	
RESTAURANT (TAKE OUT)	1 PER 150 SQ. FT.	2562sf / 150 = 17 SPACES	36 SPACES
	BREAK DOWN OF PROVIDED:		
	STANDARD PARKING SPACES	34	
	ACCESSIBLE PARKING SPACES	2	
	LOADING	1	
WAREHOUSE/ STORAGE	1 PER 1000 SQ. FT.	19520sf / 1000 = 19 SPACES	19 SPACES
	BREAK DOWN OF PROVIDED:		
	STANDARD PARKING SPACES	17	
	ACCESSIBLE PARKING SPACES	2	
	LOADING	2	
SERVICE STATION	1 PER 250 SQ. FT.	6119 sf / 250 = 24 SPACES	49 SPACES
	BREAK DOWN OF PROVIDED:		
	STANDARD PARKING SPACES	46	
	ACCESSIBLE PARKING SPACES	3	
	LOADING	2	
		REQUIRED	PROVIDED
	TOTAL PARKING SPACES	TOTAL - 366	TOTAL - 334

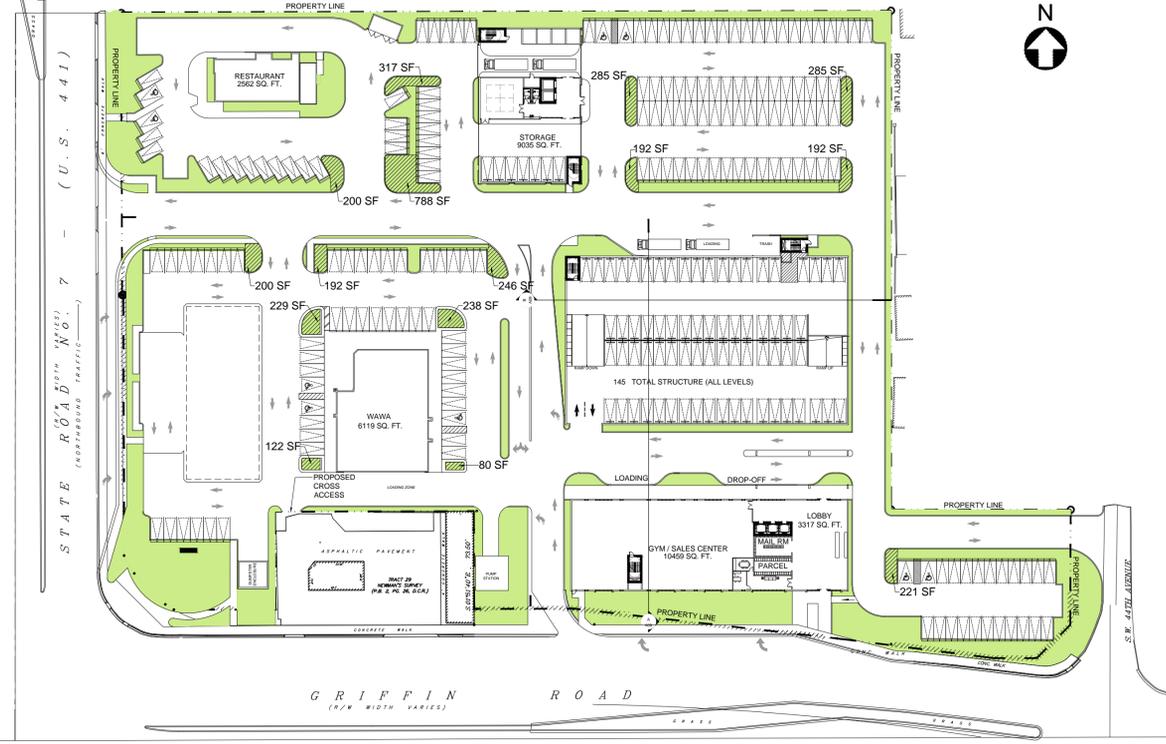
- NOTES:
- ALL MECHANICAL EQUIPMENT SHALL BE PROPERLY SCREENED FROM PUBLIC VIEW.
 - MAXIMUM FOOT CANDLES AT ALL PROPERTY LINES SHALL BE 0.5.
 - RESIDENTIAL BUILDING SHALL MEET THE FLORIDA GREEN BUILDING COALITION CERTIFICATION.



TRACT 29
NEWMAN'S SURVEY
(P.B. 2, PG. 26, D.C.R.)



TRACT 29
NEWMAN'S SURVEY
(P.B. 2, PG. 26, D.C.R.)

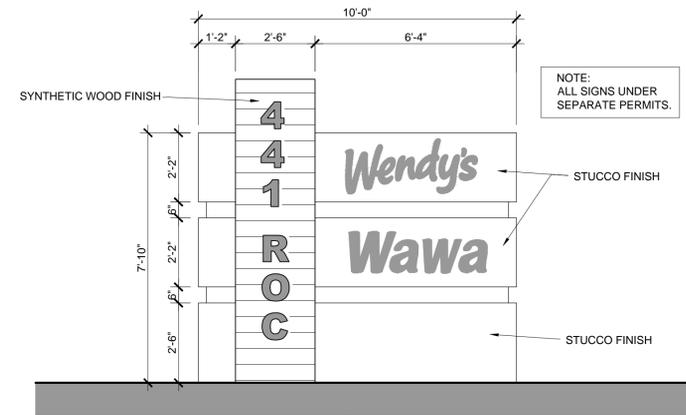


1 PEDESTRIAN PATH DIAGRAM
A3.1 SCALE: 1/64" = 1'-0"

LEGEND	
PEDESTRIAN PATH	

2 PERVIOUS DIAGRAM
A3.1 SCALE: 1/64" = 1'-0"

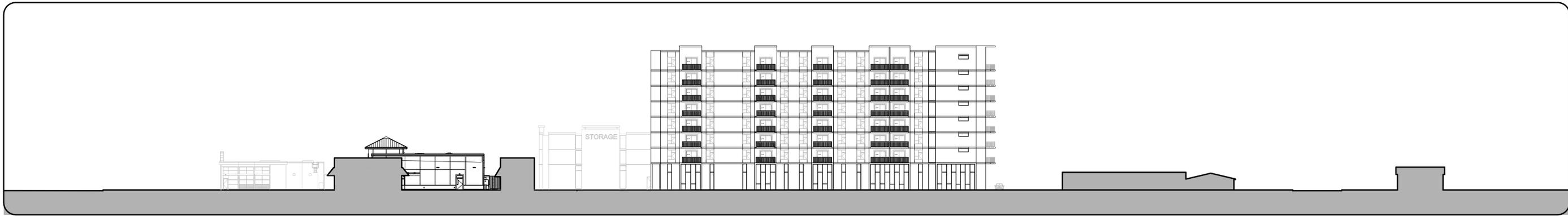
LEGEND	SF	%
PERVIOUS SPACE	41,478 SF	15.6%
IMPERVIOUS SPACE	224,595 SF	84.4%



4 MONUMENT SIGN AT GRIFFIN AND 441 ENTRANCES
A3.1 SCALE: N.T.S.



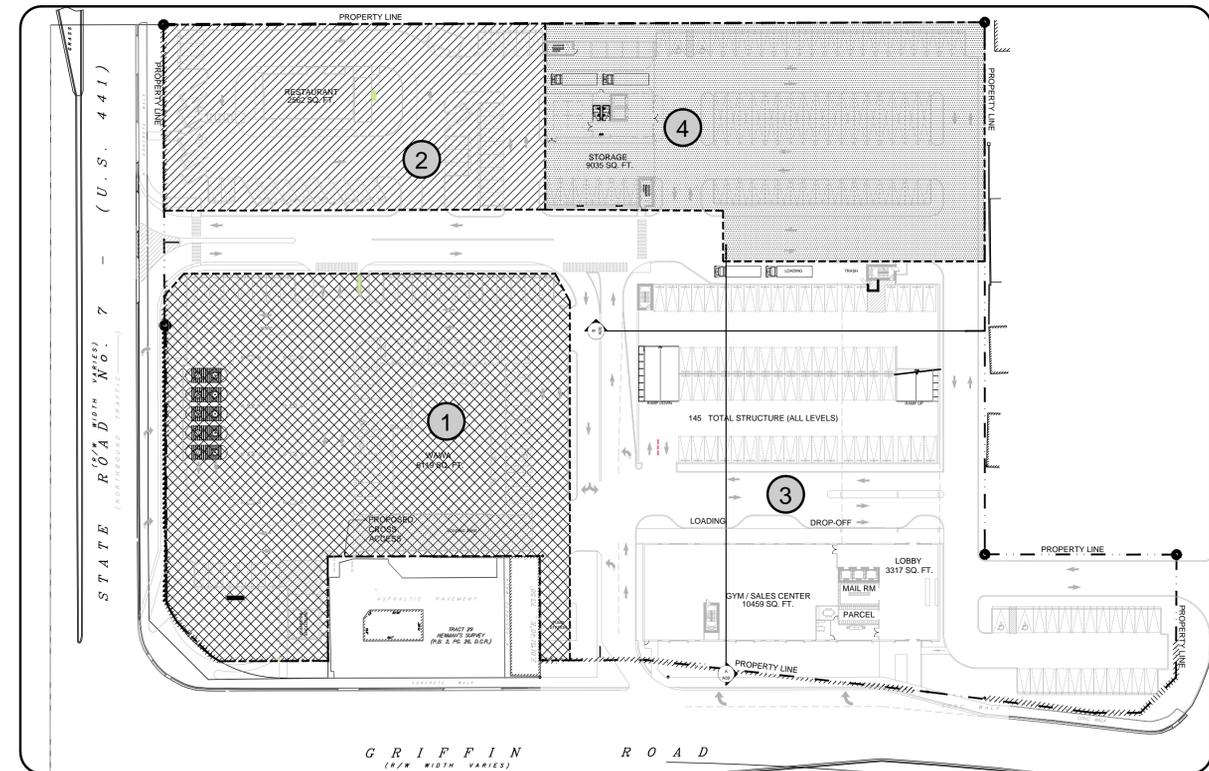
3 MONUMENT SIGN AT INTERSECTION OF GRIFFIN AND 441
A3.1 SCALE: N.T.S.



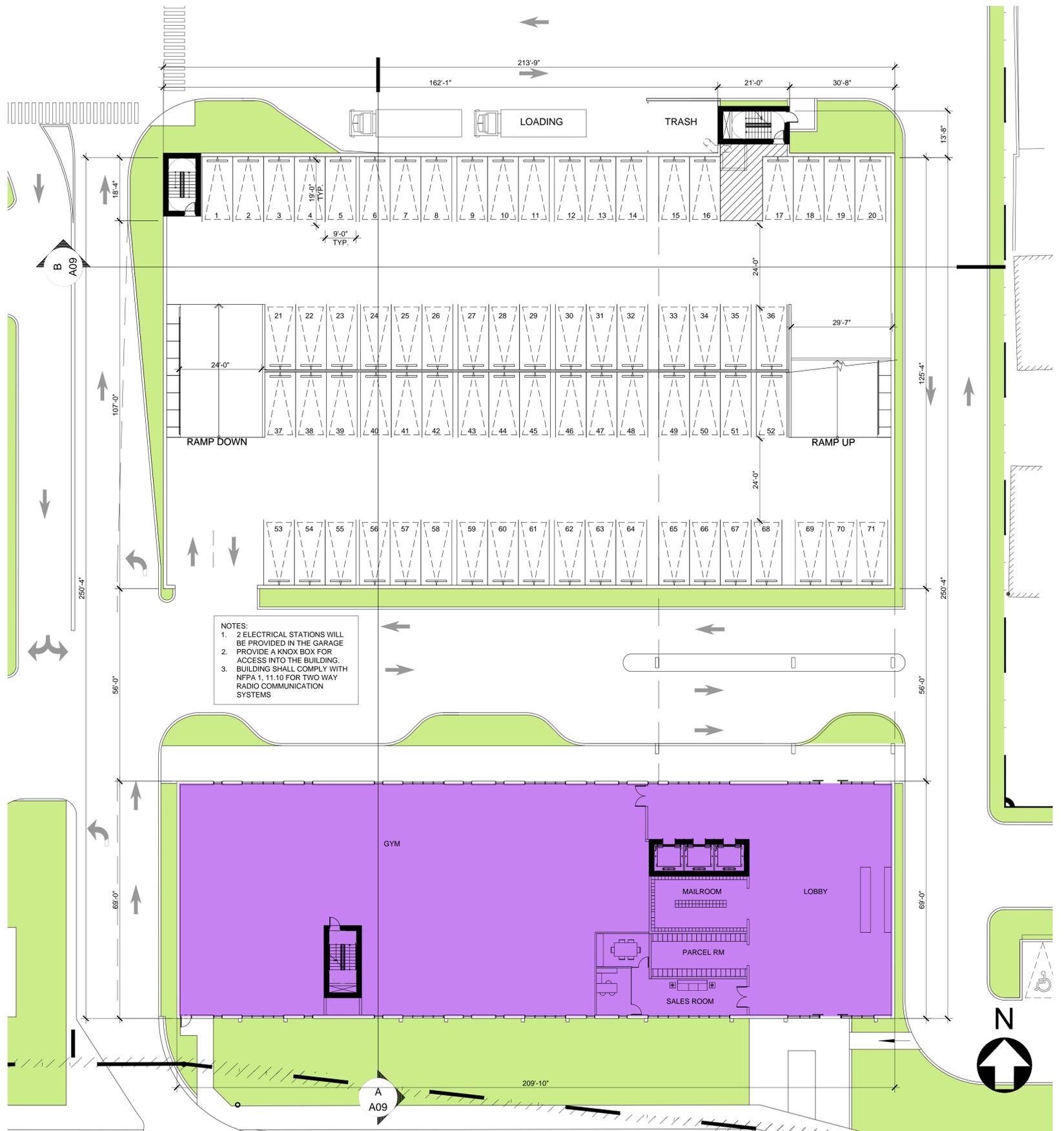
NORTH STREET PROFILE
SCALE: 1" = 30'



WEST STREET PROFILE
SCALE: 1" = 30'

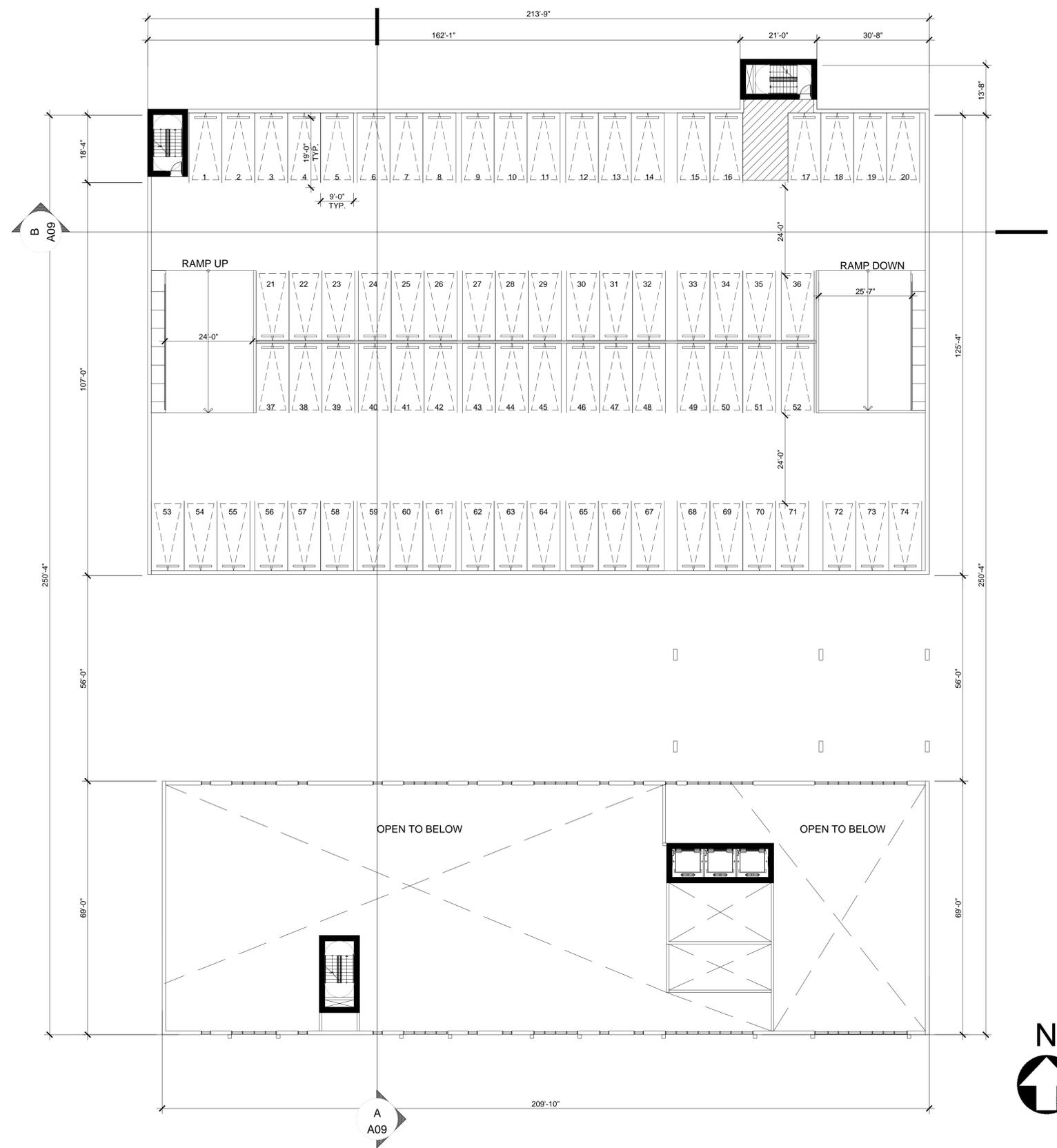


PHASING PLAN
SCALE: 1" = 60'



NOTES:
 1. 2 ELECTRICAL STATIONS WILL BE PROVIDED IN THE GARAGE
 2. PROVIDE A KNOX BOX FOR ACCESS INTO THE BUILDING.
 3. BUILDING SHALL COMPLY WITH NFPA 1, 11.10 FOR TWO WAY RADIO COMMUNICATION SYSTEMS

- RESIDENTIAL GREEN BUILDING PRACTICES (PER ORDINANCE 151.151)
- SANITATION SYSTEM FOR POOLS THAT REDUCES CHLORINE USAGE. TO CLAIM THIS ITEM, A SYSTEM THAT ELIMINATES THE USE OF LIQUID CHLORINE BY RECYCLING A SALT ALTERNATIVE, OR A SYSTEM THAT REDUCES THE AMOUNT OF LIQUID CHLORINE REQUIRED BY USING IONIZATION TECHNOLOGY MUST BE USED. AN ULTRA VIOLET AND OZONE SYSTEM THAT STERILIZES THE WATER WITHOUT THE USE OF CHEMICALS IS ALSO ACCEPTABLE. SYSTEMS MUST BE SHOWN ON PLANS AND VERIFIED BY PLUMBING INSPECTOR ON SITE AT FINAL INSPECTION.
 - ALL ENERGY STAR APPLIANCES. ALL PERMANENT APPLIANCES IN THE RESIDENCE THAT CAN BE ENERGY STAR RATED MUST BE SO RATED TO CLAIM THIS ITEM. (THIS INCLUDES REFRIGERATOR, STOVE, WASHING MACHINE, DRYER, ETC. ITEMS NOT COVERED ARE COUNTERTOP APPLIANCES SUCH AS TOASTERS, MIXERS ETC.) ENERGY STAR APPLIANCES MUST BE VERIFIED BY BUILDING INSPECTOR ON SITE AT FINAL INSPECTION
 - NO SHOWER WITH MORE THAN ONE SHOWER HEAD, AND ALL LOW FLOW SHOWER HEADS. LOW FLOW SHOWER HEADS ARE RATED AT A MAXIMUM FLOW OF 2.5 GALLONS PER MINUTE AT 80 PSI WATER PRESSURE. ONE SHOWER HEAD PER SHOWER AND LOW FLOW SHOWER HEADS MUST BE SHOWN ON PLUMBING PLANS AND VERIFIED BY PLUMBING INSPECTOR ON SITE AT FINAL INSPECTION
 - ENERGY EFFICIENT (LOW E) WINDOWS. ALL WINDOWS SHALL CONFORM TO THE ENERGY STAR RATING CRITERIA FOR SOUTH FLORIDA AS APPROVED BY THE NFRC (NATIONAL FENESTRATION RATING COUNCIL).
 - CENTRAL AIR CONDITIONER OF 18 SEER OR HIGHER.
 - PROGRAMMABLE THERMOSTATS
 - DUAL FLUSH TOILETS. THESE TOILETS WHEN FLUSHED USE LESS THAN ONE GALLON TO FLUSH LIQUID AND 1.6 GALLONS OR LESS FOR SOLIDS (USGBC). PLANS SHALL INDICATE DUAL FLUSH TOILET. SYSTEM MUST BE VERIFIED BY PLUMBING INSPECTOR AT FINAL INSPECTION.
 - ALL ENERGY-EFFICIENT OUTDOOR LIGHTING. SUGGESTED LIGHTS FOR OUTDOOR SPACES INCLUDE FLUORESCENT BULBS AND FIXTURES WITH ELECTRONIC BALLASTS (MORE EFFICIENT THAN MAGNETIC TYPES), LOW PRESSURE SODIUM OR MERCURY VAPOR, PHOTOVOLTAIC SYSTEMS, LED LIGHTING AND LOW VOLTAGE LANDSCAPE LIGHTS THAT RUN ON A TIMER. ALL ENERGY-EFFICIENT OUTDOOR LIGHTING SHALL BE VERIFIED BY ELECTRICAL INSPECTOR AT FINAL INSPECTION.
 - ELECTRIC VEHICLE-CHARGING-STATION INFRASTRUCTURE.
 - ACCESS TO PUBLIC TRANSPORTATION.



