



FARRAGUT MUNICIPAL PLANNING COMMISSION

AGENDA

November 17, 2022

Farragut Town Hall - Board Room

7:00 p.m.

For questions, please e-mail Mark Shipley at mshipley@townoffarragut.org or Bart Hose at bhose@townoffarragut.org.

1. Approval of agenda
2. Approval of minutes – October 20, 2022
3. Discussion and public hearing on a request to amend the Future Land Use Map in the Comprehensive Land Use Plan Update 2012 for 11500 Kingston Pike, 68.31 Acres, from Mixed Use Town Center, Medium Density Residential, Low Density Residential, and Open Space to Commercial, Parks and Recreation, Low Density Residential, and Very Low Density Residential (John Brehm, Hy-Vee, Applicant)
4. Discussion and public hearing on a request to amend the Farragut Zoning Map for 11500 Kingston Pike, 68.31 Acres, from C-1, O-1, B-1, and R-1 to C-1, O-S, R-4, and R-3 (John Brehm, Hy-Vee, Applicant)
5. Discussion and public hearing on an ordinance to amend the Farragut Municipal Code, Appendix A., Zoning, Chapter 2., Definitions., to define Ballfield, and Chapter 4., General Provisions and Exceptions, Section XIII., Outdoor Site Lighting, Subsection A., to clarify street lighting provisions, establish where ballfield lighting may be provided, and prohibit lighting that would be a nuisance due to uncontrolled glare on any adjacent properties, rights-of-ways, access easements, or driveways (Farragut Neighborhood Preservation Partnership, Applicant)
6. Discussion and public hearing on the installation of new small cell poles in the rights of ways adjacent to 102 Glen Abbey Boulevard, 126 West End Avenue, 100 Smith Road, 11403 Municipal Center Drive, 11509 Parkside Drive, 101 West End Avenue, 100 Brooklawn Street, and 11425 Kingston Pike (TeleCAD Wireless, Applicant)
7. Discussion and public hearing on the installation of underground fiber optic cable to service new small cell poles in the rights of ways adjacent to 102 Glen Abbey Boulevard, 126 West End Avenue, 100 Smith Road, 11403 Municipal Center Drive, 11509 Parkside Drive, 101 West End Avenue, 100 Brooklawn Street, and 11425 Kingston Pike (Fiberlink, Applicant)
8. Discussion and public hearing on a site plan for the Farragut Town Center at Biddle Farms Townhouses, Parcel 3.24, Tax Map 143, 47 Units, Zoned PCD (Budd Cullom, Applicant)

11408 MUNICIPAL CENTER DRIVE | FARRAGUT, TN 37934 | 865.966.7057 |
WWW.TOWNOFFARRAGUT.ORG

It is the policy of the Town of Farragut not to discriminate on the basis of race, color, natural origin, gender, gender identity, sexual orientation, age, religion, disability or veteran status pursuant to Title VI of the Civil Rights Act of 1964, Public Law 93-112 and 101-336 in its hiring, employment practices and programs. To request accommodations due to disabilities, please call 865-966-7057 in advance of the meeting



9. Discussion and public hearing on approval of a final plat for the Ivey Farms Subdivision, Phases 2 and 3, Parcel 54.01, Tax Map 151, 30.39 Acres, 101 Lots, Zoned R-1/OSR (Goodall Homes, Applicant)
10. Discussion and public hearing on approval of a final plat for the Grove at Boyd Station, Phase 1, Unit 2, 27.63 Acres, 66 Lots, Zoned R-1/OSMR (Lynch Surveys, LLC., Applicant)
11. Discussion and public hearing on a concept plan for the Virtue View Farm Subdivision, Parcels 33.03 and 33.04, Tax Map 152 033.03 and 152 033.04, 44.09 Acres, 13 Lots, Zoned R-1 (Steve Williams, Applicant)
12. Discussion on updates to the Farragut Sign Ordinance (Town of Farragut, Applicant)
13. Approval of utilities
14. Citizen forum

Public Comment Protocol

The Planning Commission welcomes and invites Farragut residents to participate in public meetings. At the end of each business meeting, there will be time reserved for public comment under the Citizen Forum agenda item. If you are interested in speaking, please fill out a blue comment card and turn it in to the Planning Director or other designated staff member. This time is set aside specifically for comments on items that are not on the Planning Commission regular agenda for the meeting. Each speaker will be given five (5) minutes to speak on his/her topic.

During the regular agenda portion of the meeting there may be an allowance for public comment for each agenda item. The Chairman may recognize individuals for public comment based on the following guidelines.

1. The Chairman shall maintain and control the meeting to provide a professional and objective environment;
2. Any Farragut resident, property owner, or business owner interested in speaking should fill out a blue comment card stating which agenda item they would like to comment on and turn in to the Planning Director or other designated staff member;
3. Speakers shall come to the podium and identify themselves by name and street address;
4. Public comment shall be limited to five (5) minutes per individual. Time for public comment may be amended at the discretion of the Chairman. Time is not transferable to other speakers;
5. Speakers should strive to avoid redundancy; each speaker should have their own original viewpoint;
6. Comments shall address issues, not individuals or personalities;
7. Comments may support or oppose issues or measures, but the motives of those with differing views shall not be questioned or attacked;
8. Personal attacks and malicious comments shall not be tolerated;
9. An applicant, and/or their representative(s), for an item on the regular agenda shall be afforded the time necessary to present their request and respond to questions. The five (5) minute limitation shall

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not apply. However, the Chairman may ask an applicant to stay on point in order to facilitate the efficiency of the meeting.

Each speaker will be asked if they can agree to abide by the Comment Protocol. If so, please be prepared to speak when your name is called.

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**MINUTES
FARRAGUT MUNICIPAL PLANNING COMMISSION**

October 20, 2022

MEMBERS PRESENT

Rita Holladay, Chairman
Ed St. Clair, Vice-Chairman
Ron Williams, Mayor
Louise Povlin, Vice Mayor
Ron Pinchok
Jon Greene
Shannon Preston
Noah Myers
Hayley Sims, Youth Representative

MEMBERS ABSENT

Scott Russ, Secretary

Staff Representative: Mark Shipley, Community Development Director
David Smoak, Town Administrator
Tom Hale, Town Attorney

1. Approval of agenda

Staff recommended approval of the agenda as submitted.

A motion was made by Mayor Williams to follow staffs' recommendation. Motion was seconded by Commissioner Myers and was approved unanimously.

2. Approval of minutes – September 15, 2022

Staff recommended approval of the minutes as submitted.

A motion was made by Commissioner Myers to follow staffs' recommendation. Motion was seconded by Commissioner St. Clair and was approved unanimously except for Commissioner Pinchok who abstained due to being absent.

3. Review a request for a recommendation of approval to the Board of Mayor and Aldermen for a variance of 122 feet from the distance between driveways and 65 feet from the distance between driveways and intersections requirements for collector streets, as provided for in the Driveways and Other Access Ways Ordinance, for a proposed single-family residence at 221 S. Hobbs Road (Red Door Homes, Applicant)

Staff reviewed this item and recommended approval of the access and associated variances since the access lines up with the access across the street, satisfies sight distance, and serves only one dwelling unit.

A motion was made by Commissioner St. Clair to follow staffs' recommendation. Motion was seconded by Mayor Williams and was approved unanimously.

4. Discussion and public hearing on approval of a preliminary plat for the Westerly Subdivision, Parcels 8.01, 9, and 10.02, Tax Map 152, 8.74 Acres, 12 Lots, Zoned R-1 and R-2 (BHN-P, Applicant)

Staff reviewed this item and a long discussion ensued involving commissioners, the applicant, and citizens.

Due to having more than one option in terms of access and concerns over safety related considerations for the proposed access onto Champions Point, a motion was made by Vice Mayor Povlin to deny the preliminary plat that was submitted with the access onto Champions Point. Motion was seconded by Commissioner Myers and motion passed 7-1 with Mayor Williams voting in opposition.

5. Discussion and public hearing on Resolution PC-22-10, a resolution to approve amendments to the Future Land Use Map in the Comprehensive Land Use Plan Update December 2012 for portions of the Kingston Pike/Smith Road/Boring Road Study Area

Staff reviewed this item and noted that it was discussed as a workshop item in August and staff was asked to include the recommendations based on predominant citizen input in Resolution PC-22-10. Staff reviewed the proposed amendments to the study area and a long discussion ensued involving commissioners and citizens.

Some property owners expressed concerns about proposed changes to their future land use designations and some citizens spoke in support of the proposed amendments. Staff and Vice Mayor Povlin noted that some of concerns expressed by property owners were mentioned at the August workshop and that areas I and J on Exhibit A may need further evaluation. Some additional comments made at the October meeting involved re-evaluating the proposed future land use designations for Areas F and G on Exhibit A to provide for an internal transition of density within these general areas.

A motion was made by Vice Mayor Povlin to approve Resolution PC-22-10 subject to the areas shown as I and J on Exhibit A associated with Resolution PC-22-10 being changed from the proposed Rural Residential land use to the Very Low-Density Residential land use. The areas shown as F and G on Exhibit A would remain in their current future land use classification (Medium Density Residential) until these areas could be further evaluated for proper transitioning. Motion was seconded by Commissioner Pinchok and motion passed 7-1 with Commissioner Myers voting in opposition.

6. Discussion on a request to amend the Future Land Use Map in the Comprehensive Land Use Plan Update 2012 for 11500 Kingston Pike, 68.31 Acres, from Mixed Use Town Center, Medium Density Residential, Low Density Residential, and Open Space to Commercial, Parks and Recreation, Low Density Residential, and Very Low Density Residential (John Brehm, Hy-Vee, Applicant)

For discussion purposes only.

7. Discussion on a request to amend the Farragut Zoning Map for 11500 Kingston Pike, 68.31 Acres, from C-1, O-1, B-1, and R-1 to C-1, O-S, R-4, and R-3 (John Brehm, Hy-Vee, Applicant)

For discussion purposes only.

8. Approval of utilities

None.

9. Citizen forum

None.

The meeting adjourned at 12:01 a.m.

Scott Russ, Secretary

REPORT TO THE FARRAGUT MUNICIPAL PLANNING COMMISSION

PREPARED BY: Mark Shipley, Community Development Director

SUBJECT: Discussion and public hearing on a request to amend the Future Land Use Map in the Comprehensive Land Use Plan Update 2012 for 11500 Kingston Pike, 68.31 Acres, from Mixed Use Town Center, Medium Density Residential, Low Density Residential, and Open Space to Commercial, Parks and Recreation, Low Density Residential, and Very Low Density Residential (John Brehm, Hy-Vee, Applicant))

INTRODUCTION AND BACKGROUND: This item was reviewed last month for workshop discussion purposes. Staff provided an overview of the current and proposed future land use map and reviewed the history of the Town's desire to create a general town center area that would include a portion of the property in question. Staff noted that the applicant's request would provide for the possibility of creating a development (a big box grocery store and fuel center) that would be very different in scale and function from what is currently mapped for the community's vision of this portion of Town.

DISCUSSION: Though the size of the area currently mapped as Mixed-Use Town Center (MUTC) on the property at 11500 Kingston Pike may need to be revisited at some point in terms of how far it extends to the south, removing the property entirely from the MUTC land use would be significant. This would remove limitations on building size and other design elements that are tied to the General Commercial Zoning District to help guide the development of active pedestrian-oriented spaces that differentiate the area from its surroundings and contribute to a sense that this general portion of Farragut is its downtown.

RECOMMENDATION: As shown at the October Planning Commission meeting, the applicant presented a concept of how they envision using the property if the requested amendments to the Future Land Use and Zoning Maps are approved. Related to this concept, the applicant has also included for this packet a traffic impact study. This study is being evaluated by the Town Engineer for comments to be provided in association with this agenda item.

More fundamentally, the request to amend the Future Land Use Map, as shown in Resolution PC-22-12, which recommends approval of Ordinance 22-15 to remove the property at 11500 Kingston Pike from the MUTC land use, is a major departure from the Town's past and current mapped vision of this general area. To help identify itself, the MUTC area is intentionally mapped with several properties. Some of these would include new development and some re-development with the incremental goal of creating an identifiable downtown with active public and private spaces that foster a sense of community. This would be compromised by the requested amendment as it would not only affect the largest undeveloped tract in the MUTC but could have an impact on new development or re-development in other areas currently mapped as MUTC. Consequently, staff does not support Resolution PC-22-12.

RESOLUTION PC-22-12

FARRAGUT MUNICIPAL PLANNING COMMISSION

A RESOLUTION TO RECOMMEND APPROVAL OF AN AMENDMENT TO THE FUTURE LAND USE MAP OF THE COMPREHENSIVE LAND USE PLAN UPDATE DECEMBER 2012 FOR THE PROPERTY LOCATED AT 11500 KINGSTON PIKE FROM MIXED USE TOWN CENTER, MEDIUM DENSITY RESIDENTIAL, LOW DENSITY RESIDENTIAL, AND OPEN SPACE TO COMMERCIAL, PARKS AND RECREATION, LOW DENSITY RESIDENTIAL, AND VERY LOW DENSITY RESIDENTIAL

WHEREAS, the Tennessee Code Annotated, Section 13-4-201et seq, provides that the Municipal Planning Commission shall make and adopt a general plan for the physical development of the municipality; and

WHEREAS, the Farragut Municipal Planning Commission has adopted the Comprehensive Land Use Plan Update on December 12, 2012; and

WHEREAS, the Farragut Municipal Planning Commission may periodically amend various aspects of the Comprehensive Land Use Plan Update;

NOW, THEREFORE, BE IT RESOLVED that the Farragut Municipal Planning Commission hereby recommends, through Resolution PC-22-12, Ordinance 22-15 to amend the Future Land Use Map of the Comprehensive Land Use Plan for the property referenced as 11500 Kingston Pike from Mixed Use Town Center, Medium Density Residential, Low Density Residential, and Open Space to Commercial, Parks and Recreation, Low Density Residential, and Very Low Density Residential, as shown on Exhibit A.

ADOPTED this 17th day of November 2022.

Rita Holladay, Chairman

Scott Russ, Secretary

ORDINANCE:	22-15
PREPARED BY:	Shipley
REQUESTED BY:	John Brehm, Hy-Vee
CERTIFIED BY FMPC:	November 17, 2022
PUBLIC HEARING:	_____
PUBLISHED IN:	_____
DATE:	_____
1ST READING:	_____
2ND READING:	_____
PUBLISHED IN:	_____
DATE:	_____

AN ORDINANCE TO AMEND THE FUTURE LAND USE MAP OF THE COMPREHENSIVE LAND USE PLAN UPDATE FOR THE PROPERTY LOCATED AT 11500 KINGSTON PIKE FROM MIXED USE TOWN CENTER, MEDIUM DENSITY RESIDENTIAL, LOW DENSITY RESIDENTIAL, AND OPEN SPACE TO COMMERCIAL, PARKS AND RECREATION, LOW DENSITY RESIDENTIAL, AND VERY LOW DENSITY RESIDENTIAL

WHEREAS, the Board of Mayor and Aldermen of the Town of Farragut, Tennessee, through the Farragut Municipal Planning Commission, created and adopted the Farragut Comprehensive Land Use Plan Update and Future Land Use Map; and,

WHEREAS, the Tennessee Code Annotated, Section 13-4-201 et seq, provides that the Municipal Planning Commission shall make and adopt a general plan for the physical development of the municipality; and

WHEREAS, the Farragut Municipal Planning Commission adopted the Farragut Comprehensive Land Use Plan Update and Future Land Use Map by Resolution PC-12-18 on December 20, 2012; and

WHEREAS, the Tennessee Code Annotated, Section 13-4-202 et seq, provides that the Municipal Planning Commission and the chief legislative body may adopt parts of the Comprehensive Land Use Plan Update that correspond generally with one (1) or more of the functional subdivisions of the subject matter of the plan; and

WHEREAS, the Board of Mayor and Alderman of the Town of Farragut has adopted the Mixed-Use Town Center portion of the Future Land Use Map of the Farragut Comprehensive Land Use Plan Update; and

WHEREAS, the Board of Mayor and Alderman of the Town of Farragut may periodically amend the map of the Mixed-Use Town Center Land Use of the Farragut Comprehensive Land Use Plan Update;

NOW, THEREFORE, BE IT ORDAINED by the Board of Mayor and Aldermen of the Town

of Farragut that the Future Land Use Map in the Comprehensive Land Use Plan Update is amended as follows:

SECTION 1.

Changing the property referenced as 11500 Kingston Pike from Mixed Use Town Center, Medium Density Residential, Low Density Residential, and Open Space to Commercial, Parks and Recreation, Low Density Residential, and Very Low Density Residential (see Exhibit A).

SECTION 2.

This ordinance shall take effect from and after its final passage and publication, the public welfare requiring it.

Ron Williams, Mayor

Allison Myers, Town Recorder

Certified to the Farragut Board of Mayor and Aldermen this _____ day of _____, 2022, with approval recommended.

Rita Holladay, Chairman

Scott Russ, Secretary

FARRAGUT MUNICIPAL PLANNING COMMISSION



Exhibit A Ordinance 22-15

Future Land Use Map

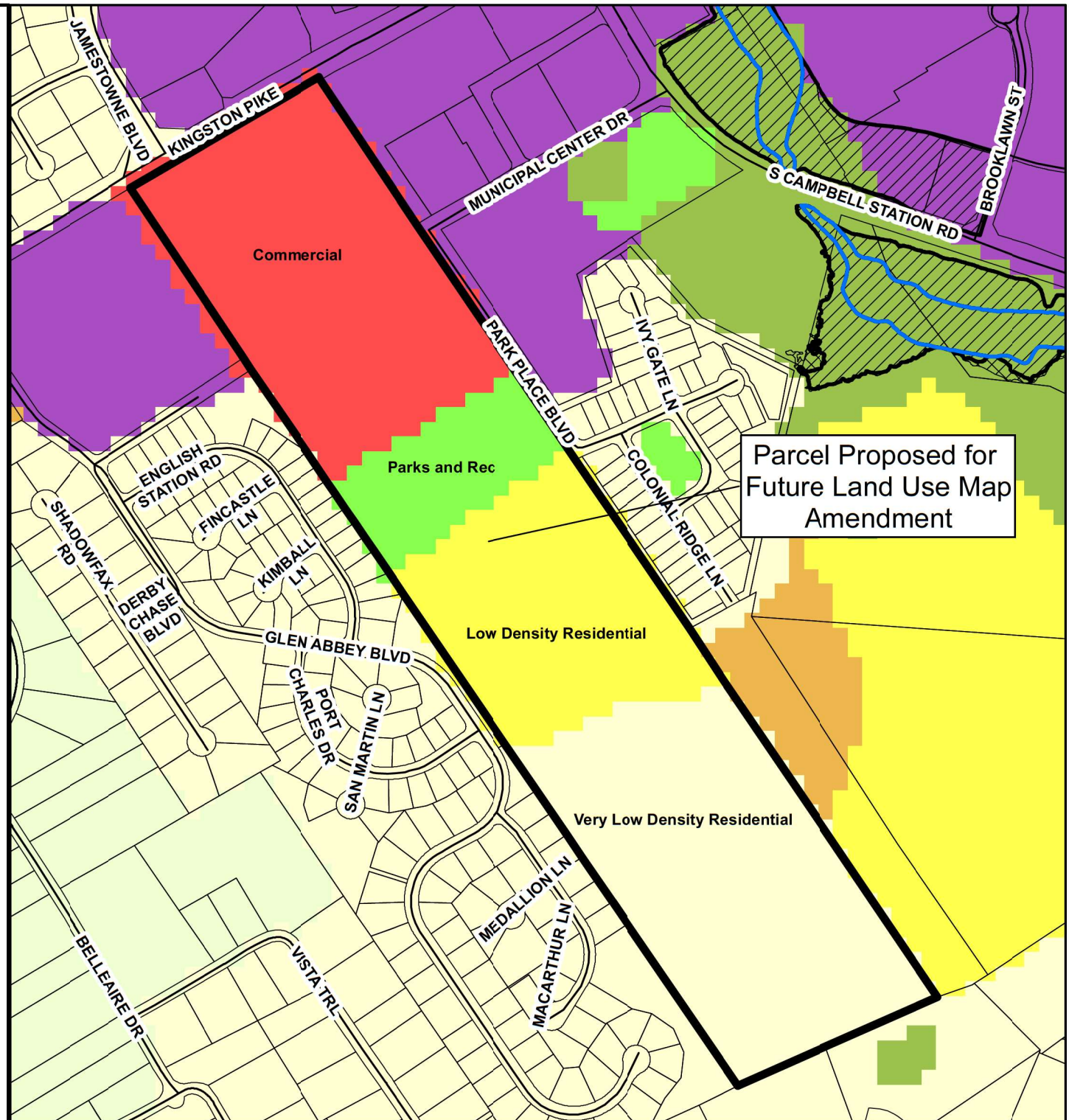
11500 Kingston Pike

Legend

- Subject Property
- Floodway
- 100 year Flood Zone
- 500 year Flood Zone
- Streets
- Parcels
- Commercial
- Open Space
- Parks and Rec
- Rural Residential (> 1 Acre lots)
- Very Low Density Residential (2-4 DUs /
- Low Density Residential (3-6 DUs /
- Med Density Residential (6-8 DUs / Acre)
- Mixed Use Town Center (8-15 DUs /



1 in = 500 ft





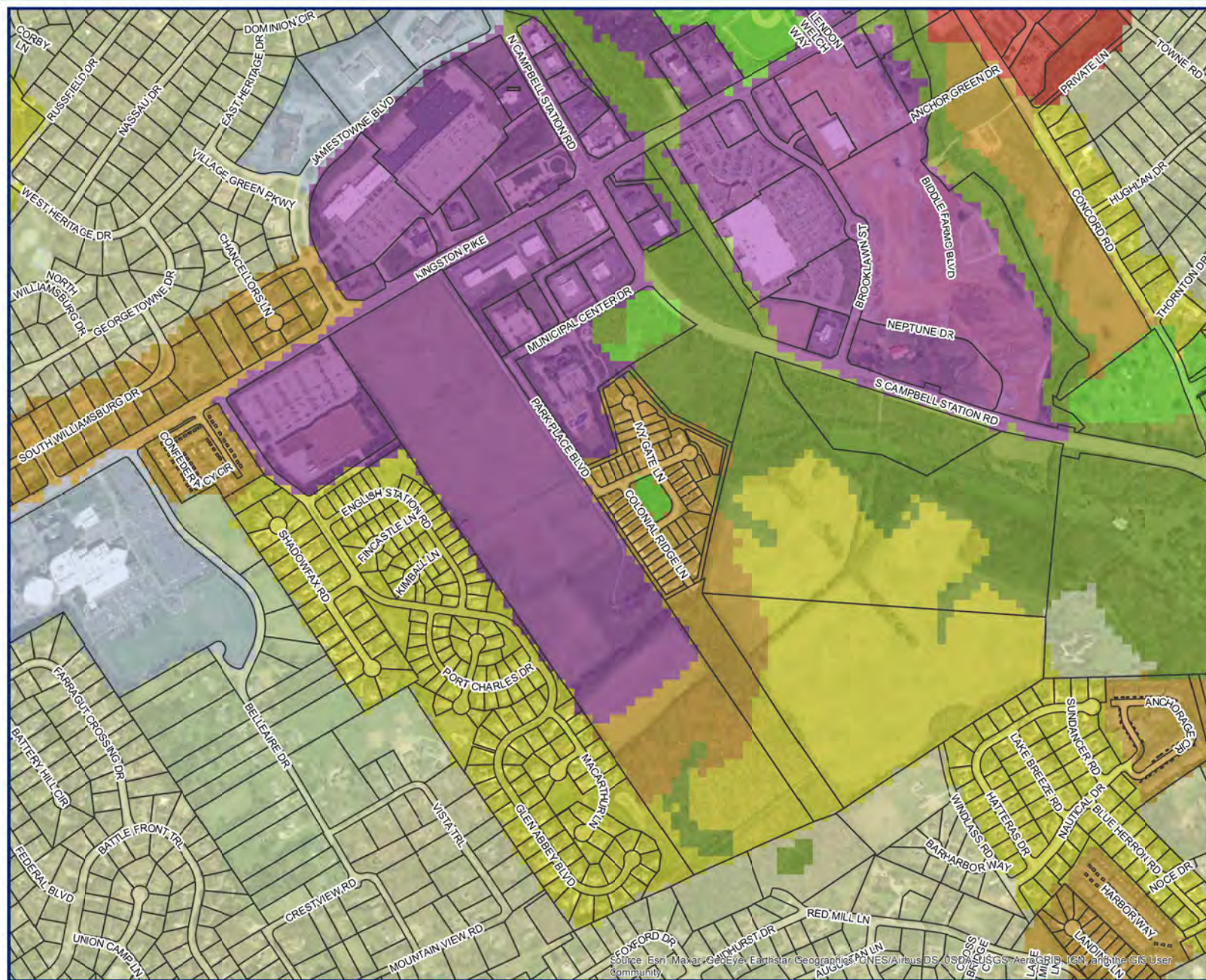
Existing Future Land Use 11500 Kingston Pike

- Ford Parcel
- Town Limit
- Future Land Use**
 - Civic/Institutional
 - Commercial
 - Open Space
 - Parks and Rec
 - Rural Residential (> 1 Acre lots)
 - Very Low Density Residential (2-4 DUs / Acre)
 - Low Density Residential (3-6 DUs / Acre)
 - Med Density Residential (6-8 DUs / Acre)
 - Mixed Use Town Center (8-15 DUs / Acre)



1 inch = 550 feet

Map Prepared: October 2022



Illustrative Concept Plan



View Looking East Towards Proposed Grocery Entrance



Entrance Boulevard Looking At Proposed Grocery



View Looking Toward Kingston Pike



View Looking Toward Kingston Pike



View Looking Over Park Space & Retention Pond



View Across Park Space & Renovated, Historic *Ford* Barn



MARKETPLACE CONCEPT - FORD PROPERTY

FARRAGUT, TENNESSEE

TRAFFIC IMPACT STUDY

KINGSTON PIKE
TOWN OF FARRAGUT, TENNESSEE

CCI PROJECT NO. 01674-0000

PREPARED FOR:

Hy-Vee, Inc.
5820 Westown Parkway
Wes Des Moines, IA 50266

SUBMITTED BY:

Cannon & Cannon, Inc.
8550 Kingston Pike
Knoxville, TN 37919
865.670.8555



NOVEMBER
2022

MARKETPLACE CONCEPT – FORD PROPERTY FARRAGUT, TENNESSEE

TRAFFIC IMPACT STUDY

KINGSTON PIKE
TOWN OF FARRAGUT, TENNESSEE

CCI PROJECT NO. 01674-0000



PREPARED FOR:

Hy-Vee, Inc.
5820 Westown Parkway
Wes Des Moines, IA 50266

SUBMITTED BY:

Cannon & Cannon, Inc.
8550 Kingston Pike
Knoxville, TN 37919
865.670.8555

NOVEMBER
2022

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EXECUTIVE SUMMARY

This report provides a summary of a traffic impact study that was performed for a proposed development on Kingston Pike in Farragut, Tennessee. The project site is located on the south side of Kingston Pike just west of the intersection of Campbell Station Road at Kingston Pike. The development plan for this project proposes a 156,100 square-foot grocery store with a mixed-use of convenience market with gas pumps (4,500 square feet & 16 gas pumps), a 12,000 square-foot strip retail plaza, and 99-units of single-family housing. The proposed development will create a new primary full-movement access across from Jamestowne Boulevard as well as making connection to Municipal Center Drive.

The purpose of this study was the evaluation of the traffic operational and safety impacts of the proposed development upon roadways in the vicinity of the project site. Discussion with the Town of Farragut and the Tennessee Department of Transportation staff resulted in nine (9) intersections being identified for detailed study. The studied intersections include the following intersections at Kingston Pike - Glen Abbey Boulevard, Kohl's Way, Jamestowne Boulevard, Campbell Station Road, Brooklawn Street, Lendon Welch Way, Concord Road / West End Avenue, as well as the following intersections at Campbell Station Road - Jamestowne Boulevard and Municipal Center Drive. Appropriate intersection evaluations were conducted at the study intersections for existing and future conditions, both with and without site generated traffic, in order to determine the anticipated impacts and to establish recommended measures to mitigate these impacts.

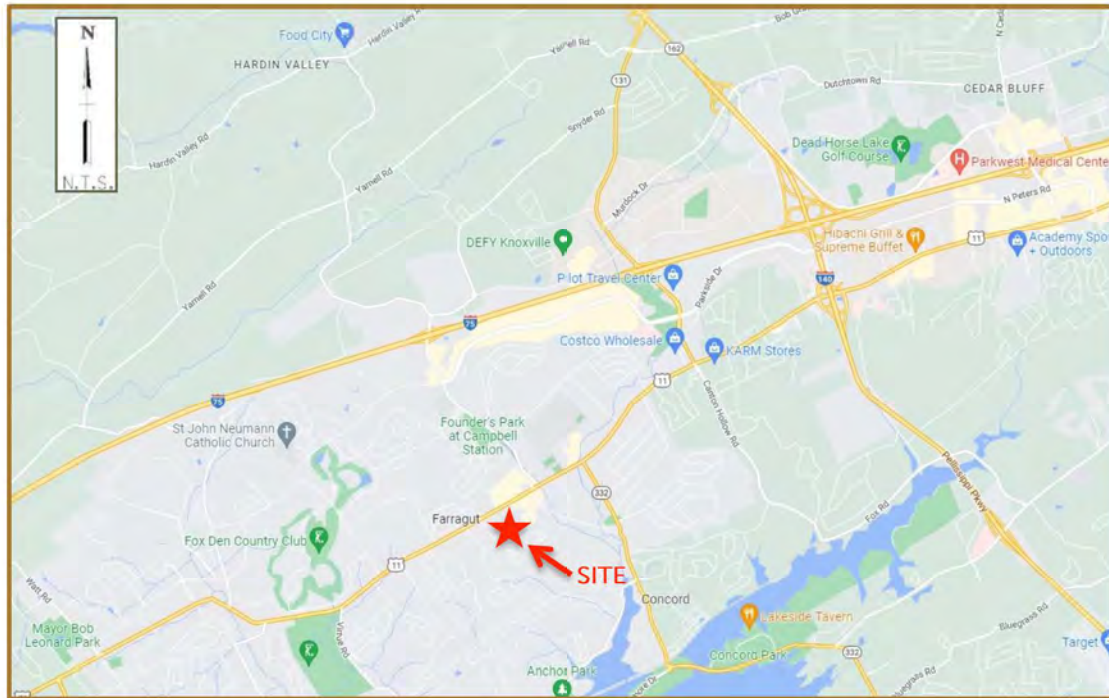
The primary conclusion of this study is that the traffic generated from the proposed development will impact the studied intersections. The following is a listing of recommendations that were developed to address traffic concerns in the vicinity of the project site:

1. Proposed Site Access / Jamestowne Boulevard at Kingston Pike:
 - a. Install traffic signal
 - b. Install Northbound Approach (Proposed Site Access)
 - i. Install Dual left turn lanes w/ 200' storage
 - ii. Install Single thru lane
 - iii. Install Single right turn lane w/ 200' storage
 - c. Southbound Approach (Jamestowne Boulevard)
 - i. Install Single left turn lane w/ 100' storage
 - ii. Install Dual thru lanes
 - iii. Install Single right turn lane w/ 50' storage
 - d. Eastbound Approach (Kingston Pike)
 - i. Single left turn lane (can be achieved with existing two-way-left-turn lane)
 - ii. Dual thru lanes remain existing
 - iii. Install Single right turn lane w/ 200' storage
 - e. Westbound Approach (Kingston Pike)
 - i. Single left turn lane (can be achieved with existing two-way-left-turn lane)
 - ii. Dual thru lanes remain existing
2. Jamestowne Boulevard at Campbell Station Road:
 - a. Install traffic signal
 - b. Retain existing lane configuration

3. Municipal Center Drive at Campbell Station Road:
 - a. Eastbound approach (Municipal Center Drive)
 - i. Install additional eastbound approach lane to create one left turn lane and one left / right turn lane
4. Maintain intersection corner sight distances on the site driveway by ensuring that site grading, landscaping, signage, and other site features do not restrict intersection sight distance lines of sight.

INTRODUCTION & PURPOSE OF STUDY

This report provides a summary of a traffic impact study that was performed for a proposed development on Kingston Pike in Farragut, Tennessee. The project site is located on the south side of Kingston Pike just west of the intersection of Campbell Station Road at Kingston Pike. FIGURE 1 is a location map showing the major roadways in the project site vicinity.



**FIGURE 1
LOCATION MAP**

The development plan for this project proposes a 156,100 square-foot grocery store with a mixed-use of convenience market with gas pumps (4,500 square feet & 16 gas pumps), a 12,000 square-foot strip retail plaza, and 99-units of single-family housing. The proposed development will create a new primary full-movement access across from Jamestowne Boulevard as well as making connection to Municipal Center Drive. FIGURE 2 is a Conceptual Site Plan detailing the proposed site.

The purpose of this study was the evaluation of the traffic operational and safety impacts of the proposed development upon roadways in the vicinity of the project site. Discussion with the Town of Farragut and the Tennessee Department of Transportation staff resulted in nine (9) intersections being identified for detailed study. The studied intersections include the following intersections at Kingston Pike - Glen Abbey Boulevard, Kohl's Way, Jamestowne Boulevard, Campbell Station Road, Brooklawn Street, Lendon Welch Way, Concord Road / West End Avenue, as well as the following intersections at Campbell Station Road - Jamestowne Boulevard and Municipal Center Drive. Appropriate intersection evaluations were conducted at the study intersections for existing and future conditions, both with and without site generated traffic, in order to determine the anticipated impacts and to establish recommended measures to mitigate these impacts.

Illustrative Concept Plan



FIGURE 2
CONCEPTUAL SITE PLAN

EXISTING CONDITIONS

EXISTING ROADWAY CONDITIONS

Roadway conditions for the study roadways are summarized as follows:

- Kingston Pike (US 70 / SR 1) is a five-lane roadway with two lanes in each direction and a two-way-left-turn lane and pocket left & right turn lanes within the vicinity of the proposed site. It is classified as a principal arterial per Tennessee Department of Transportation's (TDOT) functional class system. Lane widths are 11 feet with sidewalks, curb, and gutter on both sides of Kingston Pike and the posted speed limit is 45 mph.
- Glen Abbey Boulevard is a residential road with a three-lane cross section from Kingston Pike to Municipal Center Drive and a two-lane roadway within the Glen Abbey neighborhood. Lane widths vary from 12-13 feet with sidewalks and curb on both sides of Glen Abbey Boulevard. The posted speed limit is 25 mph.
- Kohl's Driveway is a commercial development access drive with a three-lane cross section tying into Kingston Pike with un-signalized access control.
- Jamestowne Boulevard is two-lane local roadway with a roughly 40-foot median between each direction of traffic from Kingston Pike to just east of Village Green Parkway. From just east of Village Green Parkway to Campbell Station Road, Jamestowne Boulevard remains two lanes and is undivided. In the median divided section of Jamestowne Boulevard, lanes widths are roughly 25 feet and in the undivided section, lanes widths are roughly 12 feet. There is curb the entire length of Jamestowne Boulevard and sidewalk on the northside of the roadway from Village Green Parkway to Campbell Station Road. The posted speed limit is 25 mph.
- Campbell Station Road is a five-lane roadway with two lanes in each direction and a two-way-left-turn lane and pocket left & right turn lanes within the vicinity of the proposed site. It is classified as a minor arterial per TDOT's functional class system. Lane widths are 11 feet with sidewalks, curb, and gutter on both sides of Campbell Station Road and the posted speed limit is 40 mph.
- Brooklawn Street is a local roadway providing access to existing commercial developments and the Biddle Farms development currently under construction. Lane widths are 12 feet with sidewalks, curb, and gutter on both sides and the posted speed limit is 40 mph.
- Lendon Welch Way is a local roadway providing access to Farragut High School and the Biddle Farms development currently under construction. There is curb the entire length of Lendon Welch Way and sidewalk on the west side of the roadway. The Biddle Farms side of Lendon Welch Way is proposed to provide sidewalk, curb, and gutter. There is no posted speed limit.
- Concord Road / West End Avenue is classified as a major collector per TDOT's functional class system. There are multiple turn lanes at the intersection with Kingston Pike. Sidewalk, curb, and gutter is provided throughout this intersection. The posted speed limit along West End Avenue is 25 mph and 30 mph on Concord Road.
- Municipal Center Drive is a two-lane local roadway with sidewalk and curb along both sides of the road. There is no posted speed limit. Municipal Center Drive is split by the Ford Property and is proposed to be connected from Glen Abbey Boulevard to Campbell Station Road once the proposed development of the Ford Property is completed.

Traffic control for the study intersection is as follows:

- Signalized intersections:
 - Campbell Station Road at Kingston Pike
 - Brooklawn Street at Kingston Pike
 - Lendon Welch Way at Kingston Pike
 - West End Avenue / Concord Road at Kingston Pike
 - Municipal Center Drive at Campbell Station Road
- Un-signalized intersections:
 - Glen Abbey Boulevard at Kingston Pike
 - Kohl's Driveway at Kingston Pike
 - Jamestowne Boulevard at Kingston Pike
 - Jamestowne Boulevard at Campbell Station Road

EXISTING SITE CONDITIONS

The proposed development is located at the existing Ford Property on the south side of Kingston Pike west of the intersection of Campbell Station Road at Kingston Pike. The existing site conditions consist of relatively flat to rolling terrain. FIGURE 3 provides an aerial view of the project site and the surrounding area.

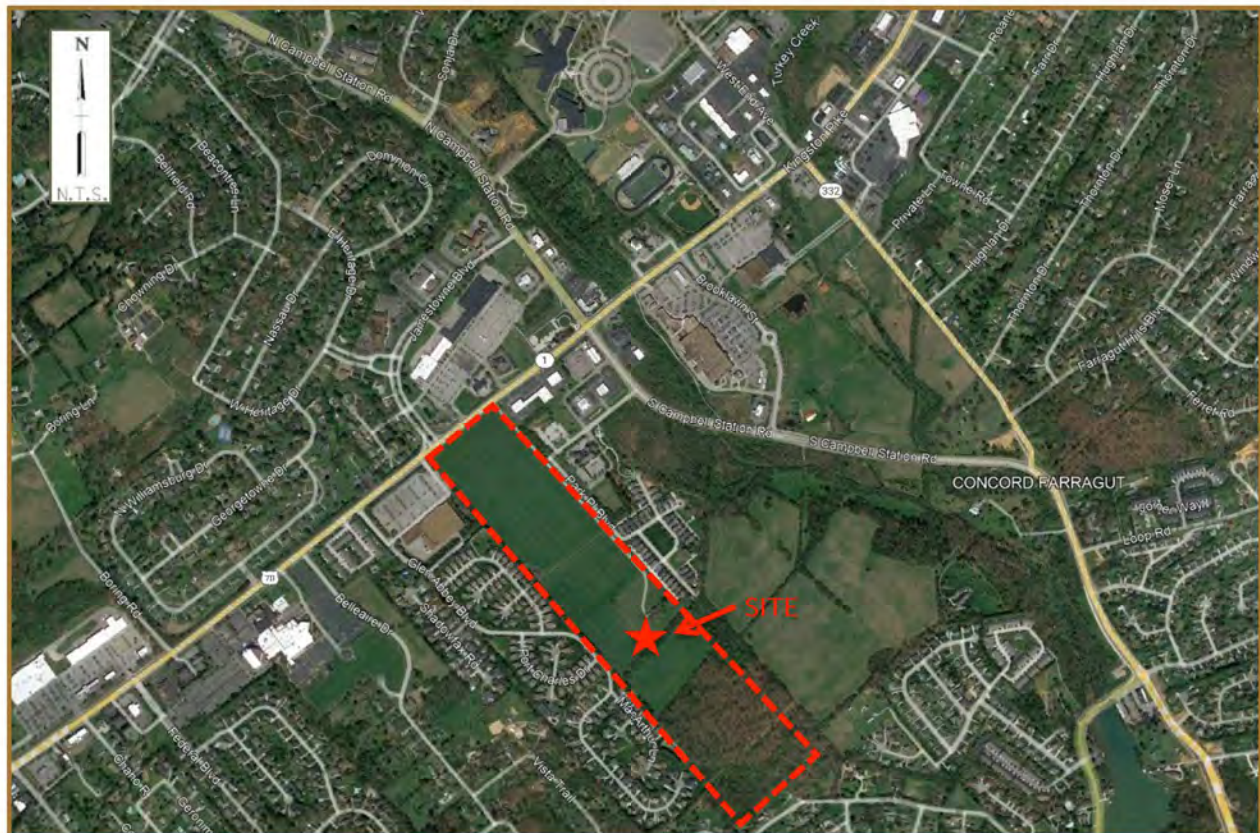


FIGURE 3
EXISTING SITE CONDITIONS

EXISTING TRAFFIC DATA

Two types of existing traffic data were gathered for this study. The Tennessee Department of Transportation (TDOT) and the Knoxville Regional Transportation Planning Organization (TPO) collects annual average daily traffic (AADT) data on roadways in the study area. Multiple count stations were found near the project site that were felt to have relevance for this study. The most currently available data from this station is contained in Table 1.

TABLE 1: ANNUAL AVERAGE DAILY TRAFFIC COUNT SUMMARY

COUNT YEAR	TDOT COUNT STATION 47000138 KINGSTON PIKE EAST OF SITE	TDOT COUNT STATION 47000454 CAMPBELL STATION RD EAST OF SITE	TPO COUNT STATION 093M402 KINGSTON PIKE WEST OF SITE	TPO COUNT STATION 093M070 CAMPBELL STATION RD NORTH OF SITE	TPO COUNT STATION 093M072 JAMESTOWNE BLVD NORTH OF SITE
2017	31,441	11,474	-	24,330	-
2018	25,389	11,705	-	-	-
2019	34,792	11,349	-	-	1,180
2020	26,615	10,142	-	19,200	-
2021	32,133	13,387	29,920	23,900	-

In addition to the available AADT data, intersection turning movement traffic counts were compiled at the study intersections from a combination of adjacent studies (Jamestowne Boulevard Corridor Study and Biddle Farms TIS) and recently collected traffic counts.

The traffic data from the Jamestowne Boulevard Corridor Study and Biddle Farms TIS is factored into the 2022 existing traffic data and is summarized in FIGURE 4. The turning movement count data and Biddle Farm count summary sheets are contained in APPENDIX A.

EXISTING CAPACITY ANALYSES / LEVELS-OF-SERVICE

Capacity analyses employing the methods of the *Highway Capacity Manual* were conducted for the existing conditions at the study intersections. These analyses were performed with the 2022 existing traffic volumes, shown in FIGURE 4, and existing intersection traffic control and lane configurations. The EVALUATIONS section of this report may be referenced for tabular summaries of these analyses, while more detailed summaries are presented on the computer printouts contained in APPENDIX C. Also contained in APPENDIX C is a section entitled "Capacity and Level of Service Concepts", which provides a description of the utilized procedures.

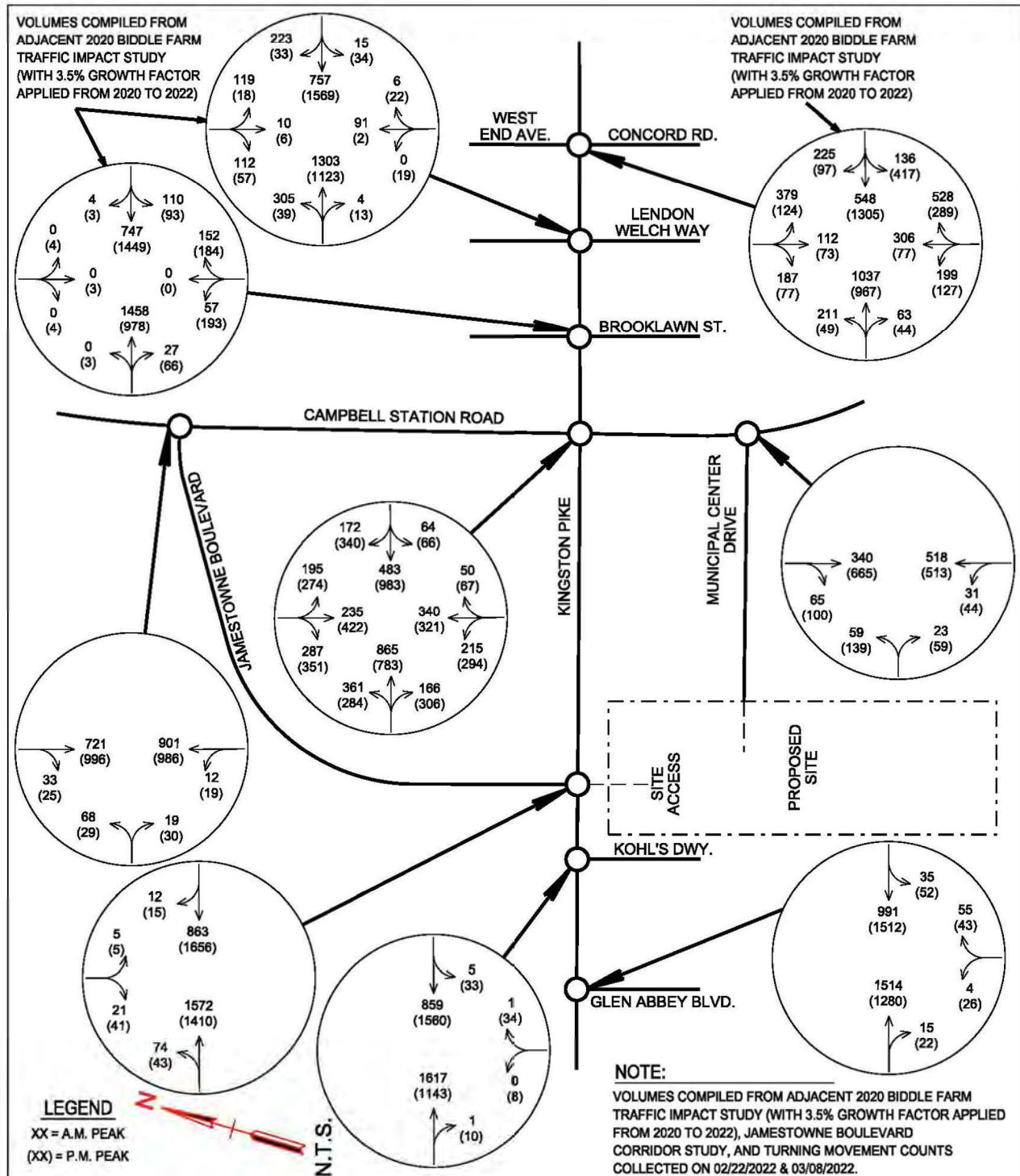


FIGURE 4
2022 EXISTING TRAFFIC VOLUMES

BACKGROUND CONDITIONS

BACKGROUND TRAFFIC GROWTH

The proposed development is anticipated to be constructed in one general phase with completion anticipated by 2027. Therefore, year 2027 was established as the appropriate design / analysis year for the study. In order to determine traffic volumes resulting solely from background traffic growth to year 2027, it was necessary to establish an annual growth rate for existing traffic. The TDOT AADT values previously discussed and a review of the recently approved TIS of the adjacent Biddle Farms mixed-use development determined an approximate annual growth rate of 3.5% to be utilized for this development. FIGURE 5 contains the background traffic volumes that would result from this annual growth rate from year 2022 to year 2027.

As previously mentioned, the Biddle Farm mixed-use development is currently under construction east of the proposed development. The project completion year for the Biddle Farm development is 2025 so anticipated traffic associated with that development was incorporated as background traffic in this study.

BACKGROUND CAPACITY ANALYSES / LEVELS-OF-SERVICE

Capacity analyses as described in the Existing Conditions section of this report were conducted utilizing the Year 2027 background volumes shown in FIGURE 5 and existing intersection traffic control and lane configurations. The EVALUATIONS section of this report may be referenced for tabular summaries of these analyses, while more detailed summaries are presented on the computer printouts contained in APPENDIX C.

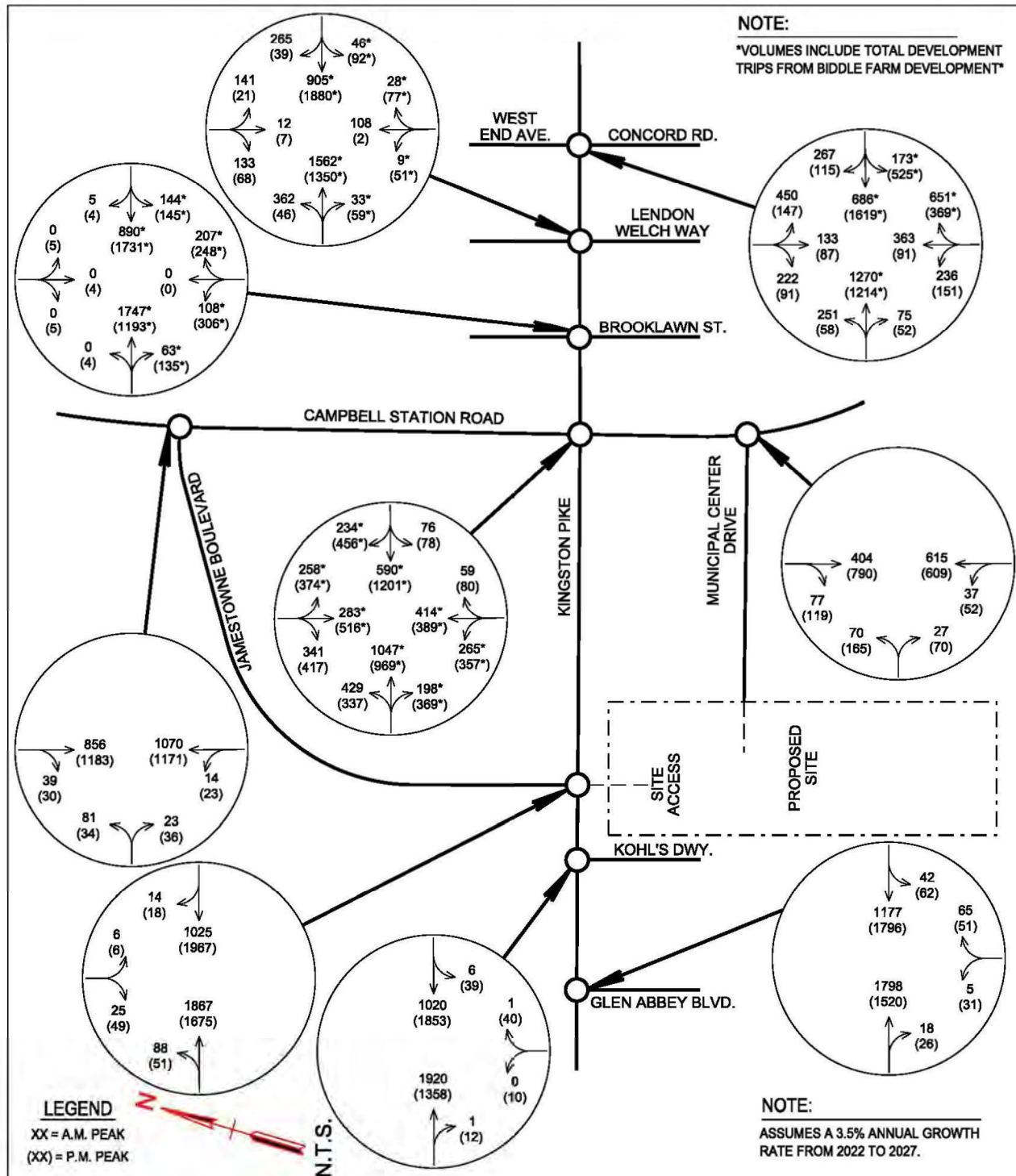


FIGURE 5
2027 BACKGROUND TRAFFIC VOLUMES

FUTURE CONDITIONS

TRIP GENERATION

In order to estimate the expected traffic volumes to be generated by the proposed development, the procedures of *Trip Generation, 11th Edition* (Institute of Transportation Engineers-ITE) were utilized. The generated trips were determined based on the weekday AM and PM peak hour of adjacent street traffic trip generation rates for Single-Family Detached Housing (ITE Land Use Code 210), Strip Retail (<40k square feet) (ITE Land Use Code 822), Supermarket (ITE Land Use Code 850), and Convenience Store w/ Gas Pumps (ITE Land Use Code 945). The generated trips for this project will consist of three specific types; internal capture trips, pass-by trips, and non-pass-by trips.

According to ITE, *"At a development site consisting of two or more land uses, there is potential for interaction among those uses (referred to as "internal capture trips"), particularly where the trip can be made by walking. As a result, the total generation of external trips (that is, those entering and exiting the overall site) may be less than the simple sum of the trips generated by each discrete land use."* ITE also states, *"An internal capture rate can be generally defined as the percentage of total person trips generated by a site that are made entirely within the site. The trip origin, destination, and travel path are all within the site."* Methodology for determining an internal capture rate followed ITE procedure and is the same methodology presented in NCHRP Report 684: *Enhancing Internal Trip Capture Estimation for Mixed-Use Developments*. Trip reductions for internal capture are separate from pass-by trip reductions and are subtracted from initial trip generation volumes before pass-by trip reductions are applied. For this specific development, internal capture trip reductions were calculated to be 0% for the AM peak hour and 5% for the PM peak hour.

The pass-by trips are those that involve vehicles that are already going past the project site, who will now turn into the site, do business, and then exit the site continuing their primary trip in the same direction. The ITE Trip Generation Handbook, 3rd Edition, provides pass-by trip rates for the specific land uses proposed in this development. Pass-by trips are not newly generated trips but rather redistributed trips from the existing roadway network to the proposed development. The pass-by trips for this development were assumed along Kingston Pike and Municipal Center Drive and consist of the following percentages: Supermarket – AM Peak = 0%, PM Peak = 24%; Convenience Store w/ Gas Pumps – AM Peak = 76%, PM Peak = 75%.

The non-pass-by trips are new trips that are made for the specific purpose of doing business at the proposed development. The non-pass-by trips are represented by the remaining percentages of the pass-by trip rates presented above.

See TABLE 2 for a summary of the traffic generated for this project. The ITE trip generation worksheets and internal capture calculation spreadsheets are contained in APPENDIX B.

TABLE 2: TRIP GENERATION SUMMARY

LAND USE	ITE CODE	SIZE	WEEKDAY (TRIPS/DAY)	AM PEAK HOUR (TRIPS/HOUR)			PM PEAK HOUR (TRIPS/HOUR)		
				IN	OUT	TOTAL	IN	OUT	TOTAL
Single-Family Detached Housing	210	99 units	1,000	19	55	74	62	36	98
			<i>Internal Capture Reduction*</i>	(-0)	(-0)	(-0)	(-3)	(-2)	(-5)
			Reduced Trip Totals	19	55	74	59	34	93
			<i>Pass-by**</i> Non-Pass-by	(-0) 19	(-0) 55	(-0) 74	(-0) 59	(-0) 34	(-0) 93
Strip Retail Plaza (<40k sf)	822	12,000 SF	749	20	13	33	45	45	90
			<i>Internal Capture Reduction*</i>	(-0)	(-0)	(-0)	(-2)	(-2)	(-4)
			Reduced Trip Totals	20	13	33	43	43	86
			<i>Pass-by**</i> Non-Pass-by	(-0) 20	(-0) 13	(-0) 33	(-0) 43	(-0) 43	(-0) 86
Supermarket	850	156,100 SF	14,649	263	183	446	699	698	1397
			<i>Internal Capture Reduction*</i>	(-0)	(-0)	(-0)	(-35)	(-35)	(-70)
			Reduced Trip Totals	263	183	446	664	663	1327
			<i>Pass-by**</i> Non-Pass-by	(-0) 263	(-0) 183	(-0) 446	(-159) 505	(-159) 504	(-318) 1009
Convenience Store w/ Gas Pumps (4,500 SF store)	945	16 pumps	4,114	216	217	433	182	182	364
			<i>Internal Capture Reduction*</i>	(-0)	(-0)	(-0)	(-9)	(-9)	(-18)
			Reduced Trip Totals	216	217	433	173	173	346
			<i>Pass-by**</i> Non-Pass-by	(-164) 52	(-165) 52	(-329) 104	(-130) 43	(-130) 43	(-260) 86

TOTAL REDISTRIBUTED PASS-BY TRIPS	164	165	329	289	289	578
TOTAL NEW PROJECT TRIPS (NON-PASS-BY)	354	303	657	650	624	1,274
TOTAL PROJECT TRIPS AT SITE DRIVEWAYS	518	468	986	939	913	1,852
A.M. Peak Hour trip generation is based on Peak Hour of Adjacent Street Traffic, One Hour Between 7 & 9 a.m. P.M. Peak Hour trip generation is based on Peak Hour of Adjacent Street Traffic, One Hour Between 4 & 6 p.m. *Internal capture trip reductions are calculated to be 0% for the AM Peak Hour and 5% for the PM Peak Hour **Pass-by trip Redistribution: • LUC 822 – AM Peak=0%, PM Peak=0% • LUC 850 – AM Peak=0%, PM Peak=24% • LUC 945 – AM Peak=76%, PM Peak=75%						

TRIP DISTRIBUTION AND ASSIGNMENT

The proposed trip distribution for this development was determined through a review of existing travel patterns, local knowledge of the study area, proposed site location in relation to surrounding roadway network, and engineering judgment. FIGURE 6 provides a summary of how the above site generated trips would be assigned to the study intersections. FIGURE 7 provides the proposed trip assignment volumes to the studied intersections and FIGURE 8 provides the proposed pass-by trip redistribution and assignment volumes to the studied intersections.

FUTURE TRAFFIC VOLUMES

Future projected traffic volumes for the study intersections were developed by adding the generated and assigned trips shown in FIGURES 7 & 8 to the 2027 background traffic volumes developed in the previous section and shown in FIGURE 5. These combined 2027 volumes reflect the existing traffic, the background traffic growth, and the generated traffic from the proposed development. These future volumes are shown on FIGURE 9 and are the combined volumes used in the analyses of future conditions with the proposed development.

FUTURE CAPACITY ANALYSES / LEVELS-OF-SERVICE

Capacity analyses, as described in the Existing Conditions section of this report, were conducted for future conditions utilizing the traffic volumes shown in the build-out scenario. These analyses utilized existing intersection traffic control and proposed lane configurations to determine if any mitigation is required to accommodate traffic generated by the proposed site. Tabular summaries of the analysis results and associated discussion are also contained in the EVALUATIONS section. In addition, detailed computer printout summaries of the analyses are contained in APPENDIX C.

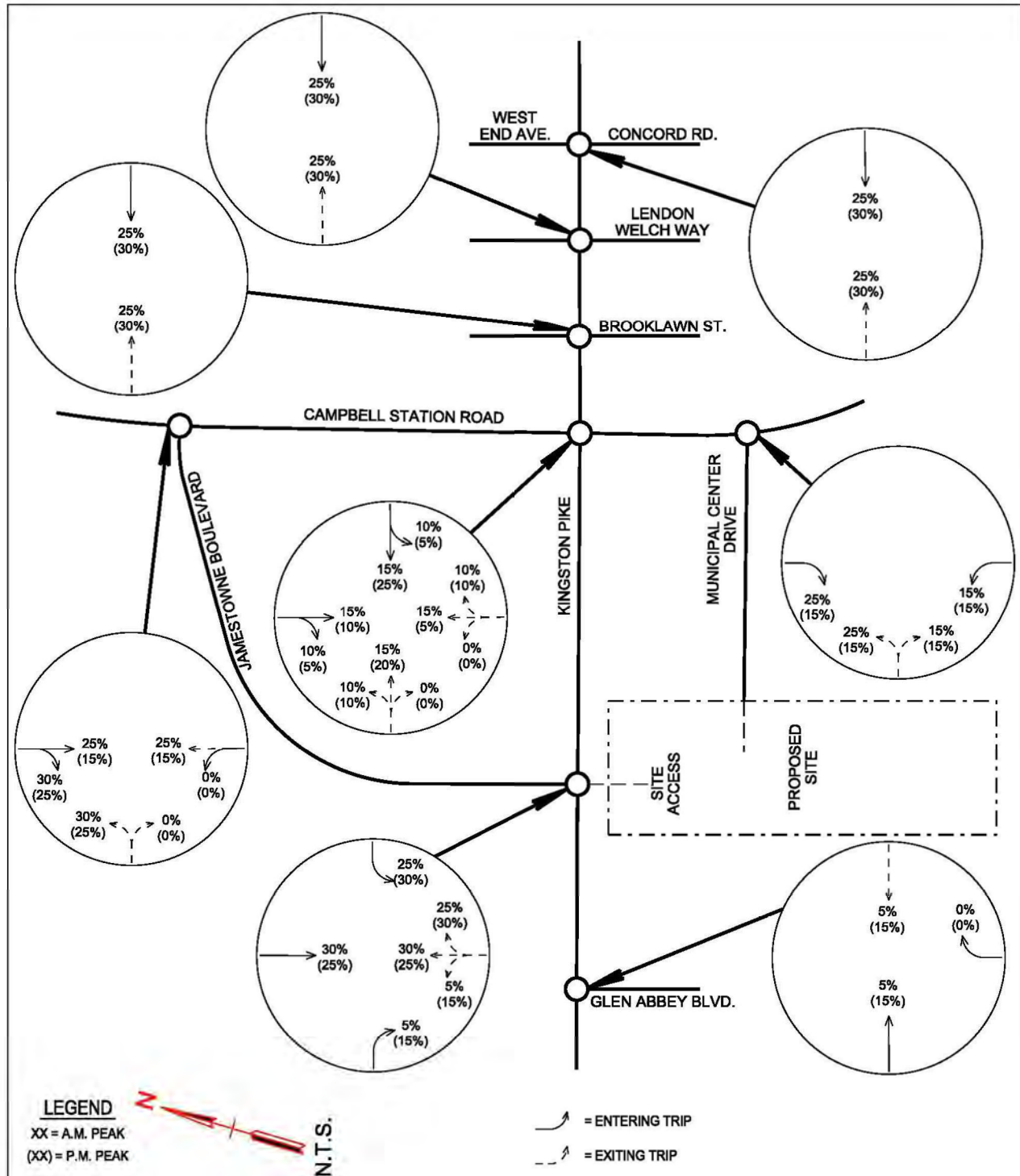


FIGURE 6
TRIP DISTRIBUTION



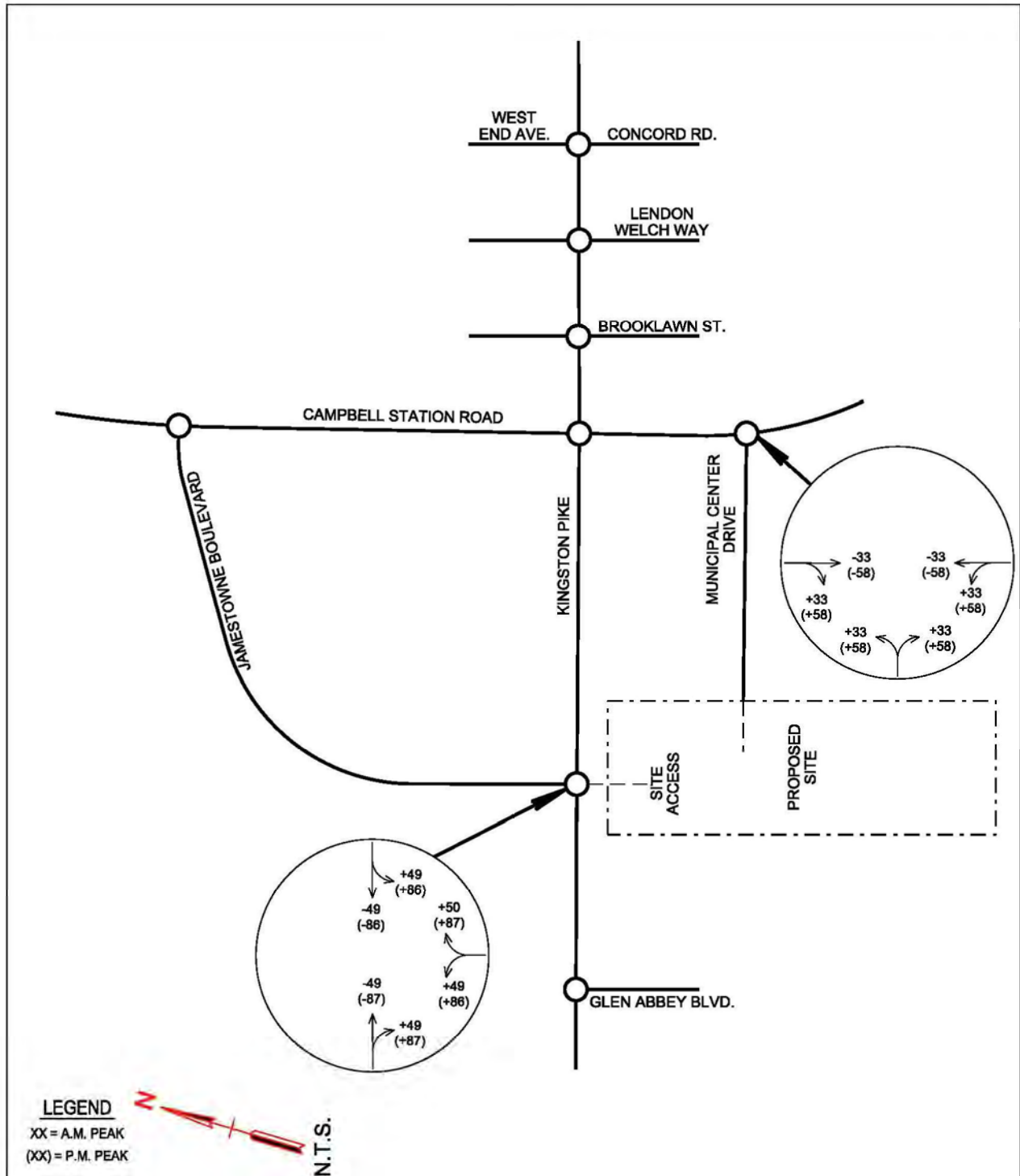


FIGURE 8
PASS-BY TRIP REDISTRIBUTION AND ASSIGNMENT

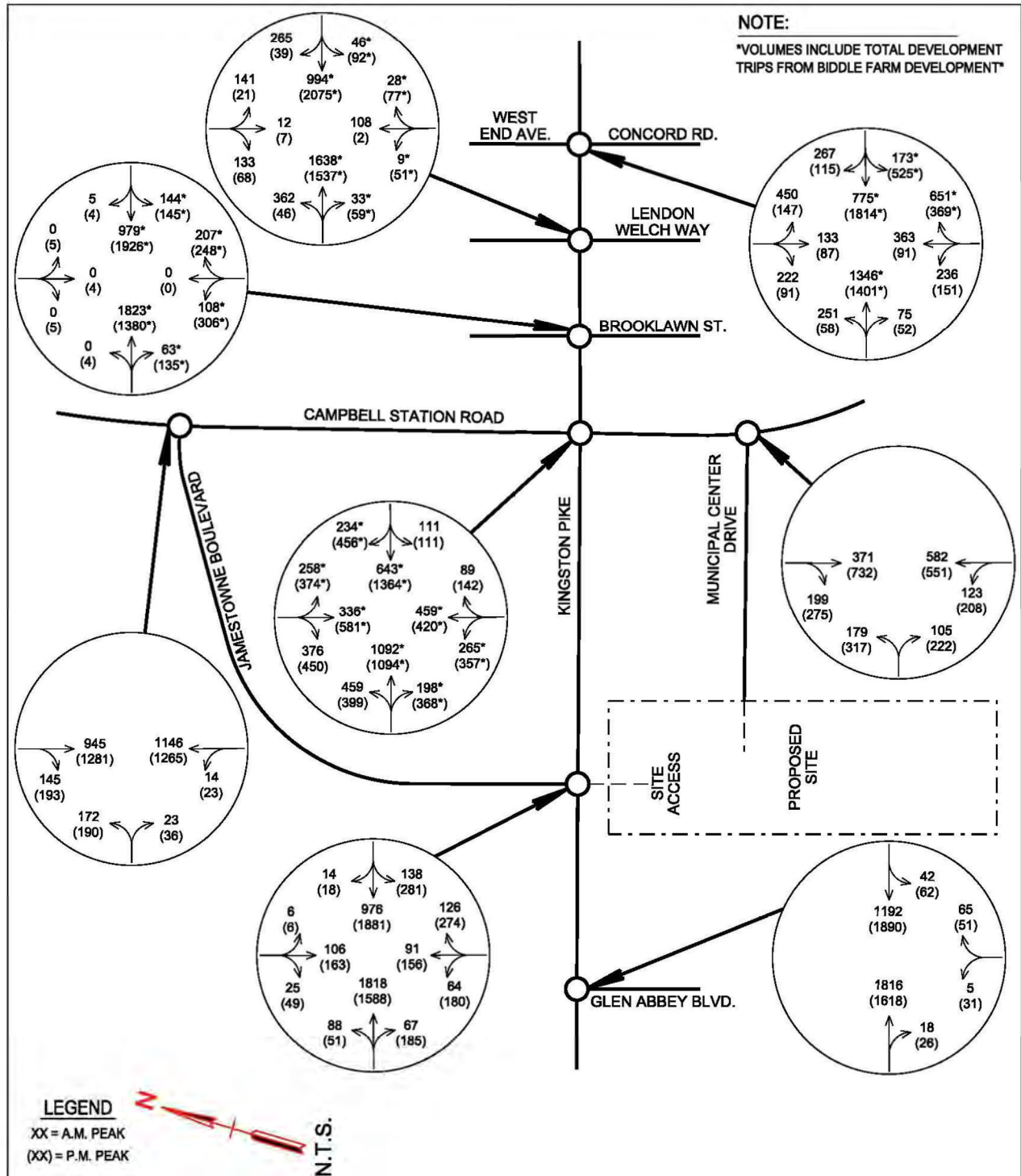


FIGURE 9
2027 COMBINED TRAFFIC VOLUMES

EVALUATIONS

INTERSECTION CAPACITY ANALYSES

As discussed in the preceding sections of this report, capacity analyses employing the methods of the Highway Capacity Manual (HCM 6th Edition) were conducted for the study intersections. These analyses were performed for the previously discussed development scenario. A summary of the capacity analyses results is shown in TABLE 3, while the resulting conclusions and recommendations are covered in the CONCLUSIONS and RECOMMENDATIONS section of this report. The complete capacity analysis reports are contained in APPENDIX C.

TABLE 3: CAPACITY ANALYSES SUMMARY

INTERSECTION	TIME PERIOD	YEAR 2022 EXISTING (LOS/DELAY)	YEAR 2027 BACKGROUND (LOS/DELAY)	YEAR 2027 COMBINED ³ (LOS/DELAY)
Glen Abbey Boulevard at Kingston Pike ¹ SIDE STREET STOP CONTROL	NB A.M. NB P.M.	C 20.1 C 22.4	D 26.9 D 31.2	D 27.3 E 35.5
Kohl's Driveway at Kingston Pike ¹ SIDE STREET STOP CONTROL	NB A.M. NB P.M.	C 17.5 C 16.4	C 21.1 C 20.0	- -
Jamestowne Boulevard at Kingston Pike ¹ SIDE STREET STOP CONTROL	SB A.M. SB P.M.	C 15.4 C 21.4	C 18.3 D 28.6	- -
Jamestowne Boulevard at Kingston Pike ² TRAFFIC SIGNAL CONTROL	A.M. P.M.	- -	- -	C 32.9 D 49.8
Campbell Station Road at Kingston Pike ² TRAFFIC SIGNAL CONTROL	A.M. P.M.	C 27.9 D 44.6	D 38.0 E 64.9	D 35.7 E 64.0
Brooklawn Street at Kingston Pike ² TRAFFIC SIGNAL CONTROL	A.M. P.M.	B 10.3 B 10.3	B 17.8 B 14.9	B 18.9 B 17.0
Lendon Welch Way at Kingston Pike ² TRAFFIC SIGNAL CONTROL	A.M. P.M.	B 16.9 A 4.1	B 19.5 A 5.8	B 19.0 A 6.7
West End Ave / Concord Rd at Kingston Pike ² TRAFFIC SIGNAL CONTROL	A.M. P.M.	D 52.1 C 30.3	F 107.6 D 49.6	F 96.4 E 64.8
Jamestowne Boulevard at Campbell Station Rd ¹ SIDE STREET STOP CONTROL	EB A.M. EB P.M.	C 17.2 C 17.5	C 21.3 C 21.5	F 56.0 F 219.7
Jamestowne Boulevard at Campbell Station Rd w/ Southbound Right Turn Lane ¹ SIDE STREET STOP CONTROL	EB A.M. EB P.M.	- -	- -	E 46.2 F 166.7
Jamestowne Boulevard at Campbell Station Rd without Southbound Right Turn Lane ² TRAFFIC SIGNAL CONTROL	A.M. P.M.	- -	- -	B 12.0 B 15.3

Municipal Center Dr at Campbell Station Rd ² TRAFFIC SIGNAL CONTROL	A.M. P.M.	A 5.4 B 13.8	A 4.8 B 13.1	B 11.3 E 67.9
Municipal Center Dr at Campbell Station Rd w/ Eastbound Right Turn Lane & Dual WB LTL ² TRAFFIC SIGNAL CONTROL	A.M. P.M.	- -	- -	A 8.8 B 17.6
¹ SIDE STREET STOP CONTROL – Data shown are Level-of-Service and Average Vehicular Delay (seconds) for the critical side street approaches and major street left turn movements utilizing HCM methodology. ² TRAFFIC SIGNAL CONTROL – Data shown are Level-of-Service and Average Vehicular Delay (seconds) for the complete intersection utilizing HCM methodology. ³ Combined Analysis Scenario includes lane configurations from build-out scenario of the Biddle Farms TIS				

For the intersection of Glen Abbey Boulevard at Kingston Pike, Combined conditions indicate the northbound approach (Glenn Abbey Boulevard) will operate at a LOS D (27.3 second delay) during the AM peak hour and LOS E (35.5 second delay) during the PM peak hour. When compared to Background conditions, the resulting LOS / Delay is believed to be acceptable operation under build-out conditions. Additionally, since the proposed development is providing connection to Municipal Center Drive behind Kohl's, there will be opportunity for Glenn Abbey traffic to utilize the new connection and access Kingston Pike at an improved signalized intersection across from Jamestowne Boulevard.

The intersection of Kohl's Driveway at Kingston Pike was not analyzed under Combined conditions since the proposed development removes this access point to Kingston Pike and creates an internal access connection to the proposed site development leg of Jamestowne Boulevard, roughly 350 feet south of Kingston Pike.

For the intersection of Jamestowne Boulevard at Kingston Pike, Combined conditions indicate a traffic signal is required to accommodate traffic generated by the proposed development. With the intersection configuration below, this intersection operates at a LOS C (32.9 second delay) during the AM peak hour and LOS D (49.8 second delay) during the PM peak hour under Combined conditions. The recommended lane configuration for this intersection is as follows:

- Northbound Approach (Proposed Site Access)
 - Dual left turn lanes w/ 200' storage
 - Single thru lane
 - Single right turn lane w/ 200' storage
- Southbound Approach (Jamestowne Boulevard)
 - Single left turn lane w/ 100' storage
 - Dual thru lanes
 - Single right turn lane w/ 50' storage
- Eastbound Approach (Kingston Pike)
 - Single left turn lane (can be achieved with existing two-way-left-turn lane)
 - Dual thru lanes remain existing
 - Single right turn lane w/ 200' storage
- Westbound Approach (Kingston Pike)
 - Single left turn lane (can be achieved with existing two-way-left-turn lane)
 - Dual thru lanes remain existing

For the intersection of Campbell Station Road at Kingston Pike, Combined conditions were similar when compared to Background conditions. This intersection was assumed to have been modified to include dual left turn lanes on the eastbound, northbound, and southbound approaches as described in the Biddle Farm TIS. No further mitigation is recommended at this intersection to accommodate traffic generated by the proposed development.

Combined conditions for the intersections of Brooklawn Street and Lendon Welch Way at Kingston Pike indicate minimal difference in intersection operation when comparing Background conditions to Combined conditions. No mitigation is recommended at these two intersections to accommodate traffic generated by the proposed development.

For the intersection of West End Avenue / Concord Road at Kingston Pike, Combined conditions indicate a slight increase in delay during the PM peak hour when compared to background conditions. This is likely due to the increased through volumes along Kingston Pike from the proposed development. This intersection was assumed to have been modified to include the recommended additional northbound right turn lane as described in the Biddle Farm TIS. No further mitigation is recommended at this intersection to accommodate traffic generated by the proposed development.

For the intersection of Jamestowne Boulevard at Campbell Station, Combined conditions indicate a traffic signal is required to accommodate traffic generated by the proposed development. With the intersection configuration below, this intersection operates at a LOS B (12.0 second delay) during the AM peak hour and LOS B (15.3 second delay) during the PM peak hour under Combined conditions. The recommended lane configuration for this intersection is as follows:

- Northbound Approach (Campbell Station Road)
 - Single left turn lane (can be achieved with existing two-way-left-turn lane)
 - Dual thru lanes remain existing
- Southbound Approach (Campbell Station Road)
 - Retain existing configuration
- Eastbound Approach (Jamestowne Boulevard)
 - Retain existing configuration

For the intersection of Municipal Center Drive at Campbell Station Road, Combined conditions indicate an additional eastbound lane would provide improved intersection operation and bring the overall intersection operation more in line with Background conditions.

CONCLUSIONS & RECOMMENDATIONS

The primary conclusion of this study is that the traffic generated from the proposed development will impact the studied intersections. The following is a listing of recommendations that were developed to address traffic concerns in the vicinity of the project site:

1. Proposed Site Access / Jamestowne Boulevard at Kingston Pike:
 - a. Install traffic signal
 - b. Install Northbound Approach (Proposed Site Access)
 - i. Install Dual left turn lanes w/ 200' storage
 - ii. Install Single thru lane
 - iii. Install Single right turn lane w/ 200' storage
 - c. Southbound Approach (Jamestowne Boulevard)
 - i. Install Single left turn lane w/ 100' storage
 - ii. Install Dual thru lanes
 - iii. Install Single right turn lane w/ 50' storage
 - d. Eastbound Approach (Kingston Pike)
 - i. Single left turn lane (can be achieved with existing two-way-left-turn lane)
 - ii. Dual thru lanes remain existing
 - iii. Install Single right turn lane w/ 200' storage
 - e. Westbound Approach (Kingston Pike)
 - i. Single left turn lane (can be achieved with existing two-way-left-turn lane)
 - ii. Dual thru lanes remain existing
2. Jamestown Boulevard at Campbell Station Road:
 - a. Install traffic signal
 - b. Retain existing lane configuration
3. Municipal Center Drive at Campbell Station Road:
 - a. Eastbound approach (Municipal Center Drive)
 - i. Install additional eastbound approach lane to create one left turn lane and one left / right turn lane
4. Maintain intersection corner sight distances on the site driveway by ensuring that site grading, landscaping, signage, and other site features do not restrict intersection sight distance lines of sight.

APPENDIX

APPENDIX ORDER:

A. TRAFFIC DATA

B. TRIP GENERATION INFORMATION

C. CAPACITY ANALYSES

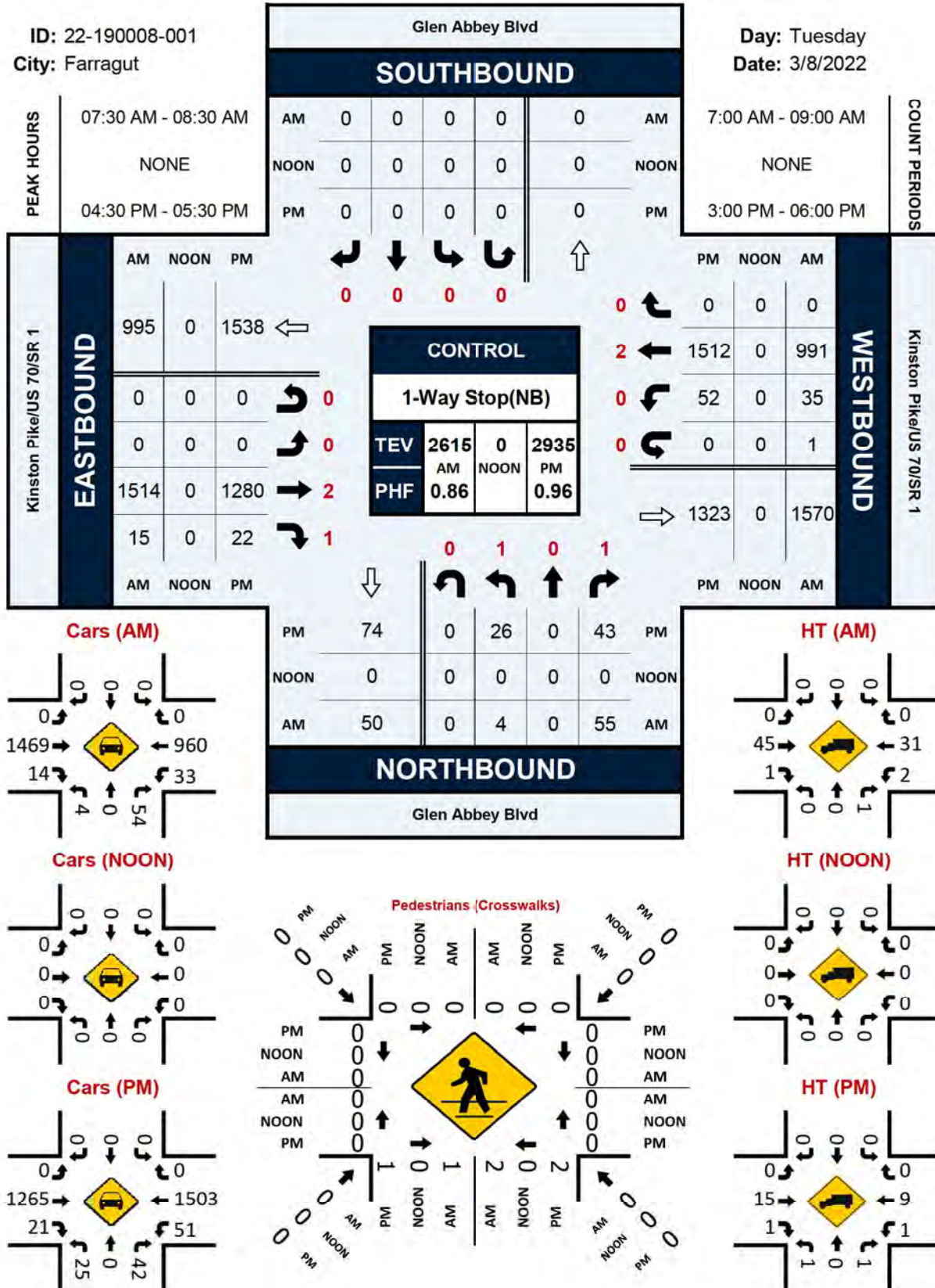
APPENDIX A – TRAFFIC DATA

Glen Abbey Blvd & Kinston Pike/US 70/SR 1

Peak Hour Turning Movement Count

ID: 22-190008-001
City: Farragut

Day: Tuesday
Date: 3/8/2022



Project ID: 22-190008-001

Location: Glen Abbey Blvd & Kinston Pike/US 70/SR 1

City: Farragut

Day: Tuesday

Date: 3/8/2022

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Glen Abbey Blvd Northbound						Glen Abbey Blvd Southbound						Kinston Pike/US 70/SR 1 Eastbound						Kinston Pike/US 70/SR 1 Westbound							
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total	
7:00 AM	0	0	12	0	1	12	0	0	0	0	0	0	0	281	1	0	0	0	282	1	128	0	0	0	129	423
7:15 AM	4	0	9	0	2	13	0	0	0	0	0	0	0	377	0	0	0	0	377	2	176	0	0	0	178	568
7:30 AM	3	0	17	0	1	20	0	0	0	0	0	0	0	439	1	0	0	0	440	4	272	0	1	0	277	737
7:45 AM	0	0	10	0	0	10	0	0	0	0	0	0	0	457	2	0	0	0	459	8	287	0	0	0	295	764
Total	7	0	48	0	4	55	0	0	0	0	0	0	0	1554	4	0	0	0	1558	15	863	0	1	0	879	2492
8:00 AM	1	0	14	0	1	15	0	0	0	0	0	0	0	333	5	0	0	0	338	7	185	0	0	0	192	545
8:15 AM	0	0	14	0	1	14	0	0	0	0	0	0	0	285	7	0	0	0	292	16	247	0	0	0	263	569
8:30 AM	0	0	10	0	0	10	0	0	0	0	0	0	0	258	6	0	0	0	264	3	221	0	0	0	224	498
8:45 AM	0	0	8	0	1	8	0	0	0	0	0	0	0	265	4	0	0	0	269	8	215	0	0	0	223	500
Total	1	0	46	0	3	47	0	0	0	0	0	0	0	1141	22	0	0	0	1163	34	868	0	0	0	902	2112
BREAK																										
3:00 PM	5	0	12	0	0	17	0	0	0	0	0	0	0	240	7	0	0	0	247	15	391	0	1	0	407	671
3:15 PM	4	0	12	0	1	16	0	0	0	0	0	0	0	370	3	0	0	0	373	6	318	0	0	0	324	713
3:30 PM	4	0	13	0	1	17	0	0	0	0	0	0	0	299	4	0	0	0	303	12	385	0	0	0	397	717
3:45 PM	3	0	8	0	1	11	0	0	0	0	0	0	0	246	11	0	0	0	257	18	381	0	0	0	399	667
Total	16	0	45	0	3	61	0	0	0	0	0	0	0	1155	25	0	0	0	1180	51	1475	0	1	0	1527	2768
4:00 PM	4	0	14	0	0	18	0	0	0	0	0	0	0	279	5	0	0	0	284	15	408	0	0	0	423	725
4:15 PM	5	0	9	0	1	14	0	0	0	0	0	0	0	280	4	0	0	0	284	19	347	0	0	0	366	664
4:30 PM	8	0	12	0	0	20	0	0	0	0	0	0	0	315	5	0	0	0	320	14	362	0	0	0	376	716
4:45 PM	7	0	9	0	1	16	0	0	0	0	0	0	0	320	4	0	0	0	324	13	384	0	0	0	397	737
Total	24	0	44	0	2	68	0	0	0	0	0	0	0	1194	18	0	0	0	1212	61	1501	0	0	0	1562	2842
5:00 PM	2	0	10	0	1	12	0	0	0	0	0	0	0	349	7	0	0	0	356	13	381	0	0	0	394	762
5:15 PM	9	0	12	0	1	21	0	0	0	0	0	0	0	296	6	0	0	0	302	12	385	0	0	0	397	720
5:30 PM	7	0	7	0	0	14	0	0	0	0	0	0	0	258	10	0	0	0	268	10	361	0	0	0	371	653
5:45 PM	3	0	9	0	1	12	0	0	0	0	0	0	0	277	5	0	0	0	282	15	331	0	0	0	346	640
Total	21	0	38	0	3	59	0	0	0	0	0	0	0	1180	28	0	0	0	1208	50	1458	0	0	0	1508	2775
Grand Total	69	0	221	0	15	290	0	0	0	0	0	0	0	6224	97	0	0	0	6321	211	6165	0	2	0	6378	12989
Apprch %	23.8	0.0	76.2	0.0	5.2		0.0	0.0	0.0	0.0	0.0		0.0	98.5	1.5	0.0	0.0		3.3	96.7	0.0	0.0	0.0			
Total %	0.5	0.0	1.7	0.0	0.1	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.9	0.7	0.0	0.0	0.0	1.6	47.5	0.0	0.0	0.0	0.0	49.1	
Cars, PU, Vans	68	0	212	0		280	0	0	0	0		0	0	6077	93	0		6170	206	6015	0	2		6223	12673	
% Cars, PU, Vans	98.6	0.0	95.9	0.0		96.6	0.0	0.0	0.0	0.0		0.0	0.0	97.6	95.9	0.0		97.6	97.6	0.0	100.0			97.6	97.6	
Heavy trucks	1	0	9	0		10	0	0	0	0		0	0	147	4	0		151	5	150	0	0		155	316	
%Heavy trucks	1.4	0.0	4.1	0.0		3.4	0.0	0.0	0.0	0.0		0.0	0.0	2.4	4.1	0.0		2.4	2.4	2.4	0.0	0.0		2.4	2.4	