PARCEL 'A' - 441 ROC - GRIFFIN & 441 PLAZA
 HOLLYWOOD, FL 15-820US

MEETING DATES:
 PRELIMINARY TAC - 04-03-2017
 FINAL TAC - 06-15-2017

RESIDENTIAL FLOOR PLAN 02



20900 NE 30th Ave., Suite 914
 Aventura, FL 33180
 Tel: (305) 792-0015
 Fax: (305) 931-0279
 ARCHITECT LICENSE NO. BA20000066
 www.absolute-idea.com
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Scale: 1/16" = 1'-0"

Date: 2017-06-05

STEPHANE L'ECUYER AR 93637

Sheet 4.2



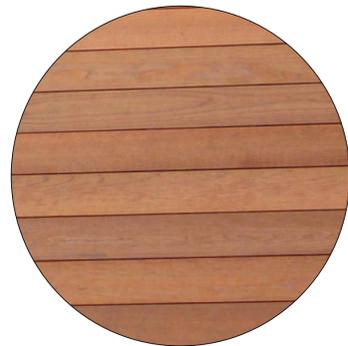
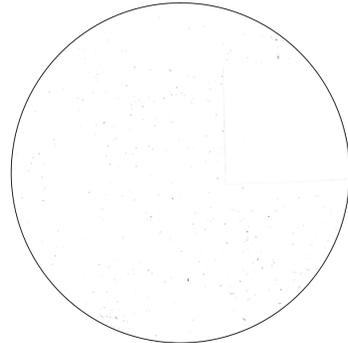
23 865 S.F. (NET)



23 865 S.F. (NET)

LEGEND:

- 1 EXTERIOR STUCCO FINISH
- 2 METAL RAILING (TYP.)
- 3 CONCRETE CANOPY WITH STUCCO FINISH
- 4 EXTERIOR DOOR, TYP.
- 5 IMPACT RESISTANT WINDOW
- 6 SYNTHETIC WOOD FINISH
- 7 SYNTHETIC GREEN WALL SYSTEM
- 8 LOUVERS

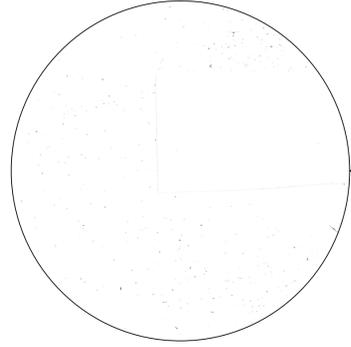


NORTH RESIDENTIAL BUILDING SECTION / ELEVATION



NORTH RESIDENTIAL BUILDING ELEVATION

- LEGEND:
- 1 EXTERIOR STUCCO FINISH
 - 2 METAL RAILING (TYP.)
 - 3 CONCRETE CANOPY WITH STUCCO FINISH
 - 4 EXTERIOR DOOR, TYP.
 - 5 IMPACT RESISTANT WINDOW
 - 6 SYNTHETIC WOOD FINISH
 - 7 SYNTHETIC GREEN WALL SYSTEM
 - 8 LOUVERS

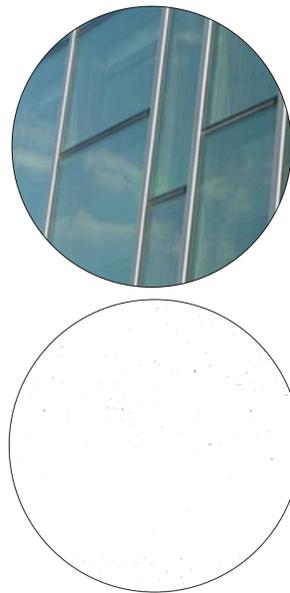


WEST RESIDENTIAL BUILDING ELEVATION

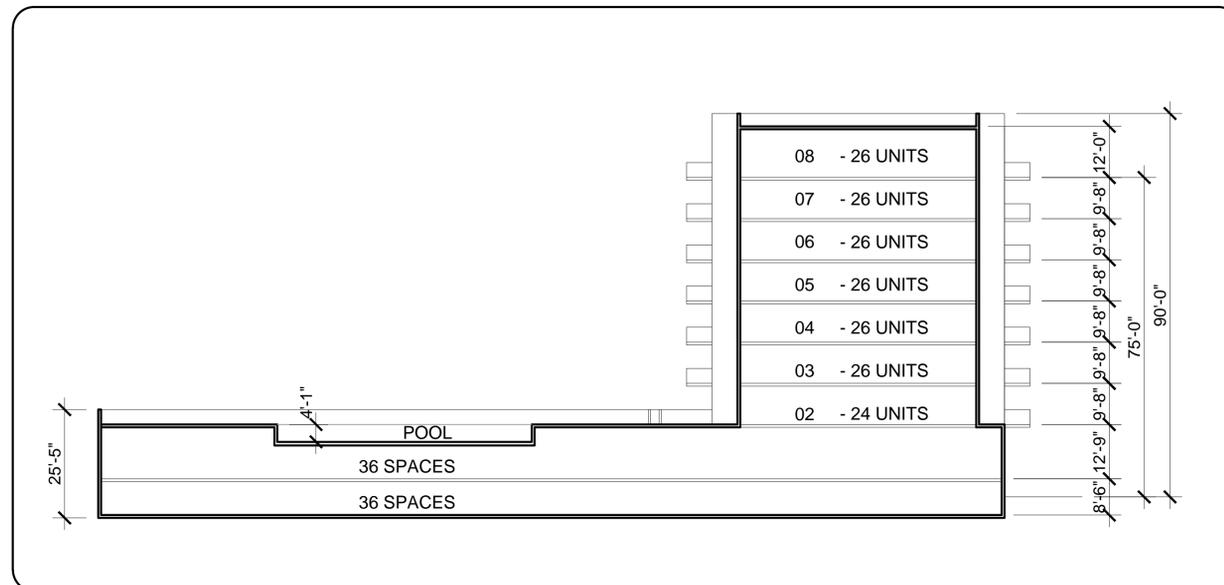


EAST RESIDENTIAL BUILDING ELEVATION

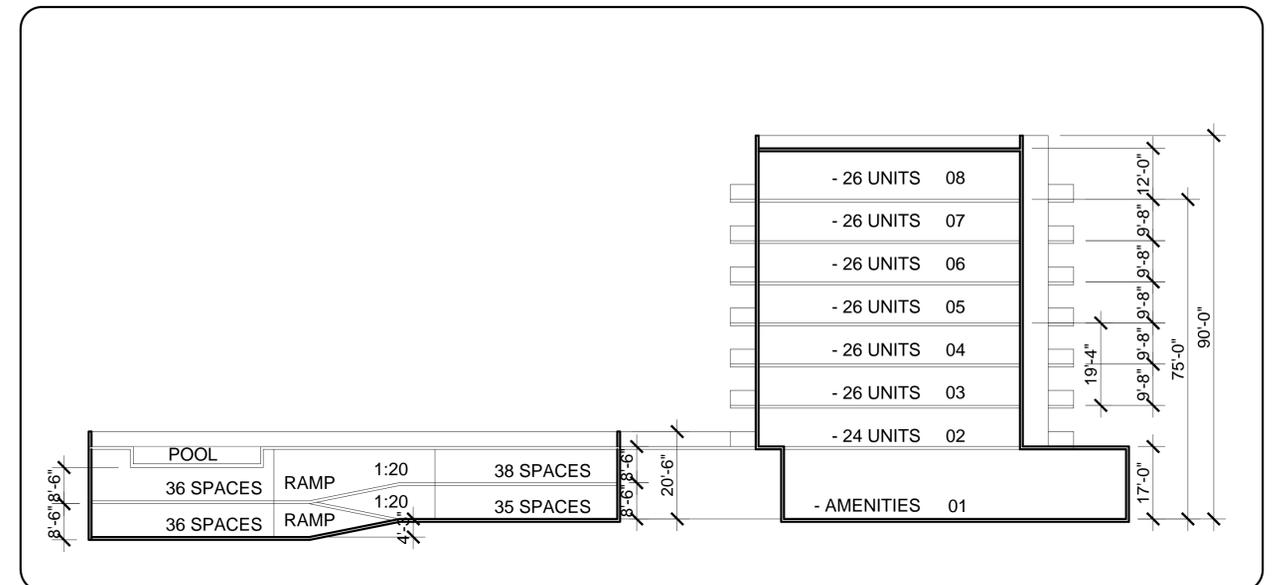
- LEGEND:
- 1 EXTERIOR STUCCO FINISH
 - 2 METAL RAILING (TYP.)
 - 3 CONCRETE CANOPY WITH STUCCO FINISH
 - 4 EXTERIOR DOOR, TYP.
 - 5 IMPACT RESISTANT WINDOW
 - 6 SYNTHETIC WOOD FINISH
 - 7 SYNTHETIC GREEN WALL SYSTEM
 - 8 LOUVERS



SOUTH RESIDENTIAL BUILDING ELEVATION
SCALE: 1/16"=1'-0"

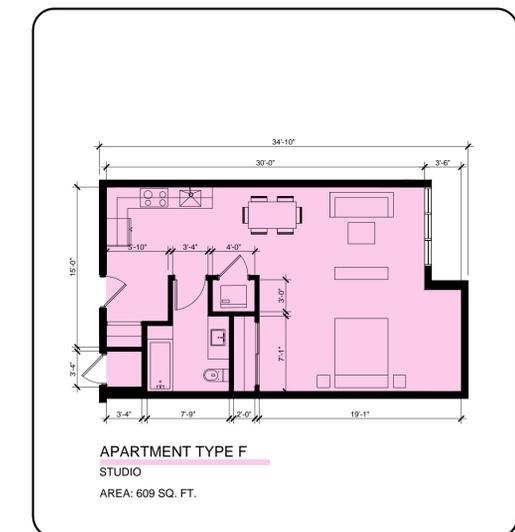
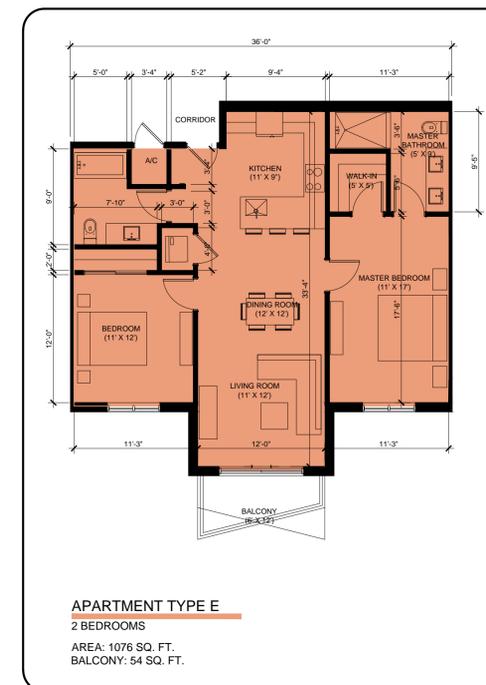
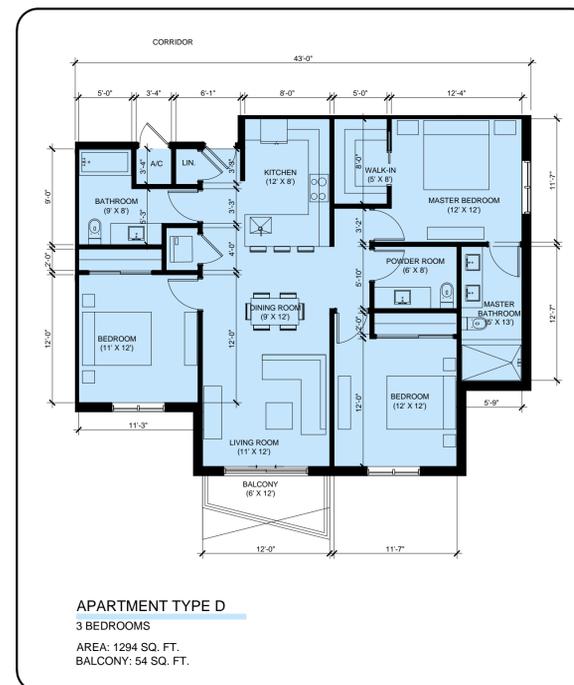
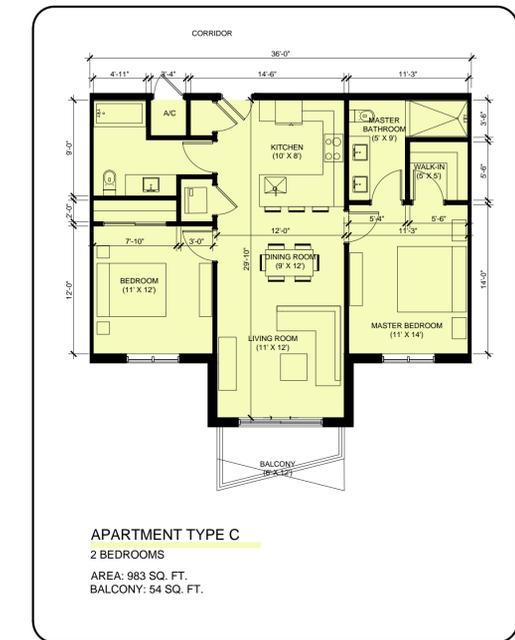
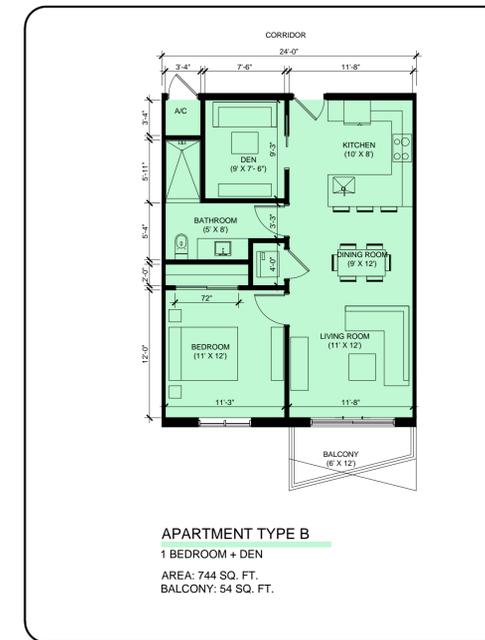
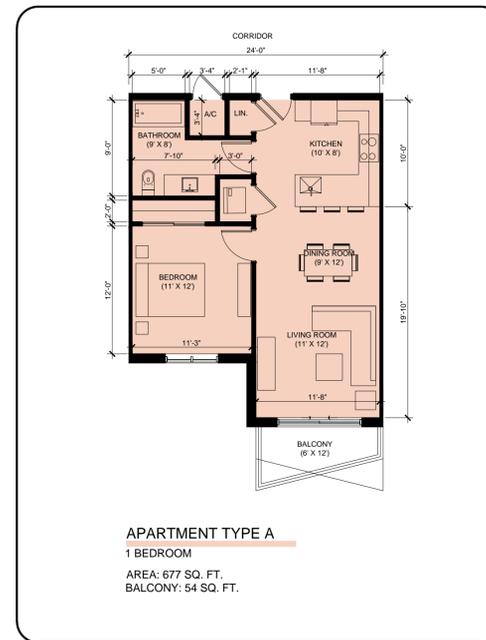


BUILDING SECTION 'B'
SCALE: 1" = 20'

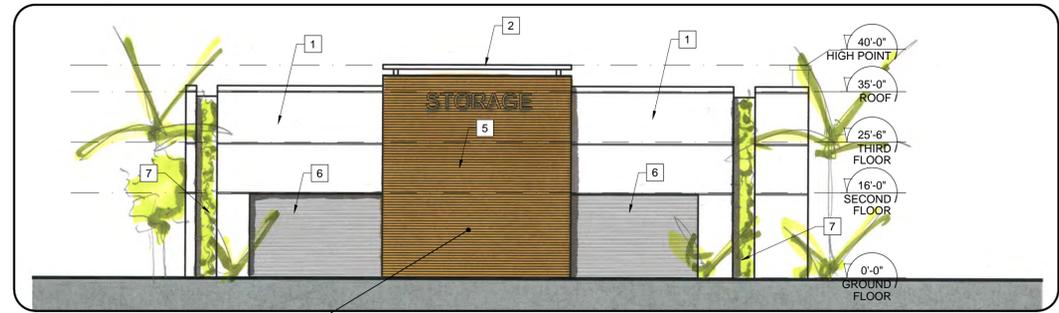


BUILDING SECTION 'A'
SCALE: 1" = 20'

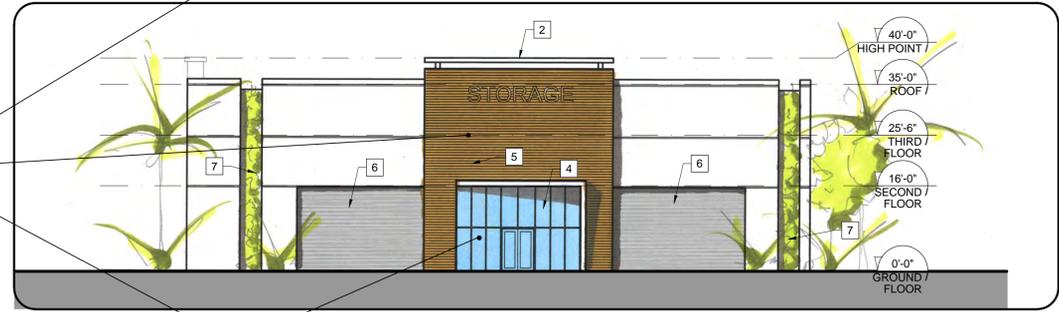




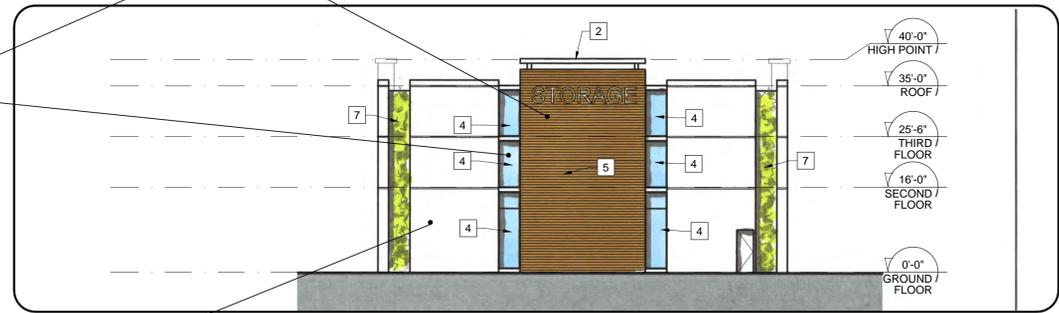
- LEGEND:**
- 1 EXTERIOR STUCCO FINISH
 - 2 CONCRETE CANOPY WITH SYNTHETIC WOOD FINISH
 - 3 EXTERIOR DOOR, TYP.
 - 4 IMPACT RESISTANT STOREFRONT
 - 5 SYNTHETIC WOOD FINISH
 - 6 ROLL UP DOOR
 - 7 SYNTHETIC GREEN WALL



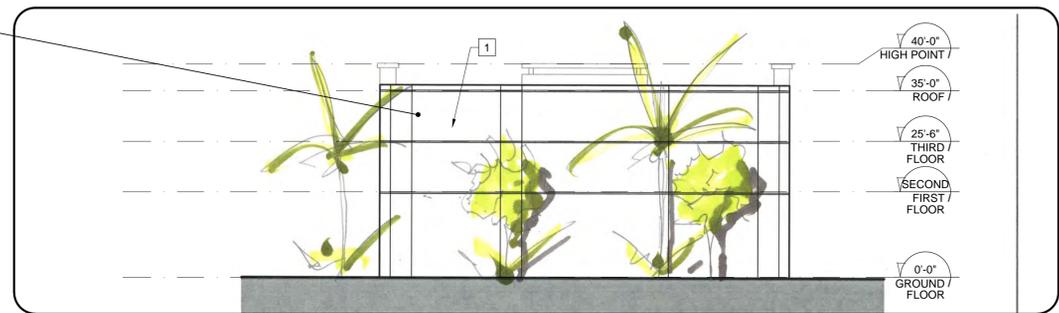
WEST ELEVATION



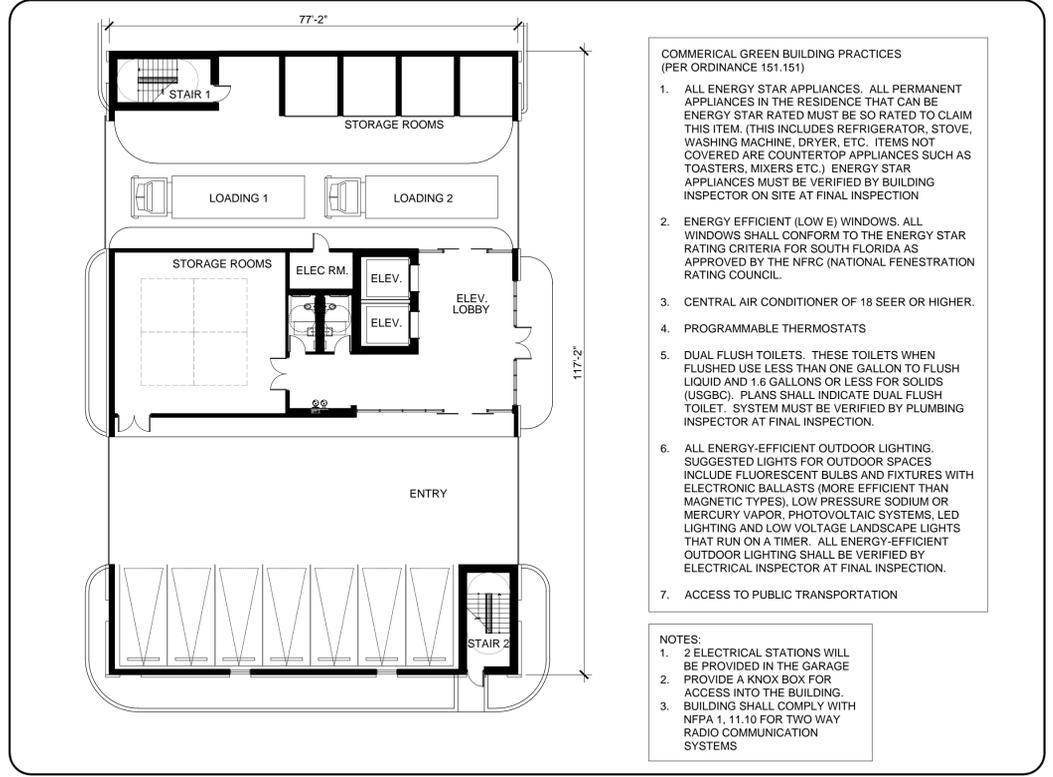
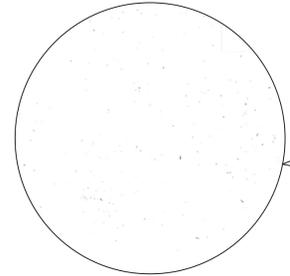
EAST ELEVATION