Project ID: 22-190008-001

Location: Glen Abbey Blvd & Kinston Pike/US 70/SR 1

City: Farragut

PEAK HOURS

Day: Tuesday

Date: 3/8/2022

AM

	Glen Abbey Blvd Northbound					Glen Abbey Blvd Southbound					Kinston Pike/US 70/SR 1 Eastbound					Kinston Pike/US 70/SR 1 Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
7:30 AM	3	0	17	0	20	0	0	0	0	0	0	439	1	0	440	4	272	0	1	277	737
7:45 AM	0	0	10	0	10	0	0	0	0	0	0	457	2	0	459	8	287	0	0	295	764
8:00 AM	1	0	14	0	15	0	0	0	0	0	0	333	5	0	338	7	185	0	0	192	545
8:15 AM	0	0	14	0	14	0	0	0	0	0	0	285	7	0	292	16	247	0	0	263	569
Total Volume	4	0	55	0	59	0	0	0	0	0	0	1514	15	0	1529	35	991	0	1	1027	2615
% App. Total	6.8	0.0	93.2	0.0	100	0.0	0.0	0.0	0.0	0	0.0	99.0	1.0	0.0	100	3.4	96.5	0.0	0.1	100	
PHF	0.738										0.833					0.870					0.856
Cars, PU, Vans	4	0	54	0	58	0	0	0	0	0	0	1469	14	0	1483	33	960	0	1	994	2535
% Cars, PU, Vans	100.0	0.0	98.2	0.0	98.3	0.0	0.0	0.0	0.0	0.0	0.0	97.0	93.3	0.0	97.0	94.3	96.9	0.0	100.0	96.8	96.9
Heavy trucks	0	0	1	0	1	0	0	0	0	0	0	45	1	0	46	2	31	0	0	33	80
%Heavy trucks	0.0	0.0	1.8	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	3.0	6.7	0.0	3.0	5.7	3.1	0.0	0.0	3.2	3.1

PM

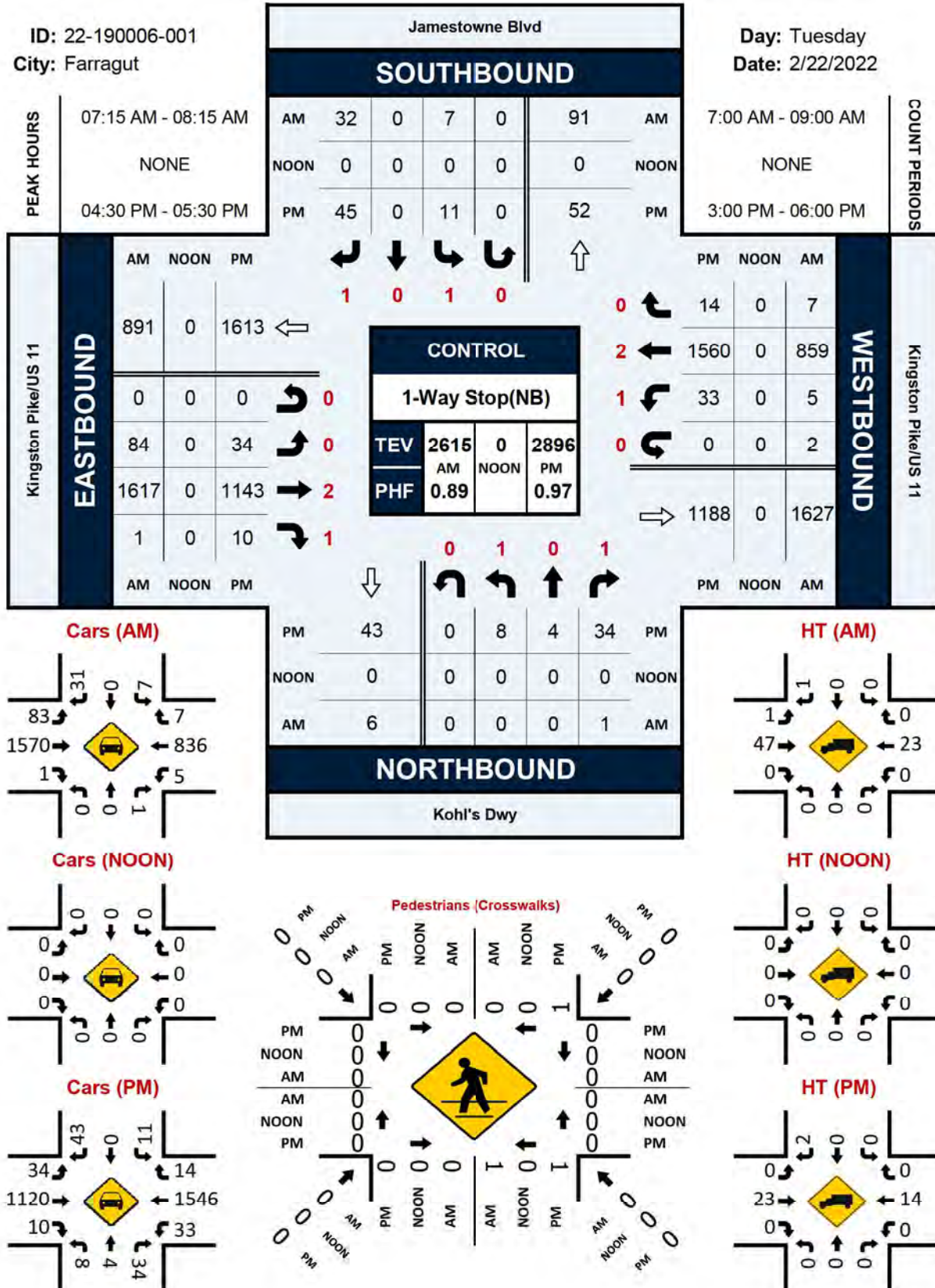
	Glen Abbey Blvd Northbound					Glen Abbey Blvd Southbound					Kinston Pike/US 70/SR 1 Eastbound					Kinston Pike/US 70/SR 1 Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 03:00 PM - 06:00 PM																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
4:30 PM	8	0	12	0	20	0	0	0	0	0	0	315	5	0	320	14	362	0	0	376	716
4:45 PM	7	0	9	0	16	0	0	0	0	0	0	320	4	0	324	13	384	0	0	397	737
5:00 PM	2	0	10	0	12	0	0	0	0	0	0	349	7	0	356	13	381	0	0	394	762
5:15 PM	9	0	12	0	21	0	0	0	0	0	0	296	6	0	302	12	385	0	0	397	720
Total Volume	26	0	43	0	69	0	0	0	0	0	0	1280	22	0	1302	52	1512	0	0	1564	2935
% App. Total	37.7	0.0	62.3	0.0	100	0.0	0.0	0.0	0.0	0	0.0	98.3	1.7	0.0	100	3.3	96.7	0.0	0.0	100	
PHF	0.821										0.914					0.985					0.963
Cars, PU, Vans	25	0	42	0	67	0	0	0	0	0	0	1265	21	0	1286	51	1503	0	0	1554	2907
% Cars, PU, Vans	96.2	0.0	97.7	0.0	97.1	0.0	0.0	0.0	0.0	0.0	0.0	98.8	95.5	0.0	98.8	98.1	99.4	0.0	0.0	99.4	99.0
Heavy trucks	1	0	1	0	2	0	0	0	0	0	0	15	1	0	16	1	9	0	0	10	28
%Heavy trucks	3.8	0.0	2.3	0.0	2.9	0.0	0.0	0.0	0.0	0.0	0.0	1.2	4.5	0.0	1.2	1.9	0.6	0.0	0.0	0.6	1.0

Kohl's Dwy/Jamestowne Blvd & Kingston Pike/US 11

Peak Hour Turning Movement Count

ID: 22-190006-001
City: Farragut

Day: Tuesday
Date: 2/22/2022



Project ID: 22-190006-001

Location: Kohl's Dwy/Jamestowne Blvd & Kingston Pike/US 11

City: Farragut

Day: Tuesday

Date: 2/22/2022

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Kohl's Dwy Northbound						Jamestowne Blvd Southbound						Kingston Pike/US 11 Eastbound						Kingston Pike/US 11 Westbound							
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total	
7:00 AM	0	0	2	0	0	2	1	0	1	1	0	3	2	269	0	0	0	271	0	110	0	0	0	110	386	
7:15 AM	0	0	0	0	1	0	2	0	2	0	0	4	7	364	0	0	0	371	1	171	0	1	0	173	548	
7:30 AM	0	0	0	0	0	0	3	0	7	0	0	10	22	398	0	0	0	420	1	249	1	1	0	252	682	
7:45 AM	0	0	0	0	0	0	0	0	14	0	0	14	17	447	0	0	0	464	2	249	3	0	0	254	732	
Total	0	0	2	0	1	2	6	0	24	1	0	31	48	1478	0	0	0	1526	4	779	4	2	0	789	2348	
8:00 AM	0	0	1	0	0	1	2	0	9	0	0	11	38	408	1	0	0	447	1	190	3	0	0	194	653	
8:15 AM	0	0	0	0	0	0	3	0	2	0	0	5	19	298	1	0	0	318	3	211	1	1	0	216	539	
8:30 AM	0	0	1	0	0	1	2	0	6	0	0	8	11	264	0	0	0	275	1	254	4	0	0	259	543	
8:45 AM	1	0	2	0	0	3	3	0	6	0	0	9	9	243	0	0	0	252	6	176	1	0	0	183	447	
Total	1	0	4	0	0	5	10	0	23	0	0	33	77	1213	2	0	0	1292	11	831	9	1	0	852	2182	
BREAK																										
3:00 PM	4	0	15	0	1	19	3	0	20	0	0	23	14	311	3	0	0	328	10	354	3	0	0	367	737	
3:15 PM	3	0	11	0	0	14	8	0	19	0	0	27	14	330	5	0	0	349	6	298	6	0	0	310	700	
3:30 PM	2	1	9	0	1	12	2	0	17	0	0	19	13	274	1	0	0	288	11	400	6	1	0	418	737	
3:45 PM	1	0	13	0	0	14	0	0	14	0	0	14	12	273	1	0	0	286	4	377	8	0	0	389	703	
Total	10	1	48	0	2	59	13	0	70	0	0	83	53	1188	10	0	0	1251	31	1429	23	1	0	1484	2877	
4:00 PM	2	0	8	0	1	10	0	0	12	0	0	12	4	239	3	0	0	246	5	396	5	0	0	406	674	
4:15 PM	1	1	8	0	0	10	0	0	10	0	0	10	10	304	0	0	0	314	10	368	4	0	0	382	716	
4:30 PM	1	1	8	0	1	10	3	0	6	0	0	9	7	265	3	0	0	275	10	405	6	0	0	421	715	
4:45 PM	4	2	8	0	0	14	1	0	9	0	0	10	7	273	2	0	0	282	10	382	3	0	0	395	701	
Total	8	4	32	0	2	44	4	0	37	0	0	41	28	1081	8	0	0	1117	35	1551	18	0	0	1604	2806	
5:00 PM	1	0	10	0	0	11	4	0	15	0	1	19	11	297	4	0	0	312	6	383	1	0	0	390	732	
5:15 PM	2	1	8	0	0	11	3	0	15	0	0	18	9	308	1	0	0	318	7	390	4	0	0	401	748	
5:30 PM	1	0	2	0	2	3	2	0	9	0	0	11	6	245	4	0	0	255	7	412	5	0	0	424	693	
5:45 PM	2	0	7	0	0	9	0	0	10	0	0	10	12	260	1	0	0	273	6	336	3	0	0	345	637	
Total	6	1	27	0	2	34	9	0	49	0	1	58	38	1110	10	0	0	1158	26	1521	13	0	0	1560	2810	
Grand Total	25	6	113	0	7	144	42	0	203	1	1	246	244	6070	30	0	0	6344	107	6111	67	4	0	6289	13023	
Apprch %	17.4	4.2	78.5	0.0	4.9		17.1	0.0	82.5	0.4	0.4		3.8	95.7	0.5	0.0	0.0		1.7	97.2	1.1	0.1	0.0			
Total %	0.2	0.0	0.9	0.0	0.1	1.1	0.3	0.0	1.6	0.0	0.0	1.9	1.9	46.6	0.2	0.0	0.0	48.7	0.8	46.9	0.5	0.0	0.0	48.3		
Cars, PU, Vans	25	6	113	0		144	42	0	200	1		243	241	5918	30	0		6189	107	5977	67	4		6155	12731	
% Cars, PU, Vans	100.0	100.0	100.0	0.0		100.0	100.0	0.0	98.5	100.0		98.8	98.8	97.5	100.0	0.0		97.6	100.0	97.8	100.0	100.0		97.9	97.8	
Heavy trucks	0	0	0	0		0	0	0	3	0		3	3	152	0	0		155	0	134	0	0		134	292	
%Heavy trucks	0.0	0.0	0.0	0.0		0.0	0.0	0.0	1.5	0.0		1.2	1.2	2.5	0.0	0.0		2.4	0.0	2.2	0.0	0.0		2.1	2.2	

Project ID: 22-190006-001

Location: Kohl's Dwy/Jamestowne Blvd & Kingston Pike/US
City: Farragut**PEAK HOURS**Day: Tuesday
Date: 2/22/2022**AM**

	Kohl's Dwy Northbound					Jamestowne Blvd Southbound					Kingston Pike/US 11 Eastbound					Kingston Pike/US 11 Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
7:15 AM	0	0	0	0	0	2	0	2	0	4	7	364	0	0	371	1	171	0	1	173	548
7:30 AM	0	0	0	0	0	3	0	7	0	10	22	398	0	0	420	1	249	1	1	252	682
7:45 AM	0	0	0	0	0	0	0	14	0	14	17	447	0	0	464	2	249	3	0	254	732
8:00 AM	0	0	1	0	1	2	0	9	0	11	38	408	1	0	447	1	190	3	0	194	653
Total Volume	0	0	1	0	1	7	0	32	0	39	84	1617	1	0	1702	5	859	7	2	873	2615
% App. Total	0.0	0.0	100.0	0.0	100	17.9	0.0	82.1	0.0	100	4.9	95.0	0.1	0.0	100	0.6	98.4	0.8	0.2	100	
PHF	0.250					0.696					0.917					0.859					0.893
Cars, PU, Vans	0	0	1	0	1	7	0	31	0	38	83	1570	1	0	1654	5	836	7	2	850	2543
% Cars, PU, Vans	0.0	0.0	100.0	0.0	100.0	100.0	0.0	96.9	0.0	97.4	98.8	97.1	100.0	0.0	97.2	100.0	97.3	100.0	100.0	97.4	97.2
Heavy trucks	0	0	0	0	0	0	0	1	0	1	1	47	0	0	48	0	23	0	0	23	72
%Heavy trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1	0.0	2.6	1.2	2.9	0.0	0.0	2.8	0.0	2.7	0.0	0.0	2.6	2.8

PM

	Kohl's Dwy Northbound					Jamestowne Blvd Southbound					Kingston Pike/US 11 Eastbound					Kingston Pike/US 11 Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 03:00 PM - 06:00 PM																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
4:30 PM	1	1	8	0	10	3	0	6	0	9	7	265	3	0	275	10	405	6	0	421	715
4:45 PM	4	2	8	0	14	1	0	9	0	10	7	273	2	0	282	10	382	3	0	395	701
5:00 PM	1	0	10	0	11	4	0	15	0	19	11	297	4	0	312	6	383	1	0	390	732
5:15 PM	2	1	8	0	11	3	0	15	0	18	9	308	1	0	318	7	390	4	0	401	748
Total Volume	8	4	34	0	46	11	0	45	0	56	34	1143	10	0	1187	33	1560	14	0	1607	2896
% App. Total	17.4	8.7	73.9	0.0	100	19.6	0.0	80.4	0.0	100	2.9	96.3	0.8	0.0	100	2.1	97.1	0.9	0.0	100	
PHF	0.821					0.737					0.933					0.954					0.968
Cars, PU, Vans	8	4	34	0	46	11	0	43	0	54	34	1120	10	0	1164	33	1546	14	0	1593	2857
% Cars, PU, Vans	100.0	100.0	100.0	0.0	100.0	100.0	0.0	95.6	0.0	96.4	100.0	98.0	100.0	0.0	98.1	100.0	99.1	100.0	0.0	99.1	98.7
Heavy trucks	0	0	0	0	0	0	0	2	0	2	0	23	0	0	23	0	14	0	0	14	39
%Heavy trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.4	0.0	3.6	0.0	2.0	0.0	0.0	1.9	0.0	0.9	0.0	0.0	0.9	1.3

Jamestowne Blvd & SR 1/US 11/US 70 Kingston Pike

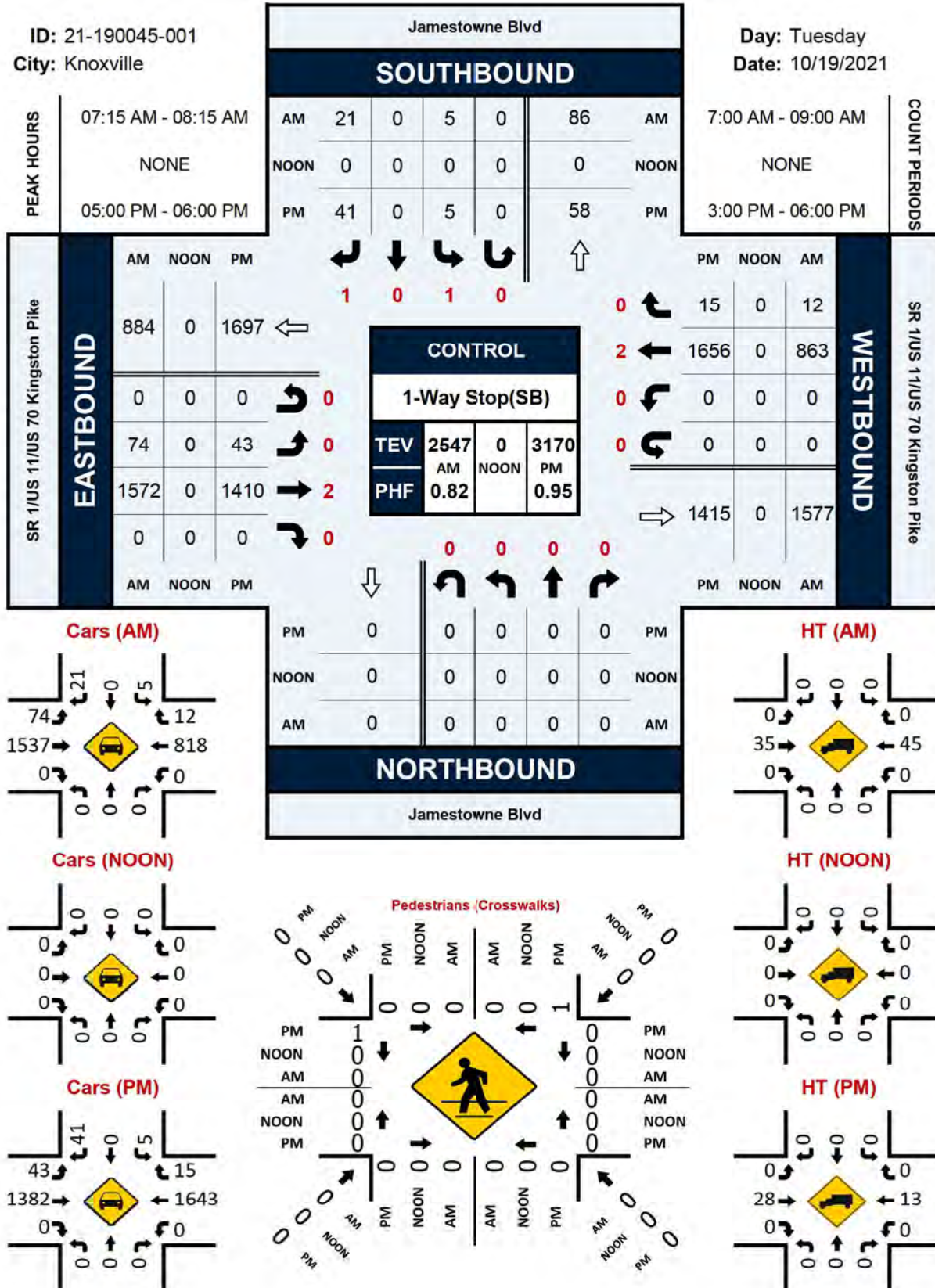
Peak Hour Turning Movement Count

ID: 21-190045-001

City: Knoxville

Day: Tuesday

Date: 10/19/2021



Project ID: 21-190045-001

Location: Jamestowne Blvd & SR 1/US 11/US 70 Kingston Pike

City: Knoxville

Day: Tuesday
Date: 10/19/2021

Groups Printed - Cars, PU, Vans - Heavy Trucks

Start Time	Jamestowne Blvd Northbound						Jamestowne Blvd Southbound						SR 1/US 11/US 70 Kingston Pike Eastbound						SR 1/US 11/US 70 Kingston Pike Westbound						Int. Total
	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	
7:00 AM	0	0	0	0	0	0	1	0	1	0	0	2	5	256	0	0	0	261	0	103	0	0	0	103	366
7:15 AM	0	0	0	0	0	0	1	0	3	0	0	4	7	352	0	0	0	359	0	154	0	0	0	154	517
7:30 AM	0	0	0	0	0	0	0	0	3	0	0	3	15	439	0	0	0	454	0	226	1	0	0	227	684
7:45 AM	0	0	0	0	0	0	2	0	11	0	0	13	23	450	0	0	0	473	0	288	3	0	0	291	777
Total	0	0	0	0	0	0	4	0	18	0	0	22	50	1497	0	0	0	1547	0	771	4	0	0	775	2344
8:00 AM	0	0	0	0	0	0	2	0	4	0	0	6	29	331	0	0	0	360	0	195	8	0	0	203	569
8:15 AM	0	0	0	0	0	0	1	0	3	0	0	4	17	230	0	0	0	247	0	239	5	0	0	244	495
8:30 AM	0	0	0	0	0	0	6	0	7	0	0	13	9	233	0	0	0	242	0	232	5	0	0	237	492
8:45 AM	0	0	0	0	0	0	2	0	4	0	0	6	4	255	0	0	0	259	0	231	2	0	0	233	498
Total	0	0	0	0	0	0	11	0	18	0	0	29	59	1049	0	0	0	1108	0	897	20	0	0	917	2054
BREAK																									
3:00 PM	0	0	0	0	0	0	1	0	11	0	0	12	16	309	0	0	0	325	0	409	2	0	0	411	748
3:15 PM	0	0	0	0	0	0	1	0	19	0	0	20	14	373	0	0	0	387	0	363	7	0	0	370	777
3:30 PM	0	0	0	0	0	0	2	0	9	0	0	11	10	326	0	0	0	336	0	413	5	0	0	418	765
3:45 PM	0	0	0	0	0	0	2	0	10	0	0	12	18	288	0	0	0	306	0	417	6	0	0	423	741
Total	0	0	0	0	0	0	6	0	49	0	0	55	58	1296	0	0	0	1354	0	1602	20	0	0	1622	3031
4:00 PM	0	0	0	0	0	0	2	0	15	0	0	17	15	311	0	0	0	326	0	377	3	0	0	380	723
4:15 PM	0	0	0	0	0	0	6	0	8	0	0	14	12	321	0	0	0	333	0	424	5	0	0	429	776
4:30 PM	0	0	0	0	0	0	4	0	12	0	0	16	10	281	0	0	0	291	0	402	3	0	0	405	712
4:45 PM	0	0	0	0	0	0	2	0	8	0	0	10	10	335	0	0	0	345	0	391	8	0	0	399	754
Total	0	0	0	0	0	0	14	0	43	0	0	57	47	1248	0	0	0	1295	0	1594	19	0	0	1613	2965
5:00 PM	0	0	0	0	0	0	2	0	12	0	0	14	16	382	0	0	0	398	0	413	5	0	0	418	830
5:15 PM	0	0	0	0	0	0	2	0	8	0	1	10	11	365	0	0	1	376	0	420	3	0	0	423	809
5:30 PM	0	0	0	0	0	0	1	0	8	0	0	9	6	315	0	0	0	321	0	410	4	0	0	414	744
5:45 PM	0	0	0	0	0	0	0	0	13	0	0	13	10	348	0	0	0	358	0	413	3	0	0	416	787
Total	0	0	0	0	0	0	5	0	41	0	1	46	43	1410	0	0	1	1453	0	1656	15	0	0	1671	3170
Grand Total	0	0	0	0	0	0	40	0	169	0	1	209	257	6500	0	0	1	6757	0	6520	78	0	0	6598	13564
Apprch %	0.0	0.0	0.0	0.0	0.0		19.1	0.0	80.9	0.0	0.5		3.8	96.2	0.0	0.0	0.0		0.0	98.8	1.2	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	1.2	0.0	0.0	1.5	1.9	47.9	0.0	0.0	0.0	49.8	0.0	48.1	0.6	0.0	0.0	48.6	
Cars, PU, Vans	0	0	0	0	0	0	40	0	169	0		209	256	6329	0	0		6585	0	6337	78	0		6415	13209
% Cars, PU, Vans	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	100.0	0.0		100.0	99.6	97.4	0.0	0.0		97.5	0.0	97.2	100.0	0.0		97.2	97.4
Heavy trucks	0	0	0	0	0	0	0	0	0	0	0	0	1	171	0	0	0	172	0	183	0	0	0	183	355
%Heavy trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	2.6	0.0	0.0	2.5		0.0	2.8	0.0	0.0		2.8	2.6

Project ID: 21-190045-001

Location: Jamestowne Blvd & SR 1/US 11/US 70 Kingston P
City: Knoxville**PEAK HOURS**Day: Tuesday
Date: 10/19/2021**AM**

	Jamestowne Blvd Northbound					Jamestowne Blvd Southbound					SR 1/US 11/US 70 Kingston Pike Eastbound					SR 1/US 11/US 70 Kingston Pike Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
7:15 AM	0	0	0	0	0	1	0	3	0	4	7	352	0	0	359	0	154	0	0	154	517
7:30 AM	0	0	0	0	0	0	0	3	0	3	15	439	0	0	454	0	226	1	0	227	684
7:45 AM	0	0	0	0	0	2	0	11	0	13	23	450	0	0	473	0	288	3	0	291	777
8:00 AM	0	0	0	0	0	2	0	4	0	6	29	331	0	0	360	0	195	8	0	203	569
Total Volume	0	0	0	0	0	5	0	21	0	26	74	1572	0	0	1646	0	863	12	0	875	2547
% App. Total	0.0	0.0	0.0	0.0	0	19.2	0.0	80.8	0.0	100	4.5	95.5	0.0	0.0	100	0.0	98.6	1.4	0.0	100	
PHF										0.500					0.870					0.752	0.819
Cars, PU, Vans	0	0	0	0	0	5	0	21	0	26	74	1537	0	0	1611	0	818	12	0	830	2467
% Cars, PU, Vans	0.0	0.0	0.0	0.0	0.0	100.0	0.0	100.0	0.0	100.0	100.0	97.8	0.0	0.0	97.9	0.0	94.8	100.0	0.0	94.9	96.9
Heavy trucks	0	0	0	0	0	0	0	0	0	0	0	35	0	0	35	0	45	0	0	45	80
%Heavy trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0	2.1	0.0	5.2	0.0	0.0	5.1	3.1

PM

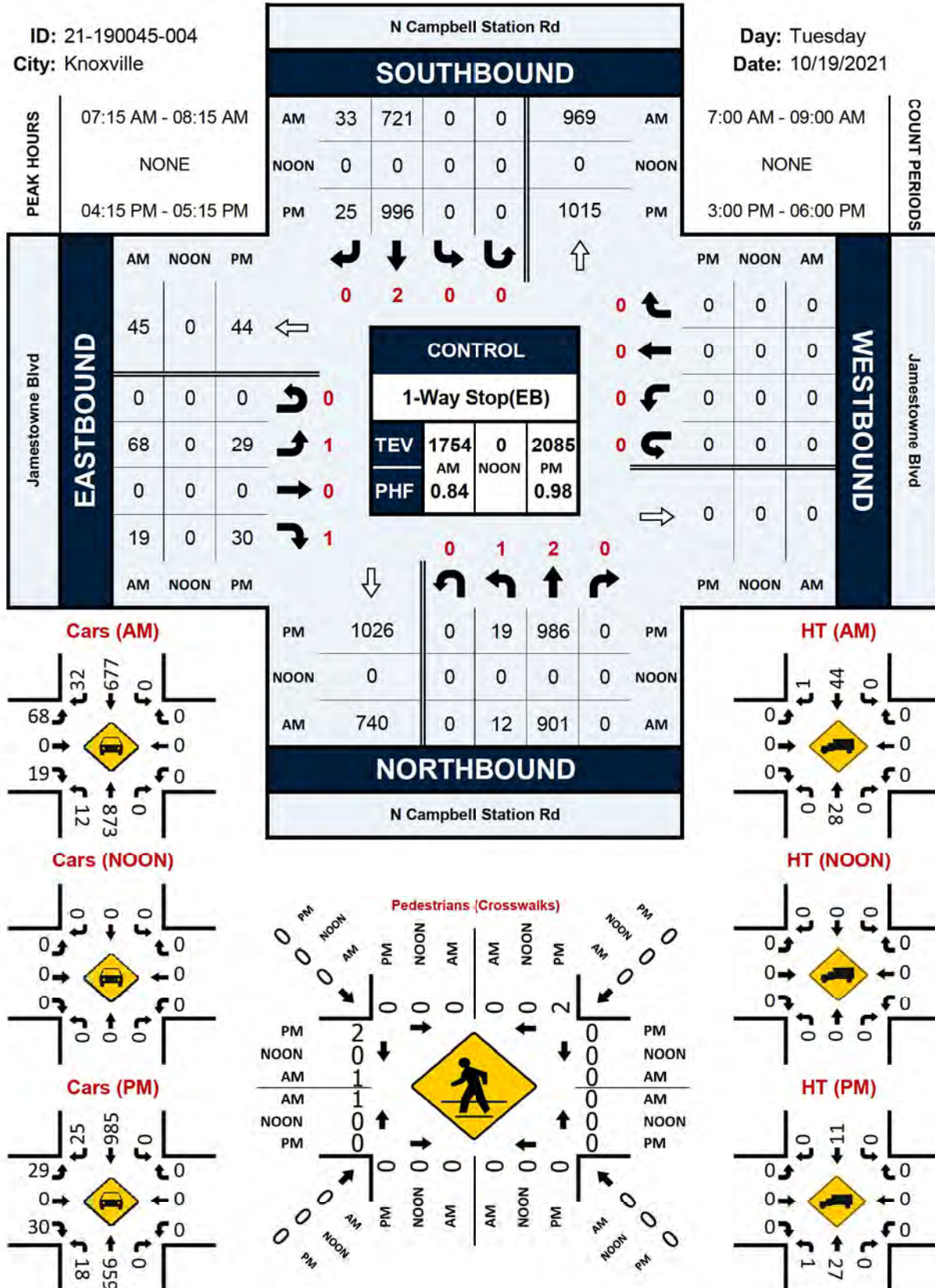
	Jamestowne Blvd Northbound					Jamestowne Blvd Southbound					SR 1/US 11/US 70 Kingston Pike Eastbound					SR 1/US 11/US 70 Kingston Pike Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 03:00 PM - 06:00 PM																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
5:00 PM	0	0	0	0	0	2	0	12	0	14	16	382	0	0	398	0	413	5	0	418	830
5:15 PM	0	0	0	0	0	2	0	8	0	10	11	365	0	0	376	0	420	3	0	423	809
5:30 PM	0	0	0	0	0	1	0	8	0	9	6	315	0	0	321	0	410	4	0	414	744
5:45 PM	0	0	0	0	0	0	0	13	0	13	10	348	0	0	358	0	413	3	0	416	787
Total Volume	0	0	0	0	0	5	0	41	0	46	43	1410	0	0	1453	0	1656	15	0	1671	3170
% App. Total	0.0	0.0	0.0	0.0	0	10.9	0.0	89.1	0.0	100	3.0	97.0	0.0	0.0	100	0.0	99.1	0.9	0.0	100	
PHF										0.821					0.913					0.988	0.955
Cars, PU, Vans	0	0	0	0	0	5	0	41	0	46	43	1382	0	0	1425	0	1643	15	0	1658	3129
% Cars, PU, Vans	0.0	0.0	0.0	0.0	0.0	100.0	0.0	100.0	0.0	100.0	100.0	98.0	0.0	0.0	98.1	0.0	99.2	100.0	0.0	99.2	98.7
Heavy trucks	0	0	0	0	0	0	0	0	0	0	0	28	0	0	28	0	13	0	0	13	41
%Heavy trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	1.9	0.0	0.8	0.0	0.0	0.8	1.3

N Campbell Station Rd & Jamestowne Blvd

Peak Hour Turning Movement Count

ID: 21-190045-004
City: Knoxville

Day: Tuesday
Date: 10/19/2021



Project ID: 21-190045-004

Location: N Campbell Station Rd & Jamestowne Blvd
City: KnoxvilleDay: Tuesday
Date: 10/19/2021

Groups Printed - Cars, PU, Vans - Heavy Trucks

	N Campbell Station Rd Northbound						N Campbell Station Rd Southbound						Jamestowne Blvd Eastbound						Jamestowne Blvd Westbound								
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total		
7:00 AM	0	161	0	0	0	161	0	88	0	0	0	88	9	0	3	0	0	12	0	0	0	0	0	0	261		
7:15 AM	4	257	0	0	0	261	0	131	4	0	0	135	7	0	5	0	2	12	0	0	0	0	0	0	408		
7:30 AM	1	244	0	0	0	245	0	184	4	0	0	188	20	0	8	0	0	28	0	0	0	0	0	0	461		
7:45 AM	3	217	0	0	0	220	0	267	10	0	0	277	19	0	4	0	0	23	0	0	0	0	0	0	520		
Total	8	879	0	0	0	887	0	670	18	0	0	688	55	0	20	0	2	75	0	0	0	0	0	0	1650		
8:00 AM	4	183	0	0	0	187	0	139	15	0	0	154	22	0	2	0	0	24	0	0	0	0	0	0	365		
8:15 AM	10	223	0	0	0	233	0	142	14	0	0	156	11	0	6	0	0	17	0	0	0	0	0	0	406		
8:30 AM	7	155	0	0	0	162	0	155	8	0	0	163	8	0	11	0	0	19	0	0	0	0	0	0	344		
8:45 AM	7	149	0	0	0	156	0	184	8	0	0	192	4	0	9	0	0	13	0	0	0	0	0	0	361		
Total	28	710	0	0	0	738	0	620	45	0	0	665	45	0	28	0	0	73	0	0	0	0	0	0	1476		
BREAK																											
3:00 PM	8	225	0	0	0	233	0	268	5	0	0	273	8	0	9	0	1	17	0	0	0	0	0	0	523		
3:15 PM	3	228	0	0	0	231	0	270	6	0	0	276	12	0	12	0	0	24	0	0	0	0	0	0	531		
3:30 PM	5	257	0	1	0	263	0	237	7	0	0	244	9	0	14	0	0	23	0	0	0	0	0	0	530		
3:45 PM	5	243	0	0	0	248	0	216	6	0	0	222	6	0	4	0	0	10	0	0	0	0	0	0	480		
Total	21	953	0	1	0	975	0	991	24	0	0	1015	35	0	39	0	1	74	0	0	0	0	0	0	2064		
4:00 PM	1	202	0	0	0	203	0	254	6	0	2	260	15	0	3	0	2	18	0	0	0	0	0	0	481		
4:15 PM	5	253	0	0	0	258	0	242	9	0	2	251	4	0	9	0	2	13	0	0	0	0	0	0	522		
4:30 PM	1	233	0	0	0	234	0	261	5	0	0	266	5	0	10	0	0	15	0	0	0	0	0	0	515		
4:45 PM	6	253	0	0	0	259	0	252	4	0	0	256	10	0	6	0	0	16	0	0	0	0	0	0	531		
Total	13	941	0	0	0	954	0	1009	24	0	4	1033	34	0	28	0	4	62	0	0	0	0	0	0	2049		
5:00 PM	7	247	0	0	0	254	0	241	7	0	0	248	10	0	5	0	0	15	0	0	0	0	0	0	517		
5:15 PM	6	234	0	0	0	240	0	265	5	0	0	270	3	0	5	0	0	8	0	0	0	0	0	0	518		
5:30 PM	4	228	0	0	0	232	0	242	7	0	0	249	5	0	4	0	2	9	0	0	0	0	0	0	490		
5:45 PM	7	206	0	0	0	213	0	285	6	0	0	291	2	0	3	0	0	5	0	0	0	0	0	0	509		
Total	24	915	0	0	0	939	0	1033	25	0	0	1058	20	0	17	0	2	37	0	0	0	0	0	0	2034		
Grand Total	94	4398	0	1	0	4493	0	4323	136	0	4	4459	189	0	132	0	9	321	0	0	0	0	0	0	9273		
Apprch %	2.1	97.9	0.0	0.0	0.0		0.0	96.9	3.1	0.0	0.1		58.9	0.0	41.1	0.0	2.8		0.0	0.0	0.0	0.0	0.0				
Total %	1.0	47.4	0.0	0.0	0.0	48.5	0.0	46.6	1.5	0.0	0.0	48.1	2.0	0.0	1.4	0.0	0.1	3.5	0.0	0.0	0.0	0.0	0.0	0.0			
Cars, PU, Vans	92	4282	0	1		4375	0	4190	133	0		4323	187	0	131	0		318	0	0	0	0			9016		
% Cars, PU, Vans	97.9	97.4	0.0	100.0		97.4	0.0	96.9	97.8	0.0		96.9	98.9	0.0	99.2	0.0		99.1	0.0	0.0	0.0	0.0			97.2		
Heavy trucks	2	116	0	0		118	0	133	3	0		136	2	0	1	0		3	0	0	0	0			257		
%Heavy trucks	2.1	2.6	0.0	0.0		2.6	0.0	3.1	2.2	0.0		3.1	1.1	0.0	0.8	0.0		0.9	0.0	0.0	0.0	0.0			2.8		

Project ID: 21-190045-004

Location: N Campbell Station Rd & Jamestowne Blvd

City: Knoxville

PEAK HOURS

Day: Tuesday

Date: 10/19/2021

AM

	N Campbell Station Rd Northbound					N Campbell Station Rd Southbound					Jamestowne Blvd Eastbound					Jamestowne Blvd Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
7:15 AM	4	257	0	0	261	0	131	4	0	135	7	0	5	0	12	0	0	0	0	0	408
7:30 AM	1	244	0	0	245	0	184	4	0	188	20	0	8	0	28	0	0	0	0	0	461
7:45 AM	3	217	0	0	220	0	267	10	0	277	19	0	4	0	23	0	0	0	0	0	520
8:00 AM	4	183	0	0	187	0	139	15	0	154	22	0	2	0	24	0	0	0	0	0	365
Total Volume	12	901	0	0	913	0	721	33	0	754	68	0	19	0	87	0	0	0	0	0	1754
% App. Total	1.3	98.7	0.0	0.0	100	0.0	95.6	4.4	0.0	100	78.2	0.0	21.8	0.0	100	0.0	0.0	0.0	0.0	0	
PHF	0.875					0.681					0.777										0.843
Cars, PU, Vans	12	873	0	0	885	0	677	32	0	709	68	0	19	0	87	0	0	0	0	0	1681
% Cars, PU, Vans	100.0	96.9	0.0	0.0	96.9	0.0	93.9	97.0	0.0	94.0	100.0	0.0	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	95.8
Heavy trucks	0	28	0	0	28	0	44	1	0	45	0	0	0	0	0	0	0	0	0	0	73
%Heavy trucks	0.0	3.1	0.0	0.0	3.1	0.0	6.1	3.0	0.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2

PM

	N Campbell Station Rd Northbound					N Campbell Station Rd Southbound					Jamestowne Blvd Eastbound					Jamestowne Blvd Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 03:00 PM - 06:00 PM																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
4:15 PM	5	253	0	0	258	0	242	9	0	251	4	0	9	0	13	0	0	0	0	0	522
4:30 PM	1	233	0	0	234	0	261	5	0	266	5	0	10	0	15	0	0	0	0	0	515
4:45 PM	6	253	0	0	259	0	252	4	0	256	10	0	6	0	16	0	0	0	0	0	531
5:00 PM	7	247	0	0	254	0	241	7	0	248	10	0	5	0	15	0	0	0	0	0	517
Total Volume	19	986	0	0	1005	0	996	25	0	1021	29	0	30	0	59	0	0	0	0	0	2085
% App. Total	1.9	98.1	0.0	0.0	100	0.0	97.6	2.4	0.0	100	49.2	0.0	50.8	0.0	100	0.0	0.0	0.0	0.0	0	
PHF	0.970					0.960					0.922										0.982
Cars, PU, Vans	18	959	0	0	977	0	985	25	0	1010	29	0	30	0	59	0	0	0	0	0	2046
% Cars, PU, Vans	94.7	97.3	0.0	0.0	97.2	0.0	98.9	100.0	0.0	98.9	100.0	0.0	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	98.1
Heavy trucks	1	27	0	0	28	0	11	0	0	11	0	0	0	0	0	0	0	0	0	0	39
%Heavy trucks	5.3	2.7	0.0	0.0	2.8	0.0	1.1	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9

N Campbell Station Rd/S Campbell Station Rd & SR 1/US 11/US 70 Kingston Pike

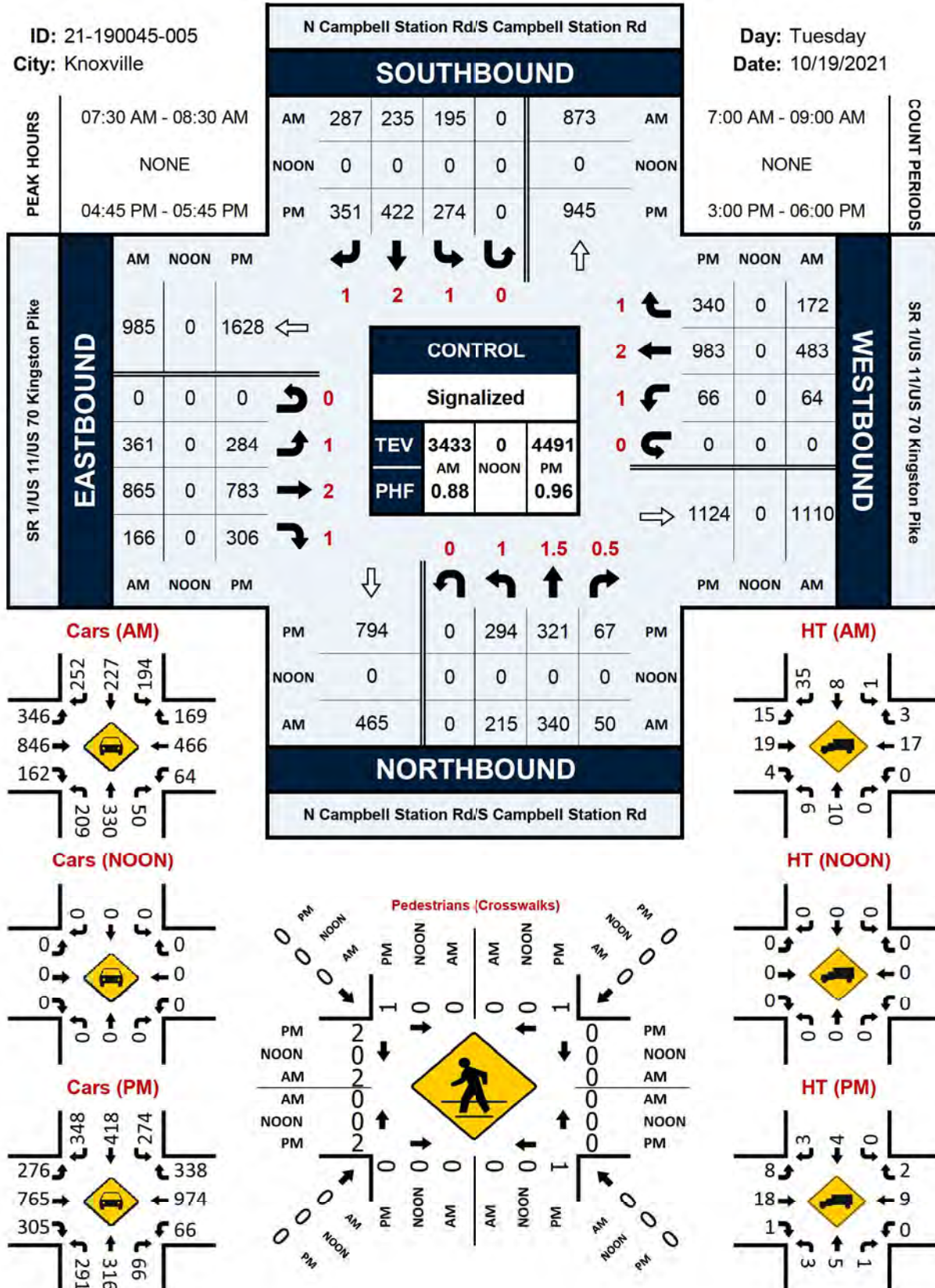
Peak Hour Turning Movement Count

ID: 21-190045-005

City: Knoxville

Day: Tuesday

Date: 10/19/2021



Project ID: 21-190045-005

Location: N Campbell Station Rd/S Campbell Station Rd & SR 1/US 11/US 70 Kingston Pike
City: KnoxvilleDay: Tuesday
Date: 10/19/2021

Groups Printed - Cars, PU, Vans - Heavy Trucks

Start Time	Campbell Station Rd/S Campbell Station Rd Northbound						Campbell Station Rd/S Campbell Station Rd Southbound						SR 1/US 11/US 70 Kingston Pike Eastbound						SR 1/US 11/US 70 Kingston Pike Westbound						Int. Total
	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	
7:00 AM	18	49	10	0	2	77	34	17	33	0	0	84	66	146	21	0	0	233	7	52	37	0	0	96	490
7:15 AM	39	109	18	0	0	166	46	42	37	0	0	125	104	204	22	0	2	330	9	73	56	0	0	138	759
7:30 AM	42	92	9	0	0	143	47	51	71	0	0	169	103	300	40	0	2	443	7	127	47	0	0	181	936
7:45 AM	60	97	11	0	0	168	70	85	115	0	0	270	109	227	45	0	0	381	10	118	27	0	0	155	974
Total	159	347	48	0	2	554	197	195	256	0	0	648	382	877	128	0	4	1387	33	370	167	0	0	570	3159
8:00 AM	50	81	16	0	0	147	46	41	48	0	0	135	84	163	51	0	0	298	17	99	33	0	0	149	729
8:15 AM	63	70	14	0	0	147	32	58	53	0	0	143	65	175	30	0	0	270	30	139	65	0	0	234	794
8:30 AM	67	50	15	0	1	132	49	58	50	0	0	157	58	137	39	0	0	234	19	116	49	0	0	184	707
8:45 AM	54	70	21	0	0	145	67	71	65	0	0	203	53	146	42	0	0	241	13	107	39	0	0	159	748
Total	234	271	66	0	1	571	194	228	216	0	0	638	260	621	162	0	0	1043	79	461	186	0	0	726	2978
BREAK																									
3:00 PM	60	71	19	0	1	150	79	97	94	0	0	270	74	180	57	0	1	311	22	249	77	0	0	348	1079
3:15 PM	61	75	21	0	0	157	80	97	100	0	0	277	77	214	64	0	0	355	22	207	74	0	0	303	1092
3:30 PM	62	68	18	0	1	148	73	93	100	0	1	266	64	201	61	0	0	326	17	273	115	0	0	405	1145
3:45 PM	63	62	19	0	0	144	47	98	87	0	1	232	73	155	68	0	0	296	27	255	108	0	0	390	1062
Total	246	276	77	0	2	599	279	385	381	0	2	1045	288	750	250	0	1	1288	88	984	374	0	0	1446	4378
4:00 PM	60	59	15	0	0	134	68	83	79	0	1	230	69	177	65	0	1	311	14	256	68	0	0	338	1013
4:15 PM	62	88	12	0	0	162	61	93	109	0	1	263	79	176	80	0	0	335	13	236	92	0	0	341	1101
4:30 PM	55	49	20	0	1	124	54	85	83	0	0	222	67	162	50	0	0	279	24	265	103	0	0	392	1017
4:45 PM	66	88	18	0	0	172	79	107	97	0	0	283	68	182	56	0	3	306	15	225	91	0	0	331	1092
Total	243	284	65	0	1	592	262	368	368	0	2	998	283	697	251	0	4	1231	66	982	354	0	0	1402	4223
5:00 PM	73	76	17	0	0	166	69	109	65	0	0	243	79	219	90	0	0	388	13	274	86	0	0	373	1170
5:15 PM	81	80	19	0	1	180	64	109	104	0	2	277	65	196	91	0	1	352	19	226	87	0	0	332	1141
5:30 PM	74	77	13	0	0	164	62	97	85	0	0	244	72	186	69	0	0	327	19	258	76	0	0	353	1088
5:45 PM	75	77	11	0	0	163	73	108	94	0	0	275	66	201	49	0	0	316	7	230	66	0	0	303	1057
Total	303	310	60	0	1	673	268	423	348	0	2	1039	282	802	299	0	1	1383	58	988	315	0	0	1361	4456
Grand Total	1185	1488	316	0	7	2989	1200	1599	1569	0	6	4368	1495	3747	1090	0	10	6332	324	3785	1396	0	0	5505	19194
Apprch %	39.6	49.8	10.6	0.0	0.2		27.5	36.6	35.9	0.0	0.1		23.6	59.2	17.2	0.0	0.2		5.9	68.8	25.4	0.0	0.0		
Total %	6.2	7.8	1.6	0.0	0.0	15.6	6.3	8.3	8.2	0.0	0.0	22.8	7.8	19.5	5.7	0.0	0.1	33.0	1.7	19.7	7.3	0.0	0.0	28.7	
Cars, PU, Vans	1157	1449	313	0		2919	1185	1563	1483	0		4231	1435	3658	1074	0		6167	323	3714	1380	0		5417	18734
% Cars, PU, Vans	97.6	97.4	99.1	0.0		97.7	98.8	97.7	94.5	0.0		96.9	96.0	97.6	98.5	0.0		97.4	99.7	98.1	98.9	0.0		98.4	97.6
Heavy trucks	28	39	3	0		70	15	36	86	0		137	60	89	16	0		165	1	71	16	0		88	460
%Heavy trucks	2.4	2.6	0.9	0.0		2.3	1.3	2.3	5.5	0.0		3.1	4.0	2.4	1.5	0.0		2.6	0.3	1.9	1.1	0.0		1.6	2.4

Project ID: 21-190045-005

Location: N Campbell Station Rd/S Campbell Station Rd & S
City: Knoxville**PEAK HOURS**Day: Tuesday
Date: 10/19/2021**AM**

	Campbell Station Rd/S Campbell Station Rd Northbound					Campbell Station Rd/S Campbell Station Rd Southbound					SR 1/US 11/US 70 Kingston Pike Eastbound					SR 1/US 11/US 70 Kingston Pike Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
7:30 AM	42	92	9	0	143	47	51	71	0	169	103	300	40	0	443	7	127	47	0	181	936
7:45 AM	60	97	11	0	168	70	85	115	0	270	109	227	45	0	381	10	118	27	0	155	974
8:00 AM	50	81	16	0	147	46	41	48	0	135	84	163	51	0	298	17	99	33	0	149	729
8:15 AM	63	70	14	0	147	32	58	53	0	143	65	175	30	0	270	30	139	65	0	234	794
Total Volume	215	340	50	0	605	195	235	287	0	717	361	865	166	0	1392	64	483	172	0	719	3433
% App. Total	35.5	56.2	8.3	0.0	100	27.2	32.8	40.0	0.0	100	25.9	62.1	11.9	0.0	100	8.9	67.2	23.9	0.0	100	
PHF	0.900					0.664					0.786					0.768					0.881
Cars, PU, Vans	209	330	50	0	589	194	227	252	0	673	346	846	162	0	1354	64	466	169	0	699	3315
% Cars, PU, Vans	97.2	97.1	100.0	0.0	97.4	99.5	96.6	87.8	0.0	93.9	95.8	97.8	97.6	0.0	97.3	100.0	96.5	98.3	0.0	97.2	96.6
Heavy trucks	6	10	0	0	16	1	8	35	0	44	15	19	4	0	38	0	17	3	0	20	118
% Heavy trucks	2.8	2.9	0.0	0.0	2.6	0.5	3.4	12.2	0.0	6.1	4.2	2.2	2.4	0.0	2.7	0.0	3.5	1.7	0.0	2.8	3.4

PM

	Campbell Station Rd/S Campbell Station Rd Northbound					Campbell Station Rd/S Campbell Station Rd Southbound					SR 1/US 11/US 70 Kingston Pike Eastbound					SR 1/US 11/US 70 Kingston Pike Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 03:00 PM - 06:00 PM																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
4:45 PM	66	88	18	0	172	79	107	97	0	283	68	182	56	0	306	15	225	91	0	331	1092
5:00 PM	73	76	17	0	166	69	109	65	0	243	79	219	90	0	388	13	274	86	0	373	1170
5:15 PM	81	80	19	0	180	64	109	104	0	277	65	196	91	0	352	19	226	87	0	332	1141
5:30 PM	74	77	13	0	164	62	97	85	0	244	72	186	69	0	327	19	258	76	0	353	1088
Total Volume	294	321	67	0	682	274	422	351	0	1047	284	783	306	0	1373	66	983	340	0	1389	4491
% App. Total	43.1	47.1	9.8	0.0	100	26.2	40.3	33.5	0.0	100	20.7	57.0	22.3	0.0	100	4.8	70.8	24.5	0.0	100	
PHF	0.947					0.925					0.885					0.931					0.960
Cars, PU, Vans	291	316	66	0	673	274	418	348	0	1040	276	765	305	0	1346	66	974	338	0	1378	4437
% Cars, PU, Vans	99.0	98.4	98.5	0.0	98.7	100.0	99.1	99.1	0.0	99.3	97.2	97.7	99.7	0.0	98.0	100.0	99.1	99.4	0.0	99.2	98.8
Heavy trucks	3	5	1	0	9	0	4	3	0	7	8	18	1	0	27	0	9	2	0	11	54
% Heavy trucks	1.0	1.6	1.5	0.0	1.3	0.0	0.9	0.9	0.0	0.7	2.8	2.3	0.3	0.0	2.0	0.0	0.9	0.6	0.0	0.8	1.2

S Campbell Station Rd & Municipal Center Dr

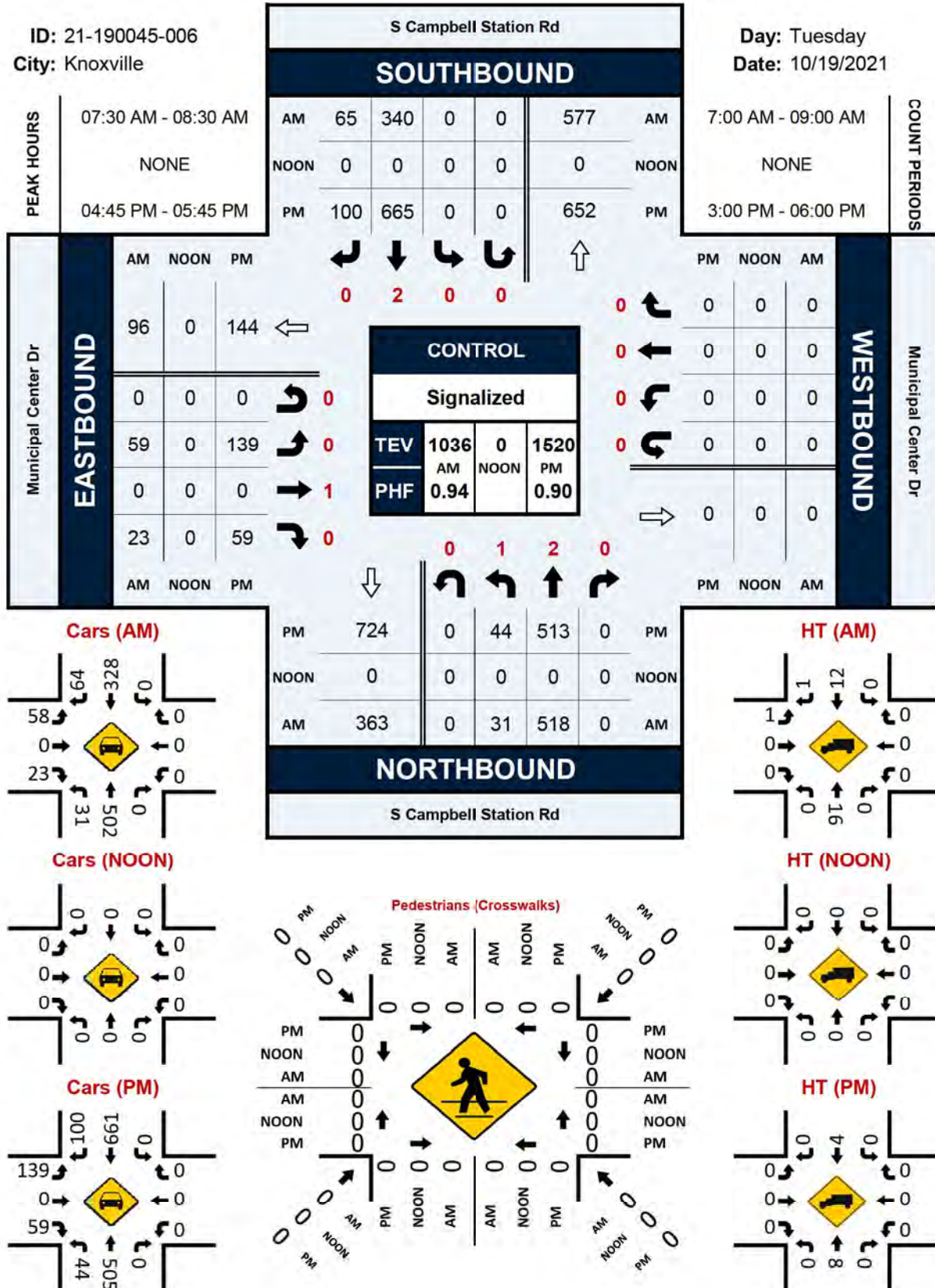
Peak Hour Turning Movement Count

ID: 21-190045-006

City: Knoxville

Day: Tuesday

Date: 10/19/2021



Project ID: 21-190045-006

Location: S Campbell Station Rd & Municipal Center Dr
City: KnoxvilleDay: Tuesday
Date: 10/19/2021

Groups Printed - Cars, PU, Vans - Heavy Trucks

Start Time	S Campbell Station Rd Northbound						S Campbell Station Rd Southbound						Municipal Center Dr Eastbound						Municipal Center Dr Westbound						Int. Total
	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	
7:00 AM	3	72	0	0	0	75	0	30	6	0	0	36	10	0	1	0	0	11	0	0	0	0	0	0	122
7:15 AM	4	133	0	0	0	137	0	52	9	0	0	61	7	0	0	0	0	7	0	0	0	0	0	0	205
7:30 AM	8	142	0	0	0	150	0	69	10	0	0	79	15	0	2	0	0	17	0	0	0	0	0	0	246
7:45 AM	2	133	0	0	0	135	0	112	12	0	0	124	11	0	5	0	0	16	0	0	0	0	0	0	275
Total	17	480	0	0	0	497	0	263	37	0	0	300	43	0	8	0	0	51	0	0	0	0	0	0	848
8:00 AM	14	113	0	0	0	127	0	88	15	0	0	103	14	0	10	0	0	24	0	0	0	0	0	0	254
8:15 AM	7	130	0	0	0	137	0	71	28	0	0	99	19	0	6	0	0	25	0	0	0	0	0	0	261
8:30 AM	6	97	0	0	0	103	0	81	16	0	0	97	20	0	4	0	1	24	0	0	0	0	0	0	224
8:45 AM	12	90	0	0	0	102	0	82	26	0	0	108	25	0	9	0	0	34	0	0	0	0	0	0	244
Total	39	430	0	0	0	469	0	322	85	0	0	407	78	0	29	0	1	107	0	0	0	0	0	0	983
BREAK																									
3:00 PM	22	107	0	0	0	129	0	122	50	0	0	172	45	0	19	0	0	64	0	0	0	0	0	0	365
3:15 PM	14	110	0	0	0	124	0	132	39	0	0	171	39	0	27	0	0	66	0	0	0	0	0	0	361
3:30 PM	17	101	0	0	0	118	0	137	28	0	0	165	31	0	18	0	0	49	0	0	0	0	0	0	332
3:45 PM	19	91	0	0	0	110	0	134	35	0	0	169	39	0	21	0	1	60	0	0	0	0	0	0	339
Total	72	409	0	0	0	481	0	525	152	0	0	677	154	0	85	0	1	239	0	0	0	0	0	0	1397
4:00 PM	18	98	0	0	0	116	0	134	22	0	0	156	35	0	17	0	0	52	0	0	0	0	0	0	324
4:15 PM	10	104	0	0	0	114	0	146	26	0	0	172	26	0	15	0	0	41	0	0	0	0	0	0	327
4:30 PM	16	92	0	0	0	108	0	128	30	0	0	158	43	0	10	0	0	53	0	0	0	0	0	0	319
4:45 PM	14	114	0	0	0	128	0	133	38	0	0	171	37	0	11	0	0	48	0	0	0	0	0	0	347
Total	58	408	0	0	0	466	0	541	116	0	0	657	141	0	53	0	0	194	0	0	0	0	0	0	1317
5:00 PM	13	141	0	0	0	154	0	188	17	0	0	205	38	0	24	0	0	62	0	0	0	0	0	0	421
5:15 PM	9	120	0	0	0	129	0	183	26	0	0	209	36	0	15	0	0	51	0	0	0	0	0	0	389
5:30 PM	8	138	0	0	0	146	0	161	19	0	0	180	28	0	9	0	0	37	0	0	0	0	0	0	363
5:45 PM	8	129	0	0	0	137	0	136	13	0	0	149	23	0	15	0	1	38	0	0	0	0	0	0	324
Total	38	528	0	0	0	566	0	668	75	0	0	743	125	0	63	0	1	188	0	0	0	0	0	0	1497
Grand Total	224	2255	0	0	0	2479	0	2319	465	0	0	2784	541	0	238	0	3	779	0	0	0	0	0	0	6042
Apprch %	9.0	91.0	0.0	0.0	0.0		0.0	83.3	16.7	0.0	0.0		69.4	0.0	30.6	0.0	0.4		0.0	0.0	0.0	0.0	0.0		
Total %	3.7	37.3	0.0	0.0	0.0	41.0	0.0	38.4	7.7	0.0	0.0	46.1	9.0	0.0	3.9	0.0	0.0	12.9	0.0	0.0	0.0	0.0	0.0	0.0	
Cars, PU, Vans	223	2190	0	0		2413	0	2269	463	0		2732	539	0	235	0		774	0	0	0	0			5919
% Cars, PU, Vans	99.6	97.1	0.0	0.0		97.3	0.0	97.8	99.6	0.0		98.1	99.6	0.0	98.7	0.0		99.4	0.0	0.0	0.0	0.0			98.0
Heavy trucks	1	65	0	0		66	0	50	2	0		52	2	0	3	0		5	0	0	0	0			123
%Heavy trucks	0.4	2.9	0.0	0.0		2.7	0.0	2.2	0.4	0.0		1.9	0.4	0.0	1.3	0.0		0.6	0.0	0.0	0.0	0.0			2.0

Project ID: 21-190045-006

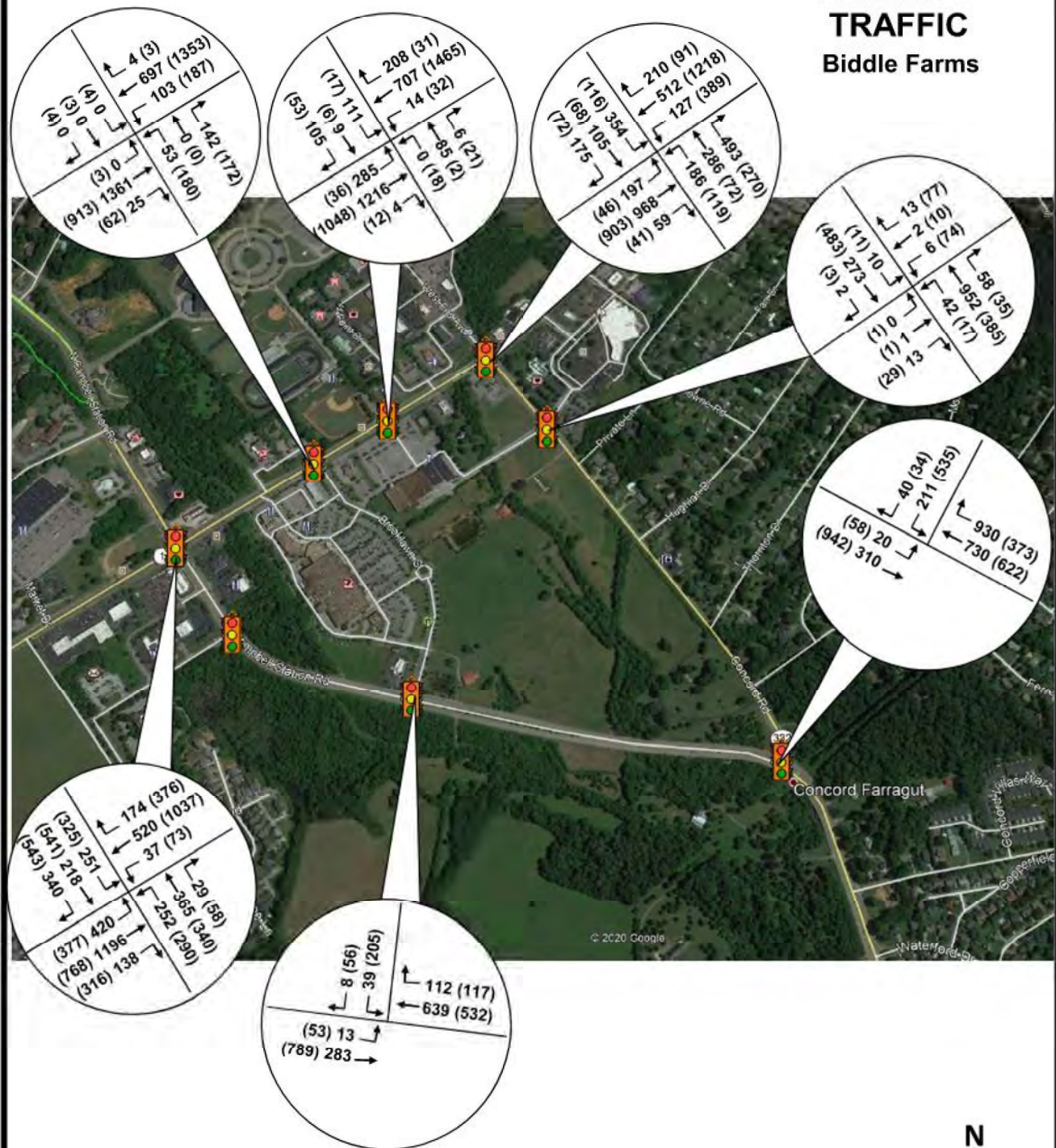
Location: S Campbell Station Rd & Municipal Center Dr
City: Knoxville**PEAK HOURS**Day: Tuesday
Date: 10/19/2021**AM**

	S Campbell Station Rd Northbound					S Campbell Station Rd Southbound					Municipal Center Dr Eastbound					Municipal Center Dr Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
7:30 AM	8	142	0	0	150	0	69	10	0	79	15	0	2	0	17	0	0	0	0	0	246
7:45 AM	2	133	0	0	135	0	112	12	0	124	11	0	5	0	16	0	0	0	0	0	275
8:00 AM	14	113	0	0	127	0	88	15	0	103	14	0	10	0	24	0	0	0	0	0	254
8:15 AM	7	130	0	0	137	0	71	28	0	99	19	0	6	0	25	0	0	0	0	0	261
Total Volume	31	518	0	0	549	0	340	65	0	405	59	0	23	0	82	0	0	0	0	0	1036
% App. Total	5.6	94.4	0.0	0.0	100	0.0	84.0	16.0	0.0	100	72.0	0.0	28.0	0.0	100	0.0	0.0	0.0	0.0	0	
PHF	0.915					0.817					0.820										0.942
Cars, PU, Vans	31	502	0	0	533	0	328	64	0	392	58	0	23	0	81	0	0	0	0	0	1006
% Cars, PU, Vans	100.0	96.9	0.0	0.0	97.1	0.0	96.5	98.5	0.0	96.8	98.3	0.0	100.0	0.0	98.8	0.0	0.0	0.0	0.0	0.0	97.1
Heavy trucks	0	16	0	0	16	0	12	1	0	13	1	0	0	0	1	0	0	0	0	0	30
%Heavy trucks	0.0	3.1	0.0	0.0	2.9	0.0	3.5	1.5	0.0	3.2	1.7	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	2.9

PM

	S Campbell Station Rd Northbound					S Campbell Station Rd Southbound					Municipal Center Dr Eastbound					Municipal Center Dr Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 03:00 PM - 06:00 PM																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
4:45 PM	14	114	0	0	128	0	133	38	0	171	37	0	11	0	48	0	0	0	0	0	347
5:00 PM	13	141	0	0	154	0	188	17	0	205	38	0	24	0	62	0	0	0	0	0	421
5:15 PM	9	120	0	0	129	0	183	26	0	209	36	0	15	0	51	0	0	0	0	0	389
5:30 PM	8	138	0	0	146	0	161	19	0	180	28	0	9	0	37	0	0	0	0	0	363
Total Volume	44	513	0	0	557	0	665	100	0	765	139	0	59	0	198	0	0	0	0	0	1520
% App. Total	7.9	92.1	0.0	0.0	100	0.0	86.9	13.1	0.0	100	70.2	0.0	29.8	0.0	100	0.0	0.0	0.0	0.0	0	
PHF	0.904					0.915					0.798										0.903
Cars, PU, Vans	44	505	0	0	549	0	661	100	0	761	139	0	59	0	198	0	0	0	0	0	1508
% Cars, PU, Vans	100.0	98.4	0.0	0.0	98.6	0.0	99.4	100.0	0.0	99.5	100.0	0.0	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	99.2
Heavy trucks	0	8	0	0	8	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	12
%Heavy trucks	0.0	1.6	0.0	0.0	1.4	0.0	0.6	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8

2020 EXISTING TRAFFIC Biddle Farms

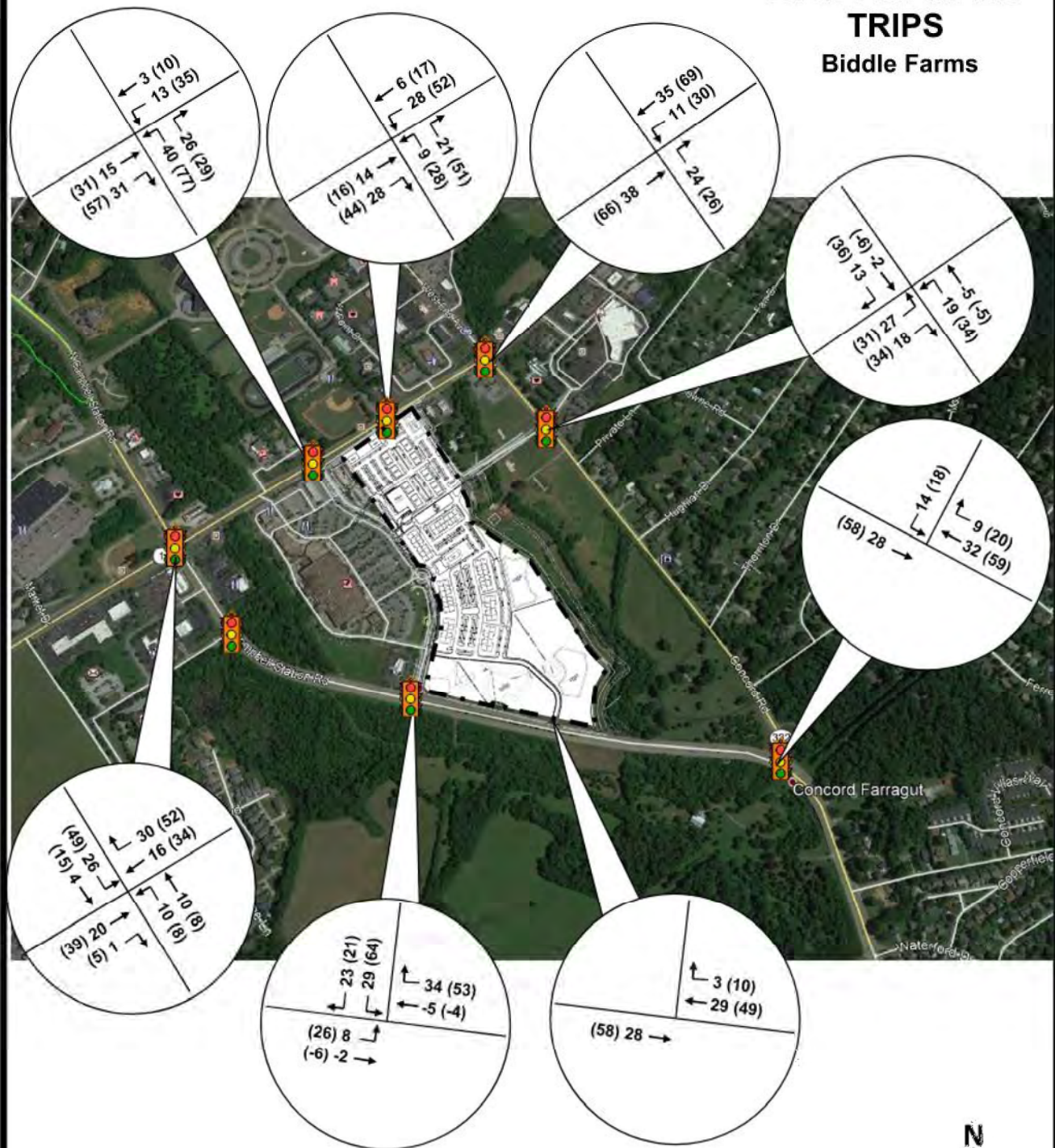


LEGEND
XXX AM PEAK
(XXX) PM PEAK



Figure 3A

TOTAL DEVELOPMENT TRIPS Biddle Farms



LEGEND
XXX AM PEAK
(XXX) PM PEAK



Figure 13A

APPENDIX B – TRIP GENERATION INFORMATION

Land Use: 210

Single-Family Detached Housing

Description

A single-family detached housing site includes any single-family detached home on an individual lot. A typical site surveyed is a suburban subdivision.

Specialized Land Use

Data have been submitted for several single-family detached housing developments with homes that are commonly referred to as patio homes. A patio home is a detached housing unit that is located on a small lot with little (or no) front or back yard. In some subdivisions, communal maintenance of outside grounds is provided for the patio homes. The three patio home sites total 299 dwelling units with overall weighted average trip generation rates of 5.35 vehicle trips per dwelling unit for weekday, 0.26 for the AM adjacent street peak hour, and 0.47 for the PM adjacent street peak hour. These patio home rates based on a small sample of sites are lower than those for single-family detached housing (Land Use 210), lower than those for single-family attached housing (Land Use 251), and higher than those for senior adult housing -- single-family (Land Use 251). Further analysis of this housing type will be conducted in a future edition of *Trip Generation Manual*.

Additional Data

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

For 30 of the study sites, data on the number of residents and number of household vehicles are available. The overall averages for the 30 sites are 3.6 residents per dwelling unit and 1.5 vehicles per dwelling unit.

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Arizona, California, Connecticut, Delaware, Illinois, Indiana, Kentucky, Maryland, Massachusetts, Minnesota, Montana, New Jersey, North Carolina, Ohio, Ontario (CAN), Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Vermont, Virginia, and West Virginia.

Source Numbers

100, 105, 114, 126, 157, 167, 177, 197, 207, 211, 217, 267, 275, 293, 300, 319, 320, 356, 357, 367, 384, 387, 407, 435, 522, 550, 552, 579, 598, 601, 603, 614, 637, 711, 716, 720, 728, 735, 868, 869, 903, 925, 936, 1005, 1007, 1008, 1010, 1033, 1066, 1077, 1078, 1079

Single-Family Detached Housing (210)

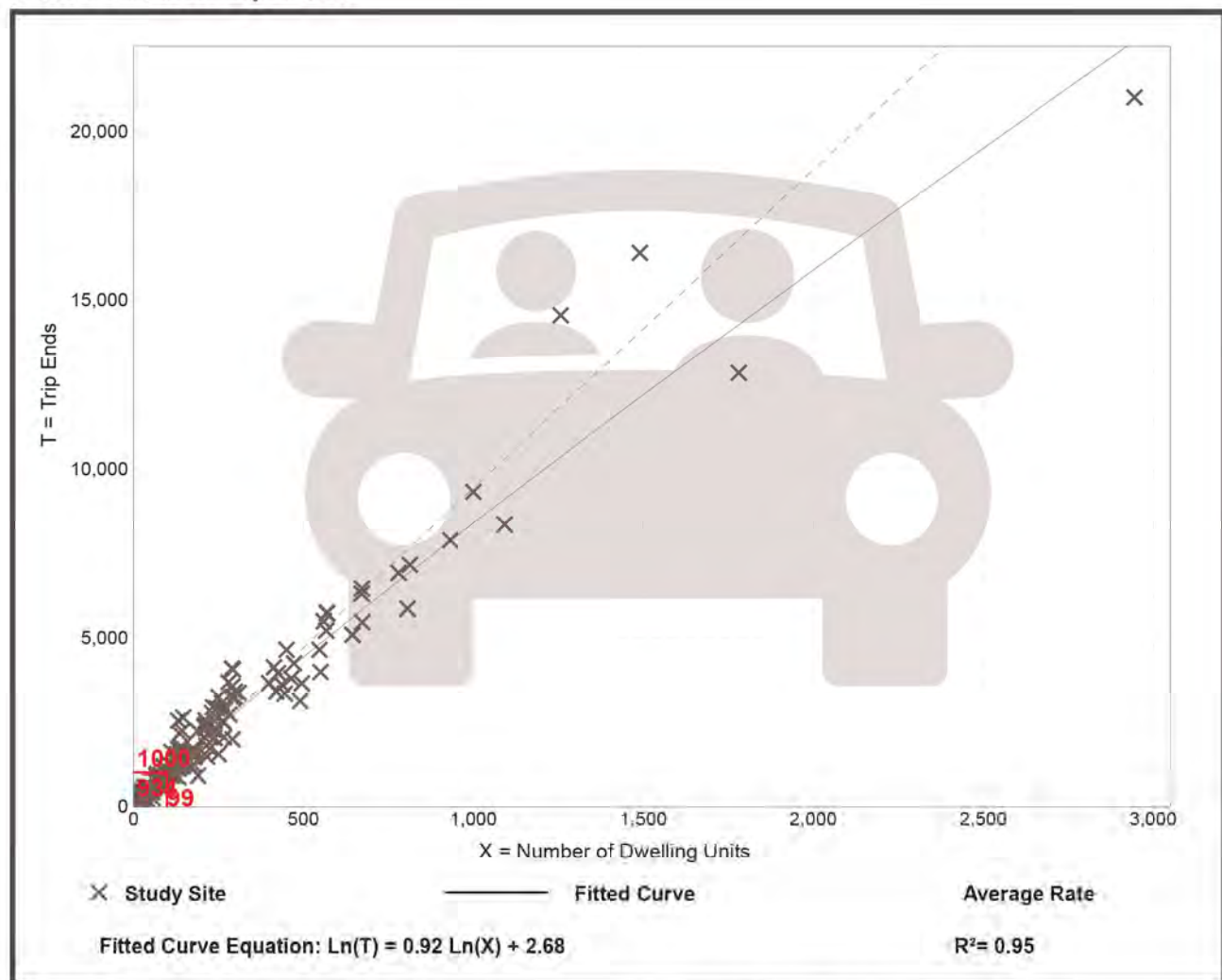
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 174
Avg. Num. of Dwelling Units: 246
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.43	4.45 - 22.61	2.13

Data Plot and Equation



Single-Family Detached Housing (210)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 192

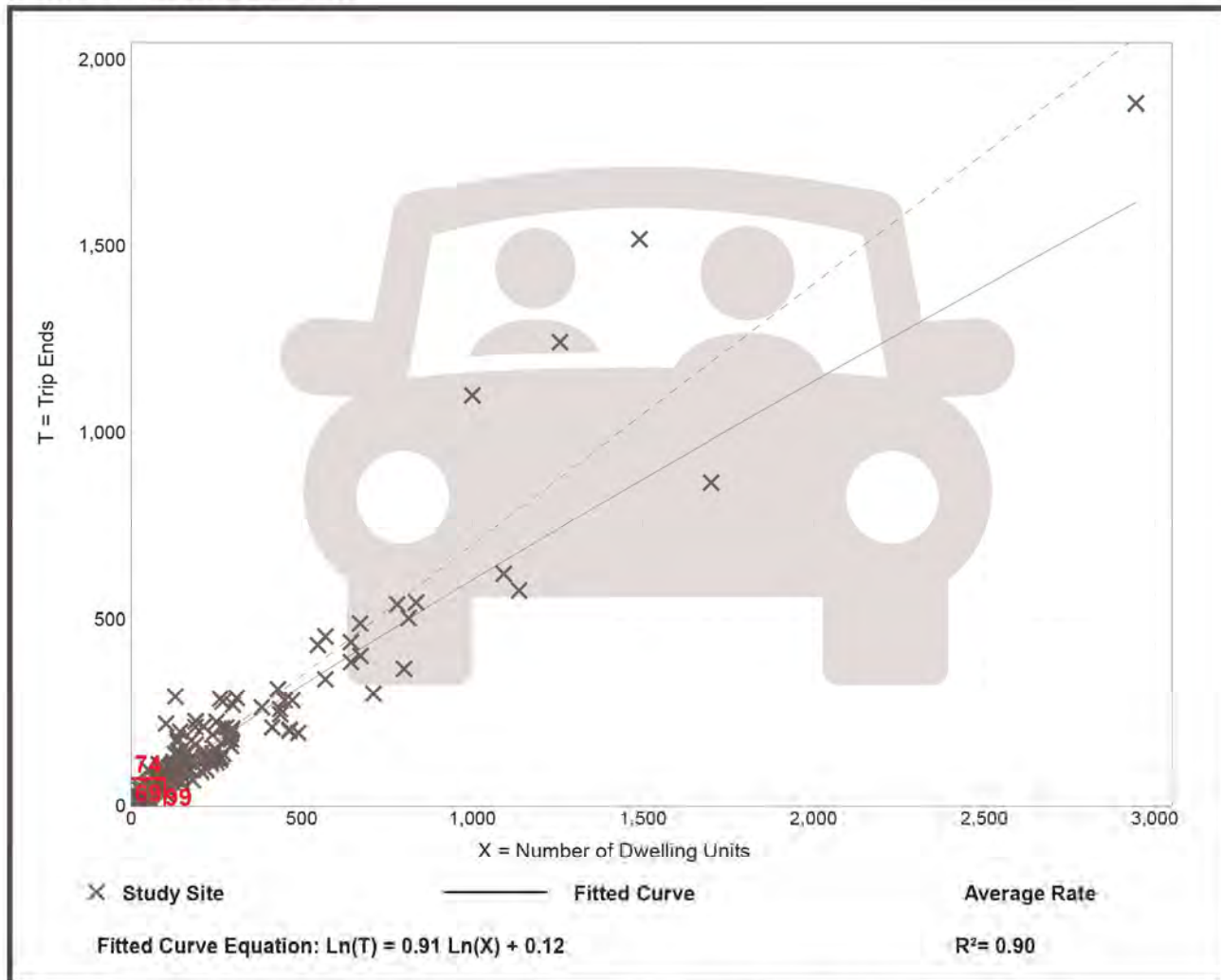
Avg. Num. of Dwelling Units: 226

Directional Distribution: 26% entering, 74% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.70	0.27 - 2.27	0.24

Data Plot and Equation



Single-Family Detached Housing (210)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 208

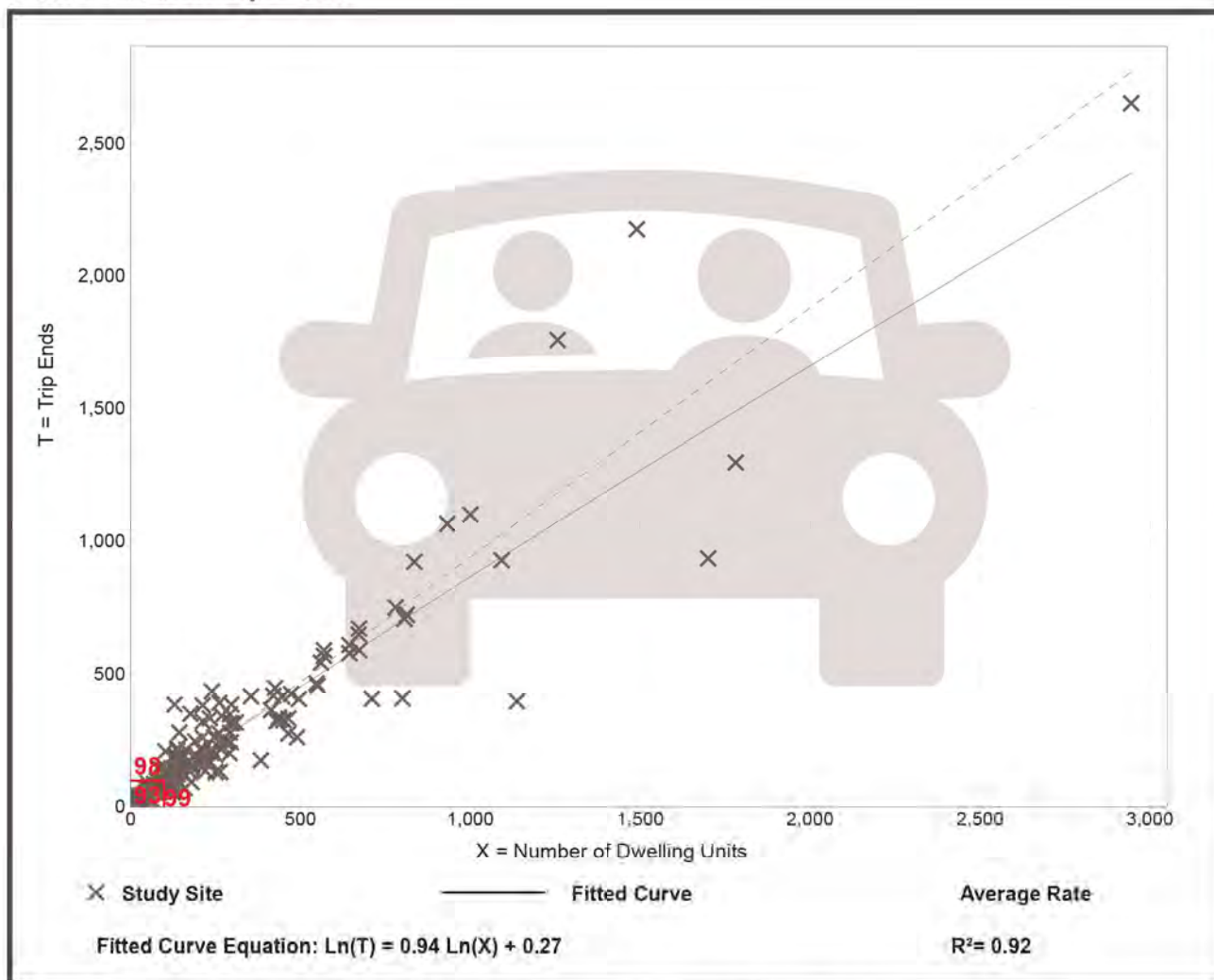
Avg. Num. of Dwelling Units: 248

Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.94	0.35 - 2.98	0.31

Data Plot and Equation



Land Use: 822

Strip Retail Plaza (<40k)

Description

A strip retail plaza is an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. Each study site in this land use has less than 40,000 square feet of gross leasable area (GLA). Because a strip retail plaza is open-air, the GLA is the same as the gross floor area of the building.