SOUTH ELEVATION



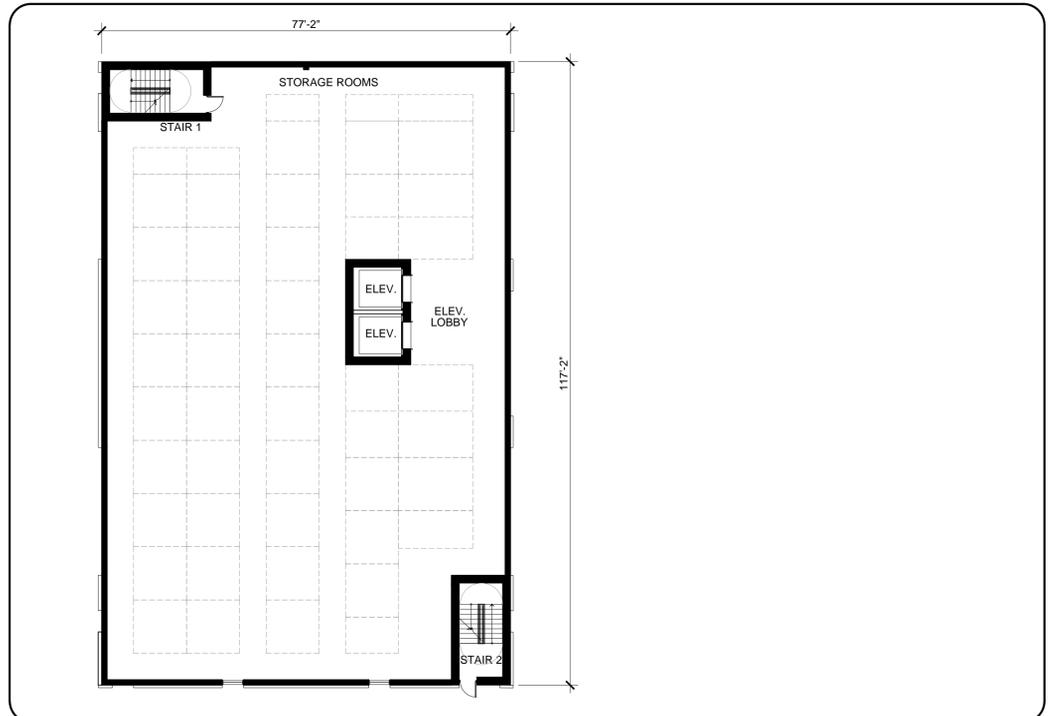
NORTH ELEVATION



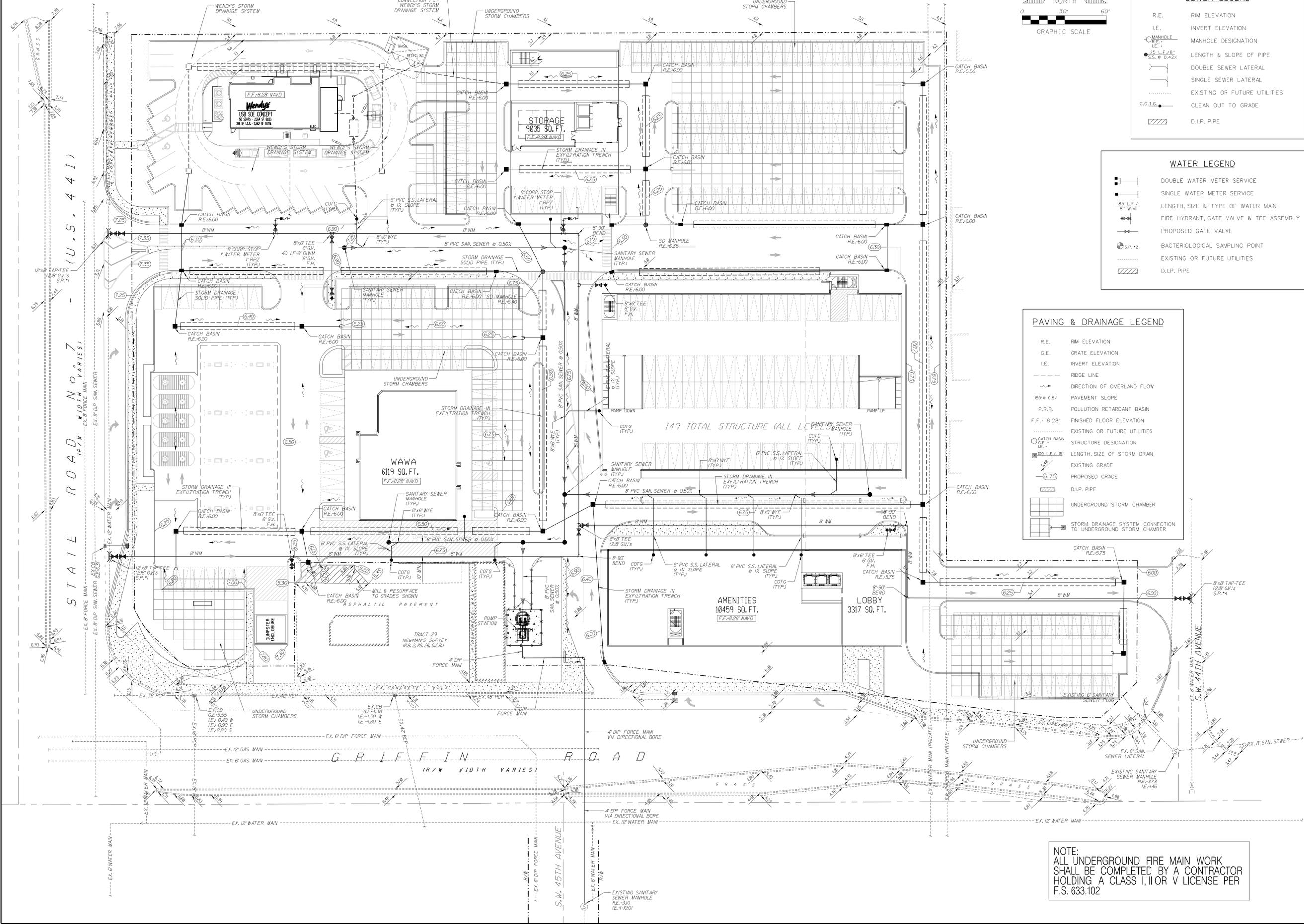
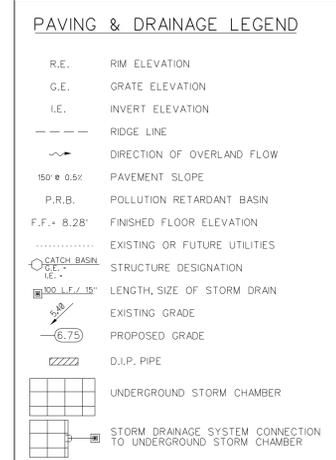
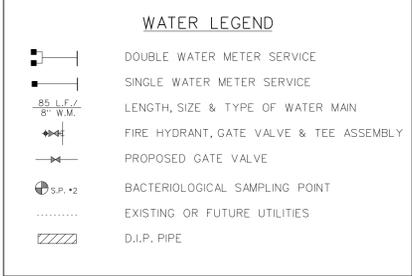
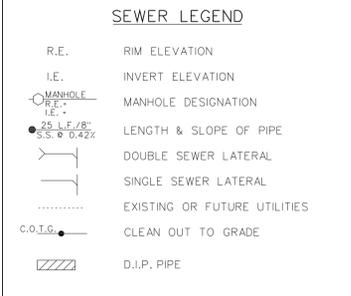
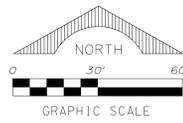
GROUND FLOOR PLAN

- COMMERCIAL GREEN BUILDING PRACTICES (PER ORDINANCE 151.151)**
1. ALL ENERGY STAR APPLIANCES. ALL PERMANENT APPLIANCES IN THE RESIDENCE THAT CAN BE ENERGY STAR RATED MUST BE SO RATED TO CLAIM THIS ITEM. (THIS INCLUDES REFRIGERATOR, STOVE, WASHING MACHINE, DRYER, ETC. ITEMS NOT COVERED ARE COUNTERTOP APPLIANCES SUCH AS TOASTERS, MIXERS ETC.) ENERGY STAR APPLIANCES MUST BE VERIFIED BY BUILDING INSPECTOR ON SITE AT FINAL INSPECTION
 2. ENERGY EFFICIENT (LOW E) WINDOWS. ALL WINDOWS SHALL CONFORM TO THE ENERGY STAR RATING CRITERIA FOR SOUTH FLORIDA AS APPROVED BY THE NFRC (NATIONAL FENESTRATION RATING COUNCIL).
 3. CENTRAL AIR CONDITIONER OF 18 SEER OR HIGHER.
 4. PROGRAMMABLE THERMOSTATS
 5. DUAL FLUSH TOILETS. THESE TOILETS WHEN FLUSHED USE LESS THAN ONE GALLON TO FLUSH LIQUID AND 1.6 GALLONS OR LESS FOR SOLIDS (USGBC). PLANS SHALL INDICATE DUAL FLUSH TOILET. SYSTEM MUST BE VERIFIED BY PLUMBING INSPECTOR AT FINAL INSPECTION.
 6. ALL ENERGY-EFFICIENT OUTDOOR LIGHTING. SUGGESTED LIGHTS FOR OUTDOOR SPACES INCLUDE FLUORESCENT BULBS AND FIXTURES WITH ELECTRONIC BALLASTS (MORE EFFICIENT THAN MAGNETIC TYPES), LOW PRESSURE SODIUM OR MERCURY VAPOR, PHOTOVOLTAIC SYSTEMS, LED LIGHTING AND LOW VOLTAGE LANDSCAPE LIGHTS THAT RUN ON A TIMER. ALL ENERGY-EFFICIENT OUTDOOR LIGHTING SHALL BE VERIFIED BY ELECTRICAL INSPECTOR AT FINAL INSPECTION.
 7. ACCESS TO PUBLIC TRANSPORTATION

- NOTES:**
1. 2 ELECTRICAL STATIONS WILL BE PROVIDED IN THE GARAGE
 2. PROVIDE A KNOX BOX FOR ACCESS INTO THE BUILDING.
 3. BUILDING SHALL COMPLY WITH NFPA 1, 11.10 FOR TWO WAY RADIO COMMUNICATION SYSTEMS



SECOND AND THIRD FLOOR PLAN



REVISIONS:

1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

CLIENT: **Privacp Companies**
7200 W. Camino Real, Suite 200
Boca Raton, Florida 33433

PROJECT: **Griffin Multi-Use**
FLORIDA
HOLLYWOOD
TASK: **PRELIMINARY CIVIL ENGINEERING PLAN**

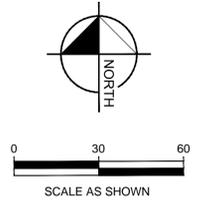
GGB Engineering, Inc.
CIVIL AND FORENSIC ENGINEERS • LAND PLANNERS
• CONSTRUCTION MANAGERS
FLORIDA REGISTRATION NO. 8118
2899 Stirling Road, Suite C-202
Fort Lauderdale, Florida 33312
Phone: (954) 986-9899
Fax: (954) 986-8655

DATE: **May 2016** SCALE: **1"=30'**
DESIGNED BY: **C.C.B.** DRAWN BY: **M.M.**

PROJECT NO. **151030**
SHEET **PRE**

NOTE:
ALL UNDERGROUND FIRE MAIN WORK
SHALL BE COMPLETED BY A CONTRACTOR
HOLDING A CLASS I, II OR V LICENSE PER
F.S. 633.102

TRACT 29
NEWMAN'S SURVEY
(P.B. 2, PG. 26, D.C.R.)



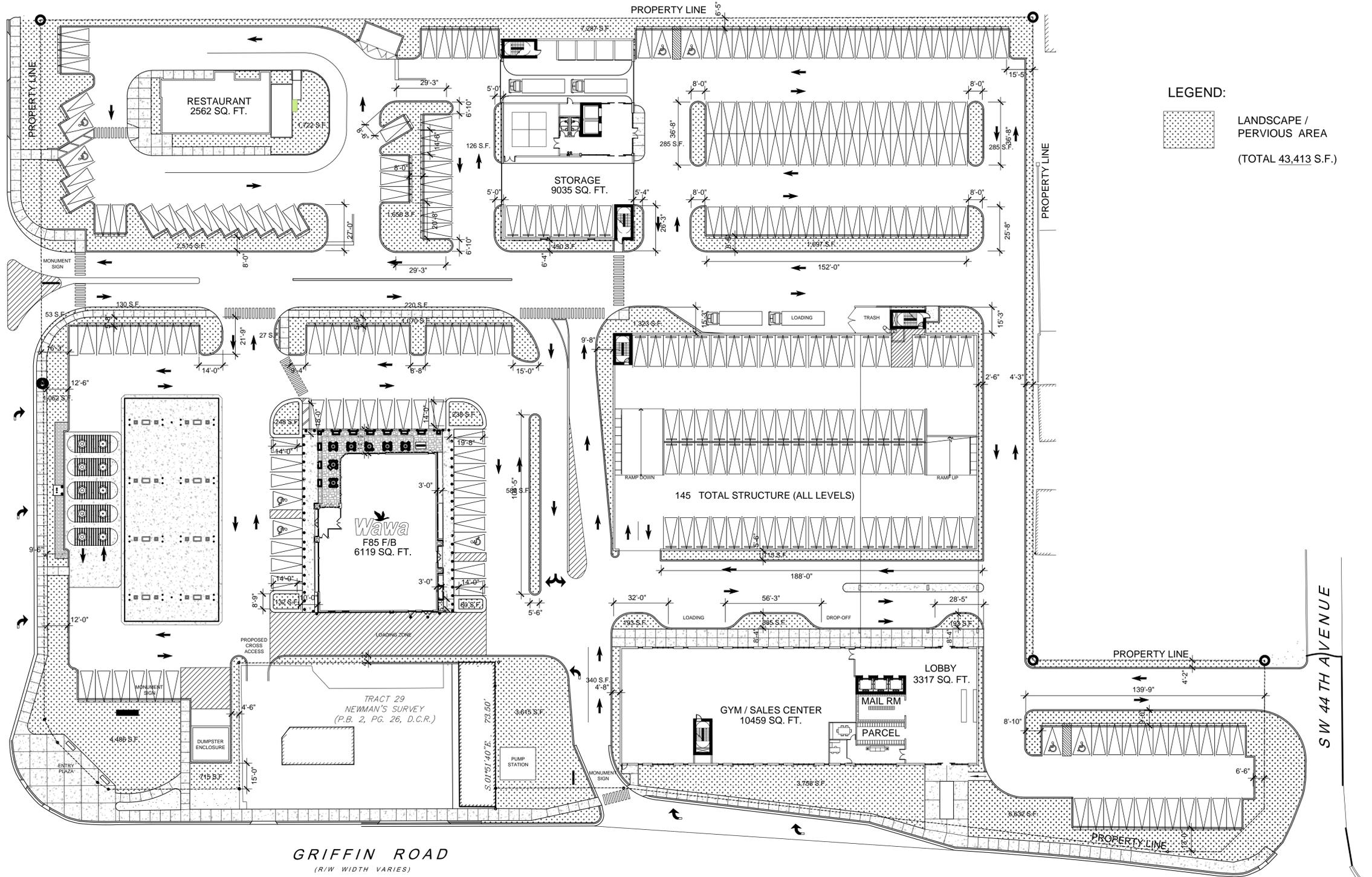
LEGEND:



LANDSCAPE /
PERVIOUS AREA
(TOTAL 43,413 S.F.)

STATE ROAD No. 7 - (U.S. 441)

(R/W WIDTH VARIES)



GRIFFIN ROAD
(R/W WIDTH VARIES)

SW 44 TH AVENUE

NO.	REVISIONS	DATE	BY

ALOHA PACIFICA LLC
LANDSCAPE ARCHITECTURE + PLANNING
1101 N. HAWAIIAN ST., SUITE 201
HAWAII, FLORIDA 33131
ALOHAPACIFICLLC@GMAIL.COM
PH: 813-388-8878



SCALE AS NOTED
DESIGNED BY GR
DRAWN BY BW
CHECKED BY GR

LANDSCAPE AREA AND
DIMENSIONING PLAN

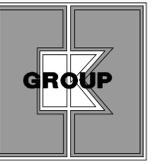
PARCEL 'A'
US 441 & GRIFFIN PLAZA
HOLLYWOOD
FLORIDA

48 HOURS BEFORE YOU DIG
CALL SUNSHINE
1-800-432-4770
IT'S THE LAW IN FLORIDA



DATE
06/05/17
PROJECT NO.
SHEET NUMBER
LA-1

SITE NUMBER: 00000
 BASE MODEL: USB SQE 55 V3
 ASSET TYPE: CORP/FRAN
 CLASSIFICATION: NEW
 OWNER: OWNER NAME
 BASE VERSION: XXXXXXXX
 UPGRADE CLASSIFICATION:
 CORP. NEW BUILD
 PROJECT YEAR: 2016
 FURNITURE PACKAGE: 2016 V3
 DRAWING RELEASE: 2016 V3R1



Cke GROUP
 INCORPORATED
 engineering • architecture • planning
 15500 NEW BARR ROAD
 SUITE 100
 MIAMI LAKES, FLORIDA 33014
 PHONE: (305) 558-4124
 FAX: (305) 626-0619

PROJECT TYPE: USB SQE 55
 NEW

Wendy's
 GRIFFIN RD. & 441 (SR-7)
 HOLLYWOOD, FLORIDA.

REV.	DATE	DESCRIPTION
-	06-02-17	
-		
-		
-		
-		

ISSUE DATE: 03/30/2017
 PROJECT NUMBER: 1506
 DRAWN BY: R. C.
 CHECKED BY: E. C.

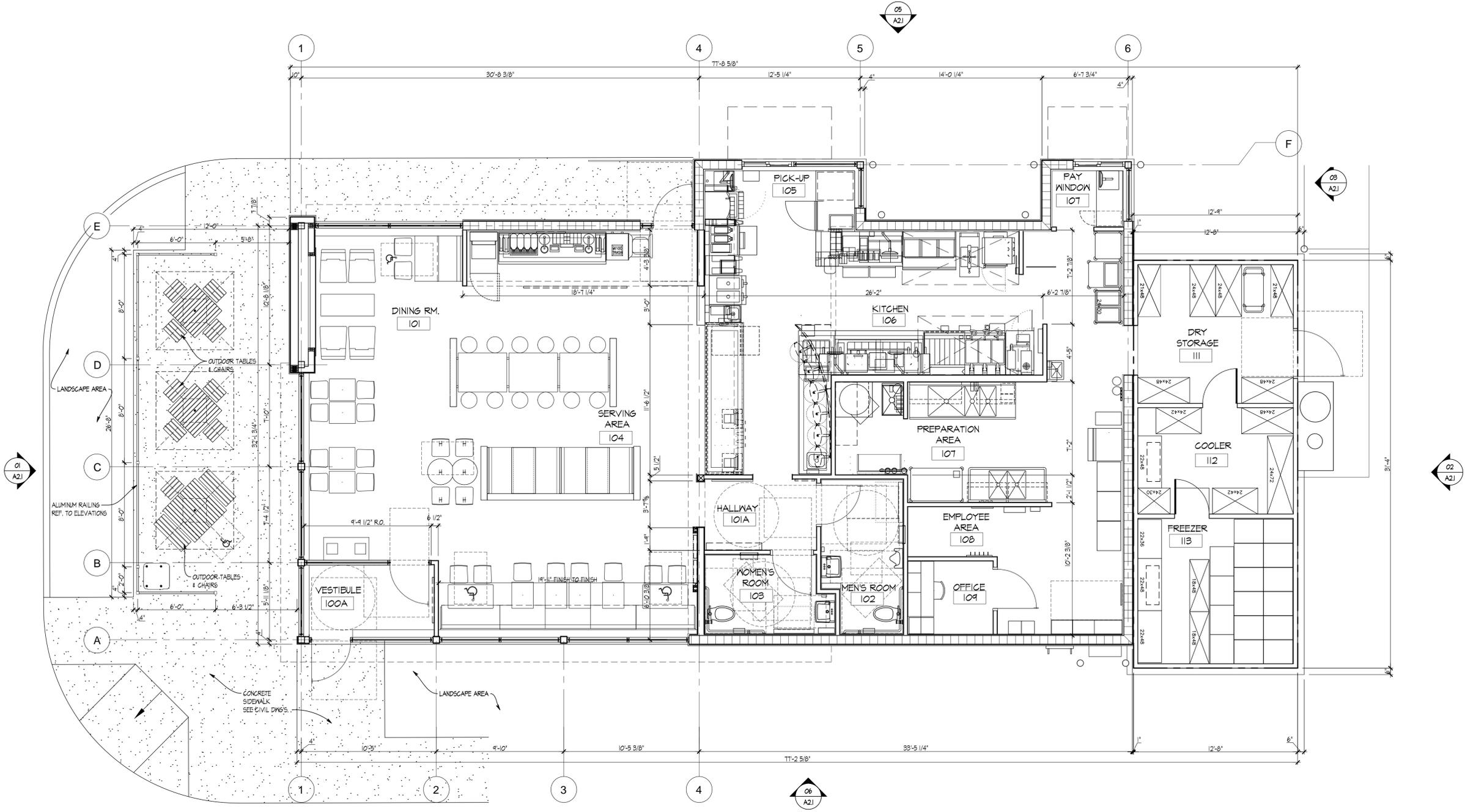
SEAL

EDUARDO L. CARCACHÉ, PE 31914
 ANA A. GONZALEZ VALDES, AR 97769
 CKE GROUP, INC. COA-4432

SHEET NAME
 FLOOR PLAN

SHEET NUMBER

A1.1



01 FLOOR PLAN
 SCALE

SITE NUMBER:	00000
BASE MODEL:	USB SQE 55 V3
ASSET TYPE:	CORP/FRAN
CLASSIFICATION:	NEW
OWNER:	OWNER NAME
BASE VERSION:	XXXXXXXXX
UPGRADE CLASSIFICATION:	
	CORP. NEW BUILD
PROJECT YEAR:	2016
FURNITURE PACKAGE:	2016 V3
DRAWING RELEASE:	2016 V3R1



PROJECT TYPE: USB SQE 55 NEW

Wendy's.
GRIFFIN RD. & 441 (SR-7)
HOLLYWOOD, FLORIDA.

REV.	DATE	DESCRIPTION
	06-02-17	

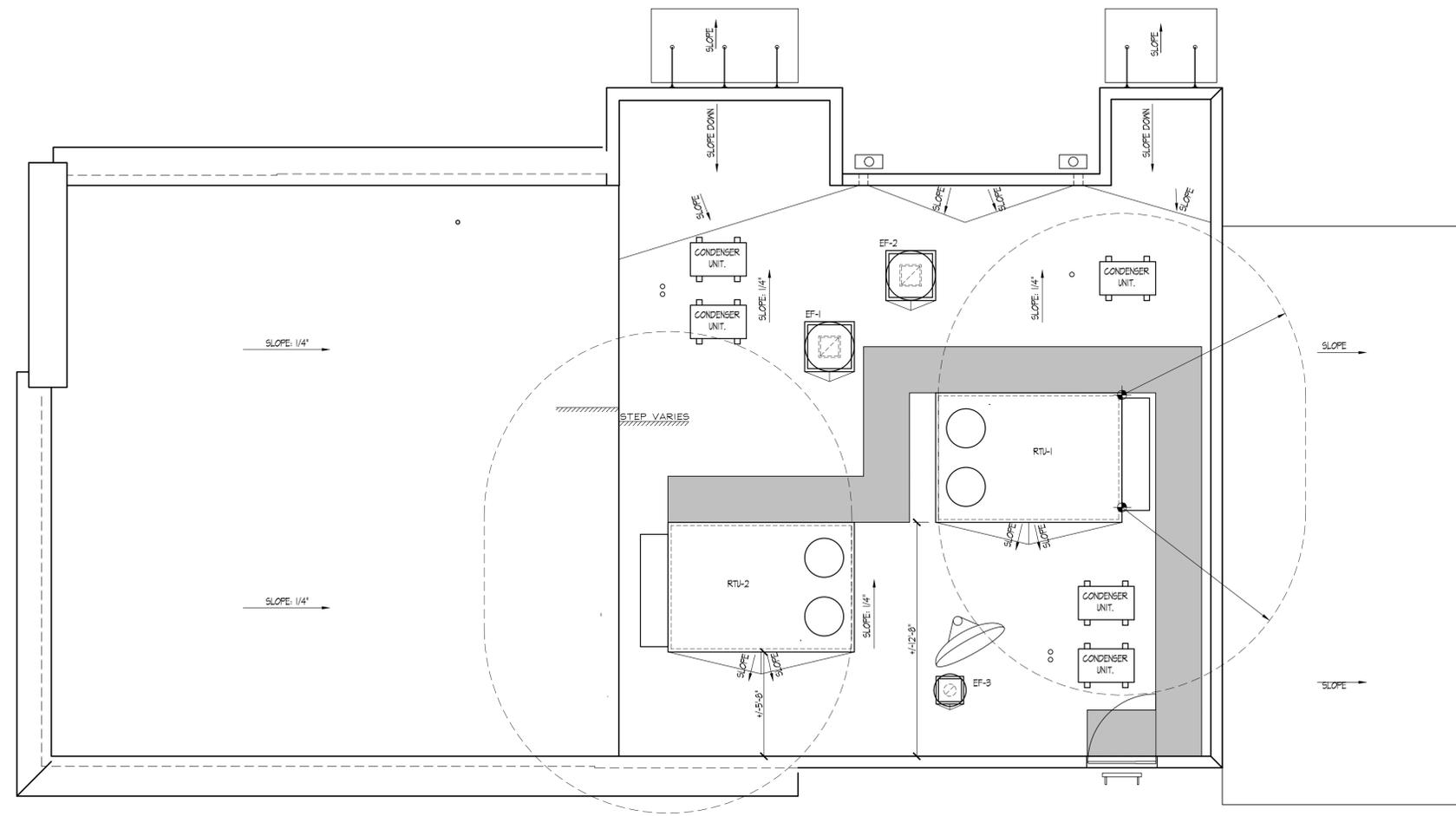
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PROJECT NUMBER: 1506
DRAWN BY: R. C.
CHECKED BY: E. C.

SEAL

EDUARDO L. CARCACHE, PE 31914
ANA A. GONZALEZ VALDES, AR 97769
CKE GROUP, INC. COA-4432

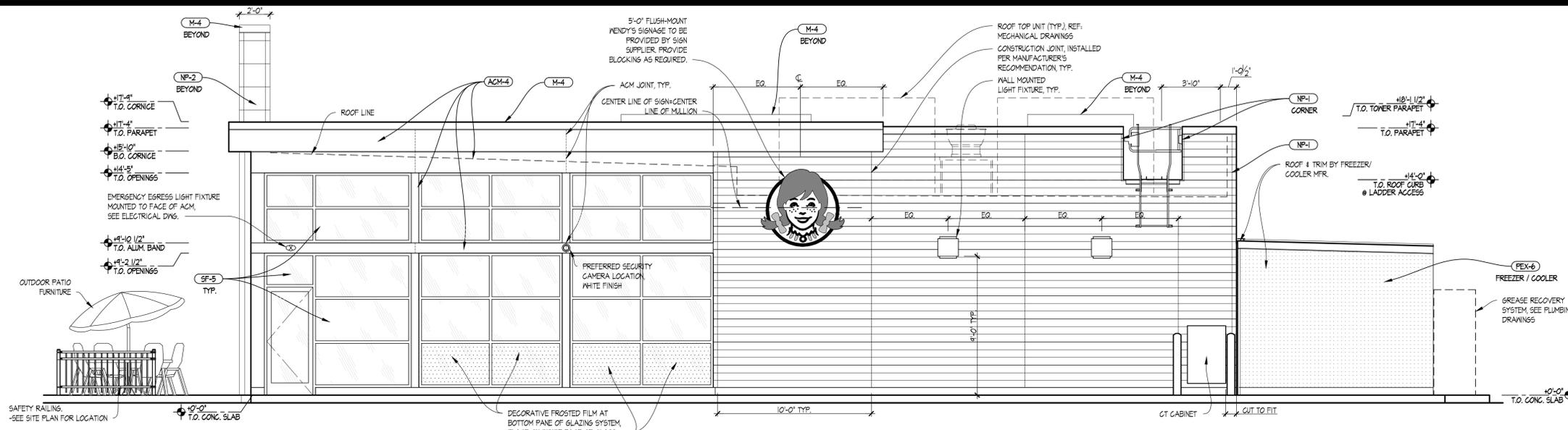
SHEET NAME
ROOF PLAN

SHEET NUMBER
A1.3

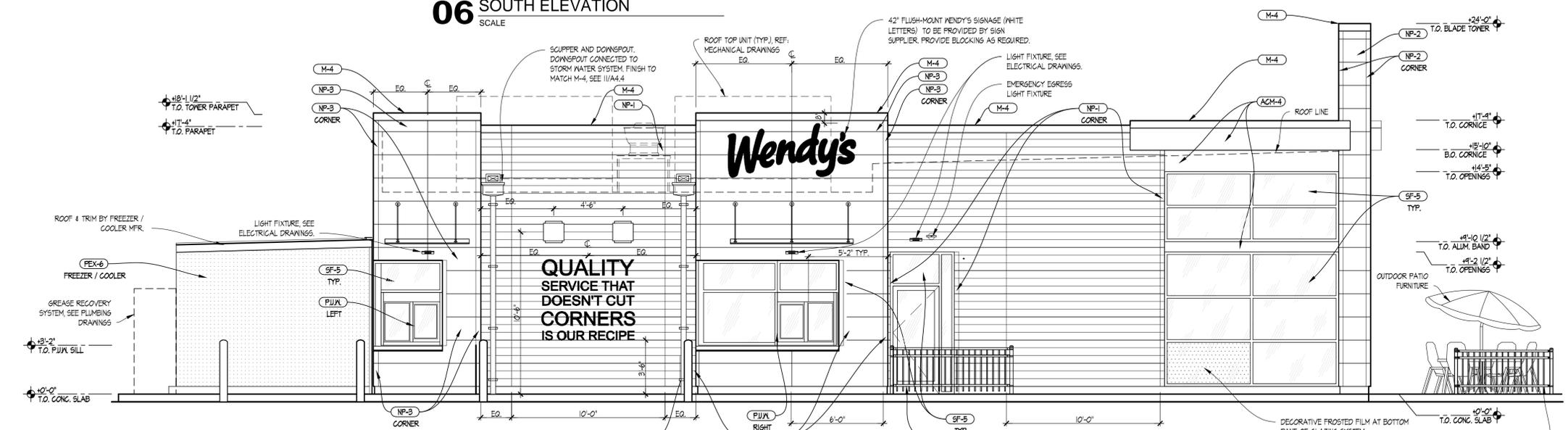


01 ROOF PLAN
SCALE: 1/4" = 1'-0"





06 SOUTH ELEVATION
SCALE

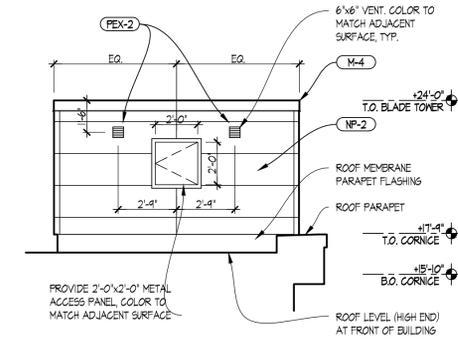


05 NORTH ELEVATION
SCALE

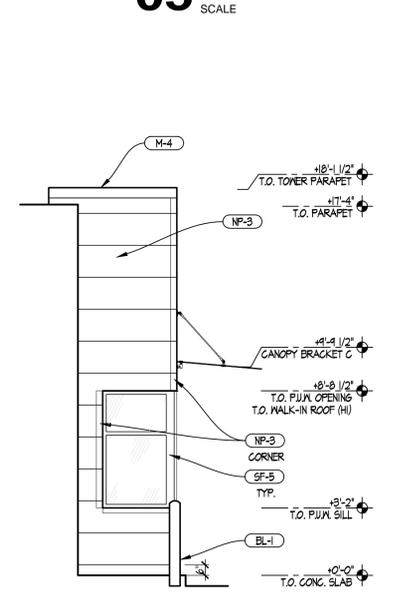
EXTERIOR FINISHES LEGEND

NOTE: REFER TO SHEET A&I FOR SPECIFICATIONS OF EXTERIOR MATERIALS AND FINISHES.

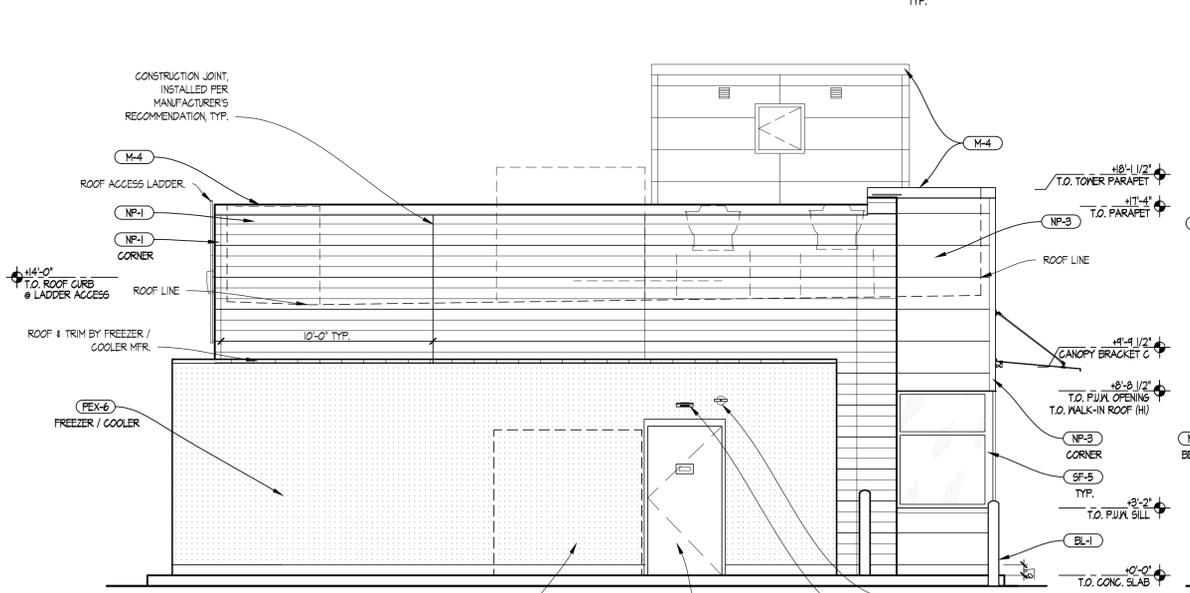
- BL-1 PLASTIC BOLLARD SLEEVE
- NP-1 FIBER CEMENT WALL PANEL (BASIS OF DESIGN - NICHIA VINTAGE WOOD SERIES - CEDAR)
- NP-2 FIBER CEMENT WALL PANEL (BASIS OF DESIGN - NICHIA ILLUMINATION SERIES - BLAZE)
- NP-3 FIBER CEMENT WALL PANEL (BASIS OF DESIGN - NICHIA ILLUMINATION SERIES - KNIGHTS ARMOR)
- M-2 CORRUGATED METAL PANEL (ANODIC CLEAR)
- M-4 PARAPET CAP (ANODIC CLEAR)
- M-5 METAL COPING (RED)
- SF-5 ALUMINUM STOREFRONT SYSTEM
- ACM-4 MODULAR SOFFIT/ FASCIA
- PUM PICKUP WINDOW
- PEX-2 PAINT (COLOR: WENDY'S EXTERIOR RED)
- PEX-6 PAINT (COLOR: WENDY'S DARK BRONZE - COOLER BOX ONLY)



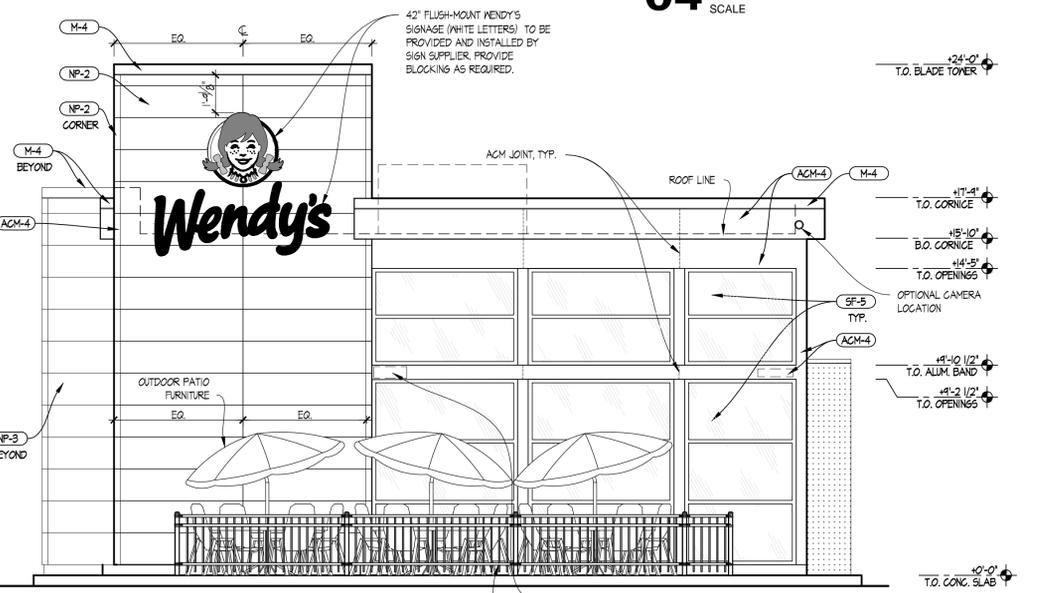
04 BLADE WALL DETAIL
SCALE



03 REAR DRIVE THRU ELEVATION
SCALE



02 EAST ELEVATION
SCALE



01 WEST ELEVATION
SCALE

SITE NUMBER: 00000
 BASE MODEL: USB SQE 55 V3
 ASSET TYPE: CORP/FRAN
 CLASSIFICATION: NEW
 OWNER: OWNER NAME
 BASE VERSION: XXXXXXXX
 UPGRADE CLASSIFICATION:
 CORP. NEW BUILD
 PROJECT YEAR: 2016
 FURNITURE PACKAGE: 2016 V3
 DRAWING RELEASE: 2016 V3R1



PROJECT TYPE: USB SQE 55
NEW

Wendy's
 GRIFFIN RD. & 441 (SR-7)
 HOLLYWOOD, FLORIDA.

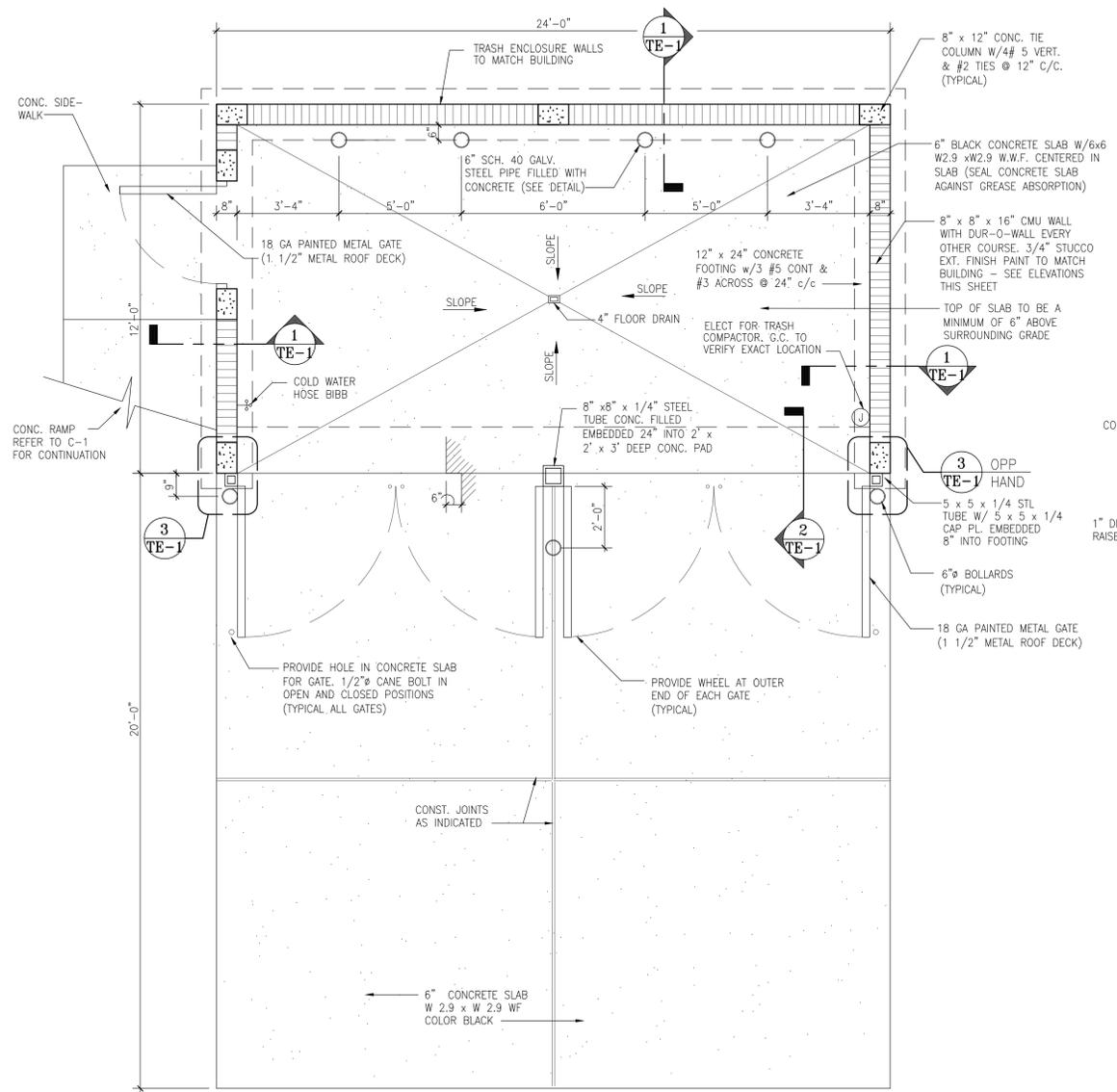
REV.	DATE	DESCRIPTION
06-01-17		

ISSUE DATE: 03/30/2017
 PROJECT NUMBER: 1506
 DRAWN BY: E. C.
 CHECKED BY: E. C.

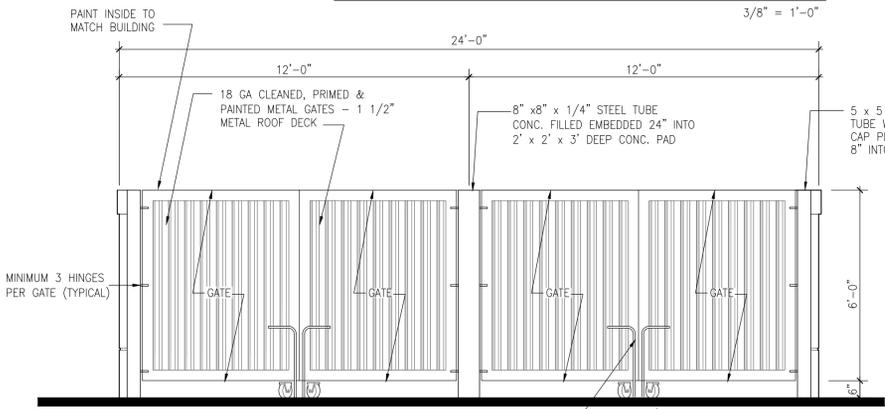
EDUARDO L. CARCHACE, PE 31914
 ANA A. GONZALEZ VALDES, AR 97769
 CKE GROUP, INC. COA-4432

SHEET NAME
EXTERIOR ELEVATIONS

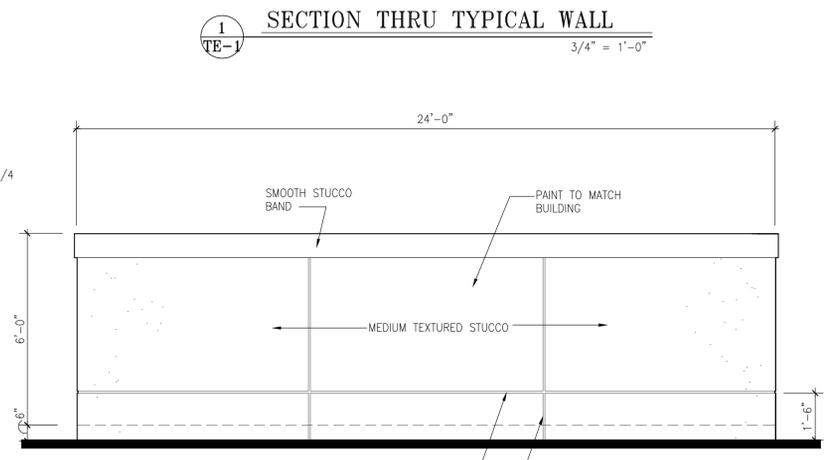
SHEET NUMBER
A2.1



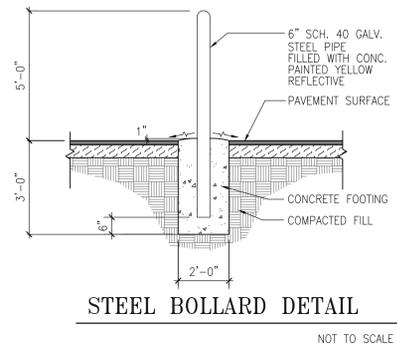
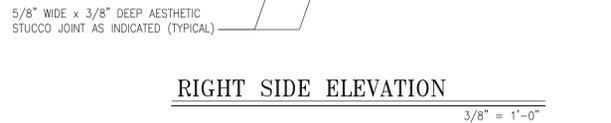
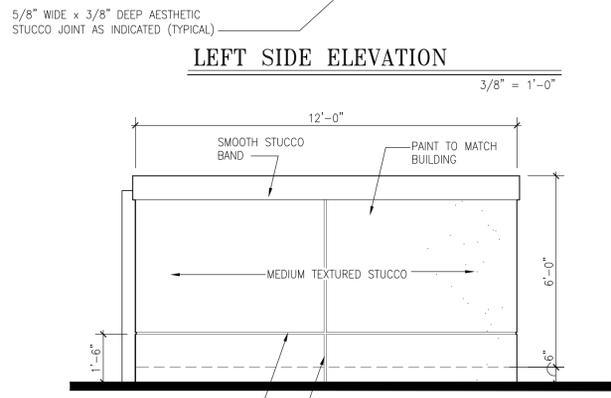
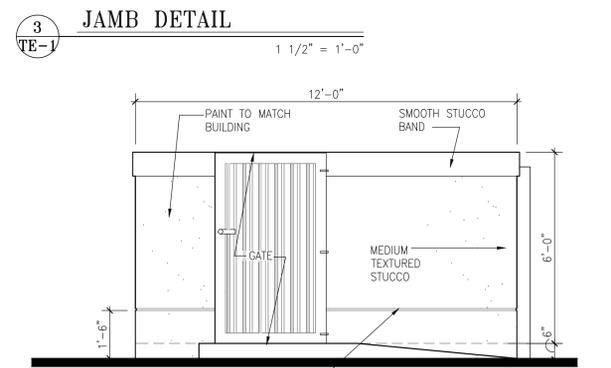
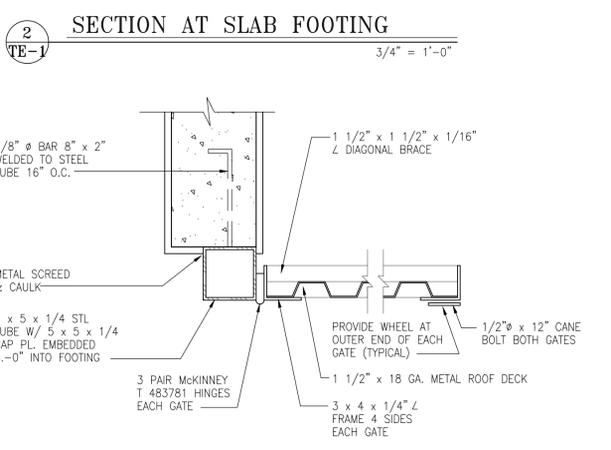
TRASH & RECYCLING ENCLOSURE PLAN
3/8" = 1'-0"