The 40,000 square feet GFA threshold between strip retail plaza and shopping plaza (Land Use 821) was selected based on an examination of the overall shopping center/plaza database. No shopping plaza with a supermarket as its anchor is smaller than 40,000 square feet GLA.

Shopping center (>150k) (Land use 820), shopping plaza (40-150k) (Land Use 821), and factory outlet center (Land Use 823) are related uses.

Additional Data

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), California, Delaware, Florida, New Jersey, Ontario (CAN), South Dakota, Vermont, Washington, and Wisconsin.

Source Numbers

304, 358, 423, 428, 437, 507, 715, 728, 936, 960, 961, 974, 1009

Strip Retail Plaza (<40k) (822)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday

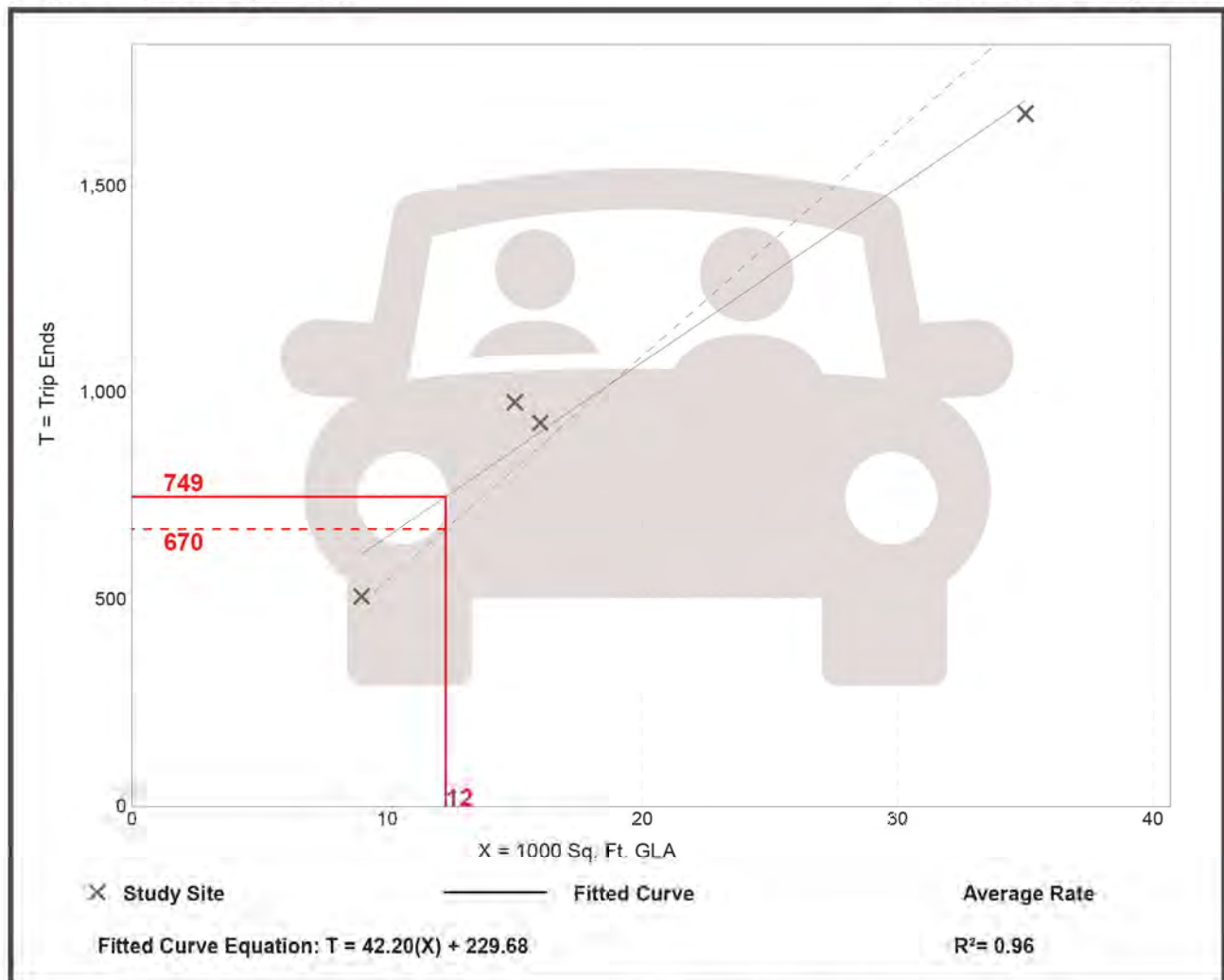
Setting/Location: General Urban/Suburban
Number of Studies: 4
Avg. 1000 Sq. Ft. GLA: 19
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
54.45	47.86 - 65.07	7.81

Data Plot and Equation

Caution – Small Sample Size



Strip Retail Plaza (<40k) (822)

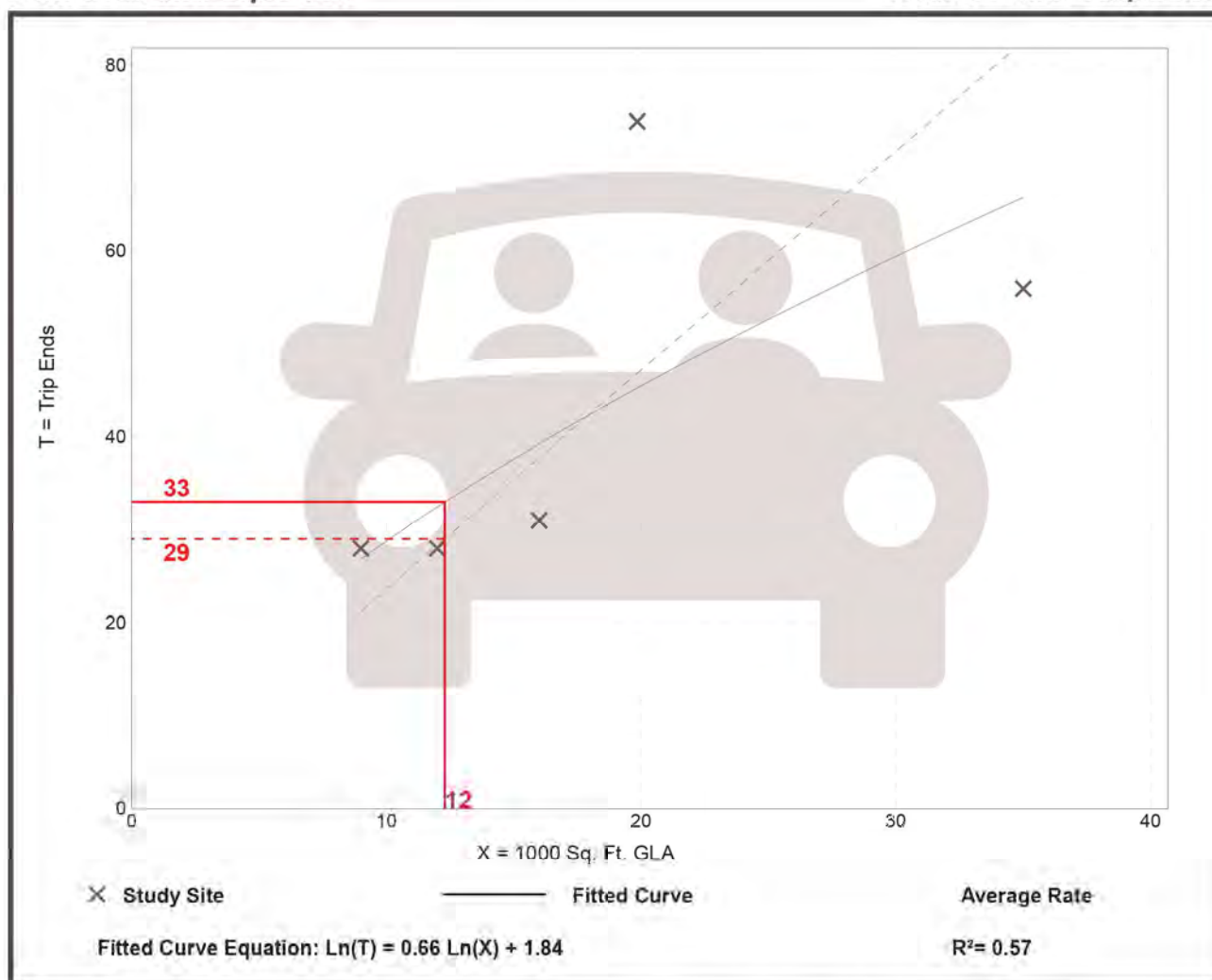
Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 7 and 9 a.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 5
 Avg. 1000 Sq. Ft. GLA: 18
 Directional Distribution: 60% entering, 40% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
2.36	1.60 - 3.73	0.94

Data Plot and Equation

Caution – Small Sample Size



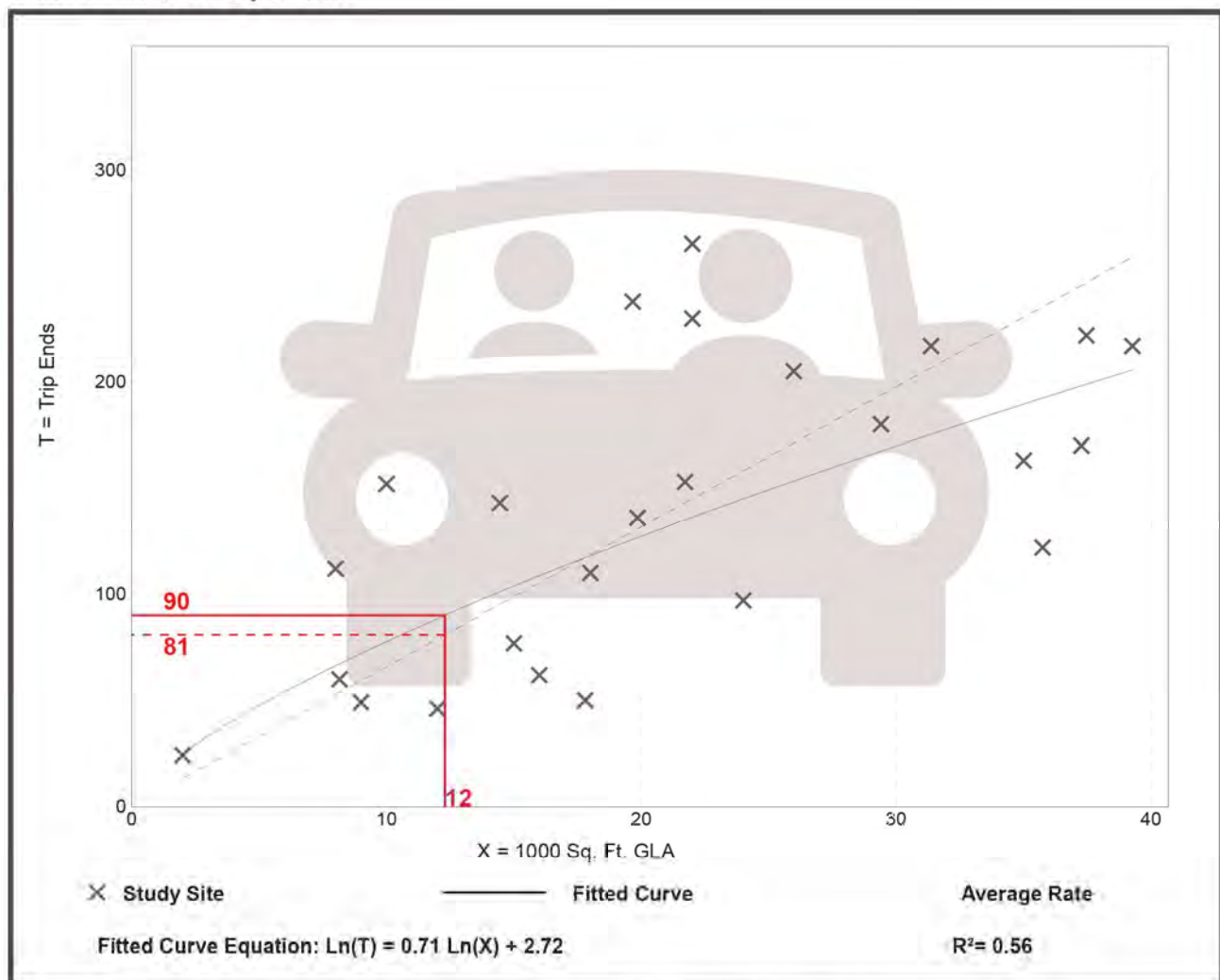
Strip Retail Plaza (<40k) (822)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 4 and 6 p.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 25
 Avg. 1000 Sq. Ft. GLA: 21
 Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
6.59	2.81 - 15.20	2.94

Data Plot and Equation



Land Use: 850 Supermarket

Description

A supermarket is a free-standing retail store that sells a complete assortment of food, beverage, food preparation materials, and household products. A supermarket may also provide additional products and services such as a bakery, dry cleaning, floral arrangements, greeting cards, a limited-service bank, and a pharmacy.

Additional Data

In prior editions of *Trip Generation Manual*, a separate land use code was assigned to a discount supermarket. With the addition of new supermarket data points, an examination of the database reveals very little difference between trip generation rates for the traditional supermarket and a reported discount supermarket. This examination looked at both the small discount supermarkets and the large discount supermarkets. As a result, all types of supermarkets are included in this land use database.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

The sites were surveyed in the 1980s, the 1990s, the 2000s, the 2010s, and the 2020s in Alberta (CAN), California, Colorado, Connecticut, District of Columbia, Florida, Georgia, Illinois, Kentucky, Maryland, Minnesota, Nevada, New Jersey, New York, Ontario (CAN), Oregon, Pennsylvania, South Dakota, Texas, Vermont, Virginia, Washington, and Wisconsin.

Source Numbers

213, 221, 236, 251, 273, 305, 359, 365, 438, 440, 442, 447, 448, 514, 520, 537, 552, 577, 610, 715, 716, 728, 738, 746, 854, 870, 882, 893, 917, 926, 935, 946, 959, 961, 966, 975, 1004, 1009, 1025, 1058, 1063, 1064

Supermarket (850)

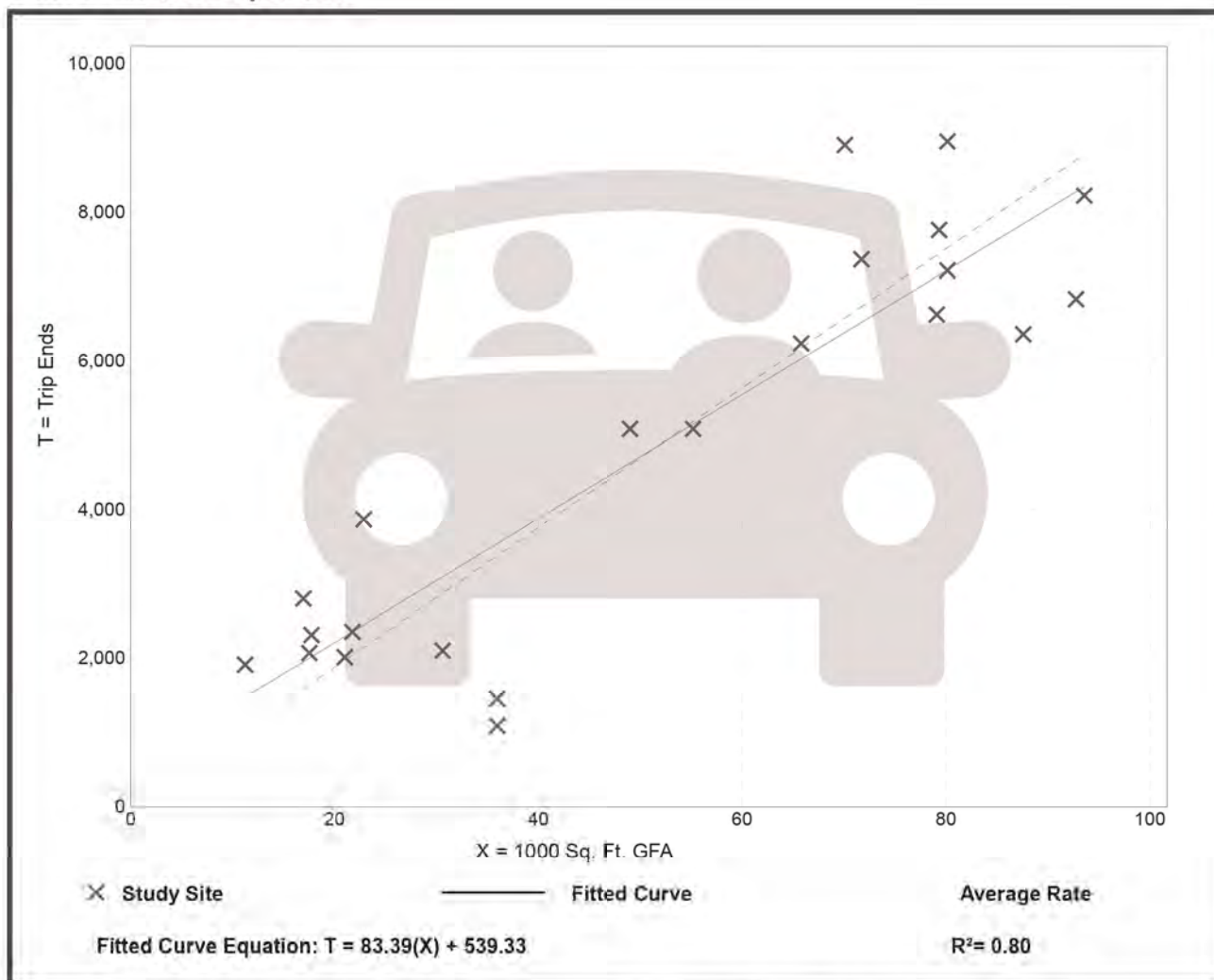
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 22
Avg. 1000 Sq. Ft. GFA: 52
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
93.84	30.09 - 170.24	27.05

Data Plot and Equation



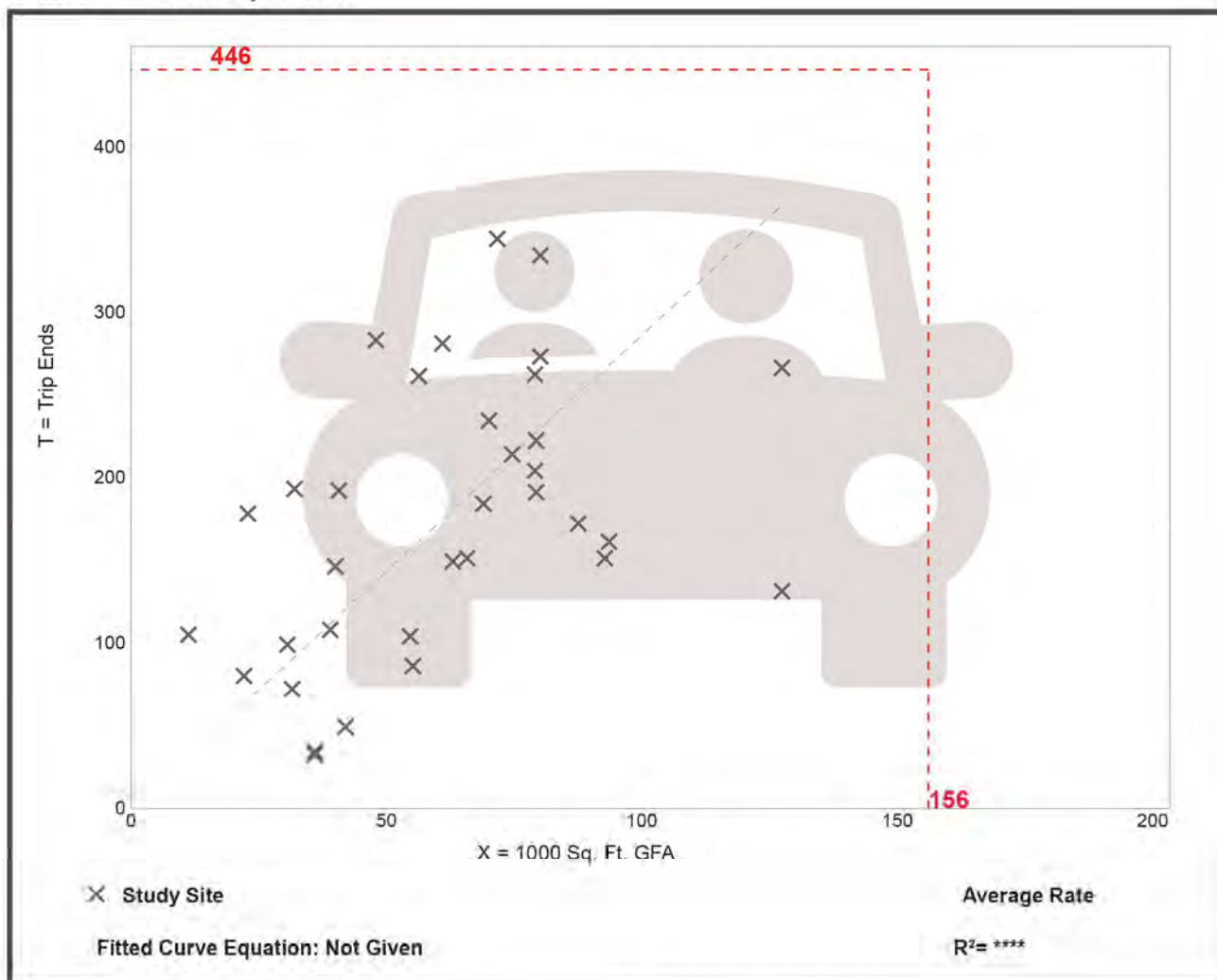
Supermarket (850)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 7 and 9 a.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 34
 Avg. 1000 Sq. Ft. GFA: 61
 Directional Distribution: 59% entering, 41% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
2.86	0.89 - 9.35	1.45

Data Plot and Equation



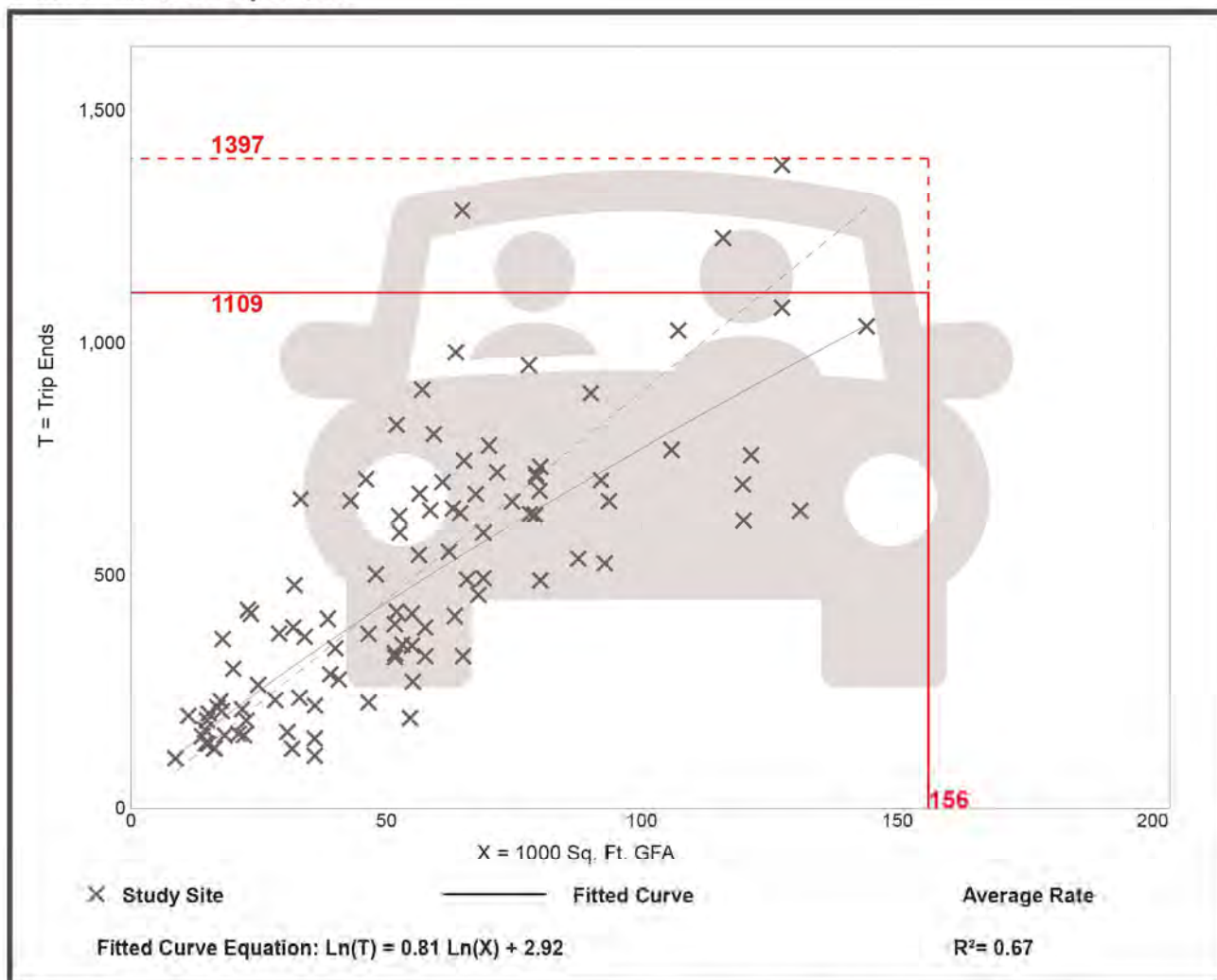
Supermarket (850)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 4 and 6 p.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 104
 Avg. 1000 Sq. Ft. GFA: 55
 Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
8.95	3.11 - 20.30	3.32

Data Plot and Equation



Land Use: 945

Convenience Store/Gas Station

Description

A convenience store/gas station is a facility with a co-located convenience store and gas station. The convenience store sells grocery and other everyday items that a person may need or want as a matter of convenience. The gas station sells automotive fuels such as gasoline and diesel.

A convenience store/gas station is typically located along a major thoroughfare to optimize motorist convenience. Extended hours of operation (with many open 24 hours, 7 days a week) are common at these facilities.

The convenience store product mix typically includes pre-packaged grocery items, beverages, dairy products, snack foods, confectionary, tobacco products, over-the-counter drugs, and toiletries. A convenience store may sell alcohol, often limited to beer and wine. Coffee and pre-made sandwiches are also commonly sold at a convenience store. Made-to-order food orders are sometimes offered. Some stores offer limited seating.

The sites in this land use include both self-pump and attendant-pumped fueling positions and both pre-pay and post-pay operations.

Convenience store (Land Use 851), gasoline/service station (Land Use 944), and truck stop (Land Use 950) are related uses.

Land Use Subcategory

Multiple subcategories were added to this land use to allow for multi-variable evaluation of sites with single-variable data plots. All study sites are assigned to one of three subcategories, based on the number of vehicle fueling positions (VFP) at the site: between 2 and 8 VFP, between 9 and 15 VFP, and between 16 and 24 VFP. For each VFP range subcategory, data plots are presented with GFA as the independent variable for all time periods and trip types for which data are available. The use of both GFA and VFP (as the independent variable and land use subcategory, respectively) provides a significant improvement in the reliability of a trip generation estimate when compared to the single-variable data plots in prior editions of *Trip Generation Manual*.

Further, the study sites were also assigned to one of three other subcategories, based on the gross floor area (GFA) of the convenience store at the site: between 2,000 and 4,000 square feet, between 4,000 and 5,500 square feet, and between 5,500 and 10,000 square feet. For each GFA subcategory range, data plots are presented with VFP as the independent variable for all time periods and trip types for which data are available. The use of both VFP and GFA (as the independent variable and land use subcategory, respectively) provides a significant improvement in the reliability of a trip generation estimate when compared to the single-variable data plots in prior editions of *Trip Generation Manual*.

When analyzing the convenience store/gas station land use with each combination of GFA and VFP values as described above, the two sets of data plots will produce two estimates of site-generated trips. Both values can be considered when determining a site trip generation estimate.

Data plots are also provided for three additional independent variables: AM peak hour traffic on adjacent street, PM peak hour traffic on adjacent street, and employees. These independent variables are intended to be analyzed as single independent variables and do not have sub-categories associated with them. Within the data plots and within the ITETripGen web app, these plots are found under the land use subcategory "none."

Additional Data

ITE recognizes there are existing convenience store/gas station sites throughout North America that are larger than the sites presented in the data plots. However, the ITE database does not include any site with more than 24 VFP or any site with gross floor area greater than 10,000 square feet. Submission of trip generation data for larger sites is encouraged.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), Arkansas, California, Connecticut, Delaware, Florida, Indiana, Iowa, Kentucky, Maryland, Massachusetts, Minnesota, Nevada, New Hampshire, New Jersey, Pennsylvania, Rhode Island, South Dakota, Texas, Utah, Vermont, Washington, and Wisconsin.

Source Numbers

221, 245, 274, 288, 300, 340, 350, 351, 352, 355, 359, 385, 440, 617, 718, 810, 813, 844, 850, 853, 864, 865, 867, 869, 882, 883, 888, 904, 926, 927, 936, 938, 954, 960, 962, 977, 1004, 1024, 1025, 1027, 1052

Convenience Store/Gas Station - GFA (4-5.5k) (945)

Vehicle Trip Ends vs: Vehicle Fueling Positions
On a: Weekday

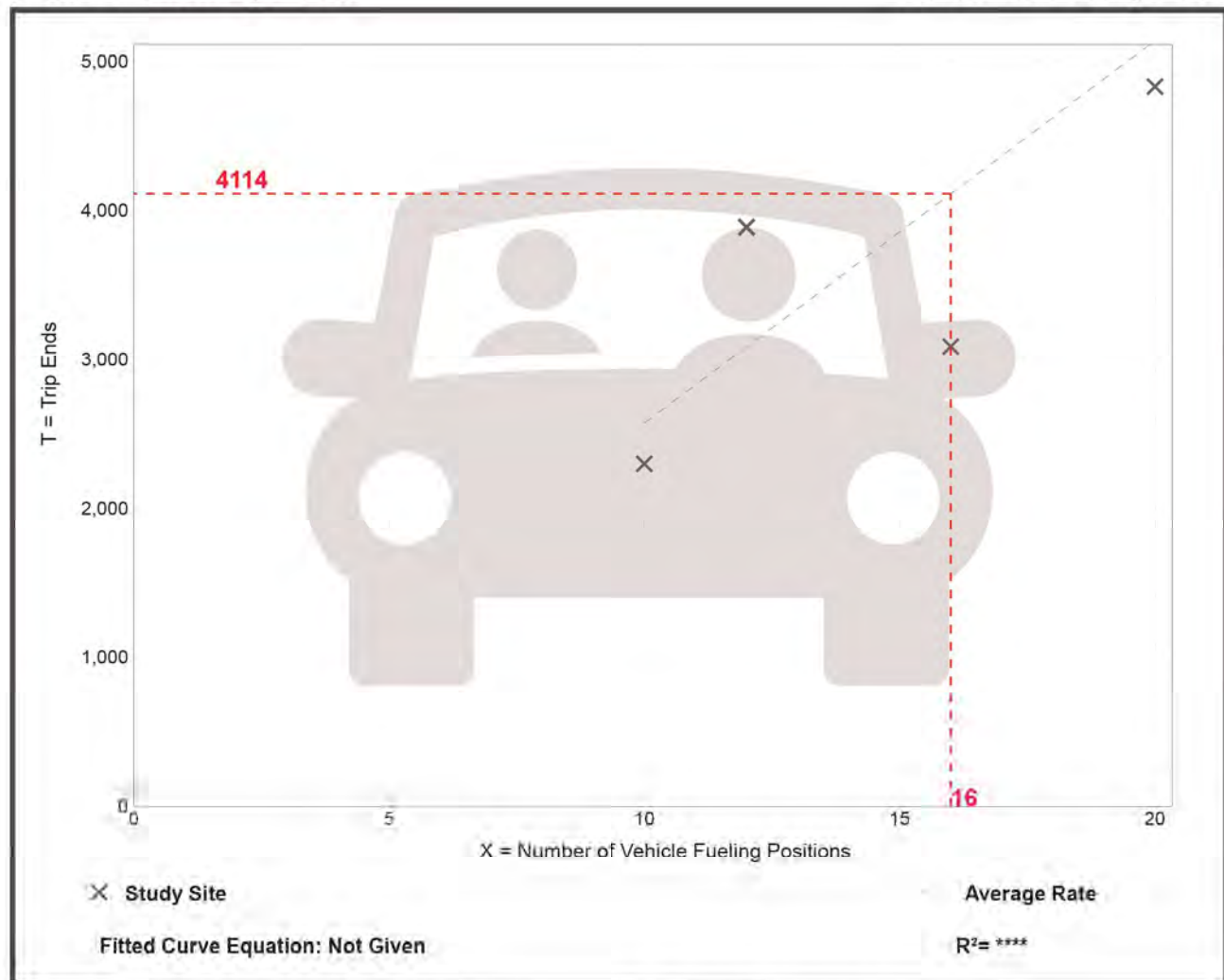
Setting/Location: General Urban/Suburban
Number of Studies: 5
Avg. Num. of Vehicle Fueling Positions: 14
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
257.13	193.00 - 324.17	57.53

Data Plot and Equation

Caution – Small Sample Size



Convenience Store/Gas Station - GFA (4-5.5k) (945)

Vehicle Trip Ends vs: Vehicle Fueling Positions

On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 18

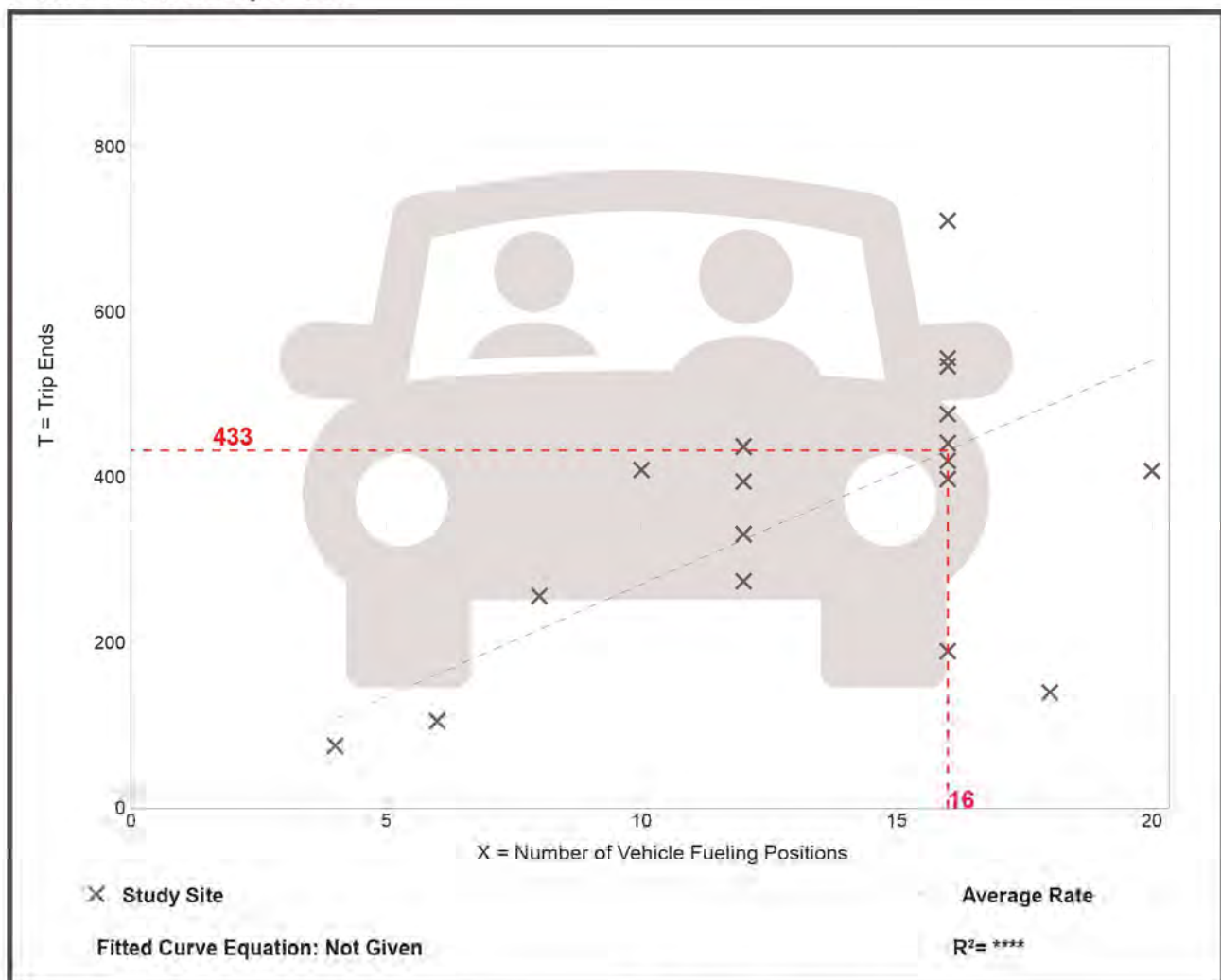
Avg. Num. of Vehicle Fueling Positions: 13

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
27.04	7.78 - 44.38	9.88

Data Plot and Equation



Convenience Store/Gas Station - GFA (4-5.5k) (945)

Vehicle Trip Ends vs: Vehicle Fueling Positions

On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 23

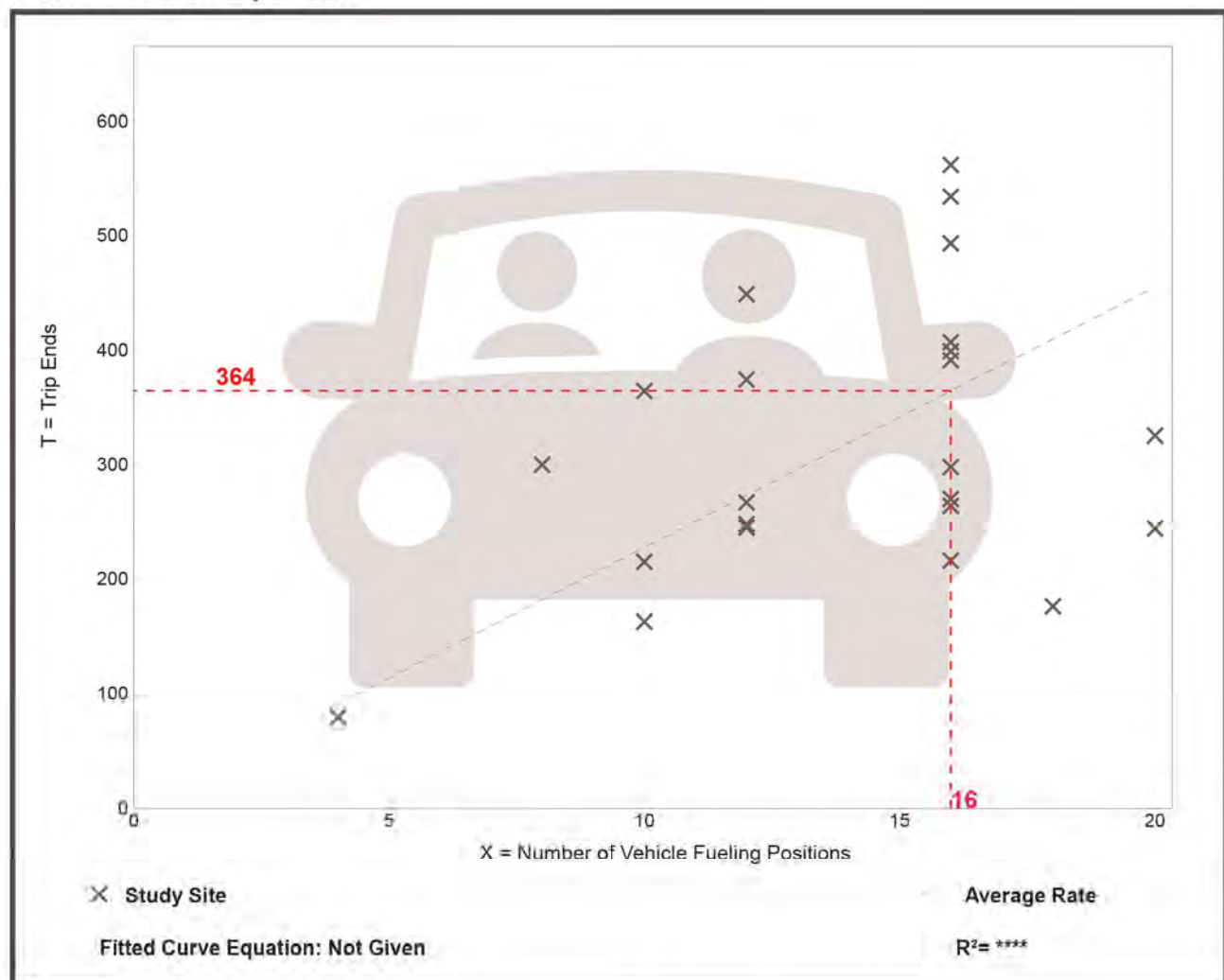
Avg. Num. of Vehicle Fueling Positions: 14

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
22.76	9.78 - 37.50	8.49

Data Plot and Equation



NCHRP 684 Internal Trip Capture Estimation Tool					
Project Name:	Marketplace Concept			Organization:	Cannon & Cannon, Inc.
Project Location:	Kingston Pike - Ford Property			Performed By:	Wesley Stokes, PE
Scenario Description:				Date:	10/10/2022
Analysis Year:	2022			Checked By:	
Analysis Period:	AM Street Peak Hour			Date:	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	822, 850, 945	156.1, 12, 16	KSF & Pumps	912	499	413
Restaurant				0		
Cinema/Entertainment				0		
Residential	210	99	Units	74	19	55
Hotel				0		
All Other Land Uses ²				0		
				986	518	468

Table 2-A: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office						
Retail	1.00	0%	0%	1.00	0%	0%
Restaurant				1.00		
Cinema/Entertainment						
Residential	1.00	0%	0%	1.00	0%	0%
Hotel						
All Other Land Uses ²						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	0	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	986	518	468
Internal Capture Percentage	0%	0%	0%
External Vehicle-Trips ⁵	984	517	467
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	0%	0%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	0%	2%
Hotel	N/A	N/A

¹Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

³Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

⁴Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

⁵Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

⁶Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

NCHRP 684 Internal Trip Capture Estimation Tool					
Project Name:	Marketplace Concept			Organization:	Cannon & Cannon, Inc.
Project Location:	Kingston Pike - Ford Property			Performed By:	Wesley Stokes, PE
Scenario Description:				Date:	10/10/2022
Analysis Year:	2022			Checked By:	
Analysis Period:	PM Street Peak Hour			Date:	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	822, 850, 945	156.1, 12, 16	KSF & Pumps	1,851	926	925
Restaurant				0		
Cinema/Entertainment				0		
Residential	210	99	units	98	62	36
Hotel				0		
All Other Land Uses ²				0		
				1,949	988	961

Table 2-P: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office						
Retail	1.00	0%	0%	1.00	0%	0%
Restaurant						
Cinema/Entertainment						
Residential	1.00	0%	0%	1.00	0%	0%
Hotel						
All Other Land Uses ²						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	29	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	15	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	1,949	988	961
Internal Capture Percentage	5%	4%	5%
External Vehicle-Trips ⁵	1,861	944	917
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	2%	3%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	47%	42%
Hotel	N/A	N/A

¹ Land Use Codes (LUCs) from <i>Trip Generation Manual</i> , published by the Institute of Transportation Engineers.
² Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.
³ Enter trips assuming no transit or non-motorized trips (as assumed in ITE <i>Trip Generation Manual</i>).
⁴ Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made.
⁵ Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.
⁶ Person-Trips
*Indicates computation that has been rounded to the nearest whole number.
Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

APPENDIX C – CAPACITY ANALYSES

CAPACITY AND LEVEL-OF-SERVICE CONCEPTS

In a general sense, a roadway is similar to a pipeline or other material carrying conduit in that it has a certain capacity for the amount of material (vehicles) that it can efficiently carry. As the number of vehicles in a given time period gradually increases, the quality of traffic flow gradually decreases. On roadway sections this results in increasing turbulence in the traffic stream, and at intersections it results in increasing stops and delay. As the volumes begin to approach the capacity of the facility, these problems rapidly magnify, with resulting serious levels of congestion, stops, delay, excess fuel consumption, pollutant emissions, etc.