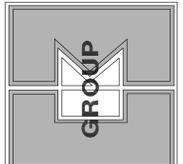
FRONT ELEVATION
3/8" = 1'-0"



REAR ELEVATION
3/8" = 1'-0"



STEEL BOLLARD DETAIL
NOT TO SCALE



EDUARDO CARCACHÉ
CIVIL ENGR. - PE 31814
JAMES UCCIELLO
ARCHITECT - CA 10897

CKE GROUP
INCORPORATED
engineering • architecture • planning

REPRERH #
WENDY'S RESTAURANT
GRIFFIN & 441 (S.R. #7)
HOLLYWOOD, FLORIDA

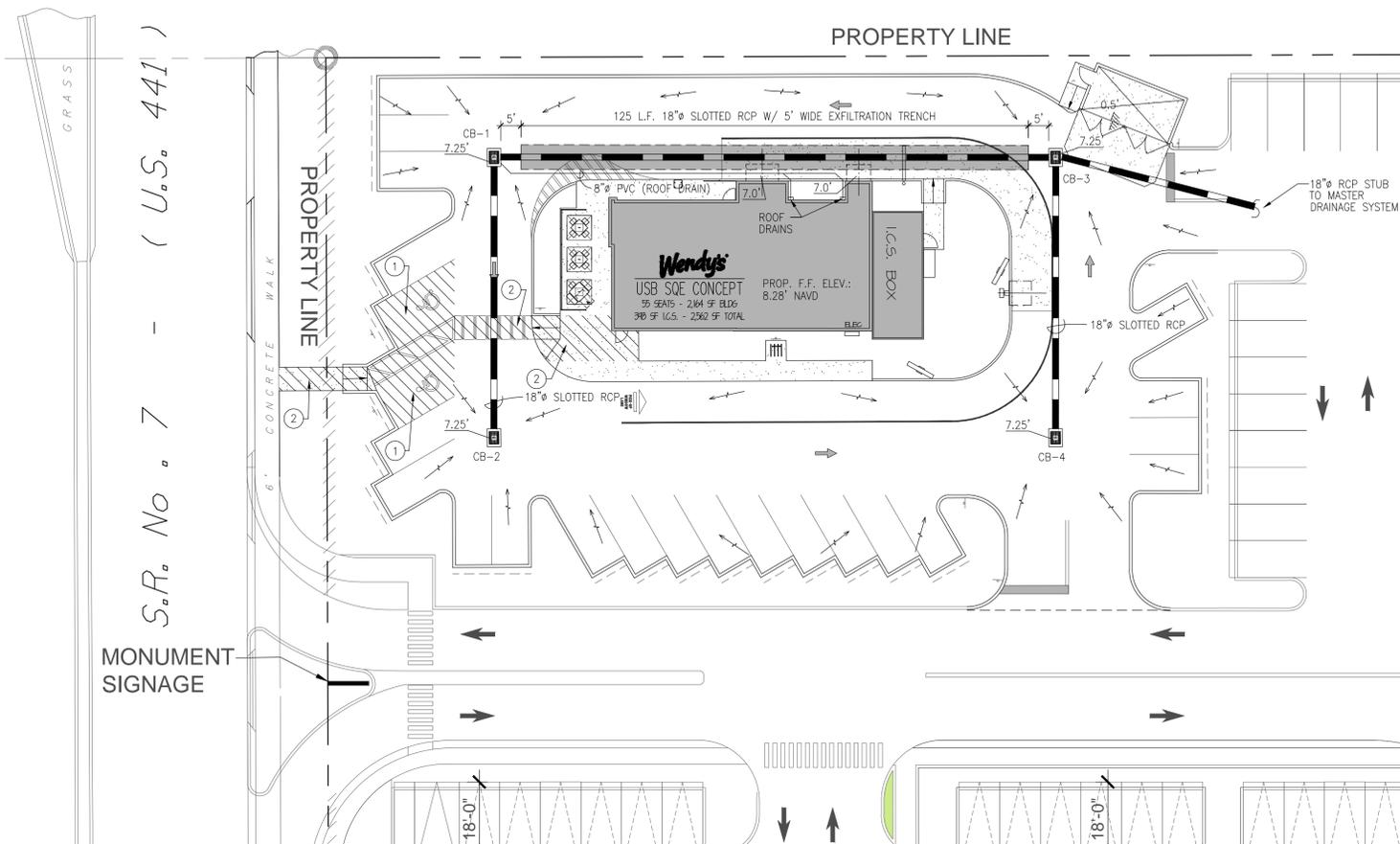
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project no: -
scale: AS SHOWN
date: 03-31-17
drawn by: AV

06-02-17
revisions

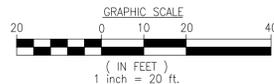
15500 NEW BARN ROAD • SUITE 106 • MIAMI LAKES, FLORIDA 33014 • [305] 558-4124

TE-1



PAVING AND DRAINAGE PLAN

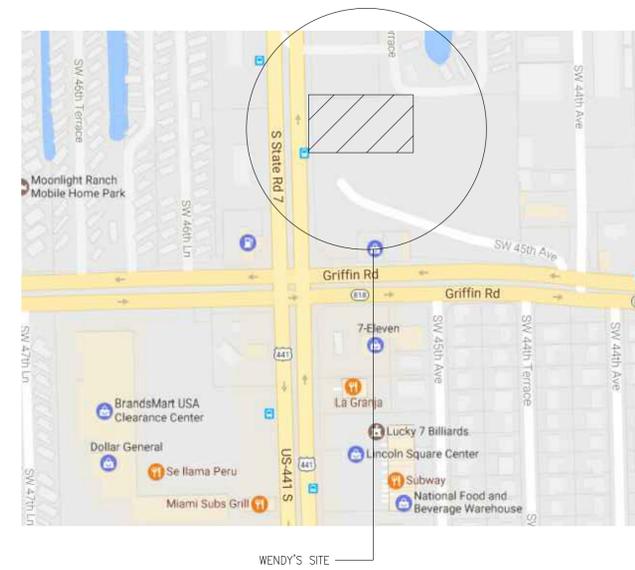
1"=20'-0"



PROPOSED DRAINAGE SCHEDULE

STRUCTURE #	TYPE	GRATE EL.	INVERT ELEVATIONS			
			N	S	E	W
CB-1	"E"	7.25		4.0'	4.0'	
CB-2	"E"	7.25	4.0'			
CB-3	"E"	7.25		4.0'	4.0'	4.0'
CB-4	"E"	7.25	4.0'			

* PROVIDE POLLUTION RETARDANT BAFFLE



LOCATION PLAN

N.T.S.



NOTES:

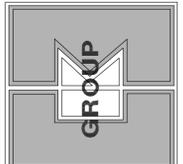
- ALL ORGANIC OR DELETERIOUS MATERIAL SHALL BE REMOVED FROM WITHIN 10 FEET OF ANY AREA TO BE FILLED. THIS INCLUDES ALL BUILDING AREAS AND PAVING AREAS WHICH ARE BEING FILLED. ANY SUCH MATERIAL SHALL BE REPLACED WITH APPROVED GRANULAR FILL WHICH SHALL BE COMPACTED IN 8" LAYERS TO 100% OF MAXIMUM DENSITY AS PER AASHTO T-99C.
- ALL UTILITIES AND DRAINAGE INSTALLATIONS SHALL BE CONSTRUCTED, INSTALLED, AND THEN ACCEPTED BY THE CITY OF HOLLYWOOD ENGINEERING DIVISION, IRRIGATION AND AND SOIL CONSERVATION DISTRICT.
- STABILIZED SUBGRADE SHALL HAVE LIMEROCK BEARING RATION (LBR) OF 40 AND SHALL BE COMPACTED TO 98% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-99C.
- LIMEROCK BASE COURSE SHALL CONFORM TO THE REQUIREMENTS OF SECTION 911 OF THE FLORIDA D. O. T. STANDARD SPECIFICATIONS, EXCEPT THAT THE MINIMUM PERCENTAGE OF CARBONATES OF CALCIUM AND MAGNESIUM SHALL BE 70%.
- ASPHALTIC CONCRETE SURFACE COURSE SHALL BE TYPE S-III.
- PRIME COAT AND TACK COAT FOR BASE COURSES SHALL CONFORM TO THE REQUIREMENTS OF SECTIONS 300-1 THROUGH 300-7 OF FLORIDA D. O. T. STANDARD SPECIFICATIONS. PRIME COAT SHALL BE APPLIED AT A RATE OF 0.25 GALLONS PER SQUARE YARD.
- ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS UNLESS OTHERWISE NOTED.
- PRECAST CONCRETE MANHOLES AND CATCH BASINS SHALL MEET THE REQUIREMENTS OF A. S. T. M. SPECIFICATIONS C-478 AND 64T, AND CITY OF HOLLYWOOD ENGINEERING DEPARTMENT MINIMUM STANDARDS.
- CONCRETE FOR PRECAST MANHOLE AND CATCH BASINS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS.
- REINFORCING STEEL FOR MANHOLES AND CATCH BASINS SHALL CONFORM TO A. S. T. M. SPECIFICATIONS A-615 AND A-305, LATEST REVISION.
- ALL JOINTS IN CONCRETE STRUCTURES SHALL BE FINISHED WATERTIGHT.
- ALL SPACES AROUND PIPING ENTERING OR LEAVING MANHOLES AND CATCH BASINS SHALL BE COMPLETELY FILLED WITH 2 : 1 CEMENT MORTAR MIX.
- REINFORCED CONCRETE PIPE SHALL CONFORM TO THE REQUIREMENTS OF A. S. T. M. SPECIFICATION C-76, CLASS III, WALL THICKNESS "B", LATEST REVISION, AND AS MODIFIED BY SECTION 941 FLORIDA D. O. T. STANDARD SPECIFICATIONS.
- ALL WORKMANSHIP, INSTALLATIONS, AND MATERIALS SHALL MEET THE REQUIREMENTS OF CITY OF HOLLYWOOD ENGINEERING DIVISION'S MINIMUM STANDARDS.
- THE LOCATION OF EXISTING UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE AND ARE BASED ON AS-BUILT INFORMATION. ADDITIONAL UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THESE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND VERIFYING ALL UTILITIES PRIOR TO BEGINNING CONSTRUCTION.
- SHOP DRAWINGS OF ALL MATERIALS BEING USED SHALL BE SUBMITTED TO C. K. E. GROUP, INC. AND TO CITY OF HOLLYWOOD ENGINEERING DIVISION FOR APPROVAL PRIOR TO ORDERING THE MATERIALS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING CERTIFIED AS-BUILT DRAWINGS PRIOR TO FINAL INSPECTION BY CITY OF HOLLYWOOD ENGINEERING DIVISION.
- THE CONTRACTOR SHALL PROVIDE TO THE CITY OF HOLLYWOOD ENGINEERING DIVISION WITH A CERTIFIED AS-BUILT SURVEY INDICATING GRADE ELEVATIONS AT TOP OF LIMEROCK BASE PRIOR TO PAVING.
- SOIL BORING RECORDS ARE PART OF THE BID DOCUMENTS. IN THE EVENT OF DISCREPANCY BETWEEN THE SPECIFICATIONS AND THE SOILS REPORT RECOMMENDATIONS, THE MOST STRINGENT OF THE TWO SHALL BE USED.

NOTES:

- SITE CONTRACTOR SHALL GRADE ALL LANDSCAPED AREAS TO AN ELEVATION 3" BELOW TOP OF CURB OR SIDEWALK.
- SITE CONTRACTOR IS RESPONSIBLE FOR GRADING ALL SITE, INCLUDING BERMS AND SWALES, IF ANY. COORDINATE WITH LANDSCAPE DRAWINGS AND LANDSCAPE CONTRACTOR.
- SITE CONTRACTOR IS RESPONSIBLE FOR POSITIVE DRAINAGE OVER ENTIRE SITE.
- GENERAL CONTRACTOR SHALL PROVIDE SLEEVES FOR LANDSCAPE IRRIGATION LINES PRIOR TO PAVING. COORDINATE WITH IRRIGATION DRAWINGS AND IRRIGATION CONTRACTOR.

LEGEND

- PROF. DIRECTION OF DRAINAGE FLOW ARROW
- EXISTING ELEVATION
- PROP. TOP OF CURB & FINISHED GRADE ELEV.
- PROPOSED ELEVATIONS
- G.C. TO VERIFY MAX. 2% SLOPE AT HANDICAP SPACE AND ACCESSIBILITY ROUTE
- SLOPE ALONG ACCESS PATH NOT TO EXCEED 5% SLOPE ALONG PATH AND MAX. 2% CROSS SLOPE.



EDUARDO CARACACHE
CIVIL ENGR. - PE 31814
AMBER UCCELLI
ARCHITECT - CA 18897

CKE GROUP
INCORPORATED
engineering • architecture • planning

REFRESH #
WENDY'S RESTAURANT
GRIFFIN & 441 (S.R. #7)
HOLLYWOOD, FLORIDA

Wendy's
STD-E-2014 MAKE

06-02-17
revisions

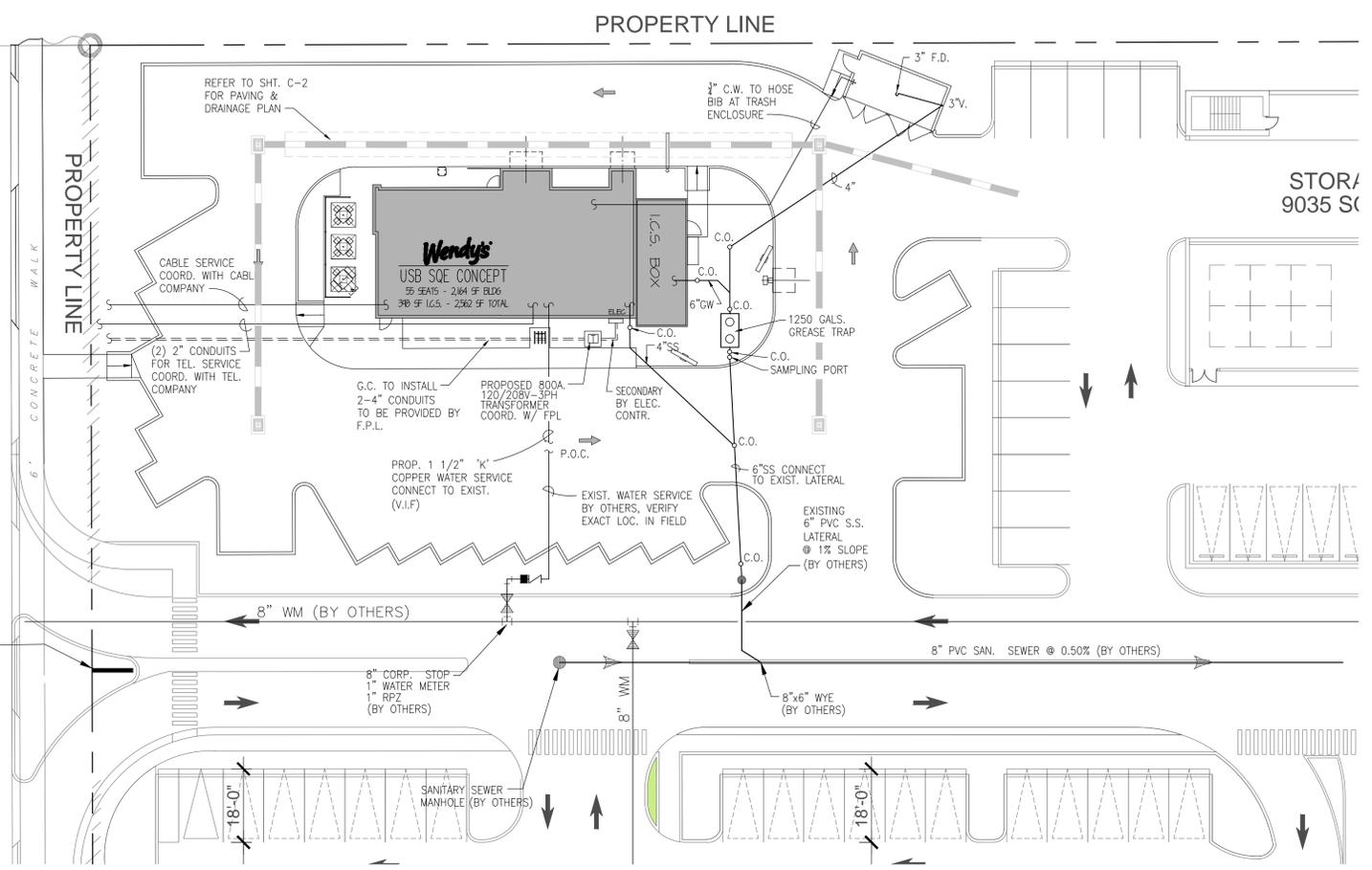
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scale: AS SHOWN
date: 03-31-17
drawn by: AV

C-2

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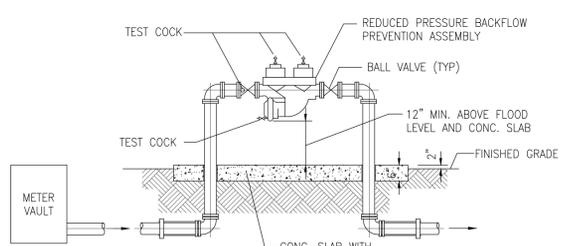
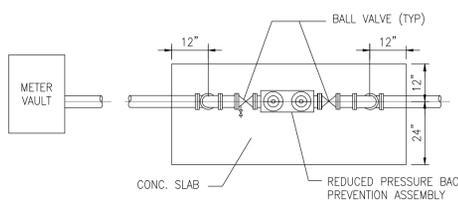
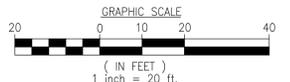
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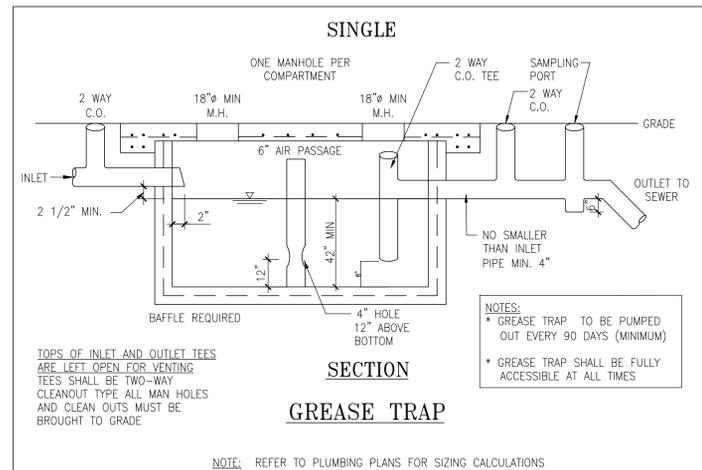
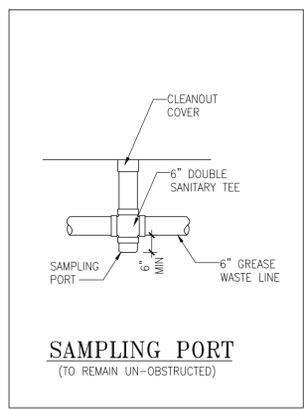


UTILITY PLAN

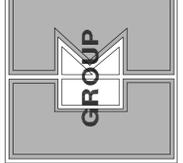
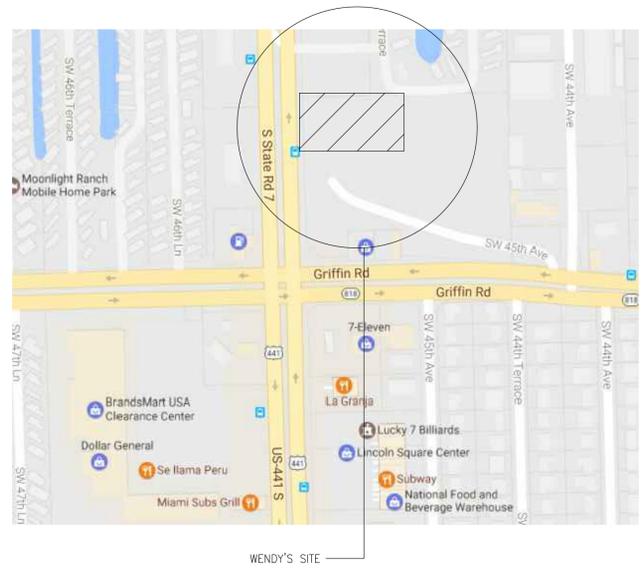
1"=20'-0"



REDUCED PRESSURE ZONE BACKFLOW PREVENTER FOR WATER SERVICE 3/4" THRU 2"



- NOTES:
1. ALL HYDRANTS TO FALL WITHIN 2 FEET OF CURB, STEAMER CONNECTION TO FACE ROADWAY.
 2. LANDSCAPING SHALL NOT OBSCURE FIRE HYDRANT NOR SPRINKLER / STANDPIPE WYES.
 3. BUILDING ADDRESS SHALL BE CLEARLY VISIBLE FROM ROADWAY.
 4. ALL CLEAN-OUTS IN DRIVEWAYS TO HAVE TRAFFIC BEARING CAPS (USE #7605 VALVE BOX).
 5. ON-SITE SANITARY SEWER TO BE PRIVATELY MAINTAINED.
 6. CONTRACTOR TO VERIFY INVERTS AND EXACT LOCATION OF UTILITIES PRIOR TO COMMENCING WORK.
 7. MINIMUM SLOPE OF SANITARY WASTE = 1%.
 8. CONTRACTOR TO PROVIDE CLEANOUTS AT EACH CHANGE OF DIRECTION OF SEWER LINE AND AT INTERVALS NOT TO EXCEED 70FT.
 9. NO SOLVENT WELD SHALL BE USED.
 10. REFER TO CITY OF HOLLYWOOD PUBLIC WORKS STANDARD DETAILS FOR ADDITIONAL DETAILS.
 11. REFER TO SHEET CE-1 FOR SITE LIGHTING AND SITE ELECTRICAL.