The Transportation Research Board has published the Year 2010 Highway Capacity Manual (HCM2010), which establishes theoretical techniques to quantify the capacity conditions on all types of roadways, intersections, ramps, pedestrian facilities, etc. A basic concept that is applicable to most of these techniques is the idea of level of service (LOS). This concept establishes a rating system that quantifies the quality of traffic flow, as perceived by motorists and/or passengers. The general system is similar to a school grade scale, and is outlined as follows:

Level of Service (LOS)	General Quality of Traffic Flow	Description of Corresponding Conditions
A	Excellent	Roadways – Free flow, high maneuverability Intersections – Very few stops, very low delay
B	Very Good	Roadways – Free flow, slightly lower maneuverability Intersections – Minor stops, low delay
C	Good	Roadways – Stable flow, restricted maneuverability Intersections – Significant stops, significant delay
D	Fair	Roadways – Marginally stable flow, congestion seriously restricts maneuverability Intersections – High stops, long but tolerable delay
E	Poor	Roadways – Unstable flow*, lower operating speeds, congestion severely restricts maneuverability Intersections – All vehicles stop, very long queues and very long intolerable delay
F	Very Poor	Roadways – Forced flow, stoppages may be lengthy, congestion severely restricts maneuverability Intersections – All vehicles stop, extensive queues and extremely long intolerable delay

*Unstable flow is such that minor fluctuations or disruptions can result in rapid degradation to LOS F.

LOS CRITERIA: SIGNALIZED & UNSIGNALIZED INTERSECTIONS

LOS	CONTROL DELAY (S/VEH)		
	SIGNALIZED	UNSIGNALIZED	ROUNDBABOUT
A	≤10	≤10	≤10
B	>10-20	>10-15	>10-15
C	>20-35	>15-25	>15-25
D	>35-55	>25-35	>25-35
E	>55-80	>35-50	>35-50
F	>80	>50	>50

Another measure of intersection capacity that is often used in the evaluation of intersection operations is the volume to capacity (V/C) ratio. This ratio is defined as “the ratio of flow rate to capacity”, and is a good measure of how much of an intersection’s available capacity has been used up by the analysis volumes. Conversely, it also provides an indication of the reserve capacity available for future growth in traffic volumes.

The Intersection Capacity Utilization (ICU) is another measure that expresses a value similar to the V/C ratio. Specifically, the ICU method “sums the amount of the time required to serve all movements at saturation for a given cycle length and divides by that reference cycle length.” The ICU is considered a more accurate measure of volume to capacity conditions for a signalized intersection, primarily because it accounts for the effects of the signal timing on intersection capacity.

HCS7 Two-Way Stop-Control Report

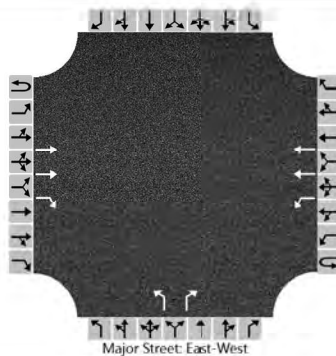
General Information

Analyst	WAS
Agency/Co.	CCI
Date Performed	6/9/2022
Analysis Year	2022
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Existing AM

Site Information

Intersection	Kingston at Glen Abbey
Jurisdiction	Town of Farragut
East/West Street	Kingston Pike
North/South Street	Glenn Abbey Blvd
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	1	0	1	2	0		1	0	1		0	0	0
Configuration			T	R		L	T			L		R				
Volume (veh/h)			1514	15	0	35	991			4		55				
Percent Heavy Vehicles (%)					3	3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No								No							
Median Type Storage					Left Only								2			

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.86		6.96				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						38				4		60				
Capacity, c (veh/h)						379				128		315				
v/c Ratio						0.10				0.03		0.19				
95% Queue Length, Q ₉₅ (veh)						0.3				0.1		0.7				
Control Delay (s/veh)						15.6				34.0		19.1				
Level of Service (LOS)						C				D		C				
Approach Delay (s/veh)					0.5				20.1							
Approach LOS									C							

HCS7 Two-Way Stop-Control Report

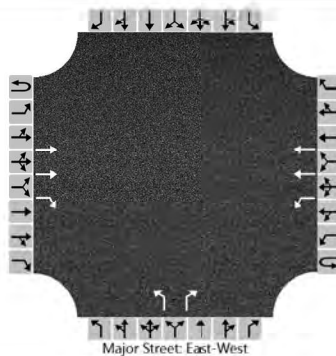
General Information

Analyst	WAS
Agency/Co.	CCI
Date Performed	6/9/2022
Analysis Year	2022
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Existing AM

Site Information

Intersection	Kingston at Kohl's
Jurisdiction	Town of Farragut
East/West Street	Kingston Pike
North/South Street	Kohl's Access
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	1	0	1	2	0		1	0	1		0	0	0
Configuration			T	R		L	T			L		R				
Volume (veh/h)			1617	1	0	5	859			0		1				
Percent Heavy Vehicles (%)					3	3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No								No							
Median Type Storage	Left Only								2							

Critical and Follow-up Headways

Base Critical Headway (sec)					4.1				7.5		6.9					
Critical Headway (sec)					4.16				6.86		6.96					
Base Follow-Up Headway (sec)					2.2				3.5		3.3					
Follow-Up Headway (sec)					2.23				3.53		3.33					

Delay, Queue Length, and Level of Service

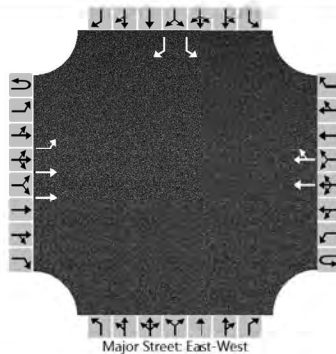
Flow Rate, v (veh/h)					5				0		1					
Capacity, c (veh/h)					347				114		289					
v/c Ratio					0.02				0.00		0.00					
95% Queue Length, Q ₉₅ (veh)					0.0				0.0		0.0					
Control Delay (s/veh)					15.5				36.5		17.5					
Level of Service (LOS)					C				E		C					
Approach Delay (s/veh)					0.1				17.5							
Approach LOS									C							

HCS7 Two-Way Stop-Control Report

General Information

Analyst	WAS	Intersection	Kingston at Jamestowne
Agency/Co.	CCI	Jurisdiction	Town of Farragut
Date Performed	6/9/2022	East/West Street	Kingston Pike
Analysis Year	2022	North/South Street	Jamestowne Boulevard
Time Analyzed	AM Peak	Peak Hour Factor	0.82
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Existing AM		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		1	0	1
Configuration		L	T				T	TR						L		R
Volume (veh/h)	0	74	1572				863	12						5		21
Percent Heavy Vehicles (%)	2	2												2		2
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized													Yes			
Median Type Storage	Left Only								2							

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.5		6.9
Critical Headway (sec)		4.14												6.84		6.94
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.22												3.52		3.32

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		90												6		26
Capacity, c (veh/h)		649												173		491
v/c Ratio		0.14												0.04		0.05
95% Queue Length, Q ₉₅ (veh)		0.5												0.1		0.2
Control Delay (s/veh)		11.4												26.6		12.7
Level of Service (LOS)		B												D		B
Approach Delay (s/veh)	0.5												15.4			
Approach LOS													C			

HCS7 Two-Way Stop-Control Report

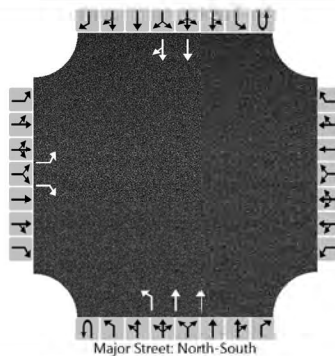
General Information

Analyst	WAS
Agency/Co.	CCI
Date Performed	6/9/2022
Analysis Year	2022
Time Analyzed	AM Peak
Intersection Orientation	North-South
Project Description	Existing AM

Site Information

Intersection	Jamestowne at Campb. Sta.
Jurisdiction	Town of Farragut
East/West Street	Jametowne Blvd
North/South Street	Campbell Station
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	2	0	0	0	2	0
Configuration		L		R						L	T				T	TR
Volume (veh/h)		68		19					0	12	901				721	33
Percent Heavy Vehicles (%)		2		3					3	3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No															
Median Type Storage	Left Only								2							

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5		6.9						4.1						
Critical Headway (sec)		6.84		6.96						4.16						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.33						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		74		21						13						
Capacity, c (veh/h)		334		588						799						
v/c Ratio		0.22		0.04						0.02						
95% Queue Length, Q ₉₅ (veh)		0.8		0.1						0.0						
Control Delay (s/veh)		18.8		11.3						9.6						
Level of Service (LOS)		C		B						A						
Approach Delay (s/veh)		17.2								0.1						
Approach LOS		C														

Lanes, Volumes, Timings
5: Campbell Station Road & Kingston Pike

Marketplace Concept - Ford Property
2022 Existing AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	361	865	166	64	483	172	215	340	50	195	235	287
Future Volume (vph)	361	865	166	64	483	172	215	340	50	195	235	287
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt			0.850			0.850		0.981				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1814	3628	1623	1734	3468	1552	1734	3403	0	1761	3522	1575
Flt Permitted	0.284			0.258			0.526			0.283		
Satd. Flow (perm)	542	3628	1623	471	3468	1552	960	3403	0	525	3522	1575
Satd. Flow (RTOR)			180			176		15				140
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.93	0.93	0.93	0.77	0.77	0.77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	392	940	180	69	519	185	231	420	0	253	305	373
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	1	6	7	5	2	3	7	4		3	8	1
Permitted Phases	6		6	2		2	4			8		8
Detector Phase	1	6	7	5	2	3	7	4		3	8	1
Switch Phase												
Minimum Initial (s)	6.0	12.0	6.0	6.0	12.0	6.0	6.0	8.0		6.0	8.0	6.0
Minimum Split (s)	13.0	19.0	13.0	13.0	19.0	13.0	13.0	15.0		13.0	15.0	13.0
Total Split (s)	25.0	39.0	18.0	13.0	27.0	19.0	18.0	19.0		19.0	20.0	25.0
Total Split (%)	27.8%	43.3%	20.0%	14.4%	30.0%	21.1%	20.0%	21.1%		21.1%	22.2%	27.8%
Maximum Green (s)	19.0	33.0	12.5	7.0	21.0	13.5	12.5	13.5		13.5	14.5	19.0
Yellow Time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	1.5	1.5	2.0	1.5	1.5	1.5	1.5		1.5	1.5	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
Total Lost Time (s)	6.0	6.0	5.5	6.0	6.0	5.5	5.5	5.5		5.5	5.5	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.5	4.0	3.0	2.5	4.0	3.0	3.0	2.5		3.0	2.5	2.5
Recall Mode	None	C-Max	None	None	C-Max	None	None	None		None	None	None
Act Effect Green (s)	46.9	36.8	54.6	31.2	24.6	43.5	25.0	13.2		27.1	14.2	36.0
Actuated g/C Ratio	0.52	0.41	0.61	0.35	0.27	0.48	0.28	0.15		0.30	0.16	0.40
v/c Ratio	0.76	0.63	0.17	0.27	0.55	0.22	0.63	0.82		0.76	0.55	0.52
Control Delay	24.3	24.9	1.9	9.9	26.6	10.8	36.1	54.7		38.2	39.0	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	24.3	24.9	1.9	9.9	26.6	10.8	36.1	54.7		38.2	39.0	14.6
LOS	C	C	A	A	C	B	D	D		D	D	B
Approach Delay		22.0			21.3			48.1			29.0	
Approach LOS		C			C			D			C	
Queue Length 50th (ft)	132	235	0	11	153	54	109	114		106	84	91
Queue Length 95th (ft)	202	306	26	18	161	77	202	#194		141	106	123
Internal Link Dist (ft)		1584			957			609			1006	
Turn Bay Length (ft)	280		295	160		320	135			320		325
Base Capacity (vph)	551	1482	1066	263	948	850	380	524		346	569	756
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.71	0.63	0.17	0.26	0.55	0.22	0.61	0.80		0.73	0.54	0.49

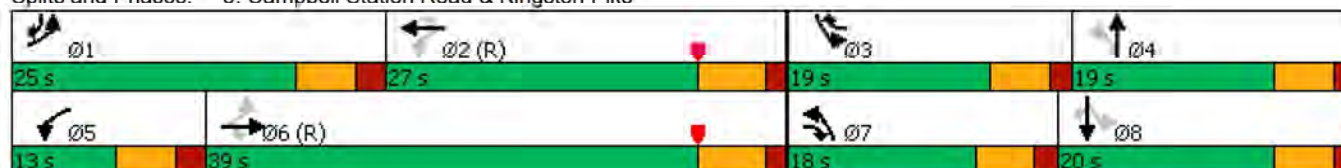
Timing Plan: AM Peak
Cannon & Cannon, Inc.

Synchro 9 Report
Page 5

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 40 (44%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 27.9
 Intersection LOS: C
 Intersection Capacity Utilization 74.3%
 ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 5: Campbell Station Road & Kingston Pike



Lanes, Volumes, Timings
6: Campbell Station Road & Municipal Center Drive

Marketplace Concept - Ford Property
2022 Existing AM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	59	23	31	518	340	65
Future Volume (vph)	59	23	31	518	340	65
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.962				0.976	
Flt Protected	0.965		0.950			
Satd. Flow (prot)	1747	0	1761	3522	3506	0
Flt Permitted	0.965		0.378			
Satd. Flow (perm)	1747	0	701	3522	3506	0
Satd. Flow (RTOR)	33				47	
Peak Hour Factor	0.70	0.70	0.89	0.89	0.84	0.84
Shared Lane Traffic (%)						
Lane Group Flow (vph)	117	0	35	582	482	0
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	8		1	6	2	
Permitted Phases			6			
Detector Phase	8		1	6	2	
Switch Phase						
Minimum Initial (s)	6.0		6.0	10.0	10.0	
Minimum Split (s)	13.0		13.0	17.0	17.0	
Total Split (s)	15.0		13.0	30.0	17.0	
Total Split (%)	33.3%		28.9%	66.7%	37.8%	
Maximum Green (s)	9.5		7.5	24.5	11.5	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.5		5.5	5.5	5.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		2.5	4.0	4.0	
Recall Mode	None		None	C-Max	C-Max	
Act Effect Green (s)	7.6		28.7	29.8	27.4	
Actuated g/C Ratio	0.17		0.64	0.66	0.61	
v/c Ratio	0.36		0.06	0.25	0.22	
Control Delay	15.6		4.8	4.9	3.5	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	15.6		4.8	4.9	3.5	
LOS	B		A	A	A	
Approach Delay	15.6			4.9	3.5	
Approach LOS	B			A	A	
Queue Length 50th (ft)	19		3	31	17	
Queue Length 95th (ft)	36		12	57	32	
Internal Link Dist (ft)	477			595	609	
Turn Bay Length (ft)			55			
Base Capacity (vph)	394		623	2330	2156	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.30		0.06	0.25	0.22	

Timing Plan: AM Peak
Cannon & Cannon, Inc.

Synchro 9 Report
Page 7

Intersection Summary

Cycle Length: 45

Actuated Cycle Length: 45

Offset: 1 (2%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow

Natural Cycle: 45

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.36

Intersection Signal Delay: 5.4

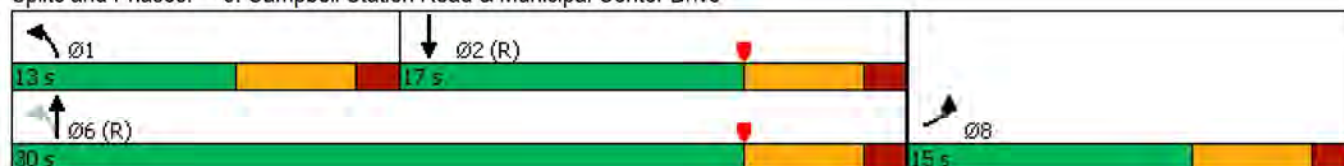
Intersection LOS: A

Intersection Capacity Utilization 35.2%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 6: Campbell Station Road & Municipal Center Drive



Lanes, Volumes, Timings
7: Brooklawn Street & Kingston Pike

Marketplace Concept - Ford Property
2022 Existing AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1458	27	110	747	4	57	0	152	0	0	0
Future Volume (vph)	0	1458	27	110	747	4	57	0	152	0	0	0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850		0.999				0.850			
Flt Protected				0.950			0.950	0.950				
Satd. Flow (prot)	1872	3557	1591	1761	3518	0	1690	1690	1591	0	1993	0
Flt Permitted				0.088			0.950	0.950				
Satd. Flow (perm)	1872	3557	1591	163	3518	0	1690	1690	1591	0	1993	0
Satd. Flow (RTOR)			182		1				182			
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.89	0.89	0.89	0.92	0.92	0.92
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	0	1585	29	118	807	0	32	32	171	0	0	0
Turn Type	Perm	NA	Perm	pm+pt	NA		Split	NA	Perm			
Protected Phases		2		1	6		4	4		3	3	
Permitted Phases	2		2	6					4			
Detector Phase	2	2	2	1	6		4	4	4	3	3	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	8.0	15.0		8.0	8.0	8.0	6.0	6.0	
Minimum Split (s)	22.0	22.0	22.0	15.0	22.0		15.0	15.0	15.0	14.0	14.0	
Total Split (s)	46.0	46.0	46.0	15.0	61.0		15.0	15.0	15.0	14.0	14.0	
Total Split (%)	51.1%	51.1%	51.1%	16.7%	67.8%		16.7%	16.7%	16.7%	15.6%	15.6%	
Maximum Green (s)	40.0	40.0	40.0	9.5	55.0		9.0	9.0	9.0	7.5	7.5	
Yellow Time (s)	4.5	4.5	4.5	4.0	4.5		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		2.0	2.0	2.0	2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	6.0	5.5	6.0		6.0	6.0	6.0		6.5	
Lead/Lag	Lag	Lag	Lag	Lead			Lag	Lag	Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	5.0	5.0	5.0	2.5	5.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Act Effect Green (s)		58.1	58.1	69.8	69.3		8.7	8.7	8.7			
Actuated g/C Ratio		0.65	0.65	0.78	0.77		0.10	0.10	0.10			
v/c Ratio		0.69	0.03	0.43	0.30		0.20	0.20	0.54			
Control Delay		11.9	0.0	20.5	3.3		39.9	39.9	11.9			
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0	0.0			
Total Delay		11.9	0.0	20.5	3.3		39.9	39.9	11.9			
LOS		B	A	C	A		D	D	B			
Approach Delay		11.6			5.5			19.6				
Approach LOS		B			A			B				
Queue Length 50th (ft)		384	0	37	22		17	17	0			
Queue Length 95th (ft)		497	m0	m74	101		45	45	49			
Internal Link Dist (ft)		957			436			791			99	
Turn Bay Length (ft)			105	110			190		190			
Base Capacity (vph)		2297	1091	297	2709		178	178	329			
Starvation Cap Reductn		0	0	0	0		0	0	0			
Spillback Cap Reductn		0	0	0	0		0	0	0			
Storage Cap Reductn		0	0	0	0		0	0	0			
Reduced v/c Ratio		0.69	0.03	0.40	0.30		0.18	0.18	0.52			

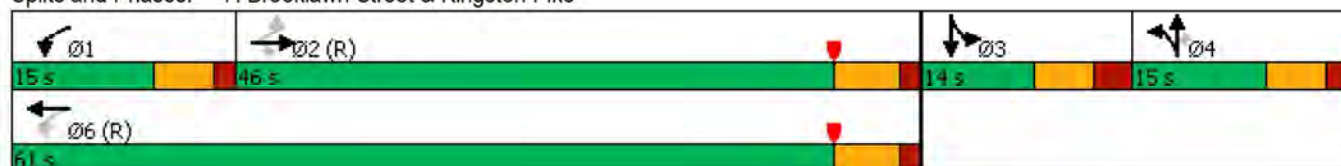
Timing Plan: AM Peak
Cannon & Cannon, Inc.

Synchro 9 Report
Page 9

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 83 (92%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 10.3
 Intersection Capacity Utilization 68.2%
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Brooklawn Street & Kingston Pike



Lanes, Volumes, Timings
8: Kingston Pike & Lendon Welch Way

Marketplace Concept - Ford Property
2022 Existing AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	305	1303	4	15	757	223	0	91	6	119	10	112
Future Volume (vph)	305	1303	4	15	757	223	0	91	6	119	10	112
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.966				0.850			0.850
Flt Protected	0.950			0.950							0.956	
Satd. Flow (prot)	1787	3575	0	1778	3436	0	0	1863	1583	0	1807	1607
Flt Permitted	0.133			0.161							0.583	
Satd. Flow (perm)	250	3575	0	301	3436	0	0	1863	1583	0	1102	1607
Satd. Flow (RTOR)					52				170			170
Peak Hour Factor	0.93	0.93	0.93	0.88	0.88	0.88	0.59	0.59	0.59	0.80	0.80	0.80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	328	1405	0	17	1113	0	0	154	10	0	162	140
Turn Type	pm+pt	NA		pm+pt	NA			NA	Perm	Perm	NA	Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4		4	8		8
Detector Phase	1	6		5	2		4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	6.0	15.0		6.0	15.0		8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	13.0	22.0		13.0	22.0		15.0	15.0	15.0	15.0	15.0	15.0
Total Split (s)	23.0	53.0		13.0	43.0		24.0	24.0	24.0	24.0	24.0	24.0
Total Split (%)	25.6%	58.9%		14.4%	47.8%		26.7%	26.7%	26.7%	26.7%	26.7%	26.7%
Maximum Green (s)	17.5	47.0		7.5	37.0		18.5	18.5	18.5	18.5	18.5	18.5
Yellow Time (s)	4.0	4.5		4.0	4.5		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	5.5	6.0		5.5	6.0			5.5	5.5		5.5	5.5
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.5	4.0		2.5	4.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	None
Act Effect Green (s)	62.7	57.6		48.4	41.9			16.3	16.3		16.3	16.3
Actuated g/C Ratio	0.70	0.64		0.54	0.47			0.18	0.18		0.18	0.18
v/c Ratio	0.77	0.61		0.07	0.68			0.46	0.02		0.81	0.33
Control Delay	35.7	3.4		6.5	20.4			36.8	0.2		65.2	5.2
Queue Delay	0.0	0.1		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	35.7	3.5		6.5	20.4			36.8	0.2		65.2	5.2
LOS	D	A		A	C			D	A		E	A
Approach Delay		9.6			20.2			34.6			37.4	
Approach LOS		A			C			C			D	
Queue Length 50th (ft)	83	24		4	287			76	0		86	0
Queue Length 95th (ft)	187	43		m6	m313			83	0		#146	19
Internal Link Dist (ft)		436			748			304			663	
Turn Bay Length (ft)	140			100								90
Base Capacity (vph)	472	2287		289	1628			382	460		226	465
Starvation Cap Reductn	0	143		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.69	0.66		0.06	0.68			0.40	0.02		0.72	0.30

Timing Plan: AM Peak
Cannon & Cannon, Inc.

Synchro 9 Report
Page 11

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 87 (97%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 16.9

Intersection LOS: B

Intersection Capacity Utilization 72.9%

ICU Level of Service C

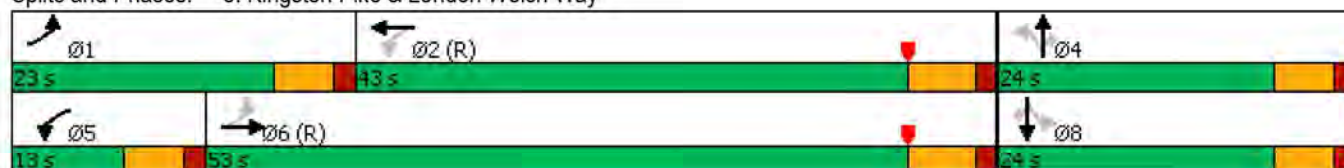
Analysis Period (min) 15

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: 8: Kingston Pike & Lendon Welch Way



Lanes, Volumes, Timings
9: Concord Road/West End Avenue & Kingston Pike

Marketplace Concept - Ford Property

2022 Existing AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	211	1037	63	136	548	225	199	306	528	379	112	187
Future Volume (vph)	211	1037	63	136	548	225	199	306	528	379	112	187
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.97	1.00	1.00	0.97	1.00	1.00
Frt		0.991			0.956				0.850		0.906	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1778	3525	0	1787	3417	0	3450	1872	1591	3450	1696	0
Flt Permitted	0.206			0.130			0.950			0.950		
Satd. Flow (perm)	386	3525	0	245	3417	0	3450	1872	1591	3450	1696	0
Satd. Flow (RTOR)		7			74				109		77	
Peak Hour Factor	0.95	0.95	0.95	0.94	0.94	0.94	0.98	0.98	0.98	0.91	0.91	0.91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	222	1158	0	145	822	0	203	312	539	416	328	0
Turn Type	pm+pt	NA		pm+pt	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	1	6		5	2		4	4	5	3	3	
Permitted Phases	6			2					4			
Detector Phase	1	6		5	2		4	4	5	3	3	
Switch Phase												
Minimum Initial (s)	6.0	12.0		6.0	12.0		8.0	8.0	6.0	8.0	8.0	
Minimum Split (s)	13.0	19.0		13.0	19.0		15.0	15.0	13.0	15.0	15.0	
Total Split (s)	16.0	35.0		17.0	36.0		20.0	20.0	17.0	18.0	18.0	
Total Split (%)	17.8%	38.9%		18.9%	40.0%		22.2%	22.2%	18.9%	20.0%	20.0%	
Maximum Green (s)	10.5	29.0		11.5	30.0		14.5	14.5	11.5	12.0	12.0	
Yellow Time (s)	4.0	4.5		4.0	4.5		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	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	
Total Lost Time (s)	5.5	6.0		5.5	6.0		5.5	5.5	5.5	6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	2.5	4.0		2.5	4.0		2.5	2.5	2.5	2.5	2.5	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effect Green (s)	40.0	29.7		42.0	30.7		14.5	14.5	30.8	12.0	12.0	
Actuated g/C Ratio	0.44	0.33		0.47	0.34		0.16	0.16	0.34	0.13	0.13	
v/c Ratio	0.69	0.99		0.48	0.68		0.37	1.04	0.88	0.90	1.12	
Control Delay	30.4	51.0		18.7	26.5		35.8	100.8	39.0	63.6	120.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	30.4	51.0		18.7	26.5		35.8	100.8	39.0	63.6	120.0	
LOS	C	D		B	C		D	F	D	E	F	
Approach Delay		47.7			25.3			56.7			88.5	
Approach LOS		D			C			E			F	
Queue Length 50th (ft)	63	~275		41	192		53	~193	231	122	~176	
Queue Length 95th (ft)	m#156	#484		81	258		86	#353	#423	#206	#343	
Internal Link Dist (ft)		748			1140			744			778	
Turn Bay Length (ft)	125			130			175			125		
Base Capacity (vph)	336	1166		313	1214		555	301	627	460	292	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.66	0.99		0.46	0.68		0.37	1.04	0.86	0.90	1.12	

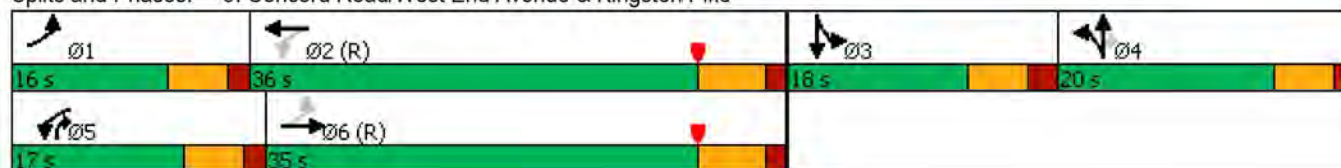
Timing Plan: AM Peak
Cannon & Cannon, Inc.

Synchro 9 Report
Page 13

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 69 (77%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.12
 Intersection Signal Delay: 52.1
 Intersection LOS: D
 Intersection Capacity Utilization 88.8%
 ICU Level of Service E
 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: 9: Concord Road/West End Avenue & Kingston Pike



HCS7 Two-Way Stop-Control Report

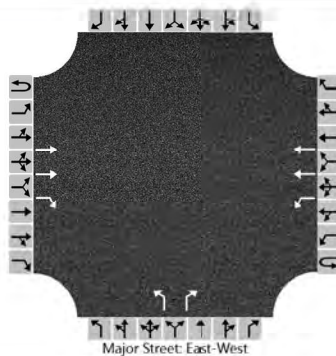
General Information

Analyst	WAS
Agency/Co.	CCI
Date Performed	6/9/2022
Analysis Year	2022
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Existing PM

Site Information

Intersection	Kingston at Glen Abbey
Jurisdiction	Town of Farragut
East/West Street	Kingston Pike
North/South Street	Glenn Abbey Blvd
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	1	0	1	2	0		1	0	1		0	0	0
Configuration			T	R		L	T			L		R				
Volume (veh/h)			1280	22	0	52	1512			26		43				
Percent Heavy Vehicles (%)					3	3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No								No							
Median Type Storage					Left Only								2			

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.86		6.96				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						57				28		47				
Capacity, c (veh/h)						472				154		382				
v/c Ratio						0.12				0.18		0.12				
95% Queue Length, Q ₉₅ (veh)						0.4				0.6		0.4				
Control Delay (s/veh)						13.7				33.5		15.7				
Level of Service (LOS)						B				D		C				
Approach Delay (s/veh)					0.5				22.4							
Approach LOS									C							

HCS7 Two-Way Stop-Control Report

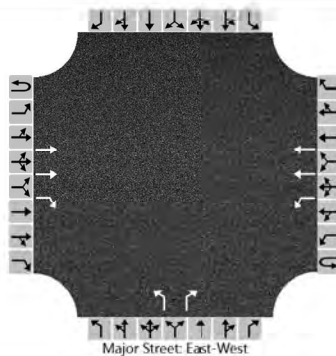
General Information

Analyst	WAS
Agency/Co.	CCI
Date Performed	6/9/2022
Analysis Year	2022
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Existing PM

Site Information

Intersection	Kingston at Kohl's
Jurisdiction	Town of Farragut
East/West Street	Kingston Pike
North/South Street	Kohl's Access
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	1	0	1	2	0		1	0	1		0	0	0
Configuration			T	R		L	T			L		R				
Volume (veh/h)			1143	10	0	33	1560			8		34				
Percent Heavy Vehicles (%)					3	3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No								No							
Median Type Storage	Left Only								2							

Critical and Follow-up Headways

Base Critical Headway (sec)					4.1				7.5		6.9					
Critical Headway (sec)					4.16				6.86		6.96					
Base Follow-Up Headway (sec)					2.2				3.5		3.3					
Follow-Up Headway (sec)					2.23				3.53		3.33					

Delay, Queue Length, and Level of Service

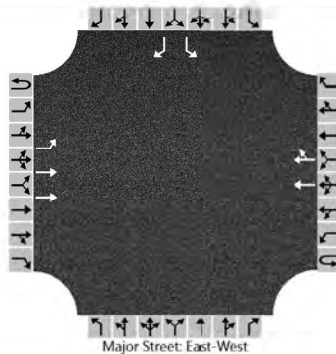
Flow Rate, v (veh/h)					36				9		37					
Capacity, c (veh/h)					545				181		428					
v/c Ratio					0.07				0.05		0.09					
95% Queue Length, Q ₉₅ (veh)					0.2				0.2		0.3					
Control Delay (s/veh)					12.1				25.9		14.2					
Level of Service (LOS)					B				D		B					
Approach Delay (s/veh)					0.2				16.4							
Approach LOS									C							

HCS7 Two-Way Stop-Control Report

General Information

Analyst	WAS	Intersection	Kingston at Jamestowne
Agency/Co.	CCI	Jurisdiction	Town of Farragut
Date Performed	6/9/2022	East/West Street	Kingston Pike
Analysis Year	2022	North/South Street	Jamestowne Boulevard
Time Analyzed	PM Peak	Peak Hour Factor	0.96
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Existing PM		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		1	0	1
Configuration		L	T				T	TR						L		R
Volume (veh/h)	0	43	1410				1656	15						5		41
Percent Heavy Vehicles (%)	2	2												2		2
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized														Yes		
Median Type Storage							Left Only					2				

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.5		6.9
Critical Headway (sec)		4.14												6.84		6.94
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.22												3.52		3.32

Delay, Queue Length, and Level of Service

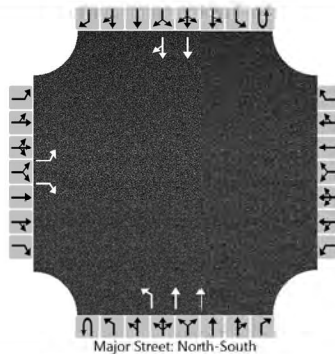
Flow Rate, v (veh/h)		45												5		43
Capacity, c (veh/h)		357												113		295
v/c Ratio		0.13												0.05		0.14
95% Queue Length, Q ₉₅ (veh)		0.4												0.1		0.5
Control Delay (s/veh)		16.5												38.4		19.3
Level of Service (LOS)		C												E		C
Approach Delay (s/veh)			0.5												21.4	
Approach LOS															C	

HCS7 Two-Way Stop-Control Report

General Information

Analyst	WAS	Intersection	Jamestowne at Campb. Sta.
Agency/Co.	CCI	Jurisdiction	Town of Farragut
Date Performed	6/9/2022	East/West Street	Jametowne Blvd
Analysis Year	2022	North/South Street	Campbell Station
Time Analyzed	AM Peak	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Existing AM		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	2	0	0	0	2	0
Configuration		L		R						L	T				T	TR
Volume (veh/h)		29		30					0	19	986				996	25
Percent Heavy Vehicles (%)		2		3					3	3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No															
Median Type Storage	Left Only								2							

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5		6.9						4.1						
Critical Headway (sec)		6.84		6.96						4.16						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.33						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		32		33						21						
Capacity, c (veh/h)		243		473						619						
v/c Ratio		0.13		0.07						0.03						
95% Queue Length, Q ₉₅ (veh)		0.4		0.2						0.1						
Control Delay (s/veh)		22.0		13.2						11.0						
Level of Service (LOS)		C		B						B						
Approach Delay (s/veh)		17.5								0.2						
Approach LOS		C														

Lanes, Volumes, Timings
5: Campbell Station Road & Kingston Pike

Marketplace Concept - Ford Property

2022 Existing PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	284	783	306	66	983	340	294	321	67	274	422	351
Future Volume (vph)	284	783	306	66	983	340	294	321	67	274	422	351
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt			0.850			0.850		0.974				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1814	3628	1623	1734	3468	1552	1734	3378	0	1761	3522	1575
Flt Permitted	0.084			0.300			0.242			0.205		
Satd. Flow (perm)	160	3628	1623	548	3468	1552	442	3378	0	380	3522	1575
Satd. Flow (RTOR)			196			132		17				77
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.93	0.93	0.93	0.77	0.77	0.77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	309	851	333	71	1057	366	316	417	0	356	548	456
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	1	6	7	5	2	3	7	4		3	8	1
Permitted Phases	6		6	2		2	4			8		8
Detector Phase	1	6	7	5	2	3	7	4		3	8	1
Switch Phase												
Minimum Initial (s)	6.0	12.0	6.0	6.0	12.0	6.0	6.0	8.0		6.0	8.0	6.0
Minimum Split (s)	13.0	19.0	13.0	13.0	19.0	13.0	13.0	15.0		13.0	15.0	13.0
Total Split (s)	24.0	58.0	24.0	13.0	47.0	27.0	24.0	22.0		27.0	25.0	24.0
Total Split (%)	20.0%	48.3%	20.0%	10.8%	39.2%	22.5%	20.0%	18.3%		22.5%	20.8%	20.0%
Maximum Green (s)	18.0	52.0	18.5	7.0	41.0	21.5	18.5	16.5		21.5	19.5	18.0
Yellow Time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	1.5	1.5	2.0	1.5	1.5	1.5	1.5		1.5	1.5	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
Total Lost Time (s)	6.0	6.0	5.5	6.0	6.0	5.5	5.5	5.5		5.5	5.5	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.5	4.0	3.0	2.5	4.0	3.0	3.0	2.5		3.0	2.5	2.5
Recall Mode	None	C-Max	None	None	C-Max	None	None	None		None	None	None
Act Effect Green (s)	65.0	54.7	79.2	48.2	41.5	69.0	35.0	16.5		41.0	19.5	42.5
Actuated g/C Ratio	0.54	0.46	0.66	0.40	0.35	0.58	0.29	0.14		0.34	0.16	0.35
v/c Ratio	0.94	0.51	0.29	0.25	0.88	0.39	0.96	0.87		0.94	0.96	0.75
Control Delay	70.7	25.3	4.4	15.2	39.5	6.8	75.6	67.9		68.3	78.7	36.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	70.7	25.3	4.4	15.2	39.5	6.8	75.6	67.9		68.3	78.7	36.9
LOS	E	C	A	B	D	A	E	E		E	E	D
Approach Delay		30.0			30.3			71.2			62.0	
Approach LOS		C			C			E			E	
Queue Length 50th (ft)	185	252	39	23	334	27	194	162		222	224	259
Queue Length 95th (ft)	#357	314	79	m36	#523	125	#373	#250		#298	#252	300
Internal Link Dist (ft)		1584			957			609			1006	
Turn Bay Length (ft)	280		295	160		320	135			320		325
Base Capacity (vph)	334	1654	1137	290	1199	948	328	479		377	572	613
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.93	0.51	0.29	0.24	0.88	0.39	0.96	0.87		0.94	0.96	0.74

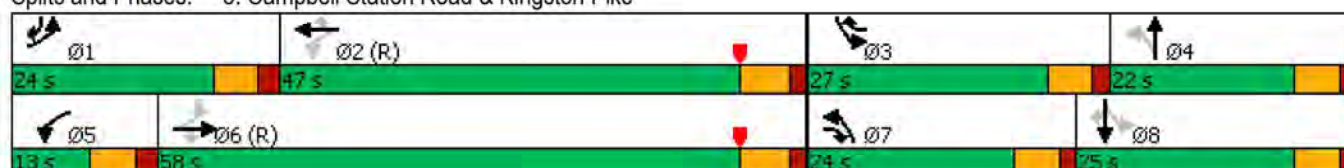
Timing Plan: AM Peak
Cannon & Cannon, Inc.

Synchro 9 Report
Page 5

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 1 (1%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.96
 Intersection Signal Delay: 44.6
 Intersection LOS: D
 Intersection Capacity Utilization 90.0%
 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Campbell Station Road & Kingston Pike



Lanes, Volumes, Timings
6: Campbell Station Road & Municipal Center Drive

Marketplace Concept - Ford Property
2022 Existing PM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		W	↑↑	↑↑	
Traffic Volume (vph)	139	59	44	513	665	100
Future Volume (vph)	139	59	44	513	665	100
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.960				0.980	
Flt Protected	0.966		0.950			
Satd. Flow (prot)	1745	0	1761	3522	3520	0
Flt Permitted	0.966		0.179			
Satd. Flow (perm)	1745	0	332	3522	3520	0
Satd. Flow (RTOR)	42				37	
Peak Hour Factor	0.70	0.70	0.89	0.89	0.84	0.84
Shared Lane Traffic (%)						
Lane Group Flow (vph)	283	0	49	576	911	0
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	8		1	6	2	
Permitted Phases			6			
Detector Phase	8		1	6	2	
Switch Phase						
Minimum Initial (s)	6.0		6.0	10.0	10.0	
Minimum Split (s)	13.0		13.0	17.0	17.0	
Total Split (s)	14.0		13.0	31.0	18.0	
Total Split (%)	31.1%		28.9%	68.9%	40.0%	
Maximum Green (s)	8.5		7.5	25.5	12.5	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.5		5.5	5.5	5.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		2.5	4.0	4.0	
Recall Mode	None		None	C-Max	C-Max	
Act Effect Green (s)	8.3		25.7	25.7	21.0	
Actuated g/C Ratio	0.18		0.57	0.57	0.47	
v/c Ratio	0.79		0.13	0.29	0.55	
Control Delay	35.0		5.1	5.5	13.0	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	35.0		5.1	5.5	13.0	
LOS	C		A	A	B	
Approach Delay	35.0			5.5	13.0	
Approach LOS	C			A	B	
Queue Length 50th (ft)	59		5	34	57	
Queue Length 95th (ft)	#90		14	53	#175	
Internal Link Dist (ft)	477			595	609	
Turn Bay Length (ft)			55			
Base Capacity (vph)	363		427	2009	1660	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.78		0.11	0.29	0.55	

Timing Plan: AM Peak
Cannon & Cannon, Inc.

Synchro 9 Report
Page 7

Intersection Summary

Cycle Length: 45

Actuated Cycle Length: 45

Offset: 1 (2%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 13.8

Intersection LOS: B

Intersection Capacity Utilization 51.6%

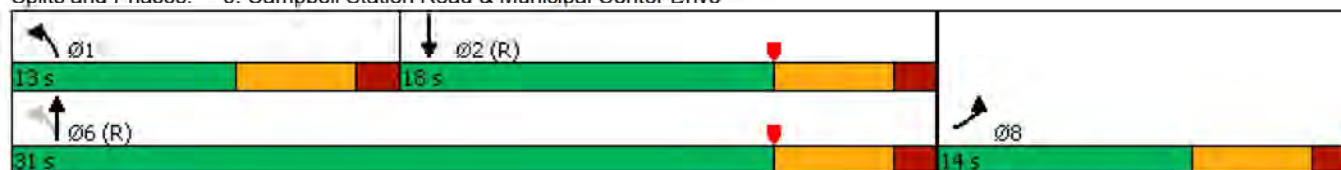
ICU Level of Service A

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 6: Campbell Station Road & Municipal Center Drive



Lanes, Volumes, Timings
7: Brooklawn Street & Kingston Pike

Marketplace Concept - Ford Property

2022 Existing PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	978	66	93	1449	3	193	0	184	4	3	4
Future Volume (vph)	3	978	66	93	1449	3	193	0	184	4	3	4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850						0.850		0.951	
Flt Protected	0.950			0.950			0.950	0.950			0.982	
Satd. Flow (prot)	1778	3557	1591	1761	3522	0	1690	1690	1591	0	1861	0
Flt Permitted	0.145			0.198			0.950	0.950			0.982	
Satd. Flow (perm)	271	3557	1591	367	3522	0	1690	1690	1591	0	1861	0
Satd. Flow (RTOR)			136						207		4	
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.89	0.89	0.89	0.92	0.92	0.92
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	3	1063	72	100	1561	0	108	109	207	0	11	0
Turn Type	Perm	NA	Perm	pm+pt	NA		Split	NA	Perm	Split	NA	
Protected Phases		2		1	6		4	4		3	3	
Permitted Phases	2		2	6					4			
Detector Phase	2	2	2	1	6		4	4	4	3	3	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	8.0	15.0		8.0	8.0	8.0	6.0	6.0	
Minimum Split (s)	22.0	22.0	22.0	15.0	22.0		15.0	15.0	15.0	14.0	14.0	
Total Split (s)	67.0	67.0	67.0	15.0	82.0		24.0	24.0	24.0	14.0	14.0	
Total Split (%)	55.8%	55.8%	55.8%	12.5%	68.3%		20.0%	20.0%	20.0%	11.7%	11.7%	
Maximum Green (s)	61.0	61.0	61.0	9.5	76.0		18.0	18.0	18.0	7.5	7.5	
Yellow Time (s)	4.5	4.5	4.5	4.0	4.5		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		2.0	2.0	2.0	2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	6.0	5.5	6.0		6.0	6.0	6.0		6.5	
Lead/Lag	Lag	Lag	Lag	Lead			Lag	Lag	Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	5.0	5.0	5.0	2.5	5.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Act Effect Green (s)	78.2	78.2	78.2	92.5	92.0		13.2	13.2	13.2		6.4	
Actuated g/C Ratio	0.65	0.65	0.65	0.77	0.77		0.11	0.11	0.11		0.05	
v/c Ratio	0.02	0.46	0.07	0.26	0.58		0.58	0.59	0.58		0.11	
Control Delay	10.0	8.8	0.3	4.4	4.1		62.5	62.8	13.0		45.6	
Queue Delay	0.0	0.0	0.0	0.0	0.1		0.0	0.0	0.0		0.0	
Total Delay	10.0	8.8	0.3	4.4	4.2		62.5	62.8	13.0		45.6	
LOS	A	A	A	A	A		E	E	B		D	
Approach Delay		8.3			4.2			38.4			45.6	
Approach LOS		A			A			D			D	
Queue Length 50th (ft)	1	137	0	10	87		85	86	0		5	
Queue Length 95th (ft)	m2	m205	m1	m21	128		141	142	66		25	
Internal Link Dist (ft)		957			436			791			99	
Turn Bay Length (ft)	95		105	110			190		190			
Base Capacity (vph)	176	2318	1084	393	2700		254	254	414		120	
Starvation Cap Reductn	0	0	0	0	267		0	0	0		0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	
Reduced v/c Ratio	0.02	0.46	0.07	0.25	0.64		0.43	0.43	0.50		0.09	

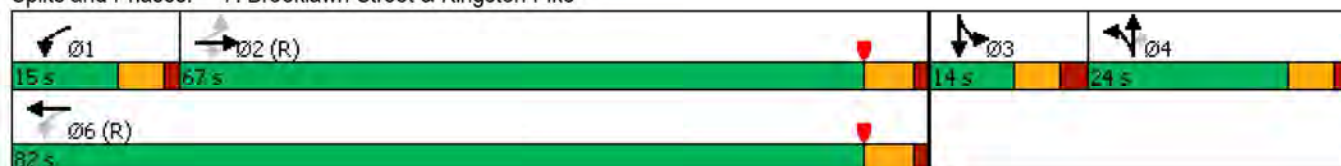
Timing Plan: AM Peak
Cannon & Cannon, Inc.

Synchro 9 Report
Page 9

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 6 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 10.3
 Intersection Capacity Utilization 79.7%
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Brooklawn Street & Kingston Pike



Lanes, Volumes, Timings
8: Kingston Pike & Lendon Welch Way

Marketplace Concept - Ford Property

2022 Existing PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	1123	13	34	1569	33	19	2	22	18	6	57
Future Volume (vph)	39	1123	13	34	1569	33	19	2	22	18	6	57
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.997				0.850			0.850
Flt Protected	0.950			0.950				0.956			0.964	
Satd. Flow (prot)	1787	3567	0	1778	3546	0	0	1781	1583	0	1823	1607
Flt Permitted	0.087			0.209				0.722			0.759	
Satd. Flow (perm)	164	3567	0	391	3546	0	0	1345	1583	0	1435	1607
Satd. Flow (RTOR)		2			4				77			77
Peak Hour Factor	0.93	0.93	0.93	0.88	0.88	0.88	0.59	0.59	0.59	0.80	0.80	0.80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	42	1222	0	39	1821	0	0	35	37	0	31	71
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4		4	8		8
Detector Phase	1	6		5	2		4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	6.0	15.0		6.0	15.0		8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	13.0	22.0		13.0	22.0		15.0	15.0	15.0	15.0	15.0	15.0
Total Split (s)	13.0	92.0		13.0	92.0		15.0	15.0	15.0	15.0	15.0	15.0
Total Split (%)	10.8%	76.7%		10.8%	76.7%		12.5%	12.5%	12.5%	12.5%	12.5%	12.5%
Maximum Green (s)	7.5	86.0		7.5	86.0		9.5	9.5	9.5	9.5	9.5	9.5
Yellow Time (s)	4.0	4.5		4.0	4.5		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	5.5	6.0		5.5	6.0			5.5	5.5		5.5	5.5
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.5	4.0		2.5	4.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	None
Act Effect Green (s)	99.7	96.8		98.6	94.5			8.7	8.7		8.7	8.7
Actuated g/C Ratio	0.83	0.81		0.82	0.79			0.07	0.07		0.07	0.07
v/c Ratio	0.19	0.42		0.10	0.65			0.36	0.20		0.30	0.38
Control Delay	3.4	1.3		1.2	3.4			63.5	3.2		60.3	16.2
Queue Delay	0.0	0.0		0.0	0.1			0.0	0.0		0.0	0.0
Total Delay	3.4	1.3		1.2	3.5			63.5	3.2		60.3	16.2
LOS	A	A		A	A			E	A		E	B
Approach Delay		1.4			3.5			32.5			29.6	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)	1	20		2	119			26	0		23	0
Queue Length 95th (ft)	m5	48		m3	130			39	0		49	31
Internal Link Dist (ft)		436			748			304			663	
Turn Bay Length (ft)	140			100								90
Base Capacity (vph)	238	2877		411	2793			106	196		113	198
Starvation Cap Reductn	0	248		0	133			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.18	0.46		0.09	0.68			0.33	0.19		0.27	0.36

Timing Plan: AM Peak
Cannon & Cannon, Inc.

Synchro 9 Report
Page 11

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 19 (16%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 4.1
 Intersection Capacity Utilization 71.9%
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Kingston Pike & Lendon Welch Way

 Ø1 13 s	 Ø2 (R) 92 s	 Ø4 15 s
 Ø5 13 s	 Ø6 (R) 92 s	 Ø8 15 s

Lanes, Volumes, Timings
9: Concord Road/West End Avenue & Kingston Pike

Marketplace Concept - Ford Property
2022 Existing PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	967	44	417	1305	97	127	77	289	124	73	77
Future Volume (vph)	49	967	44	417	1305	97	127	77	289	124	73	77
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.97	1.00	1.00	0.97	1.00	1.00
Frt		0.994			0.990				0.850		0.923	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1778	3536	0	1787	3539	0	3450	1872	1591	3450	1728	0
Flt Permitted	0.141			0.109			0.950			0.950		
Satd. Flow (perm)	264	3536	0	205	3539	0	3450	1872	1591	3450	1728	0
Satd. Flow (RTOR)		4			10				82		36	
Peak Hour Factor	0.95	0.95	0.95	0.94	0.94	0.94	0.98	0.98	0.98	0.91	0.91	0.91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	1064	0	444	1491	0	130	79	295	136	165	0
Turn Type	pm+pt	NA		pm+pt	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	1	6		5	2		4	4	5	3	3	
Permitted Phases	6			2					4			
Detector Phase	1	6		5	2		4	4	5	3	3	
Switch Phase												
Minimum Initial (s)	6.0	12.0		6.0	12.0		8.0	8.0	6.0	8.0	8.0	
Minimum Split (s)	13.0	19.0		13.0	19.0		15.0	15.0	13.0	15.0	15.0	
Total Split (s)	13.0	49.0		37.0	73.0		15.0	15.0	37.0	19.0	19.0	
Total Split (%)	10.8%	40.8%		30.8%	60.8%		12.5%	12.5%	30.8%	15.8%	15.8%	
Maximum Green (s)	7.5	43.0		31.5	67.0		9.5	9.5	31.5	13.0	13.0	
Yellow Time (s)	4.0	4.5		4.0	4.5		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	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	
Total Lost Time (s)	5.5	6.0		5.5	6.0		5.5	5.5	5.5	6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	2.5	4.0		2.5	4.0		2.5	2.5	2.5	2.5	2.5	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effect Green (s)	55.2	48.3		82.2	72.1		9.0	9.0	42.3	11.9	11.9	
Actuated g/C Ratio	0.46	0.40		0.68	0.60		0.08	0.08	0.35	0.10	0.10	
v/c Ratio	0.26	0.75		0.88	0.70		0.51	0.57	0.48	0.40	0.81	
Control Delay	12.8	25.4		46.6	19.8		60.4	69.6	23.3	54.0	70.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	12.8	25.4		46.6	19.8		60.4	69.6	23.3	54.0	70.1	
LOS	B	C		D	B		E	E	C	D	E	
Approach Delay		24.8			26.0			40.2			62.8	
Approach LOS		C			C			D			E	
Queue Length 50th (ft)	10	296		248	426		50	60	120	51	98	
Queue Length 95th (ft)	22	385		#406	528		83	112	199	83	#205	
Internal Link Dist (ft)		748			1140			744			778	
Turn Bay Length (ft)	125			130			175			125		
Base Capacity (vph)	218	1425		555	2129		273	148	659	373	219	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.24	0.75		0.80	0.70		0.48	0.53	0.45	0.36	0.75	

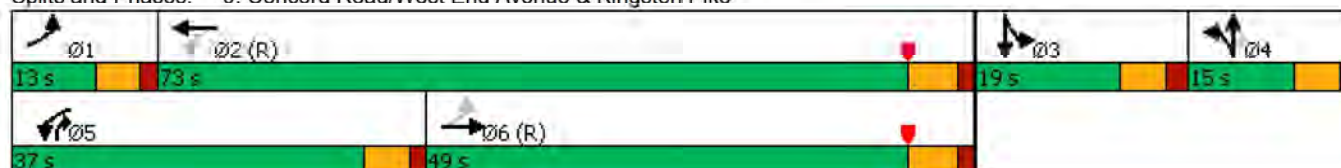
Timing Plan: AM Peak
Cannon & Cannon, Inc.

Synchro 9 Report
Page 13

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 2 (2%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 30.3
 Intersection Capacity Utilization 85.6%
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 9: Concord Road/West End Avenue & Kingston Pike



HCS7 Two-Way Stop-Control Report

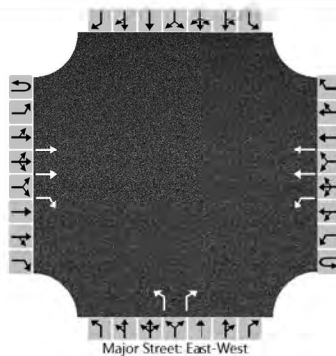
General Information

Analyst	WAS
Agency/Co.	CCI
Date Performed	6/9/2022
Analysis Year	2027
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Background AM

Site Information

Intersection	Kingston at Glen Abbey
Jurisdiction	Town of Farragut
East/West Street	Kingston Pike
North/South Street	Glenn Abbey Blvd
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	1	0	1	2	0		1	0	1		0	0	0
Configuration			T	R		L	T			L		R				
Volume (veh/h)			1798	18	0	42	1177			5		65				
Percent Heavy Vehicles (%)					3	3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No								No							
Median Type Storage	Left Only								2							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.86		6.96				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						46				5		71				
Capacity, c (veh/h)						286				87		248				
v/c Ratio						0.16				0.06		0.28				
95% Queue Length, Q ₉₅ (veh)						0.6				0.2		1.1				
Control Delay (s/veh)						20.0				49.0		25.2				
Level of Service (LOS)						C				E		D				
Approach Delay (s/veh)					0.7				26.9							
Approach LOS									D							

HCS7 Two-Way Stop-Control Report

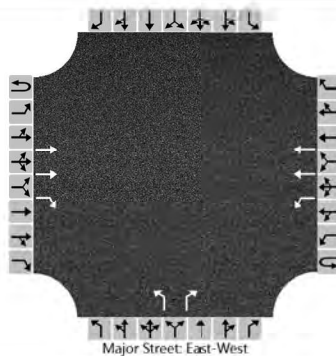
General Information

Analyst	WAS
Agency/Co.	CCI
Date Performed	6/9/2022
Analysis Year	2027
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Background AM

Site Information

Intersection	Kingston at Kohl's
Jurisdiction	Town of Farragut
East/West Street	Kingston Pike
North/South Street	Kohl's Access
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	1	0	1	2	0		1	0	1		0	0	0
Configuration			T	R		L	T			L		R				
Volume (veh/h)			1920	1	0	6	1020			0		1				
Percent Heavy Vehicles (%)					3	3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No								No							
Median Type Storage	Left Only								2							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.86		6.96				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						7				0		1				
Capacity, c (veh/h)						258				75		224				
v/c Ratio						0.03				0.00		0.00				
95% Queue Length, Q ₉₅ (veh)						0.1				0.0		0.0				
Control Delay (s/veh)						19.3				52.8		21.1				
Level of Service (LOS)						C				F		C				
Approach Delay (s/veh)					0.1				21.1							
Approach LOS									C							

HCS7 Two-Way Stop-Control Report

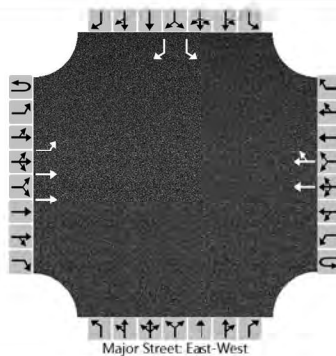
General Information

Analyst	WAS
Agency/Co.	CCI
Date Performed	6/9/2022
Analysis Year	2027
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Background AM

Site Information

Intersection	Kingston at Jamestowne
Jurisdiction	Town of Farragut
East/West Street	Kingston Pike
North/South Street	Jamestowne Boulevard
Peak Hour Factor	0.82
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		1	0	1
Configuration		L	T				T	TR						L		R
Volume (veh/h)	0	88	1867				1025	14						6		25
Percent Heavy Vehicles (%)	2	2												2		2
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized													Yes			
Median Type Storage	Left Only								2							

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.5		6.9
Critical Headway (sec)		4.14												6.84		6.94
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.22												3.52		3.32

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		107												7		30
Capacity, c (veh/h)		544												125		422
v/c Ratio		0.20												0.06		0.07
95% Queue Length, Q ₉₅ (veh)		0.7												0.2		0.2
Control Delay (s/veh)		13.2												35.5		14.2
Level of Service (LOS)		B												E		B
Approach Delay (s/veh)	0.6												18.3			
Approach LOS													C			

HCS7 Two-Way Stop-Control Report

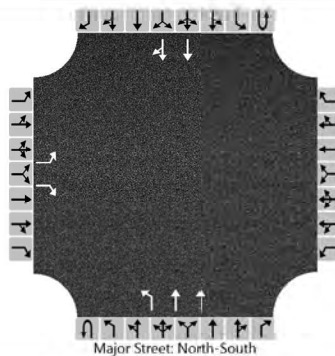
General Information

Analyst	WAS
Agency/Co.	CCI
Date Performed	6/9/2022
Analysis Year	2027
Time Analyzed	AM Peak
Intersection Orientation	North-South
Project Description	Background AM

Site Information

Intersection	Jamestowne at Campb. Sta.
Jurisdiction	Town of Farragut
East/West Street	Jametowne Blvd
North/South Street	Campbell Station
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	2	0	0	0	2	0
Configuration		L		R						L	T				T	TR
Volume (veh/h)		81		23					0	14	1070				856	39
Percent Heavy Vehicles (%)		2		3					3	3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No															
Median Type Storage	Left Only								2							

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5		6.9						4.1						
Critical Headway (sec)		6.84		6.96						4.16						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.33						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		88		25						15						
Capacity, c (veh/h)		277		524						698						
v/c Ratio		0.32		0.05						0.02						
95% Queue Length, Q ₉₅ (veh)		1.3		0.1						0.1						
Control Delay (s/veh)		23.9		12.2						10.3						
Level of Service (LOS)		C		B						B						
Approach Delay (s/veh)	21.3									0.1						
Approach LOS	C															

Lanes, Volumes, Timings
5: Campbell Station Road & Kingston Pike

Marketplace Concept - Ford Property
2027 Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	429	1066	202	76	590	234	265	414	59	281	294	341
Future Volume (vph)	429	1066	202	76	590	234	265	414	59	281	294	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-5%			4%			4%			1%	
Storage Length (ft)	280		295	160		320	135		0	320		325
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (ft)	95			60			105			150		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Fr _t			0.850			0.850		0.981				0.850
Fl _t Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1814	3628	1623	1734	3468	1552	1734	3403	0	1761	3522	1575
Fl _t Permitted	0.181			0.181			0.463			0.294		
Satd. Flow (perm)	346	3628	1623	330	3468	1552	845	3403	0	545	3522	1575
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			199			176			15			103
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		1664			1037			689			1086	
Travel Time (s)		25.2			15.7			11.7			18.5	
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)	466	1159	220	83	641	254	288	450	64	305	320	371
Shared Lane Traffic (%)												
Lane Group Flow (vph)	466	1159	220	83	641	254	288	514	0	305	320	371
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes			Yes			Yes	
Headway Factor	0.97	0.97	0.97	1.03	1.03	1.03	1.03	1.03	1.03	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	20
Trailing Detector (ft)	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
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	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	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
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
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	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	1	6	7	5	2	3	7	4		3	8	1

Timing Plan: AM Peak
Cannon & Cannon, Inc.

Synchro 10 Report
Page 5

Lanes, Volumes, Timings
5: Campbell Station Road & Kingston Pike

Marketplace Concept - Ford Property
2027 Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	6		6	2		2	4			8		8
Detector Phase	1	6	7	5	2	3	7	4		3	8	1
Switch Phase												
Minimum Initial (s)	6.0	12.0	6.0	6.0	12.0	6.0	6.0	8.0		6.0	8.0	6.0
Minimum Split (s)	13.0	19.0	13.0	13.0	19.0	13.0	13.0	15.0		13.0	15.0	13.0
Total Split (s)	25.0	40.0	18.0	13.0	28.0	18.0	18.0	19.0		18.0	19.0	25.0
Total Split (%)	27.8%	44.4%	20.0%	14.4%	31.1%	20.0%	20.0%	21.1%		20.0%	21.1%	27.8%
Maximum Green (s)	19.0	34.0	12.5	7.0	22.0	12.5	12.5	13.5		12.5	13.5	19.0
Yellow Time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	1.5	1.5	2.0	1.5	1.5	1.5	1.5		1.5	1.5	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
Total Lost Time (s)	6.0	6.0	5.5	6.0	6.0	5.5	5.5	5.5		5.5	5.5	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.5	4.0	3.0	2.5	4.0	3.0	3.0	2.5		3.0	2.5	2.5
Recall Mode	None	C-Max	None	None	C-Max	None	None	None		None	None	None
Act Effct Green (s)	47.0	36.7	55.1	28.8	22.1	40.6	25.9	13.5		26.1	13.6	38.0
Actuated g/C Ratio	0.52	0.41	0.61	0.32	0.25	0.45	0.29	0.15		0.29	0.15	0.42
v/c Ratio	0.95	0.78	0.21	0.40	0.75	0.32	0.79	0.98		0.93	0.60	0.51
Control Delay	53.0	28.9	2.2	16.1	33.0	11.5	46.8	77.6		62.6	41.0	16.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	53.0	28.9	2.2	16.1	33.0	11.5	46.8	77.6		62.6	41.0	16.4
LOS	D	C	A	B	C	B	D	E		E	D	B
Approach Delay		31.8			26.0			66.5			38.4	
Approach LOS		C			C			E			D	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 40 (44%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 38.0

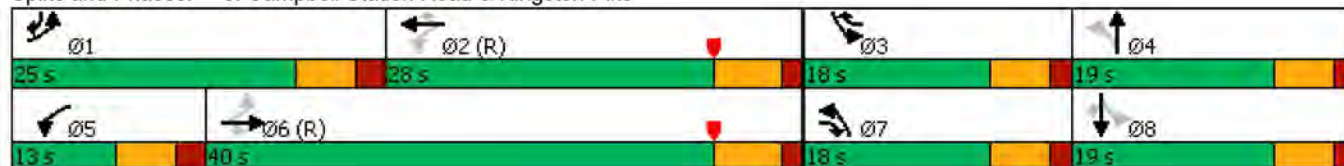
Intersection LOS: D

Intersection Capacity Utilization 88.1%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 5: Campbell Station Road & Kingston Pike



Lanes, Volumes, Timings
6: Campbell Station Road & Municipal Center Drive

Marketplace Concept - Ford Property
2027 Background AM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	70	27	37	615	404	77
Future Volume (vph)	70	27	37	615	404	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-2%			1%	-3%	
Storage Length (ft)	0	0	55			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.963				0.976	
Flt Protected	0.965		0.950			
Satd. Flow (prot)	1748	0	1761	3522	3506	0
Flt Permitted	0.965		0.365			
Satd. Flow (perm)	1748	0	677	3522	3506	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	29				50	
Link Speed (mph)	25			40	40	
Link Distance (ft)	557			675	689	
Travel Time (s)	15.2			11.5	11.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	29	40	668	439	84
Shared Lane Traffic (%)						
Lane Group Flow (vph)	105	0	40	668	523	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	0.99	0.99	1.01	1.01	0.98	0.98
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	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	Prot		pm+pt	NA	NA	
Protected Phases	8		1	6	2	

Timing Plan: AM Peak
Cannon & Cannon, Inc.

Synchro 10 Report
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Lanes, Volumes, Timings
6: Campbell Station Road & Municipal Center Drive

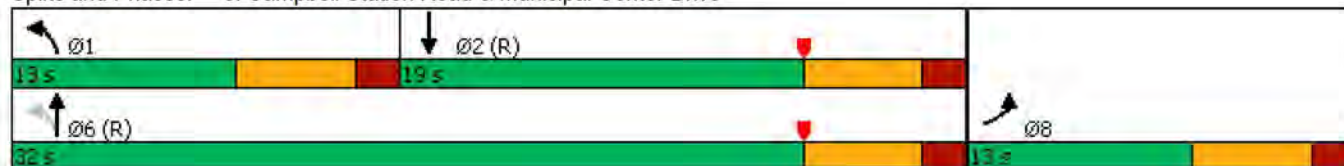
Marketplace Concept - Ford Property
2027 Background AM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases	6					
Detector Phase	8		1	6	2	
Switch Phase						
Minimum Initial (s)	6.0		6.0	10.0	10.0	
Minimum Split (s)	13.0		13.0	17.0	17.0	
Total Split (s)	13.0		13.0	32.0	19.0	
Total Split (%)	28.9%		28.9%	71.1%	42.2%	
Maximum Green (s)	7.5		7.5	26.5	13.5	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.5		5.5	5.5	5.5	
Lead/Lag	Lead			Lag		
Lead-Lag Optimize?	Yes			Yes		
Vehicle Extension (s)	3.0		2.5	4.0	4.0	
Recall Mode	None		None	C-Max	C-Max	
Act Effect Green (s)	6.9		31.7	33.9	29.3	
Actuated g/C Ratio	0.15		0.70	0.75	0.65	
v/c Ratio	0.36		0.06	0.25	0.23	
Control Delay	16.9		4.0	3.8	3.7	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	16.9		4.0	3.8	3.7	
LOS	B		A	A	A	
Approach Delay	16.9			3.8	3.7	
Approach LOS	B			A	A	

Intersection Summary

Area Type: Other
 Cycle Length: 45
 Actuated Cycle Length: 45
 Offset: 1 (2%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.36
 Intersection Signal Delay: 4.8
 Intersection LOS: A
 Intersection Capacity Utilization 37.9%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 6: Campbell Station Road & Municipal Center Drive



Lanes, Volumes, Timings
7: Brooklawn Street & Kingston Pike

Marketplace Concept - Ford Property
2027 Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1763	89	144	890	5	108	0	207	0	0	0
Future Volume (vph)	0	1763	89	144	890	5	108	0	207	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			1%			-1%			-14%	
Storage Length (ft)	95		105	110		0	190		190	0		0
Storage Lanes	1		1	1		0	1		1	0		0
Taper Length (ft)	115			135			130			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850		0.999				0.850			
Flt Protected				0.950			0.950	0.950				
Satd. Flow (prot)	1872	3557	1591	1761	3518	0	1690	1690	1591	0	1993	0
Flt Permitted				0.068			0.950	0.950				
Satd. Flow (perm)	1872	3557	1591	126	3518	0	1690	1690	1591	0	1993	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			182		1				225			
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		1037			516			871			179	
Travel Time (s)		15.7			7.8			23.8			4.9	
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)	0	1916	97	157	967	5	117	0	225	0	0	0
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	0	1916	97	157	972	0	58	59	225	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes			Yes				
Headway Factor	0.99	0.99	0.99	1.01	1.01	1.01	0.99	0.99	0.99	0.91	0.91	0.91
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	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	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	
Detector 1 Delay (s)	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	Perm	NA	Perm	pm+pt	NA		Split	NA	Perm			
Protected Phases		2		1	6		4	4		3	3	

Timing Plan: AM Peak
Cannon & Cannon, Inc.

Synchro 10 Report
Page 9

Lanes, Volumes, Timings
7: Brooklawn Street & Kingston Pike

Marketplace Concept - Ford Property
2027 Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6					4			
Detector Phase	2	2	2	1	6		4	4	4	3	3	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	8.0	15.0		8.0	8.0	8.0	6.0	6.0	
Minimum Split (s)	22.0	22.0	22.0	15.0	22.0		15.0	15.0	15.0	14.0	14.0	
Total Split (s)	46.0	46.0	46.0	15.0	61.0		15.0	15.0	15.0	14.0	14.0	
Total Split (%)	51.1%	51.1%	51.1%	16.7%	67.8%		16.7%	16.7%	16.7%	15.6%	15.6%	
Maximum Green (s)	40.0	40.0	40.0	9.5	55.0		9.0	9.0	9.0	7.5	7.5	
Yellow Time (s)	4.5	4.5	4.5	4.0	4.5		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		2.0	2.0	2.0	2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	6.0	5.5	6.0		6.0	6.0	6.0		6.5	
Lead/Lag	Lag	Lag	Lag	Lead			Lag	Lag	Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	5.0	5.0	5.0	2.5	5.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Act Effct Green (s)		53.1	53.1	68.4	67.9		10.1	10.1	10.1			
Actuated g/C Ratio		0.59	0.59	0.76	0.75		0.11	0.11	0.11			
v/c Ratio		0.91	0.10	0.59	0.37		0.31	0.31	0.60			
Control Delay		23.5	0.7	28.7	5.1		40.1	40.2	12.1			
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0	0.0			
Total Delay		23.5	0.7	28.7	5.1		40.1	40.2	12.1			
LOS		C	A	C	A		D	D	B			
Approach Delay		22.4			8.4			21.7				
Approach LOS		C			A			C				

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 83 (92%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 17.8

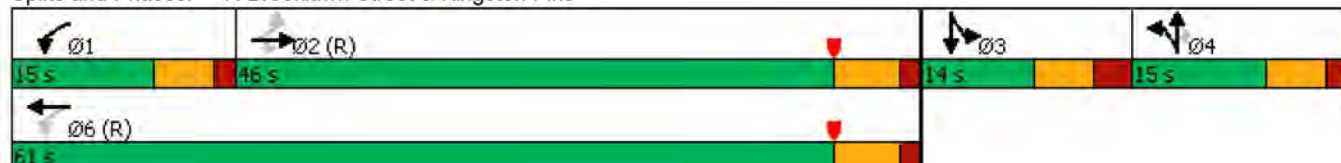
Intersection LOS: B

Intersection Capacity Utilization 78.0%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 7: Brooklawn Street & Kingston Pike



Lanes, Volumes, Timings
8: Kingston Pike & Lendon Welch Way

Marketplace Concept - Ford Property
2027 Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	362	1564	49	46	905	265	9	108	28	141	12	133
Future Volume (vph)	362	1564	49	46	905	265	9	108	28	141	12	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-2%			-1%			0%			-3%	
Storage Length (ft)	140		0	100		0	0		0	0		90
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	160			70			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.966				0.850			0.850
Flt Protected	0.950			0.950				0.996			0.956	
Satd. Flow (prot)	1787	3557	0	1778	3436	0	0	1855	1583	0	1807	1607
Flt Permitted	0.088			0.100				0.968			0.646	
Satd. Flow (perm)	166	3557	0	187	3436	0	0	1803	1583	0	1221	1607
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			50				170			170
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		516			828			384			743	
Travel Time (s)		7.8			12.5			10.5			20.3	
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)	393	1700	53	50	984	288	10	117	30	153	13	145
Shared Lane Traffic (%)												
Lane Group Flow (vph)	393	1753	0	50	1272	0	0	127	30	0	166	145
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	1.00	1.00	1.00	0.98	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		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	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
Detector 1 Delay (s)	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	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6		5	2			4			8	

Timing Plan: AM Peak
Cannon & Cannon, Inc.

Synchro 10 Report
Page 11

Lanes, Volumes, Timings

8: Kingston Pike & Lendon Welch Way

Marketplace Concept - Ford Property
2027 Background AM

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	6			2			4		4	8		8
Detector Phase	1	6		5	2		4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	6.0	15.0		6.0	15.0		8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	13.0	22.0		13.0	22.0		15.0	15.0	15.0	15.0	15.0	15.0
Total Split (s)	26.0	55.0		13.0	42.0		22.0	22.0	22.0	22.0	22.0	22.0
Total Split (%)	28.9%	61.1%		14.4%	46.7%		24.4%	24.4%	24.4%	24.4%	24.4%	24.4%
Maximum Green (s)	20.5	49.0		7.5	36.0		16.5	16.5	16.5	16.5	16.5	16.5
Yellow Time (s)	4.0	4.5		4.0	4.5		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	6.0		5.5	6.0		5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.5	4.0		2.5	4.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	None
Act Effect Green (s)	64.0	56.4		46.5	39.8		15.0	15.0	15.0	15.0	15.0	15.0
Actuated g/C Ratio	0.71	0.63		0.52	0.44		0.17	0.17	0.17	0.17	0.17	0.17
v/c Ratio	0.89	0.79		0.24	0.82		0.42	0.07	0.07	0.82	0.35	0.35
Control Delay	49.2	6.0		6.8	23.3		37.7	0.4	0.4	66.3	6.2	6.2
Queue Delay	0.0	0.2		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.2	6.2		6.8	23.3		37.7	0.4	0.4	66.3	6.2	6.2
LOS	D	A		A	C		D	A	A	E	A	A
Approach Delay		14.1			22.6		30.5			38.3		
Approach LOS		B			C		C			D		

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 87 (97%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 19.5

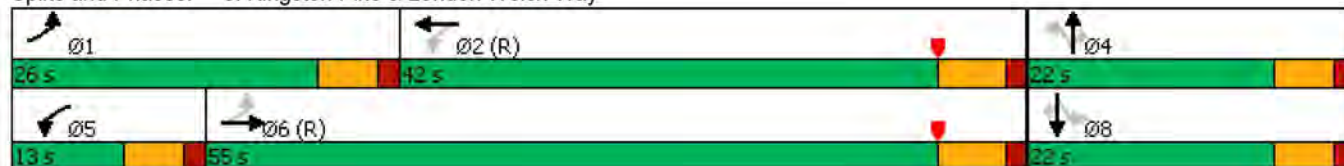
Intersection LOS: B

Intersection Capacity Utilization 82.8%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 8: Kingston Pike & Lendon Welch Way



Lanes, Volumes, Timings
9: Concord Road/West End Avenue & Kingston Pike

Marketplace Concept - Ford Property
2027 Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	251	1298	75	173	686	267	236	363	651	450	133	222
Future Volume (vph)	251	1298	75	173	686	267	236	363	651	450	133	222
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			-2%			-1%			-1%	
Storage Length (ft)	125		0	130		0	175		0	125		0
Storage Lanes	1		0	1		0	2		1	1		0
Taper Length (ft)	80			75			60			90		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.97	1.00	1.00	0.97	1.00	1.00
Frt		0.992			0.958				0.850		0.906	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1778	3528	0	1787	3424	0	3450	1872	1591	3450	1696	0
Flt Permitted	0.129			0.133			0.950			0.950		
Satd. Flow (perm)	241	3528	0	250	3424	0	3450	1872	1591	3450	1696	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			68				109			77
Link Speed (mph)		45			45			30				25
Link Distance (ft)		828			1220			824				858
Travel Time (s)		12.5			18.5			18.7				23.4
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)	273	1411	82	188	746	290	257	395	708	489	145	241
Shared Lane Traffic (%)												
Lane Group Flow (vph)	273	1493	0	188	1036	0	257	395	708	489	386	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes			Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1		2
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	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	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	
Detector 1 Delay (s)	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	pm+pt	NA		pm+pt	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	1	6		5	2		4	4	5	3	3	

Timing Plan: AM Peak
Cannon & Cannon, Inc.