EDUARDO CARCACHÉ
CIVIL ENGR. - PE 31814
AMARU UCCELLI
ARCHITECT - CA 10897

CKE GROUP
INCORPORATED
engineering • architecture • planning

REFRESH #
WENDY'S RESTAURANT
GRIFFIN & 441 (S.R. #7)
HOLLYWOOD, FLORIDA

Wendy's
STD-E-2014 MAKE

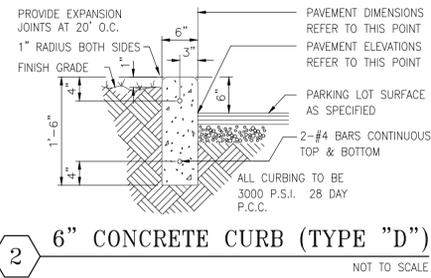
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project no: 1
scale: AS SHOWN
date: 03-31-17
drawn by: AV

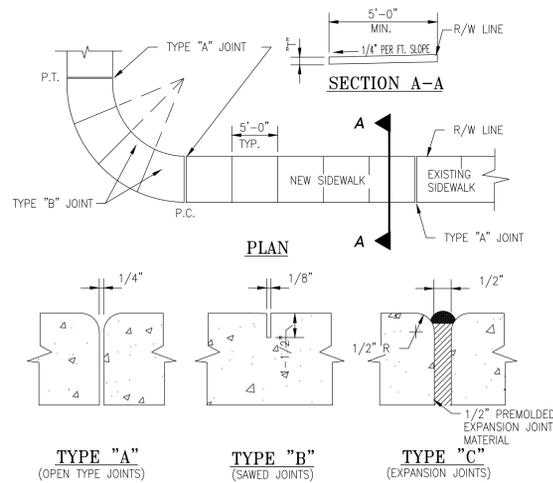
06-02-17
revisions

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C-3



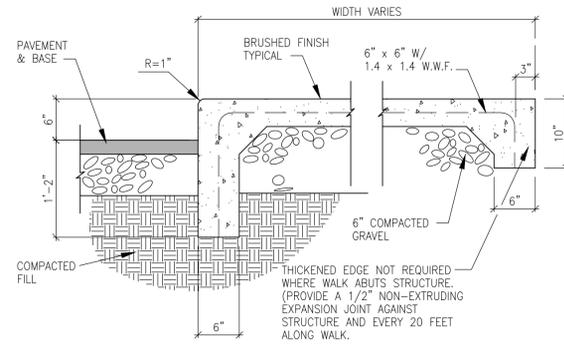
2 6" CONCRETE CURB (TYPE "D") NOT TO SCALE



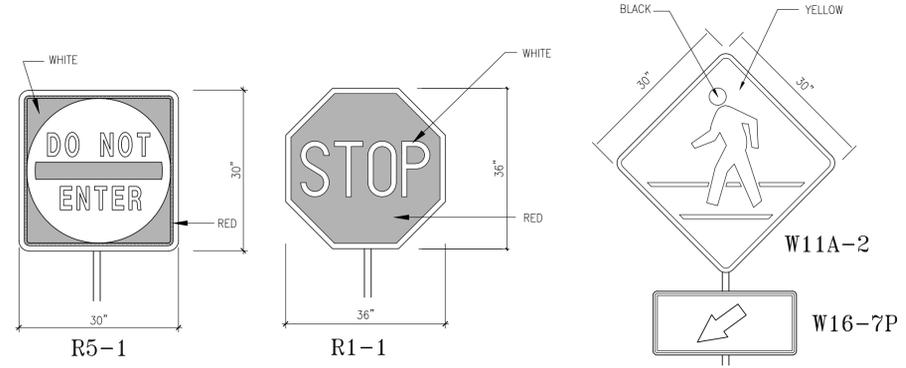
LOCATION	"T"
RESIDENTIAL AREAS AT DRIVEWAYS AND OTHER AREAS	4"
	6"

TYPE	LOCATION
"A"	P.C. AND P.T. OF CURVES JUNCTION OF EXISTING AND NEW SIDEWALKS
"B"	5'-0" CENTER TO CENTER ON SIDEWALKS
"C"	WHERE SIDEWALK ABUTS CONCRETE CURBS, DRIVEWAYS AND SIMILAR STRUCTURES

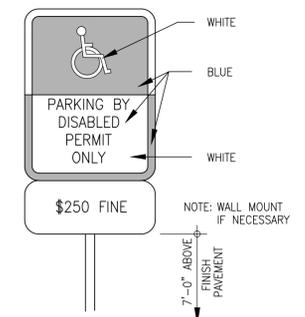
4 SIDEWALK CONSTRUCTION DETAIL NOT TO SCALE



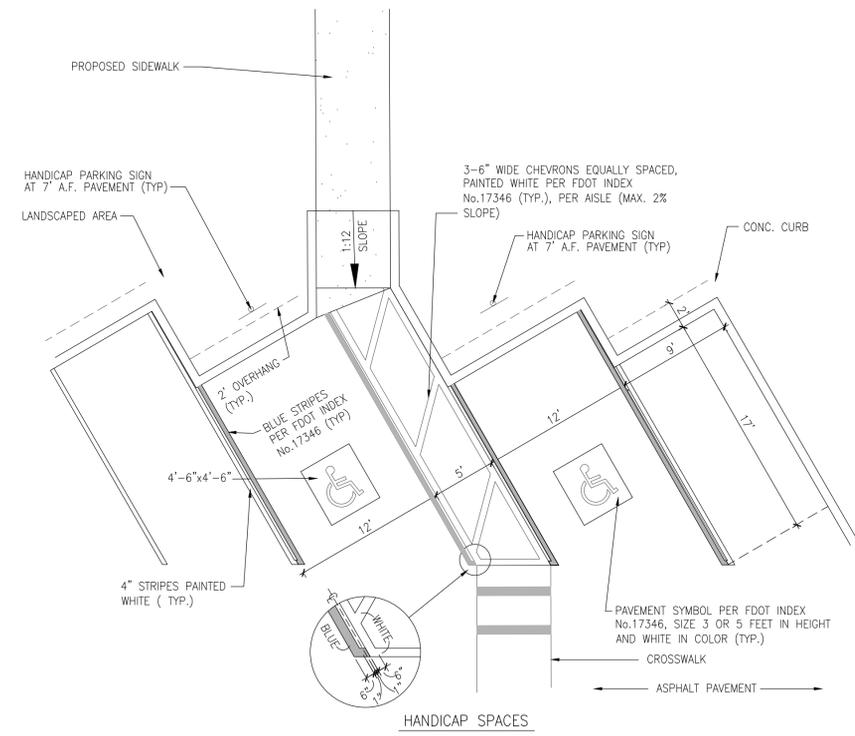
3 BRUSHED CONCRETE WALK NOT TO SCALE



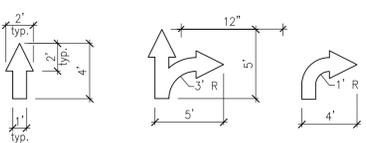
17 18 19 STANDARD F.D.O.T. & MUTCD SIGNAGE DETAILS SCALE: N.T.S.



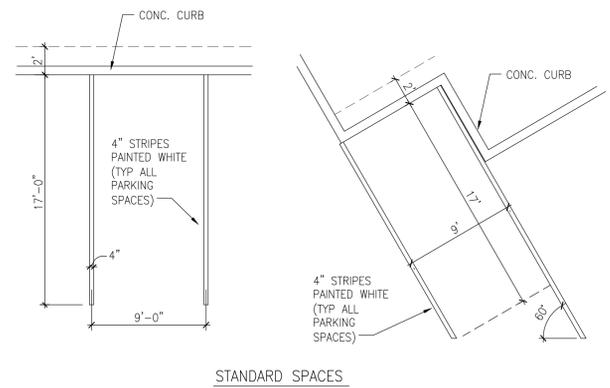
25 HANDICAP PARKING SIGN (FTP 20-04 PER FDOT INDEX 17355) NOT TO SCALE



13 16 HANDICAP AND STANDARD PARKING DETAILS NOT TO SCALE



12 PAINTED ARROWS NOT TO SCALE



STANDARD SPACES

- GENERAL NOTES**
- ALL SIGNS SHALL BE ERECTED IN ACCORDANCE WITH ALL LOCAL CODES AND SOIL CONDITIONS.
 - DESIGNS ARE PER 175 MPH WIND LOADS (VERIFY LOCAL WIND AND SOIL CONDITIONS).
 - ALL PAINTED PAVEMENT MARKERS ARE TO BE SOLID YELLOW AND FURNISHED BY GENERAL CONTRACTOR.
 - WHEN UNABLE TO VIEW CARS PLACING ORDERS DIRECTLY FROM PICK-UP WINDOW A 24" CONVEX MIRROR SHALL BE PLACED IN AN APPROPRIATE LOCATION TO VIEW CUSTOMERS AT ORDER STATION.



EDUARDO CARCACHIE
CIVIL ENG. - PE 31914
JAMES UCCELLI
ARCHITECT - CA 15897

CKE GROUP
INCORPORATED
engineering • architecture • planning

REFRESH #
WENDY'S RESTAURANT
GRIPPIN & 441 (S.R. #7)
HOLLYWOOD, FLORIDA

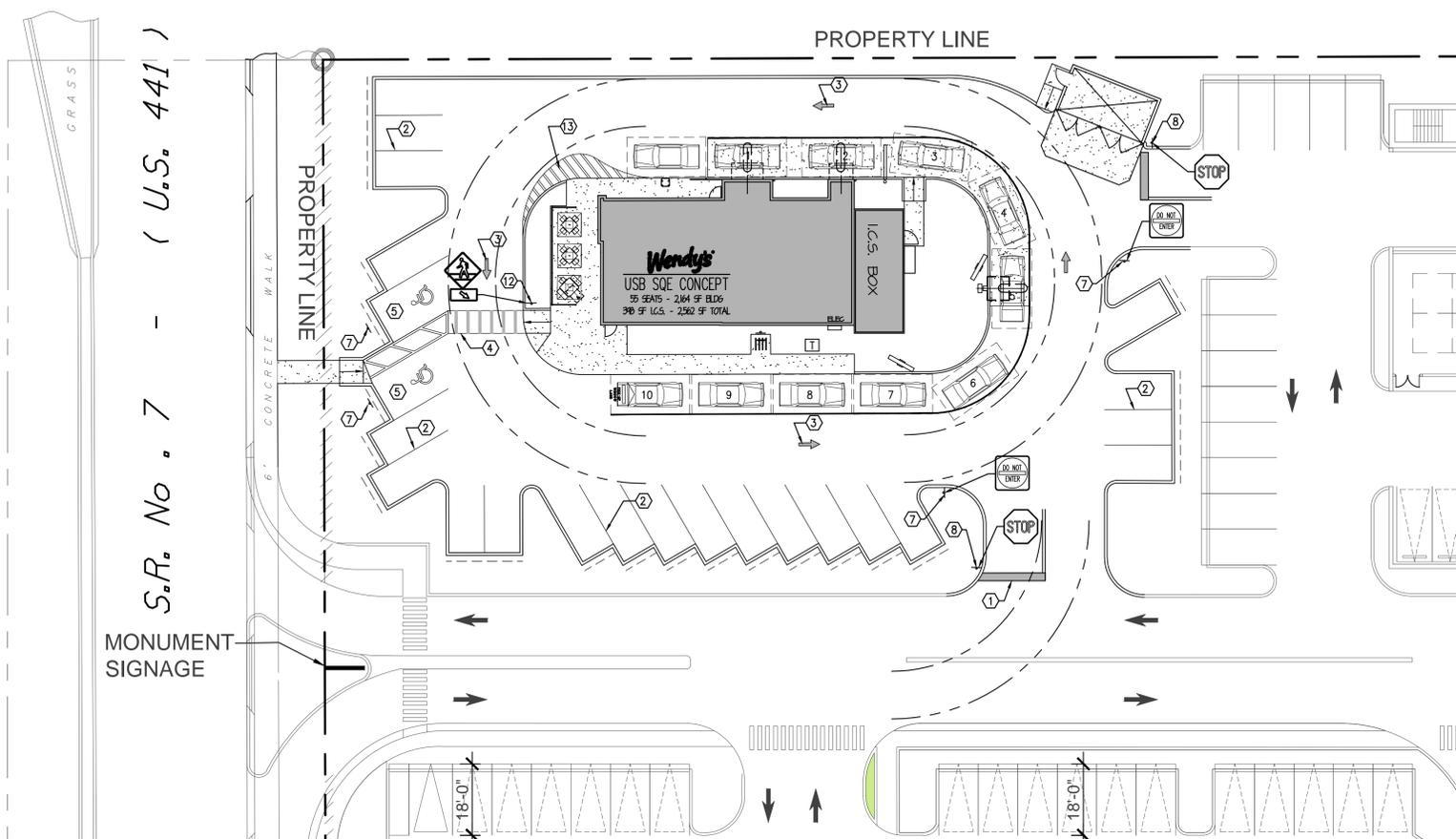
OWNERSHIP OF DOCUMENTS
PLANS AND SPECIFICATIONS, AS INSTRUMENTS OF SERVICE, ARE AND SHALL REMAIN THE PROPERTY OF CKE GROUP, INC. NO PARTS OF THESE PLANS OR SPECIFICATIONS ARE TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF CKE GROUP, INC. THE PLANS AND SPECIFICATIONS SHALL BE USED ONLY FOR THE PROJECTS AND LOCATIONS SPECIFICALLY IDENTIFIED ON THESE PLANS AND SPECIFICATIONS. ANY OTHER USE OF THESE PLANS AND SPECIFICATIONS WITHOUT THE WRITTEN PERMISSION OF CKE GROUP, INC. IS STRICTLY PROHIBITED.

06-02-17
revisions

project no: -
scale: AS SHOWN
date: 03-31-17
drawn by: AV

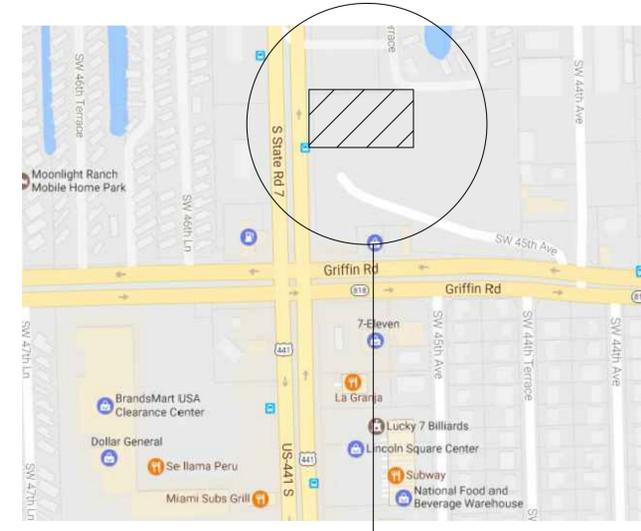
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C-4

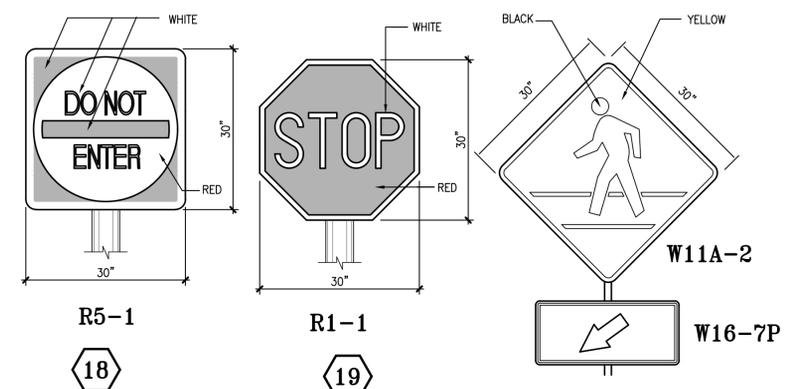


SITE PLAN
1"=20'-0"

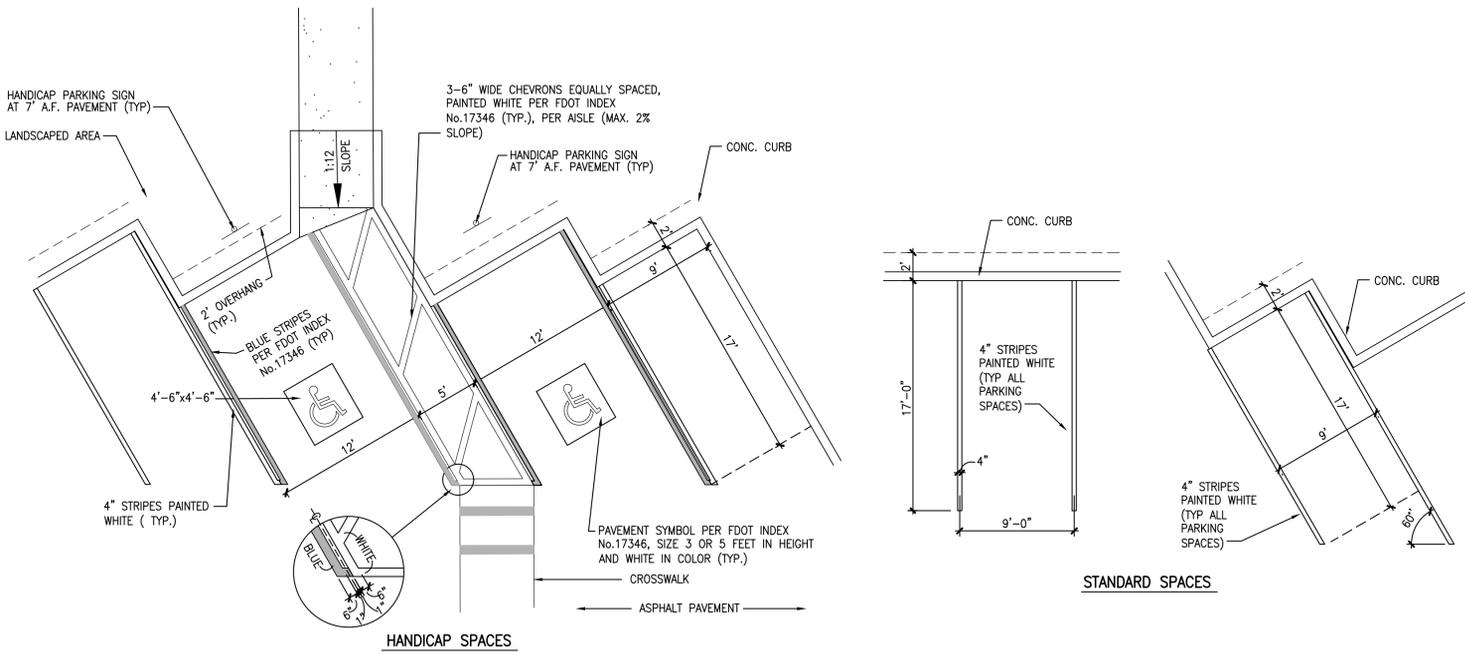
- CONSTRUCTION NOTES:**
- ① 24" STOP BAR WHITE (THERMOPLASTIC)
 - ② 4" WHITE STRIPES (TYPICAL AT PARKING SPACES)
 - ③ TRAFFIC ARROWS PAINTED WHITE.
 - ④ PEDESTRIAN CROSSING PER F.D.O.T. INDEX No. 17346
 - ⑤ HANDICAP PARKING AS PER DETAIL.
 - ⑥ HANDICAP SIGN 7'-0" A.F.P.
 - ⑦ STANDARD F.D.O.T. "DO NOT ENTER" SIGN (R5-1)
 - ⑧ STANDARD F.D.O.T. HIGH INTENSITY "STOP" SIGN. R1-1 (30"x30")
 - ⑨ 6" WHITE STRIPES @ 60" (PER FDOT INDEX No. 17346)
 - ⑩ 6" WHITE STRIPES @ 3' C/C PER F.D.O.T. INDEX
 - ⑪ PAVEMENT MARKING REFER TO DETAIL THIS SHEET.
 - ⑫ PEDESTRIAN CROSSING SIGN
 - ⑬ 12"-45" WHITE STRIPPING @ 5' C/C



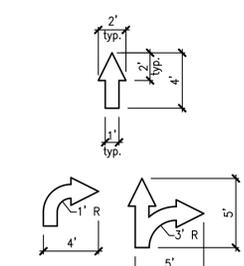
LOCATION PLAN
N.T.S.



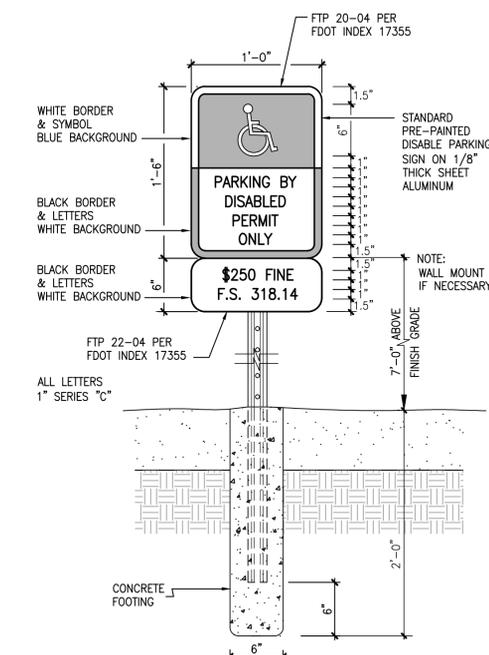
STANDARD F.D.O.T. & MUTCD SIGNAGE DETAILS
SCALE: N.T.S.



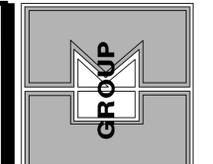
13 16 HANDICAP AND STANDARD PARKING DETAILS
NOT TO SCALE



3 PAINTED ARROWS
PER F.D.O.T. INDEX 17346 NOT TO SCALE



HANDICAP PARKING SIGN
(FTP 20-04 PER FDOT INDEX 17355)
NOT TO SCALE
(FTP 22-04 SUPPLEMENTAL PANEL PER FDOT INDEX 17355)



EDUARDO CARACIO
CIVIL ENGINEER - FE 8194
SAMUEL UCCELLO
ARCHITECT - AT 18897

CKE GROUP
INCORPORATED
engineering • architecture • planning

REFRESH #
WENDY'S RESTAURANT
GRIFFIN & 441 (S.R. #7)
HOLLYWOOD, FLORIDA

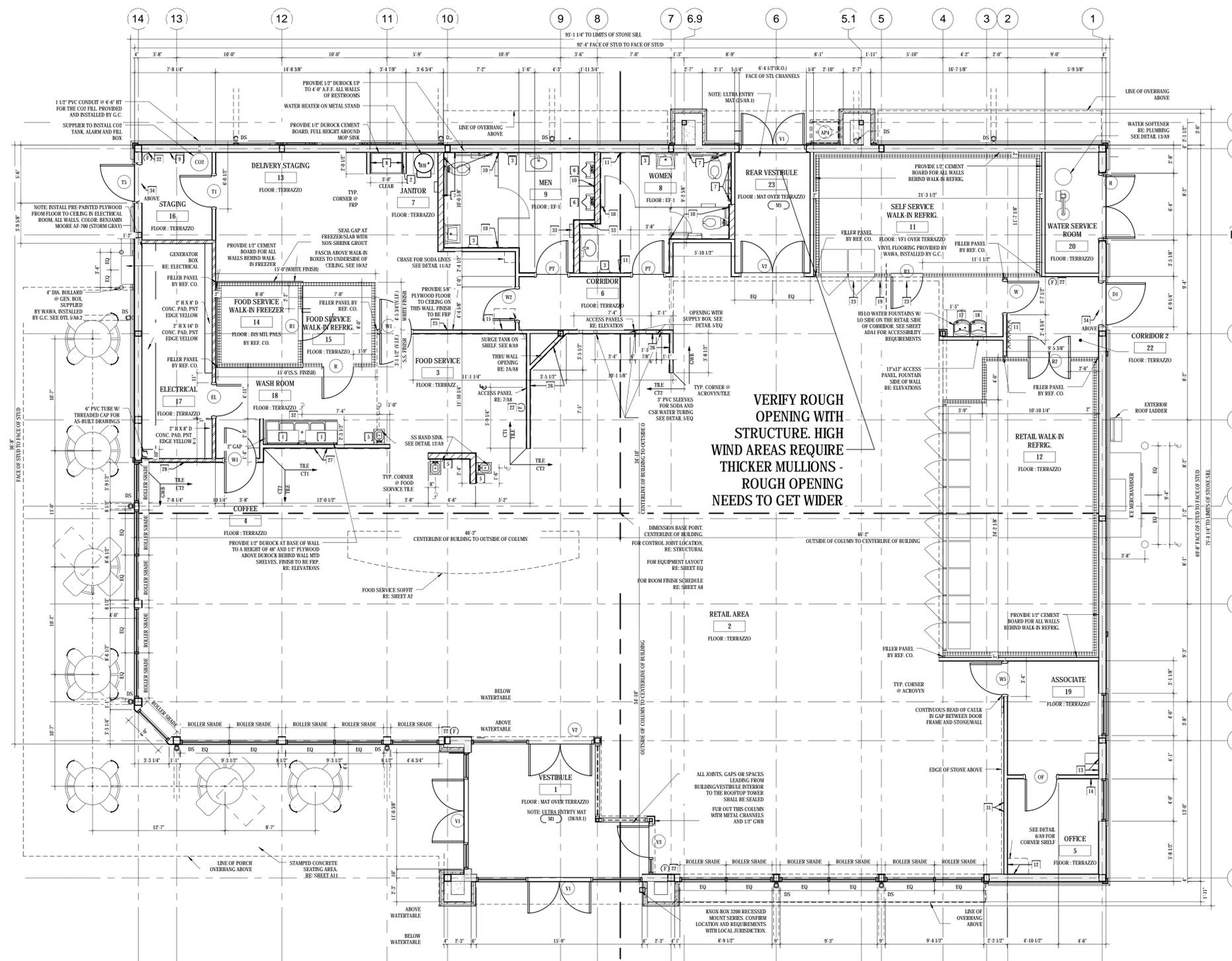
Wendy's
STD-E-2014 MISE

PROJECT NO: AS SHOWN
SCALE: AS SHOWN
DATE: 03-31-17
DRAWN BY: AV

REVISIONS
06-02-17
1 revisions

15500 NEW BARN ROAD • SUITE 106 • MIAMI LAKES, FLORIDA 33014 • (305) 558-4124

PM-1



VERIFY ROUGH
OPENING WITH
STRUCTURE. HIGH
WIND AREAS REQUIRE
THICKER MULLIONS -
ROUGH OPENING
NEEDS TO GET WIDER

LEGEND

	8" MTL. STUDS W/R 30 BATT INSUL. AND EXT. VENEER		DOOR IDENTIFICATION. SEE DOOR SCHEDULE
	3-5/8" MTL. STUDS @ 16" O.C. W/ 1/2" GWB		BLOCKING IDENTIFICATION. SEE EQUIPMENT BLOCKING NOTES
	6" MTL. STUDS @ 16" O.C. W/1/2" GWB		WATER HEATER
	CONCRETE BLOCK (CMU)		FIRE EXTINGUISHER. SEE DETAIL 4/A9. PROVIDE BLOCKING AS REQUIRED & COORDINATE FINAL LOCATION W/ FIRE MARSHALL

DOOR NOTES

- DOOR #S SHOWN IN DOOR SCHEDULE ARE TYPICAL FOR WAWA STORES. VERIFY QUANTITIES AND WHICH DOORS ARE REQUIRED AS INDICATED IN FLOOR PLAN.
- STOREROOM MFR. SPECIFICATIONS
- ARE TO BE KEYPAD ALIKE WITH THUMB LATCH AT EXTERIOR DOORS AND CLOSER AT ALL DOORS.
- ALL EXTERIOR HOLLOW METAL DOORS SHALL BE INSULATED DOORS.
- RUN CONTINUOUS BEAD OF CLEAR SILICONE CAULK AROUND ALL DOOR FRAMES.
- EXIT DOOR LOCKS, IF PROVIDED ON EGRESS DOORS, SHALL NOT REQUIRE THE USE OF A KEY. A TOOL OR SPECIAL KNOWLEDGE OR EFFORT FOR OPERATION FROM THE EGRESS SPECIFICALLY ALLOWED BY CODE.
- A LATCH OR OTHER FASTENING DEVICE ON A EGRESS DOOR SHALL BE PROVIDED WITH A KNOB, HANDLE, PANIC BAR, OR OTHER SIMPLE TYPE OF RELEASING DEVICE HAVING AN OBVIOUS METHOD OF OPERATION UNDER ALL LIGHTING CONDITIONS. DOORS SHALL BE OPERABLE WITH NO MORE THAN ONE RELEASING OPERATION PER FFPC 14.5.2.10
- REFER TO HARDWARE SCHEDULE IN THE SPECIFICATION MANUAL.
- THRESHOLD 'A' NOT TO EXCEED 1/2" HIGH.
- DOOR TC REQUIRES HOLE IN SLAB FOR BOLT.
- ALL WIRE GLASS SHALL TO COMPLY WITH SAFETY GLAZING REQUIREMENTS IN SECTION 2406 OF FBCB.

1 FLOOR PLAN
A1
3/16" = 1'-0"

DOOR SCHEDULE

#	DOOR		FRM TYPE	HW SET	COMMENTS	KICK PLATE	
	W	H				PUSH	PULL
AP4	2'-6"	2'-0"	STL	STL	NYSTROM HS		
D1	4'-0"	7'-0"	0'-1.3/4"	C	HM HM A HW 10	4" X 25" LAMINATED GLASS VISION PANEL. SEE 25 & 26/A7 FOR HEAD & JAMB	PANIC BAR 36" X 46"
EL	3'-0"	6'-8"	0'-1.3/4"	E	HM HM - HW 13	4" X 25" GLASS VISION PANEL AND 24" X 24" LOUVER. PUSH BUTTON LOCK ON PULL SIDE. SEE DETAIL 22/A9	PANIC BAR
H	3'-0"	7'-0"	0'-1.3/4"	B/F	HM HM B HW 8	ONE LEAF W/ 12" X 18" LOUVER (DOUBLE DOOR). SEE 25 & 26/A7 FOR HEAD & JAMB. SEE 27/A7 FOR SILL	
OF	3'-0"	6'-8"	0'-1.3/4"	C	HM HM - HW 12	4" X 25" ONE WAY VISION PANEL. SEE DETAIL 22/A9	LOCKSET 16" X 34" 16" X 35"
PT	3'-0"	6'-8"	0'-1.3/4"	B	HM HM - HW 7	UNDERCUT DOOR 1". SEE DETAIL 22/A9	24" X 24" 16" X 34" 16" X 35"
R	3'-0"	6'-9"	0'-2"	REF	- - - -	BY REFRIGERATION COMPANY	
R1	3'-0"	6'-9"	0'-4"	REF	- - - -	BY REFRIGERATION COMPANY	
R2	4'-0"	6'-9"	0'-2"	REF	- - - -	BY REFRIGERATION COMPANY (DOUBLE DOORS) W/ 8" X 14" LITE.	
R3	3'-0"	6'-9"	0'-2"	REF	- - - -	BY REFRIGERATION COMPANY (GLAZED)	
T1	3'-0"	6'-8"	0'-1.3/4"	C	HM HM A HW 11	4" X 25" GLASS VISION PANEL. SEE DETAIL 22/A9	PASSAGE SET 16" X 34" 16" X 35"
T5	3'-6"	7'-0"	0'-1.3/4"	C	HM HM B HW 5.3	4" X 25" LAMINATED GLASS VISION PANEL. SEE 25 & 26/A7 FOR HEAD & JAMB. SEE 27/A7 FOR SILL	LOCKSET 36" X 41"
TH	3'-0"	4'-0"	0'-2.1/8"	D	ALUM. ALUM. - HW 19	TOWER ACCESS. NYSTROM YTL SERIES INSULATED ACCESS PANEL. PROVIDE RAIN SHIELD. SEE 3/A8.	
V1	3'-0"	7'-0"	0'-1.3/4"	A	ALUM. ALUM. C -	NO HOLD OPENS (DOUBLE DOOR)	PUSH BAR
V2	3'-0"	7'-0"	0'-1.3/4"	A	ALUM. ALUM. C -	NO HOLD OPENS (DOUBLE DOOR)	PUSH PAR
V3	3'-0"	7'-0"	0'-1.3/4"	A1	ALUM. ALUM. C -	NO HOLD OPENS. PUSH ONLY	PUSH BAR
W	3'-0"	6'-8"	0'-1.3/4"	C	HM HM - HW 3	4" X 25" GLASS VISION PANEL. SEE DETAIL 22/A9	8" X 16" 16" X 34" 16" X 35"
W1	3'-0"	6'-8"	0'-1.3/4"	C	HM HM - HW 3.1	DOUBLE ACTING W/ 4" X 25" GLASS VISION PANEL. SEE DETAIL 22/A9	(2) 8" X 16" 39" X 34" 39" X 34"
W2	3'-0"	6'-8"	0'-1.3/4"	C	HM HM - HW 3.2	4" X 25" ONE WAY VISION GLASS / THUMB LATCH. SEE DETAIL 22/A9	8" X 16" 39" X 34" 39" X 35"
W5	3'-0"	6'-8"	0'-1.3/4"	C	HM HM - HW 3.5	ONE WAY 4" X 25" VISION PANEL. PROVIDE JAMB W/ EXTENSION ON THE RETAIL SIDE. SEE DETAIL 23/A9	8" X 16" 16" X 34" 16" X 35"

CLIENT NAME
WAWA
260 W. BALTIMORE PIKE
WAWA, PA 19063

PROJECT NAME
WAWA PROTOTYPE F85FBL_v2017.01
STORE #
GRIFFIN RD. & SR 7
HOLLYWOOD, FL

SHEET TITLE
FLOOR PLAN

DATE
04-03-2017

DRAWN
DS

CHECKED
BL

PROJECT NO.
2170185

DATE
04-03-2017

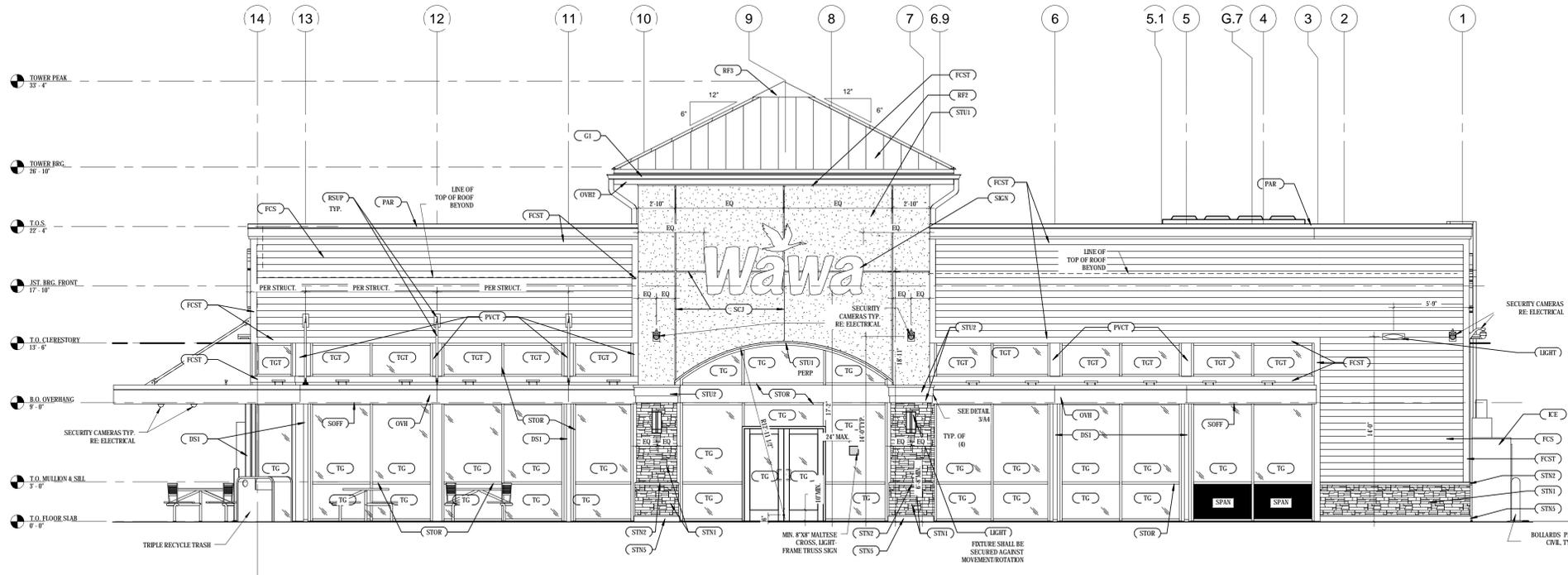
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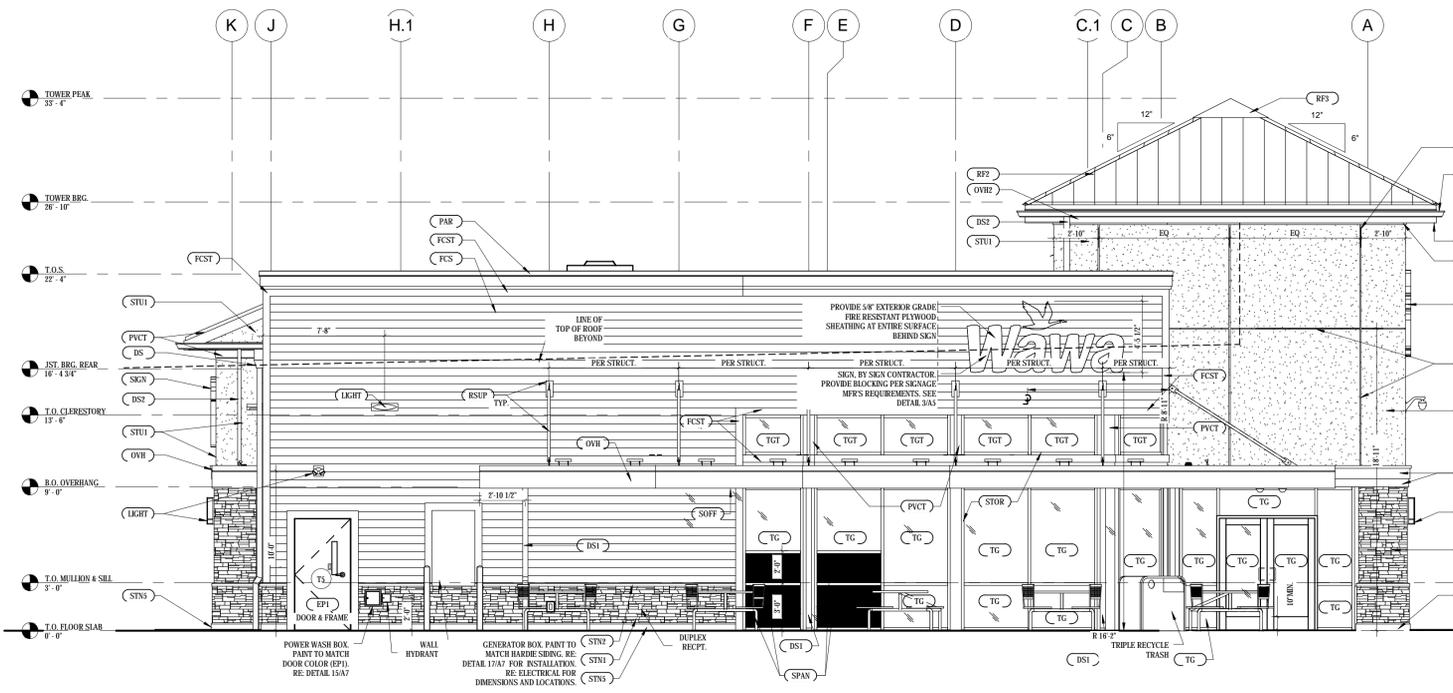
2170185 10/15/18

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4
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1 FRONT (WEST) ELEVATION (SR 7)
A4 3/16" = 1'-0"



2 LEFT (NORTH) ELEVATION
A4 3/16" = 1'-0"

NOTE: ALL SIGNAGE WILL BE PERMITTED SEPARATELY.

ARCHITECTURAL - EXTERIOR FINISH SCHEDULE				
SYMBOL	MATERIAL	MANUFACTURER	COLOR	NOTES
CO2	CO2 FILL BOX WITH PVC SLEEVE THRU WALL			SEE A1 FOR LOCATION AND MOUNTING DETAIL. 18/A7 (SMB)
DS	STAINLESS STEEL THRUWALL SCUPPER & COLLECTOR AND 4" DIA. STAINLESS STEEL DOWNSPOUT	ATAS INTERNATIONAL INC.	NATURAL MILL FINISH	COORDINATE WITH CIVIL FOR CONNECTION TO STORM SEWER. SEE DETAIL 14A & 14B/A7. ALTERNATE: PETERSEN PAC CLAD
DS1	4" DIA. STAINLESS STEEL DOWNSPOUT. REFER TO SPECS FOR GAUGE	ATAS INTERNATIONAL INC.	NATURAL MILL FINISH	COORDINATE WITH CIVIL FOR CONNECTION TO STORM SEWER. SEE DETAIL 14A & 14B/A7. ALTERNATE: PETERSEN PAC CLAD
DS2	4" DIA. .032 ALUM. DOWNSPOUT	ATAS INTERNATIONAL INC.	NATURAL MILL FINISH	ALTERNATE: PETERSEN PAC CLAD
EP1	PAINT	BENJAMIN MOORE	COLOR: WHITE DIAMOND 2121-60 FINISH: EGG SHELL	DOOR & FRAME
FCS	"ARTISAN" PLANK LAP SIDING	JAMES HARDIE	HARRIS CREAM. FINISH: BEADED SMOOTH. 8.25" X 12"	PRE-FINISHED. PROVIDE COLOR-MATCHED CAULK BY JAMES HARDIE
FCST	"ARTISAN" ACCENT TRIM	JAMES HARDIE	ARTIC WHITE. FINISH: SMOOTH. 1.5" TH X 6" W X 10'-0" L	PRE-FINISHED. PROVIDE COLOR-MATCHED CAULK BY JAMES HARDIE
G1	ALUMINUM GUTTERS		.032 POLISHED ALUMINUM W/ CLEAR ANODIZED FINISH	CONTINUOUS - NO SEAMS ALLOWED. SEE SHEET A3.1
KCE	ICE MERCHANTS	LEER	PAINTE BENJAMIN MOORE. BM OC-1 NATURAL WICKER	
LADD	METAL EXTERIOR LADDER	EASTERN METAL SUPPLY	BRUSHED ALUMINUM	SEE A3.1 FOR DETAILS
LGD	6" LADDER GUARD #LGG	VISIONMASTERS EQUIP. CO.	MILL FINISH	
LIGHT	EXTERIOR LIGHT FIXTURE			SEE ELECTRICAL DRAWINGS AND DETAIL 18/A7 FOR MOUNTING
MTPN	METAL PANEL	PIONEER ARCHITECTURAL SYSTEMS	COLOR TO MATCH ADJACENT TRIM	BAHAMA SHUTTERS
MTPN2	METAL PANEL	PIONEER ARCHITECTURAL SYSTEMS	PAINT TO MATCH DOORS, P1	
OFS	STAINLESS STEEL 8" X 16" OVERFLOW SCUPPER	ATAS INTERNATIONAL INC.	NATURAL MILL FINISH	ALTERNATE: PETERSEN PAC CLAD
OVH	METAL OVERHANG FACING	ATAS INTERNATIONAL INC.	RAPID-LOK FASCIA, CUSTOM EDGE-LOK FASCIA, COLOR: #17 BRITTE RED	SEE A3.1 FOR DETAILS. ALTERNATE: PETERSEN PAC CLAD
OVH2	HIP ROOF FASCIA	ATAS INTERNATIONAL INC.	BRAKE METAL. COLOR #26 BONE WHITE	SEE A3.1 FOR DETAILS. ALTERNATE: PETERSEN PAC CLAD
PAR	ALUMINUM PARAPET CAP	ATAS INTERNATIONAL INC.	COLOR TO MATCH ADJACENT TRIM	ALTERNATE: PETERSEN PAC CLAD
PBS	PRE-FINISHED ALUMINUM BAHAMA SHUTTER	PIONEER ARCHITECTURAL SYSTEMS	COLOR TO MATCH ADJACENT TRIM	SHUTTER PER SPECS. CONTACT (212) 926-6667
PVCT	ACCENT TRIM	AZEK	WHITE. FINISH: SMOOTH	PRE-FINISHED. ALTERNATE: PALIGHT
PVCT1	ACCENT TRIM	AZEK	1 X 2 WHITE. FINISH: SMOOTH	PRE-FINISHED. ALTERNATE: PALIGHT
RF2	METAL ROOFING	ATAS INTERNATIONAL INC.	MIR194 DUTCH SEAM. (1 1/2") 19.25". COLOR: #23 COPPERTONE	ALTERNATE: PETERSEN PAC CLAD
RF3	STANDING SEAM ROOF HIP CAP	ATAS INTERNATIONAL INC.	TO MATCH METAL ROOFING	ALTERNATE: PETERSEN PAC CLAD
RSUP	ROD SUPPORT & PLATE		POWDER COAT. MATCH SW #6078	SEE STRUCTURAL. ALL RODS NOT INDICATED ON STRUCTURAL ARE PURELY DECORATIVE RE: 21/A3.1
SC1	STUCCO CONTROL JOINT - 3/4" WIDE			W/ SHAPED ACCORDION STYLE RE: SPECS
SGN	ILLUMINATED SIGNAGE			SGN BY WAWA. SURFACE MOUNTED
SOFF	MPS120. SOLID AND VENTED	ATAS INTERNATIONAL INC.	BONE WHITE	BUILDING OVERHANGS. ALTERNATE: PETERSEN PAC-CLAD
SPAN	SPANDREL GLASS. 1" INSULATED TEMPERED	VERICON	SUBDUED BRONZE	FRIT TO BE ON INSIDE OF PANEL
STN1	MANUFACTURED STONE VENEER	BORAL	SOUTHWEST BLEND PF 8019. PRO-FIT LEDGESTONE	
STN2	PRE-CAST MANUFACTURED STONE WATERTABLE/SILL	BORAL	TAUPE CSV 1375	
STN5	PRE-CAST STONE BASE	ITALIAN CAST STONE	3" X 6" H X 48" LENGTHS. COLOR: ICS-LS-WAWA-SABIA. FINISH: "LIGHT SMOOTH". MAINTAIN CONSISTENT COLOR THROUGHOUT PROJECT	VERTICAL GROUT JOINTS: 3/16" MAX. WIDTH. GROUT WITH BONSAL #71 WARM IVORY
STN6	PRE-CAST STONE CAP	ITALIAN CAST STONE	COLOR: WHITE	SEE SHEET A10. GROUT JOINTS 3/16" MAX. WIDTH. COLOR: WHITE (TO MATCH STONE CAP)
STOR	STOREFRONT SYSTEM	KAWNEER	CLEAR ANODIZED	SEE SPECIFICATIONS
STU1	STUCCO	SENERGY	#3085 MERINGUE. FINISH: SAHARA	SEE SPECIFICATIONS
STU2	STUCCO	SENERGY	#354 STARK WHITE. FINISH: FINE	SEE SPECIFICATIONS
TG	1" INSULATED TEMPERED GLASS			SEE SPECIFICATIONS
TGT	1" INSULATED TEMPERED GLASS	PPG	SOLARGRAY VLT. SEE SPECS	SEE SPECIFICATIONS
TH	36" X 48" ACCESS HATCH		FACTORY FINISH	REFER TO DOOR SCHEDULE. SHEET A1

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PROJECT NAME
WAWA

CLIENT NAME
WAWA

280 W. BALTIMORE PIKE
WAWA, PA 19063

PROJECT NAME
WAWA PROTOTYPE F85FBL_v2017.01

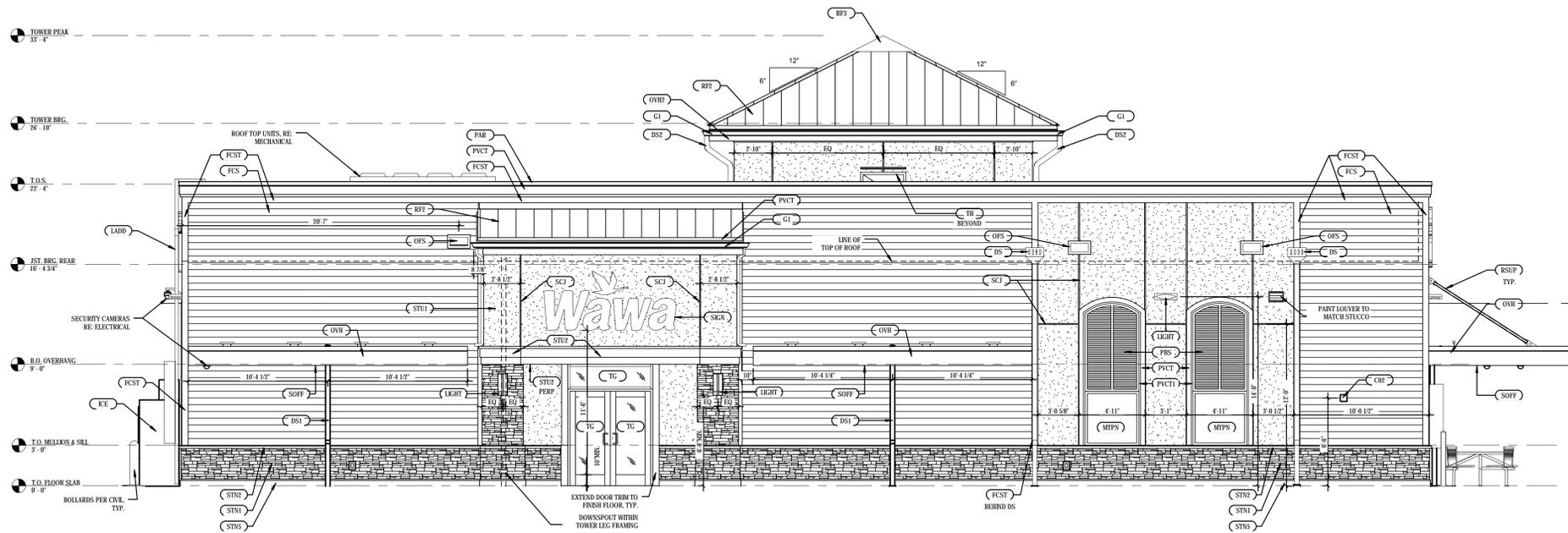
STORE #
GREEN RD. & SR 7

HOLLYWOOD, FL

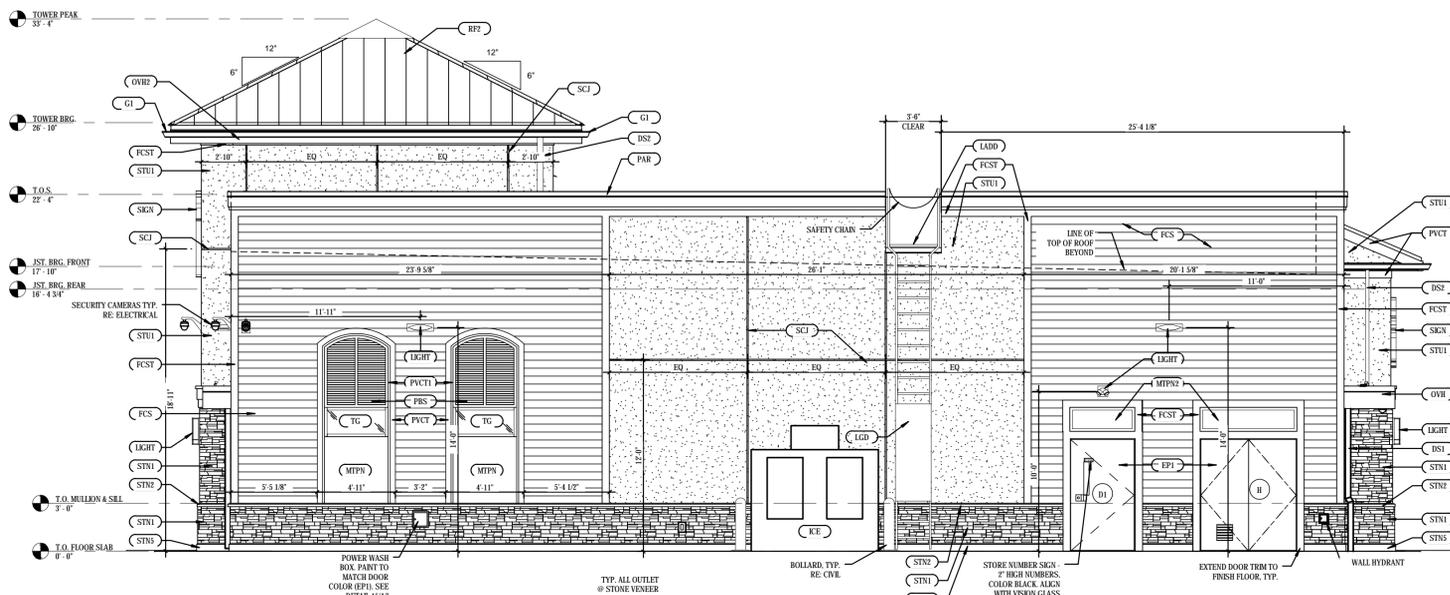
SHEET TITLE
EXTERIOR ELEVATIONS

No.	Description	Date
217085	ZONING	04-03-2017

PROJECT NO.	DATE	DRAWN	CHECKED
217085	04-03-2017	DS	BL



1 REAR (EAST) ELEVATION
A4.1 3/16" = 1'-0"



2 LEFT (SOUTH) ELEVATION (GRIFFIN RD.)
A4.1 3/16" = 1'-0"

ARCHITECTURAL - EXTERIOR FINISH SCHEDULE				
SYMBOL	MATERIAL	MANUFACTURER	COLOR	NOTES
CR2	CO2 FILL BOX WITH PVC SLEEVE THRU WALL	SUPPLIER		SEE A1 FOR LOCATION AND MOUNTING DETAIL 18/A7 (S.M)
DS	STAINLESS STEEL THRUWALL SCUPPER & COLLECTOR AND 4" DIA. STAINLESS STEEL DOWNSPOUT	ATAS INTERNATIONAL INC.	NATURAL MILL FINISH	COORDINATE WITH CIVIL FOR CONNECTION TO STORM SEWER. SEE DETAIL 14A & 14B/A7. ALTERNATE: PETERSEN PAC CLAD
DS1	4" DIA. STAINLESS STEEL DOWNSPOUT. REFER TO SPECS FOR GAUGE	ATAS INTERNATIONAL INC.	NATURAL MILL FINISH	COORDINATE WITH CIVIL FOR CONNECTION TO STORM SEWER. SEE DETAIL 14A & 14B/A7. ALTERNATE: PETERSEN PAC CLAD
DS2	4" DIA. .032 ALUM. DOWNSPOUT	ATAS INTERNATIONAL INC.	NATURAL MILL FINISH	ALTERNATE: PETERSEN PAC CLAD
EPI	PAINT	BENJAMIN MOORE	NATURAL MILL FINISH	ALTERNATE: PETERSEN PAC CLAD
FCS	"ARTISAN" PLANK LAP SIDING	JAMES HARDIE	HARRIS CREAM, FINISH: BEADED SMOOTH, 8.25" X 12"	DOOR & FRAME
FCST	"ARTISAN" ACCENT TRIM	JAMES HARDIE	ARTIC WHITE, FINISH: SMOOTH, 1.5" TH X 6" W X 10'-0" L	PRE-FINISHED. PROVIDE COLOR-MATCHED CAULK BY JAMES HARDIE
G1	ALUMINUM GUTTERS		.032 POLISHED ALUMINUM W/ CLEAR ANODIZED FINISH	CONTINUOUS - NO SEAMS ALLOWED. SEE SHEET A3.1
ICE	ICE MERCHANDISER	LEER	PART BENJAMIN MOORE, BM OC-1 NATURAL WICKER	
LADD	METAL EXTERIOR LADDER	EASTERN METAL SUPPLY	BRUSHED ALUMINUM	SEE A3.1 FOR DETAILS
LGD	6" LADDER GUARD #L6	VISIONMASTERS EQUIP. CO.	MILL FINISH	
LIGHT	EXTERIOR LIGHT FIXTURE			SEE ELECTRICAL DRAWINGS AND DETAIL 18/A7 FOR MOUNTING
MTPN	METAL PANEL	PIONEER ARCHITECTURAL SYSTEMS	COLOR TO MATCH ADJACENT TRIM	BAHAMA SHUTTERS
MTPN2	METAL PANEL	PIONEER ARCHITECTURAL SYSTEMS	PAINT TO MATCH DOORS, P1	
OFS	STAINLESS STEEL 8" X 16" OVERFLOW SCUPPER	ATAS INTERNATIONAL INC.	NATURAL MILL FINISH	ALTERNATE: PETERSEN PAC CLAD
OVH	METAL OVERHANG FACING	ATAS INTERNATIONAL INC.	RAPID-LOK FASCIA, CUSTOM EDGE LOK FASCIA, COLOR: #17 BRITE RED	SEE A3.1 FOR DETAILS. ALTERNATE: PETERSEN PAC CLAD
OVH2	HIP ROOF FASCIA	ATAS INTERNATIONAL INC.	BRAKE METAL, COLOR #26 BONE WHITE	SEE A3.1 FOR DETAILS. ALTERNATE: PETERSEN PAC CLAD
PAR	ALUMINUM PARAPET CAP	ATAS INTERNATIONAL INC.	COLOR TO MATCH ADJACENT TRIM	ALTERNATE: PETERSEN PAC CLAD
PBS	PREFINISHED ALUMINUM BAHAMA SHUTTER	PIONEER ARCHITECTURAL SYSTEMS	COLOR TO MATCH ADJACENT TRIM	SHUTTER PER SPECS. CONTACT (321) 926-6667
PVCT	ACCENT TRIM	AZEK	WHITE, FINISH: SMOOTH	PRE-FINISHED. ALTERNATE: PALIGHT
PVCT1	ACCENT TRIM	AZEK	1 X 2 WHITE, FINISH: SMOOTH	PRE-FINISHED. ALTERNATE: PALIGHT
RF2	METAL ROOFING	ATAS INTERNATIONAL INC.	MRD194 DUTCH SEAM (1 1/2") 19.25", COLOR: #23 COPPERTONE	ALTERNATE: PETERSEN PAC CLAD
RSUP	STANDING SEAM ROOF HIP CAP	ATAS INTERNATIONAL INC.	TO MATCH METAL ROOFING	ALTERNATE: PETERSEN PAC CLAD
RSUP	ROD SUPPORT & PLATE		POWDER COAT, MATCH SW #6076	SEE STRUCTURAL. ALL RODS NOT INDICATED ON STRUCTURAL ARE PURELY DECORATIVE. RE: 21/A3.1
SC1	STUCCO CONTROL JOINT - 3/4" WIDE			W SHAPED ACCORDION STYLE RE-SPECS
SGN	ILLUMINATED SIGNAGE			SIGN BY WAWA, SURFACE MOUNTED
SOFF	MPS120, SOLID AND VENTED	ATAS INTERNATIONAL INC.	BONE WHITE	BUILDING OVERHANGS. ALTERNATE: PETERSEN PAC-CLAD
SPAN	SPANDREL GLASS, 1" INSULATED TEMPERED	VERICON	SUBDUED BRONZE	FRIT TO BE ON INSIDE OF PANEL
STN1	MANUFACTURED STONE VENEER	BORAL	SOUTHWEST BLEND PF-8019, PRO-FIT LEDGESTONE	
STN2	PRE-CAST MANUFACTURED STONE WATERTABLE/SILL	BORAL	TAUPE CSV-1375	VERTICAL GROUT JOINTS: 3/16" MAX. WIDTH. GROUT WITH BONSAL #71 WARM IVORY
STN5	PRE-CAST STONE BASE	ITALIAN CAST STONE	3"W X 6"H X 48" LENGTHS. COLOR: ICS-LS-WAWA-SABIA, FINISH: "LIGHT SMOOTH" - MAINTAIN CONSISTENT COLOR THROUGHOUT PROJECT	SEE DETAIL 5 & 11/A6.1. ALTERNATE: QUALITY STONE VENEER, INC. SEE SPECIFICATIONS. VERTICAL GROUT JOINTS: 3/16" MAX. WIDTH. GROUT WITH BONSAL #71 WARM IVORY
STN6	PRE-CAST STONE CAP	ITALIAN CAST STONE	COLOR: WHITE	SEE SHEET A10. GROUT JOINTS 3/16" MAX. WIDTH. COLOR: WHITE (TO MATCH STONE CAP)
STOR	STOREFRONT SYSTEM	KAWNEER	CLEAR ANODIZED	SEE SPECIFICATIONS
STU1	STUCCO	SENERGY	#3085 MERINGUE, FINISH: SAHARA	
STU2	STUCCO	SENERGY	#354 STARK WHITE, FINISH: FINE	
TG	1" INSULATED TEMPERED GLASS			SEE SPECIFICATIONS
TGT	1" INSULATED TEMPERED GLASS	PPG	SOLARGRAY VLT. SEE SPECS	SEE SPECIFICATIONS
TH	36" X 48" ACCESS HATCH		FACTORY FINISH	REFER TO DOOR SCHEDULE, SHEET A1

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Cuhaci & Peterson
Architects Engineers Planners
ORLANDO • PHILADELPHIA

CLIENT NAME
WAWA
260 W. BALTIMORE PIKE
WAWA, PA 19063

PROJECT NAME
WAWA PROTOTYPE F85FBL_v2017.01
STORE #
GREEN RD. & SR 7
HOLLYWOOD, FL

SHEET TITLE
EXTERIOR ELEVATIONS

No.	Description	Date
	ZONING	04-03-2017

PROJECT NO.	DATE	DRAWN	CHECKED
2170185	04-03-2017	DS	BL

A4.1



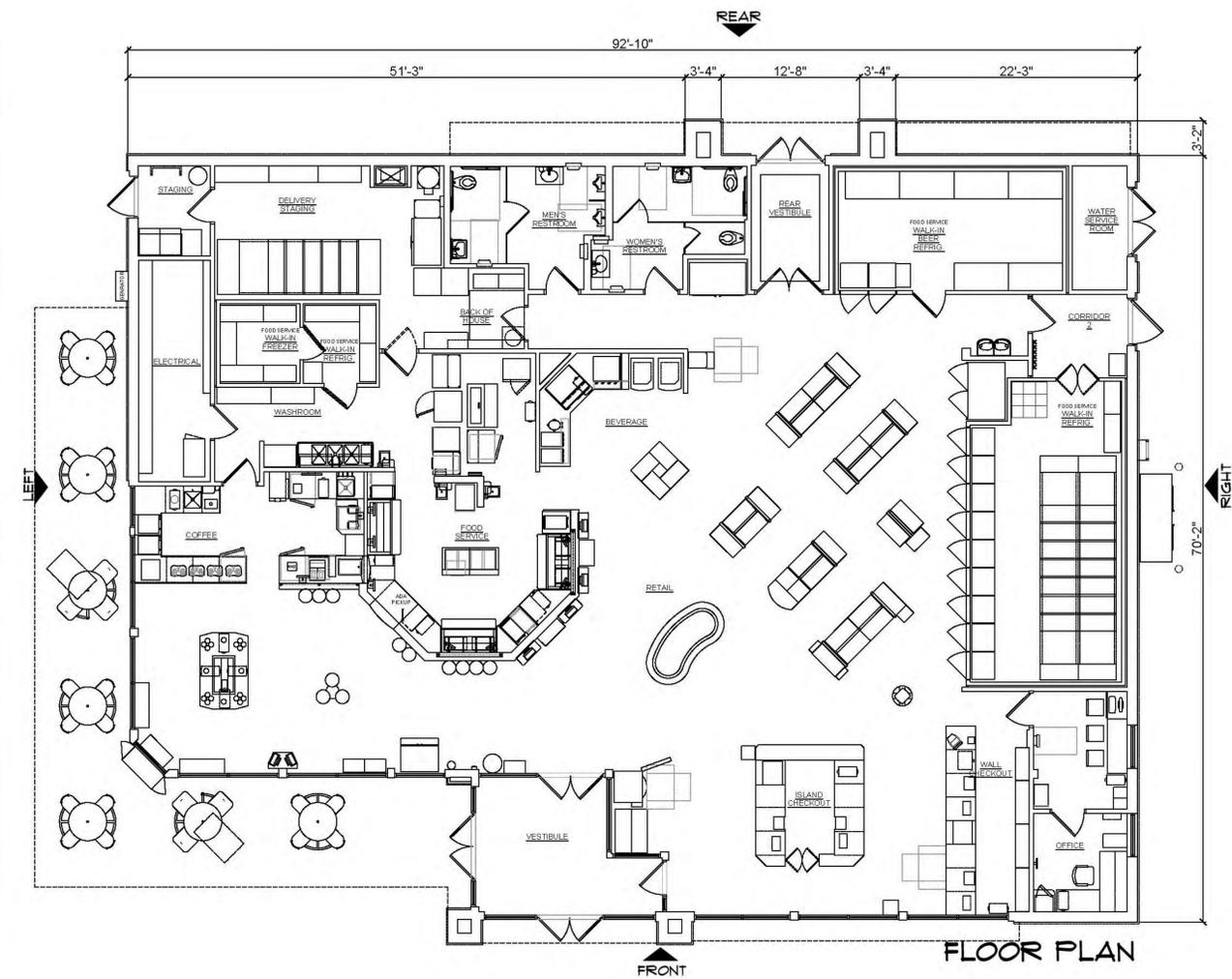
RIGHT (SOUTH) ELEVATION (GRIFFIN RD.)



FRONT (WEST) ELEVATION (ST 7)



REAR (EAST) ELEVATION



FLOOR PLAN

Metal Door Benjamin Moore White Diamond BM 2121-60	Metal Overhang Atlas #17 Brite Red
Trim James Hardie Arctic White JH10-20	Stucco Senery Meringue #3085
Fiber Cement Siding James Hardie Harris Cream	Ice Storage Benjamin Moore Natural Wicker OC-1
Metal Roof Atlas #23 23 Coppertone	Exterior Stone Cultured Stone Southwest Blend



LEFT (NORTH) ELEVATION

NOTE:
SIGNAGE IS SHOWN FOR REFERENCE ONLY
SEPARATE PERMIT REQUIRED



CANOPY SIDE ELEVATION

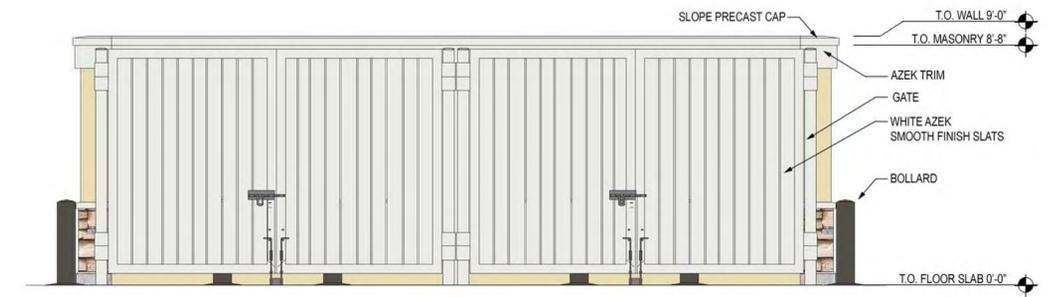
CANOPY END ELEVATION



CANOPY PERSPECTIVE VIEW

Metal Atlas International Bone White # 26	Metal Roof Atlas International Coppertone # 23	Exterior Stone Cultured Stone Southwest Blend
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Metal Door Benjamin Moore White Diamond BM 2121-60	Azek Trim White	Stucco Senergy Meringue #3085	Exterior Stone Cultured Stone Southwest Blend
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FRONT ELEVATION



RIGHT ELEVATION



LEFT ELEVATION



REAR ELEVATION