Synchro 10 Report
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Lanes, Volumes, Timings
9: Concord Road/West End Avenue & Kingston Pike

Marketplace Concept - Ford Property
2027 Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	6			2			4			3		
Detector Phase	1	6		5	2		4	4	5	3	3	
Switch Phase												
Minimum Initial (s)	6.0	12.0		6.0	12.0		8.0	8.0	6.0	8.0	8.0	
Minimum Split (s)	13.0	19.0		13.0	19.0		15.0	15.0	13.0	15.0	15.0	
Total Split (s)	16.0	37.0		15.0	36.0		20.0	20.0	15.0	18.0	18.0	
Total Split (%)	17.8%	41.1%		16.7%	40.0%		22.2%	22.2%	16.7%	20.0%	20.0%	
Maximum Green (s)	10.5	31.0		9.5	30.0		14.5	14.5	9.5	12.0	12.0	
Yellow Time (s)	4.0	4.5		4.0	4.5		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	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	
Total Lost Time (s)	5.5	6.0		5.5	6.0		5.5	5.5	5.5	6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	2.5	4.0		2.5	4.0		2.5	2.5	2.5	2.5	2.5	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	42.0	31.0		40.0	30.0		14.5	14.5	29.5	12.0	12.0	
Actuated g/C Ratio	0.47	0.34		0.44	0.33		0.16	0.16	0.33	0.13	0.13	
v/c Ratio	0.94	1.22		0.69	0.87		0.46	1.31	1.19	1.06	1.32	
Control Delay	60.5	135.0		30.3	36.1		37.3	195.5	128.2	98.8	194.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	60.5	135.0		30.3	36.1		37.3	195.5	128.2	98.8	194.7	
LOS	E	F		C	D		D	F	F	F	F	
Approach Delay	123.5			35.2			130.6			141.1		
Approach LOS	F			D			F			F		

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 69 (77%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.32

Intersection Signal Delay: 107.6

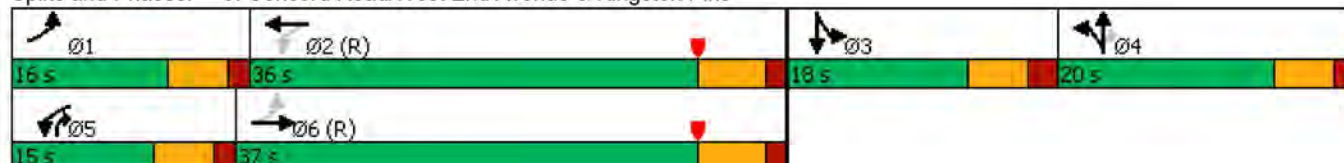
Intersection LOS: F

Intersection Capacity Utilization 106.0%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 9: Concord Road/West End Avenue & Kingston Pike



HCS7 Two-Way Stop-Control Report

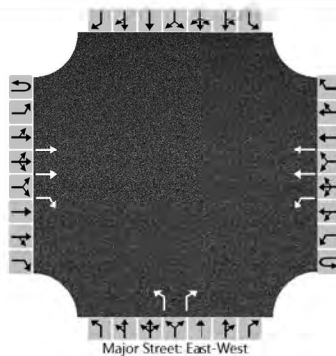
General Information

Analyst	WAS
Agency/Co.	CCI
Date Performed	6/9/2022
Analysis Year	2027
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Background PM

Site Information

Intersection	Kingston at Glen Abbey
Jurisdiction	Town of Farragut
East/West Street	Kingston Pike
North/South Street	Glenn Abbey Blvd
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	1	0	1	2	0		1	0	1		0	0	0
Configuration			T	R		L	T			L		R				
Volume (veh/h)			1520	26	0	62	1796			31		51				
Percent Heavy Vehicles (%)					3	3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No								No							
Median Type Storage	Left Only								2							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.86		6.96				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						67				34		55				
Capacity, c (veh/h)						373				111		313				
v/c Ratio						0.18				0.30		0.18				
95% Queue Length, Q ₉₅ (veh)						0.7				1.2		0.6				
Control Delay (s/veh)						16.8				51.2		19.0				
Level of Service (LOS)						C				F		C				
Approach Delay (s/veh)					0.6				31.2							
Approach LOS									D							

HCS7 Two-Way Stop-Control Report

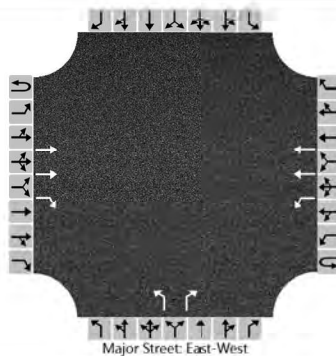
General Information

Analyst	WAS
Agency/Co.	CCI
Date Performed	6/9/2022
Analysis Year	2027
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Background PM

Site Information

Intersection	Kingston at Kohl's
Jurisdiction	Town of Farragut
East/West Street	Kingston Pike
North/South Street	Kohl's Access
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	1	0	1	2	0		1	0	1		0	0	0
Configuration			T	R		L	T			L		R				
Volume (veh/h)			1358	12	0	39	1853			10		40				
Percent Heavy Vehicles (%)					3	3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No								No							
Median Type Storage					Left Only								2			

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.86		6.96				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						42				11		43				
Capacity, c (veh/h)						442				135		358				
v/c Ratio						0.10				0.08		0.12				
95% Queue Length, Q ₉₅ (veh)						0.3				0.3		0.4				
Control Delay (s/veh)						14.0				34.0		16.4				
Level of Service (LOS)						B				D		C				
Approach Delay (s/veh)					0.3				20.0							
Approach LOS									C							

HCS7 Two-Way Stop-Control Report

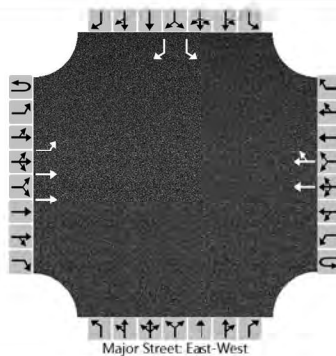
General Information

Analyst	WAS
Agency/Co.	CCI
Date Performed	6/9/2022
Analysis Year	2027
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Background PM

Site Information

Intersection	Kingston at Jamestowne
Jurisdiction	Town of Farragut
East/West Street	Kingston Pike
North/South Street	Jamestowne Boulevard
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		1	0	1
Configuration		L	T				T	TR						L		R
Volume (veh/h)	0	51	1675				1967	18						6		49
Percent Heavy Vehicles (%)	2	2												2		2
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized													Yes			
Median Type Storage	Left Only								2							

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.5		6.9
Critical Headway (sec)		4.14												6.84		6.94
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.22												3.52		3.32

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		53												6		51
Capacity, c (veh/h)		266												75		229
v/c Ratio		0.20												0.08		0.22
95% Queue Length, Q ₉₅ (veh)		0.7												0.3		0.8
Control Delay (s/veh)		21.9												57.1		25.1
Level of Service (LOS)		C												F		D
Approach Delay (s/veh)	0.6												28.6			
Approach LOS													D			

HCS7 Two-Way Stop-Control Report

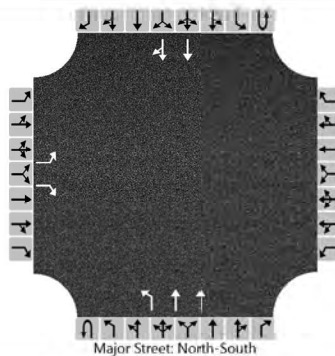
General Information

Analyst	WAS
Agency/Co.	CCI
Date Performed	6/9/2022
Analysis Year	2027
Time Analyzed	AM Peak
Intersection Orientation	North-South
Project Description	Background AM

Site Information

Intersection	Jamestowne at Campb. Sta.
Jurisdiction	Town of Farragut
East/West Street	Jametowne Blvd
North/South Street	Campbell Station
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	2	0	0	0	2	0
Configuration		L		R						L	T				T	TR
Volume (veh/h)		34		36					0	23	1171				1183	30
Percent Heavy Vehicles (%)		2		3					3	3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No															
Median Type Storage	Left Only								2							

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5		6.9						4.1						
Critical Headway (sec)		6.84		6.96						4.16						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.33						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		37		39						25						
Capacity, c (veh/h)		189		404						515						
v/c Ratio		0.20		0.10						0.05						
95% Queue Length, Q ₉₅ (veh)		0.7		0.3						0.2						
Control Delay (s/veh)		28.6		14.9						12.3						
Level of Service (LOS)		D		B						B						
Approach Delay (s/veh)	21.5									0.2						
Approach LOS	C															

Lanes, Volumes, Timings
5: Campbell Station Road & Kingston Pike

Marketplace Concept - Ford Property
2027 Background PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	337	950	364	78	1201	456	357	389	80	351	505	417
Future Volume (vph)	337	950	364	78	1201	456	357	389	80	351	505	417
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-5%			4%			4%			1%	
Storage Length (ft)	280		295	160		320	135		0	320		325
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (ft)	95			60			105			150		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Fr _t			0.850			0.850		0.974				0.850
Fl _t Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1814	3628	1623	1734	3468	1552	1734	3378	0	1761	3522	1575
Fl _t Permitted	0.082			0.206			0.229			0.229		
Satd. Flow (perm)	157	3628	1623	376	3468	1552	418	3378	0	424	3522	1575
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			132			17			77
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		1664			1037			689			1086	
Travel Time (s)		25.2			15.7			11.7			18.5	
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)	366	1033	396	85	1305	496	388	423	87	382	549	453
Shared Lane Traffic (%)												
Lane Group Flow (vph)	366	1033	396	85	1305	496	388	510	0	382	549	453
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes			Yes			Yes	
Headway Factor	0.97	0.97	0.97	1.03	1.03	1.03	1.03	1.03	1.03	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	20
Trailing Detector (ft)	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
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	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	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
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
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	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	1	6	7	5	2	3	7	4		3	8	1

Timing Plan: PM Peak
Cannon & Cannon, Inc.

Synchro 10 Report
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Lanes, Volumes, Timings
5: Campbell Station Road & Kingston Pike

Marketplace Concept - Ford Property
2027 Background PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	6		6	2		2	4			8		8
Detector Phase	1	6	7	5	2	3	7	4		3	8	1
Switch Phase												
Minimum Initial (s)	6.0	12.0	6.0	6.0	12.0	6.0	6.0	8.0		6.0	8.0	6.0
Minimum Split (s)	13.0	19.0	13.0	13.0	19.0	13.0	13.0	15.0		13.0	15.0	13.0
Total Split (s)	23.0	59.0	25.0	13.0	49.0	25.0	25.0	23.0		25.0	23.0	23.0
Total Split (%)	19.2%	49.2%	20.8%	10.8%	40.8%	20.8%	20.8%	19.2%		20.8%	19.2%	19.2%
Maximum Green (s)	17.0	53.0	19.5	7.0	43.0	19.5	19.5	17.5		19.5	17.5	17.0
Yellow Time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	1.5	1.5	2.0	1.5	1.5	1.5	1.5		1.5	1.5	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
Total Lost Time (s)	6.0	6.0	5.5	6.0	6.0	5.5	5.5	5.5		5.5	5.5	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.5	4.0	3.0	2.5	4.0	3.0	3.0	2.5		3.0	2.5	2.5
Recall Mode	None	C-Max	None	None	C-Max	None	None	None		None	None	None
Act Effct Green (s)	66.0	55.6	81.1	49.8	43.0	68.5	37.0	17.5		37.0	17.5	40.0
Actuated g/C Ratio	0.55	0.46	0.68	0.42	0.36	0.57	0.31	0.15		0.31	0.15	0.33
v/c Ratio	1.14	0.61	0.35	0.37	1.05	0.53	1.13	1.01		1.10	1.07	0.79
Control Delay	126.6	26.8	6.3	16.1	69.1	9.1	123.0	90.9		111.4	108.3	40.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	126.6	26.8	6.3	16.1	69.1	9.1	123.0	90.9		111.4	108.3	40.9
LOS	F	C	A	B	E	A	F	F		F	F	D
Approach Delay		42.6			50.9			104.8			87.1	
Approach LOS		D			D			F			F	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 1 (1%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.14

Intersection Signal Delay: 64.9

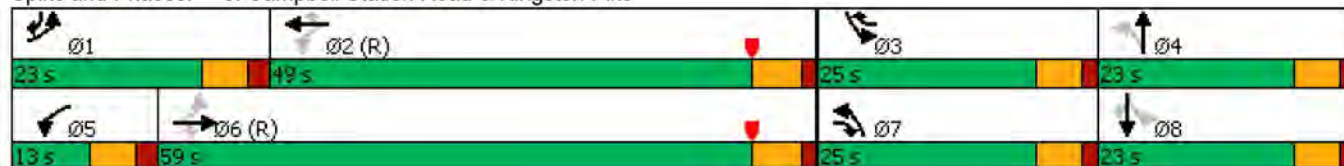
Intersection LOS: E

Intersection Capacity Utilization 104.8%

ICU Level of Service G

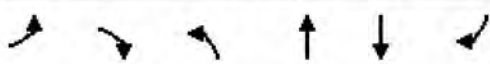
Analysis Period (min) 15

Splits and Phases: 5: Campbell Station Road & Kingston Pike



Lanes, Volumes, Timings
6: Campbell Station Road & Municipal Center Drive

Marketplace Concept - Ford Property
2027 Background PM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	165	70	52	609	790	119
Future Volume (vph)	165	70	52	609	790	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-2%			1%	-3%	
Storage Length (ft)	0	0	55			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.960				0.980	
Flt Protected	0.966		0.950			
Satd. Flow (prot)	1745	0	1761	3522	3520	0
Flt Permitted	0.966		0.167			
Satd. Flow (perm)	1745	0	310	3522	3520	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	41				38	
Link Speed (mph)	25			40	40	
Link Distance (ft)	557			675	689	
Travel Time (s)	15.2			11.5	11.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	179	76	57	662	859	129
Shared Lane Traffic (%)						
Lane Group Flow (vph)	255	0	57	662	988	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	0.99	0.99	1.01	1.01	0.98	0.98
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	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	Prot		pm+pt	NA	NA	
Protected Phases	8		1	6	2	

Timing Plan: PM Peak
Cannon & Cannon, Inc.

Synchro 10 Report
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Lanes, Volumes, Timings
6: Campbell Station Road & Municipal Center Drive

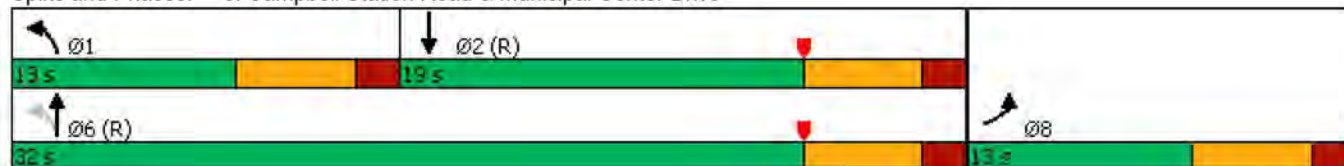
Marketplace Concept - Ford Property
2027 Background PM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases	6					
Detector Phase	8		1	6	2	
Switch Phase						
Minimum Initial (s)	6.0		6.0	10.0	10.0	
Minimum Split (s)	13.0		13.0	17.0	17.0	
Total Split (s)	13.0		13.0	32.0	19.0	
Total Split (%)	28.9%		28.9%	71.1%	42.2%	
Maximum Green (s)	7.5		7.5	26.5	13.5	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.5		5.5	5.5	5.5	
Lead/Lag	Lead			Lag		
Lead-Lag Optimize?	Yes			Yes		
Vehicle Extension (s)	3.0		2.5	4.0	4.0	
Recall Mode	None		None	C-Max	C-Max	
Act Effect Green (s)	7.5		26.5	26.5	21.8	
Actuated g/C Ratio	0.17		0.59	0.59	0.48	
v/c Ratio	0.79		0.15	0.32	0.57	
Control Delay	36.7		4.9	5.2	12.8	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	36.7		4.9	5.2	12.8	
LOS	D		A	A	B	
Approach Delay	36.7			5.2	12.8	
Approach LOS	D			A	B	

Intersection Summary

Area Type: Other
Cycle Length: 45
Actuated Cycle Length: 45
Offset: 1 (2%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 13.1
Intersection LOS: B
Intersection Capacity Utilization 57.8%
ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 6: Campbell Station Road & Municipal Center Drive



Lanes, Volumes, Timings
7: Brooklawn Street & Kingston Pike

Marketplace Concept - Ford Property
2027 Background PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	1177	109	145	1731	4	306	0	248	5	4	5
Future Volume (vph)	4	1177	109	145	1731	4	306	0	248	5	4	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			1%			-1%			-14%	
Storage Length (ft)	95		105	110		0	190		190	0		0
Storage Lanes	1		1	1		0	1		1	0		0
Taper Length (ft)	115			135			130			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850						0.850		0.952	
Flt Protected	0.950			0.950			0.950	0.950			0.982	
Satd. Flow (prot)	1778	3557	1591	1761	3522	0	1690	1690	1591	0	1863	0
Flt Permitted	0.073			0.123			0.950	0.950			0.982	
Satd. Flow (perm)	137	3557	1591	228	3522	0	1690	1690	1591	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			136						270		5	
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		1037			516			871			179	
Travel Time (s)		15.7			7.8			23.8			4.9	
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)	4	1279	118	158	1882	4	333	0	270	5	4	5
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	4	1279	118	158	1886	0	166	167	270	0	14	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes			Yes				
Headway Factor	0.99	0.99	0.99	1.01	1.01	1.01	0.99	0.99	0.99	0.91	0.91	0.91
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	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	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	
Detector 1 Delay (s)	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	Perm	NA	Perm	pm+pt	NA		Split	NA	Perm	Split	NA	
Protected Phases		2		1	6		4	4		3	3	

Timing Plan: PM Peak
Cannon & Cannon, Inc.

Synchro 10 Report
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Lanes, Volumes, Timings
7: Brooklawn Street & Kingston Pike

Marketplace Concept - Ford Property
2027 Background PM

	↖	→	↗	↖	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6					4			
Detector Phase	2	2	2	1	6		4	4	4	3	3	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	8.0	15.0		8.0	8.0	8.0	6.0	6.0	
Minimum Split (s)	22.0	22.0	22.0	15.0	22.0		15.0	15.0	15.0	14.0	14.0	
Total Split (s)	63.0	63.0	63.0	19.0	82.0		24.0	24.0	24.0	14.0	14.0	
Total Split (%)	52.5%	52.5%	52.5%	15.8%	68.3%		20.0%	20.0%	20.0%	11.7%	11.7%	
Maximum Green (s)	57.0	57.0	57.0	13.5	76.0		18.0	18.0	18.0	7.5	7.5	
Yellow Time (s)	4.5	4.5	4.5	4.0	4.5		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		2.0	2.0	2.0	2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	6.0	5.5	6.0		6.0	6.0	6.0		6.5	
Lead/Lag	Lag	Lag	Lag	Lead			Lag	Lag	Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	5.0	5.0	5.0	2.5	5.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Act Effect Green (s)	70.7	70.7	70.7	86.7	86.2		16.4	16.4	16.4		6.4	
Actuated g/C Ratio	0.59	0.59	0.59	0.72	0.72		0.14	0.14	0.14		0.05	
v/c Ratio	0.05	0.61	0.12	0.54	0.75		0.72	0.72	0.60		0.13	
Control Delay	13.5	12.3	1.3	19.7	7.9		67.1	67.4	11.4		44.8	
Queue Delay	0.0	0.0	0.0	0.0	0.3		0.0	0.0	0.0		0.0	
Total Delay	13.5	12.3	1.3	19.7	8.3		67.1	67.4	11.4		44.8	
LOS	B	B	A	B	A		E	E	B		D	
Approach Delay		11.4			9.1			42.2			44.8	
Approach LOS		B			A			D			D	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 6 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 14.9

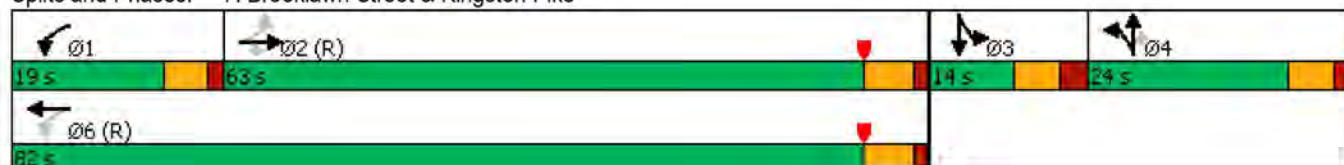
Intersection LOS: B

Intersection Capacity Utilization 90.6%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 7: Brooklawn Street & Kingston Pike



Lanes, Volumes, Timings
8: Kingston Pike & Lendon Welch Way

Marketplace Concept - Ford Property
2027 Background PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	1348	43	92	1880	39	51	2	77	21	7	68
Future Volume (vph)	46	1348	43	92	1880	39	51	2	77	21	7	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-2%			-1%			0%			-3%	
Storage Length (ft)	140		0	100		0	0		0	0		90
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	160			70			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.997				0.850			0.850
Flt Protected	0.950			0.950				0.954			0.964	
Satd. Flow (prot)	1787	3557	0	1778	3546	0	0	1777	1583	0	1823	1607
Flt Permitted	0.048			0.129				0.711			0.745	
Satd. Flow (perm)	90	3557	0	241	3546	0	0	1324	1583	0	1409	1607
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			4				84			77
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		516			828			384			743	
Travel Time (s)		7.8			12.5			10.5			20.3	
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)	50	1465	47	100	2043	42	55	2	84	23	8	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	50	1512	0	100	2085	0	0	57	84	0	31	74
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	1.00	1.00	1.00	0.98	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		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	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
Detector 1 Delay (s)	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	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6		5	2			4			8	

Timing Plan: PM Peak
Cannon & Cannon, Inc.

Synchro 10 Report
Page 11

Lanes, Volumes, Timings
8: Kingston Pike & Lendon Welch Way

Marketplace Concept - Ford Property
2027 Background PM

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	6			2			4		4	8		8
Detector Phase	1	6		5	2		4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	6.0	15.0		6.0	15.0		8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	13.0	22.0		13.0	22.0		15.0	15.0	15.0	15.0	15.0	15.0
Total Split (s)	13.0	89.0		14.0	90.0		17.0	17.0	17.0	17.0	17.0	17.0
Total Split (%)	10.8%	74.2%		11.7%	75.0%		14.2%	14.2%	14.2%	14.2%	14.2%	14.2%
Maximum Green (s)	7.5	83.0		8.5	84.0		11.5	11.5	11.5	11.5	11.5	11.5
Yellow Time (s)	4.0	4.5		4.0	4.5		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	5.5	6.0		5.5	6.0			5.5	5.5		5.5	5.5
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.5	4.0		2.5	4.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	None
Act Effect Green (s)	93.3	86.6		94.8	89.0			10.0	10.0		10.0	10.0
Actuated g/C Ratio	0.78	0.72		0.79	0.74			0.08	0.08		0.08	0.08
v/c Ratio	0.32	0.59		0.37	0.79			0.52	0.40		0.26	0.36
Control Delay	21.4	2.2		3.5	4.4			69.3	16.6		56.8	15.7
Queue Delay	0.0	0.1		0.0	0.4			0.0	0.0		0.0	0.0
Total Delay	21.4	2.3		3.5	4.8			69.3	16.6		56.8	15.7
LOS	C	A		A	A			E	B		E	B
Approach Delay		2.9			4.8			37.9			27.8	
Approach LOS		A			A			D			C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 19 (16%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 5.8

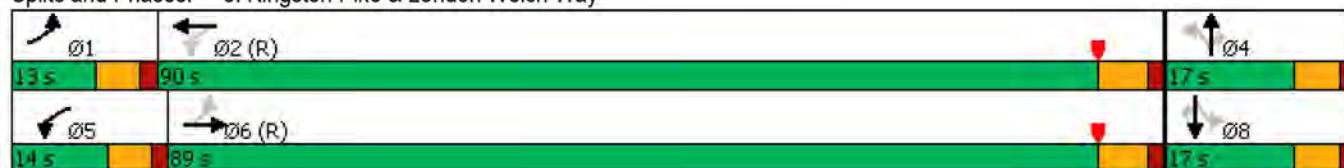
Intersection LOS: A

Intersection Capacity Utilization 82.0%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 8: Kingston Pike & Lendon Welch Way



Lanes, Volumes, Timings
9: Concord Road/West End Avenue & Kingston Pike

Marketplace Concept - Ford Property
2027 Background PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	1186	52	525	1619	115	151	91	369	147	87	91
Future Volume (vph)	58	1186	52	525	1619	115	151	91	369	147	87	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			-2%			-1%			-1%	
Storage Length (ft)	125		0	130		0	175		0	125		0
Storage Lanes	1		0	1		0	2		1	1		0
Taper Length (ft)	80			75			60			90		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.97	1.00	1.00	0.97	1.00	1.00
Frt		0.994			0.990				0.850		0.923	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1778	3536	0	1787	3539	0	3450	1872	1591	3450	1728	0
Flt Permitted	0.091			0.081			0.950			0.950		
Satd. Flow (perm)	170	3536	0	152	3539	0	3450	1872	1591	3450	1728	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			10				82		34	
Link Speed (mph)		45			45			30			25	
Link Distance (ft)		828			1220			824			858	
Travel Time (s)		12.5			18.5			18.7			23.4	
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)	63	1289	57	571	1760	125	164	99	401	160	95	99
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	1346	0	571	1885	0	164	99	401	160	194	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes			Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	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	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	
Detector 1 Delay (s)	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	pm+pt	NA		pm+pt	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	1	6		5	2		4	4	5	3	3	

Timing Plan: PM Peak
Cannon & Cannon, Inc.

Synchro 10 Report
Page 13

Lanes, Volumes, Timings
9: Concord Road/West End Avenue & Kingston Pike

Marketplace Concept - Ford Property
2027 Background PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	6			2			4			4		
Detector Phase	1	6		5	2		4	4	5	3	3	
Switch Phase												
Minimum Initial (s)	6.0	12.0		6.0	12.0		8.0	8.0	6.0	8.0	8.0	
Minimum Split (s)	13.0	19.0		13.0	19.0		15.0	15.0	13.0	15.0	15.0	
Total Split (s)	13.0	50.0		38.0	75.0		15.0	15.0	38.0	17.0	17.0	
Total Split (%)	10.8%	41.7%		31.7%	62.5%		12.5%	12.5%	31.7%	14.2%	14.2%	
Maximum Green (s)	7.5	44.0		32.5	69.0		9.5	9.5	32.5	11.0	11.0	
Yellow Time (s)	4.0	4.5		4.0	4.5		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	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	
Total Lost Time (s)	5.5	6.0		5.5	6.0		5.5	5.5	5.5	6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	2.5	4.0		2.5	4.0		2.5	2.5	2.5	2.5	2.5	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effect Green (s)	51.0	44.0		82.8	72.6		9.2	9.2	47.5	11.0	11.0	
Actuated g/C Ratio	0.42	0.37		0.69	0.60		0.08	0.08	0.40	0.09	0.09	
v/c Ratio	0.40	1.04		1.04	0.88		0.62	0.69	0.59	0.51	1.03	
Control Delay	19.2	61.0		82.4	27.0		64.4	78.5	26.5	58.0	116.8	
Queue Delay	0.0	0.0		0.0	0.1		0.0	0.0	0.0	0.0	0.0	
Total Delay	19.2	61.0		82.4	27.1		64.4	78.5	26.5	58.0	116.8	
LOS	B	E		F	C		E	E	C	E	F	
Approach Delay	59.1			40.0			43.6			90.2		
Approach LOS	E			D			D			F		

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 2 (2%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.04

Intersection Signal Delay: 49.6

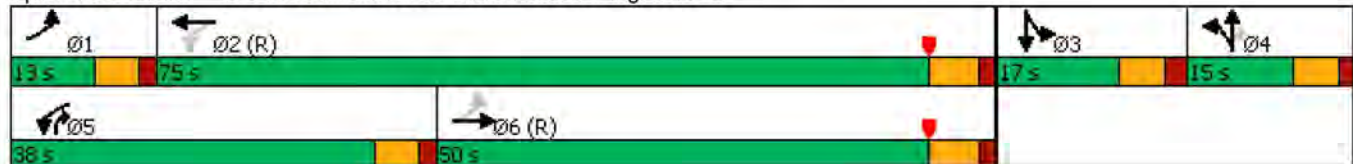
Intersection LOS: D

Intersection Capacity Utilization 99.5%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 9: Concord Road/West End Avenue & Kingston Pike



HCS7 Two-Way Stop-Control Report

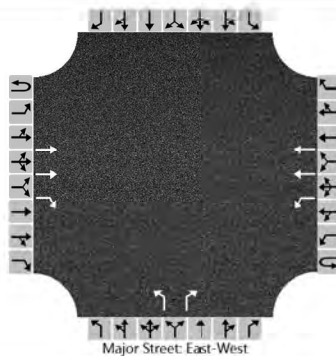
General Information

Analyst	WAS
Agency/Co.	CCI
Date Performed	6/9/2022
Analysis Year	2027
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Combined AM

Site Information

Intersection	Kingston at Glen Abbey
Jurisdiction	Town of Farragut
East/West Street	Kingston Pike
North/South Street	Glenn Abbey Blvd
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	1	0	1	2	0		1	0	1		0	0	0
Configuration			T	R		L	T			L		R				
Volume (veh/h)			1816	18	0	42	1192			5		65				
Percent Heavy Vehicles (%)					3	3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No								No							
Median Type Storage					Left Only								2			

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.86		6.96				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						46				5		71				
Capacity, c (veh/h)						281				85		245				
v/c Ratio						0.16				0.06		0.29				
95% Queue Length, Q ₉₅ (veh)						0.6				0.2		1.2				
Control Delay (s/veh)						20.3				50.2		25.6				
Level of Service (LOS)						C				F		D				
Approach Delay (s/veh)					0.7				27.3							
Approach LOS									D							

Lanes, Volumes, Timings

Marketplace Concept - Ford Property

3: Proposed Site Access/Jamestowne Blvd & Kingston Pike

2027 Combined AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	1818	67	138	976	14	64	91	126	6	106	25
Future Volume (vph)	88	1818	67	138	976	14	64	91	126	6	106	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-5%			-1%			0%			0%	
Storage Length (ft)	45		225	450		0	200		200	100		50
Storage Lanes	1		1	1		0	2		1	1		1
Taper Length (ft)	40			25			100			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00	1.00	0.95	1.00
Frt			0.850		0.998				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1814	3628	1623	1778	3550	0	3433	1863	1583	1770	3539	1583
Flt Permitted	0.207			0.066			0.950			0.693		
Satd. Flow (perm)	395	3628	1623	124	3550	0	3433	1863	1583	1291	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			208		1				208			149
Link Speed (mph)		45			45			30			25	
Link Distance (ft)		1090			1664			599			629	
Travel Time (s)		16.5			25.2			13.6			17.2	
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)	96	1976	73	150	1061	15	70	99	137	7	115	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	96	1976	73	150	1076	0	70	99	137	7	115	27
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			50	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	0.97	0.97	0.97	0.99	0.99	0.99	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	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	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
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		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	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
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
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	pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	

Timing Plan: AM Peak
Cannon & Cannon, Inc.

Synchro 10 Report
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Lanes, Volumes, Timings

Marketplace Concept - Ford Property

3: Proposed Site Access/Jamestowne Blvd & Kingston Pike

2027 Combined AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6					4	8		8
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	6.0	15.0	15.0	6.0	15.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	24.0	24.0	12.0	24.0		12.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	13.0	50.0	50.0	12.0	49.0		12.0	24.0	24.0	24.0	36.0	36.0
Total Split (%)	11.8%	45.5%	45.5%	10.9%	44.5%		10.9%	21.8%	21.8%	21.8%	32.7%	32.7%
Maximum Green (s)	7.0	44.0	44.0	6.0	43.0		6.0	18.0	18.0	18.0	30.0	30.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		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	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	None
Walk Time (s)		7.0	7.0		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	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0			0	0	0	0	0
Act Effct Green (s)	67.8	60.3	60.3	77.0	64.9		6.0	17.0	17.0	15.0	10.0	10.0
Actuated g/C Ratio	0.62	0.55	0.55	0.70	0.59		0.05	0.15	0.15	0.14	0.09	0.09
v/c Ratio	0.28	0.99	0.07	0.56	0.51		0.37	0.34	0.33	0.03	0.36	0.10
Control Delay	9.0	45.4	0.1	25.1	15.7		56.2	44.2	3.0	33.7	49.2	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.0	45.4	0.1	25.1	15.7		56.2	44.2	3.0	33.7	49.2	0.7
LOS	A	D	A	C	B		E	D	A	C	D	A
Approach Delay		42.3			16.9			28.5			39.7	
Approach LOS		D			B			C			D	
Queue Length 50th (ft)	19	~780	0	45	227		25	60	0	4	41	0
Queue Length 95th (ft)	44	#1052	0	116	349		48	118	9	16	65	0
Internal Link Dist (ft)		1010			1584			519			549	
Turn Bay Length (ft)	45		225	450			200		200	100		50
Base Capacity (vph)	344	1988	983	268	2094		187	334	455	334	965	540
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.99	0.07	0.56	0.51		0.37	0.30	0.30	0.02	0.12	0.05

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

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

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 32.9

Intersection LOS: C

Intersection Capacity Utilization 81.4%

ICU Level of Service D

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: 3: Proposed Site Access/Jamestowne Blvd & Kingston Pike



HCS7 Two-Way Stop-Control Report

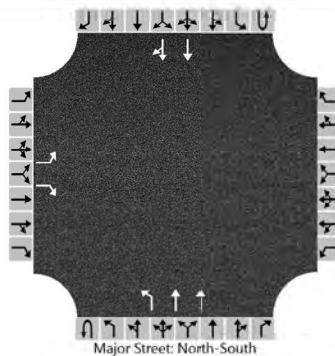
General Information

Analyst	WAS
Agency/Co.	CCI
Date Performed	6/9/2022
Analysis Year	2027
Time Analyzed	AM Peak
Intersection Orientation	North-South
Project Description	Combined AM

Site Information

Intersection	Jamestowne at Campb. Sta.
Jurisdiction	Town of Farragut
East/West Street	Jametowne Blvd
North/South Street	Campbell Station
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	2	0	0	0	2	0
Configuration		L		R						L	T				T	TR
Volume (veh/h)		172		23					0	14	1146				945	145
Percent Heavy Vehicles (%)		2		3					3	3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No															
Median Type Storage	Left Only								2							

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5		6.9						4.1						
Critical Headway (sec)		6.84		6.96						4.16						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.33						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		187		25						15						
Capacity, c (veh/h)		235		447						580						
v/c Ratio		0.80		0.06						0.03						
95% Queue Length, Q ₉₅ (veh)		5.9		0.2						0.1						
Control Delay (s/veh)		61.7		13.5						11.4						
Level of Service (LOS)		F		B						B						
Approach Delay (s/veh)	56.0								0.1							
Approach LOS	F															

Lanes, Volumes, Timings
5: Campbell Station Road & Kingston Pike

Marketplace Concept - Ford Property
2027 Combined AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	459	1092	198	111	643	234	265	459	89	258	336	376
Future Volume (vph)	459	1092	198	111	643	234	265	459	89	258	336	376
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-5%			4%			4%			1%	
Storage Length (ft)	280		295	160		320	135		0	320		325
Storage Lanes	2		1	1		1	2		0	2		1
Taper Length (ft)	95			60			105			150		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95	0.97	0.95	1.00
Frt			0.850			0.850		0.976				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3519	3628	1623	1734	3468	1552	3364	3385	0	3416	3522	1575
Flt Permitted	0.950			0.161			0.950			0.950		
Satd. Flow (perm)	3519	3628	1623	294	3468	1552	3364	3385	0	3416	3522	1575
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			139			176			22			103
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		1664			1037			689			1086	
Travel Time (s)		25.2			15.7			11.7			18.5	
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)	499	1187	215	121	699	254	288	499	97	280	365	409
Shared Lane Traffic (%)												
Lane Group Flow (vph)	499	1187	215	121	699	254	288	596	0	280	365	409
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	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		Yes			Yes			Yes			Yes	
Headway Factor	0.97	0.97	0.97	1.03	1.03	1.03	1.03	1.03	1.03	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	20
Trailing Detector (ft)	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
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	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	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
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
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	pm+ov	pm+pt	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	1	6	7	5	2	3	7	4		3	8	1

Timing Plan: AM Peak
Cannon & Cannon, Inc.

Synchro 10 Report
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Lanes, Volumes, Timings
5: Campbell Station Road & Kingston Pike

Marketplace Concept - Ford Property
2027 Combined AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			6	2		2						8
Detector Phase	1	6	7	5	2	3	7	4		3	8	1
Switch Phase												
Minimum Initial (s)	6.0	12.0	6.0	6.0	12.0	6.0	6.0	8.0		6.0	8.0	6.0
Minimum Split (s)	13.0	19.0	13.0	13.0	19.0	13.0	13.0	15.0		13.0	15.0	13.0
Total Split (s)	22.0	39.0	17.0	13.0	30.0	15.0	17.0	23.0		15.0	21.0	22.0
Total Split (%)	24.4%	43.3%	18.9%	14.4%	33.3%	16.7%	18.9%	25.6%		16.7%	23.3%	24.4%
Maximum Green (s)	16.0	33.0	11.5	7.0	24.0	9.5	11.5	17.5		9.5	15.5	16.0
Yellow Time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	1.5	1.5	2.0	1.5	1.5	1.5	1.5		1.5	1.5	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
Total Lost Time (s)	6.0	6.0	5.5	6.0	6.0	5.5	5.5	5.5		5.5	5.5	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.5	4.0	3.0	2.5	4.0	3.0	3.0	2.5		3.0	2.5	2.5
Recall Mode	None	C-Max	None	None	C-Max	None	None	None		None	None	None
Act Effct Green (s)	15.4	33.5	50.6	31.7	24.9	40.4	11.1	17.2		9.5	15.6	36.5
Actuated g/C Ratio	0.17	0.37	0.56	0.35	0.28	0.45	0.12	0.19		0.11	0.17	0.41
v/c Ratio	0.83	0.88	0.22	0.57	0.73	0.32	0.70	0.90		0.78	0.60	0.58
Control Delay	48.9	35.6	4.3	22.6	30.6	11.6	43.7	51.7		55.4	39.0	19.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	48.9	35.6	4.3	22.6	30.6	11.6	43.7	51.7		55.4	39.0	19.1
LOS	D	D	A	C	C	B	D	D		E	D	B
Approach Delay		35.5			25.2			49.1			35.6	
Approach LOS		D			C			D			D	
Queue Length 50th (ft)	141	328	19	20	185	71	83	172		81	102	129
Queue Length 95th (ft)	#212	#456	51	71	255	101	126	#266		#140	148	223
Internal Link Dist (ft)		1584			957			609			1006	
Turn Bay Length (ft)	280		295	160		320	135			320		325
Base Capacity (vph)	625	1352	980	216	960	793	429	675		360	610	710
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.80	0.88	0.22	0.56	0.73	0.32	0.67	0.88		0.78	0.60	0.58

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 40 (44%), Referenced to phase 2:WBTL and 6:EBT, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 35.7

Intersection LOS: D

Intersection Capacity Utilization 78.4%

ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 5: Campbell Station Road & Kingston Pike



Lanes, Volumes, Timings
6: Campbell Station Road & Municipal Center Drive

Marketplace Concept - Ford Property
2027 Combined AM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	179	105	123	582	371	199
Future Volume (vph)	179	105	123	582	371	199
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-2%			1%	-3%	
Storage Length (ft)	0	0	55			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.950				0.948	
Flt Protected	0.969		0.950			
Satd. Flow (prot)	1732	0	1761	3522	3406	0
Flt Permitted	0.969		0.269			
Satd. Flow (perm)	1732	0	499	3522	3406	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	59				211	
Link Speed (mph)	25			40	40	
Link Distance (ft)	557			675	689	
Travel Time (s)	15.2			11.5	11.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	195	114	134	633	403	216
Shared Lane Traffic (%)						
Lane Group Flow (vph)	309	0	134	633	619	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			24	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	0.99	0.99	1.01	1.01	0.98	0.98
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	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	Prot		pm+pt	NA	NA	
Protected Phases	8		1	6	2	

Timing Plan: AM Peak
Cannon & Cannon, Inc.

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Lanes, Volumes, Timings
6: Campbell Station Road & Municipal Center Drive

Marketplace Concept - Ford Property
2027 Combined AM



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases	6					
Detector Phase	8		1	6	2	
Switch Phase						
Minimum Initial (s)	6.0		6.0	10.0	10.0	
Minimum Split (s)	13.0		13.0	17.0	17.0	
Total Split (s)	15.0		13.0	30.0	17.0	
Total Split (%)	33.3%		28.9%	66.7%	37.8%	
Maximum Green (s)	9.5		7.5	24.5	11.5	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.5		5.5	5.5	5.5	
Lead/Lag	Lead			Lag		
Lead-Lag Optimize?	Yes			Yes		
Vehicle Extension (s)	3.0		2.5	4.0	4.0	
Recall Mode	None		None	C-Max	C-Max	
Act Effct Green (s)	9.1		24.9	24.9	15.0	
Actuated g/C Ratio	0.20		0.55	0.55	0.33	
v/c Ratio	0.78		0.29	0.32	0.48	
Control Delay	30.6		6.8	6.2	7.8	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	30.6		6.8	6.2	7.8	
LOS	C		A	A	A	
Approach Delay	30.6			6.3	7.8	
Approach LOS	C			A	A	
Queue Length 50th (ft)	60		15	41	95	
Queue Length 95th (ft)	#162		33	64	112	
Internal Link Dist (ft)	477			595	609	
Turn Bay Length (ft)			55			
Base Capacity (vph)	412		487	1950	1277	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.75		0.28	0.32	0.48	

Intersection Summary

Area Type: Other

Cycle Length: 45

Actuated Cycle Length: 45

Offset: 1 (2%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow

Natural Cycle: 45

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 11.3

Intersection LOS: B

Intersection Capacity Utilization 53.5%

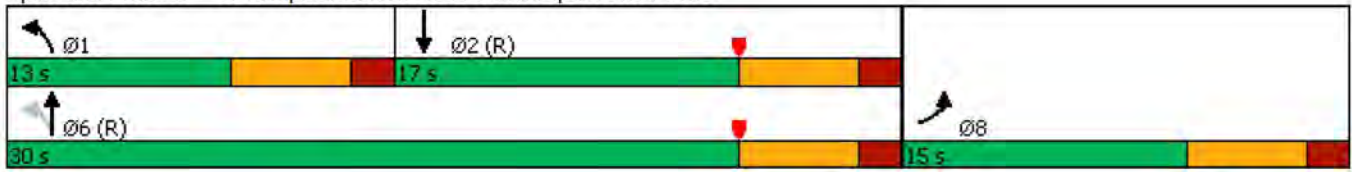
ICU Level of Service A

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 6: Campbell Station Road & Municipal Center Drive



Lanes, Volumes, Timings
7: Brooklawn Street & Kingston Pike

Marketplace Concept - Ford Property
2027 Combined AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1823	63	144	979	5	108	0	207	0	0	0
Future Volume (vph)	0	1823	63	144	979	5	108	0	207	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			1%			-1%			-14%	
Storage Length (ft)	95		105	110		0	190		190	0		0
Storage Lanes	1		1	1		0	1		1	0		0
Taper Length (ft)	115			135			130			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850		0.999				0.850			
Flt Protected				0.950			0.950	0.950				
Satd. Flow (prot)	1872	3557	1591	1761	3518	0	1690	1690	1591	0	1993	0
Flt Permitted				0.068			0.950	0.950				
Satd. Flow (perm)	1872	3557	1591	126	3518	0	1690	1690	1591	0	1993	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			182		1				225			
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		1037			516			871			179	
Travel Time (s)		15.7			7.8			23.8			4.9	
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)	0	1982	68	157	1064	5	117	0	225	0	0	0
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	0	1982	68	157	1069	0	58	59	225	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes			Yes				
Headway Factor	0.99	0.99	0.99	1.01	1.01	1.01	0.99	0.99	0.99	0.91	0.91	0.91
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	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	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	
Detector 1 Delay (s)	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	Perm	NA	Perm	pm+pt	NA		Split	NA	Perm			
Protected Phases		2		1	6		4	4		3	3	

Timing Plan: AM Peak
Cannon & Cannon, Inc.

Synchro 10 Report
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Lanes, Volumes, Timings
7: Brooklawn Street & Kingston Pike

Marketplace Concept - Ford Property
2027 Combined AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6					4			
Detector Phase	2	2	2	1	6		4	4	4	3	3	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	8.0	15.0		8.0	8.0	8.0	6.0	6.0	
Minimum Split (s)	22.0	22.0	22.0	15.0	22.0		15.0	15.0	15.0	14.0	14.0	
Total Split (s)	46.0	46.0	46.0	15.0	61.0		15.0	15.0	15.0	14.0	14.0	
Total Split (%)	51.1%	51.1%	51.1%	16.7%	67.8%		16.7%	16.7%	16.7%	15.6%	15.6%	
Maximum Green (s)	40.0	40.0	40.0	9.5	55.0		9.0	9.0	9.0	7.5	7.5	
Yellow Time (s)	4.5	4.5	4.5	4.0	4.5		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		2.0	2.0	2.0	2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	6.0	5.5	6.0		6.0	6.0	6.0		6.5	
Lead/Lag	Lag	Lag	Lag	Lead			Lag	Lag	Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	5.0	5.0	5.0	2.5	5.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Act Effct Green (s)		53.1	53.1	68.4	67.9		10.1	10.1	10.1			
Actuated g/C Ratio		0.59	0.59	0.76	0.75		0.11	0.11	0.11			
v/c Ratio		0.94	0.07	0.59	0.40		0.31	0.31	0.60			
Control Delay		25.8	0.4	29.0	4.7		40.1	40.2	12.1			
Queue Delay		0.0	0.0	0.0	0.1		0.0	0.0	0.0			
Total Delay		25.8	0.4	29.0	4.8		40.1	40.2	12.1			
LOS		C	A	C	A		D	D	B			
Approach Delay		25.0			7.9			21.7				
Approach LOS		C			A			C				
Queue Length 50th (ft)		517	0	66	70		33	33	0			
Queue Length 95th (ft)		#844	m0	m91	m135		67	68	61			
Internal Link Dist (ft)		957			436			791			99	
Turn Bay Length (ft)			105	110			190		190			
Base Capacity (vph)		2099	1013	281	2655		198	198	385			
Starvation Cap Reductn		0	0	0	487		0	0	0			
Spillback Cap Reductn		0	0	0	0		0	0	0			
Storage Cap Reductn		0	0	0	0		0	0	0			
Reduced v/c Ratio		0.94	0.07	0.56	0.49		0.29	0.30	0.58			

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 83 (92%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 18.9

Intersection LOS: B

Intersection Capacity Utilization 79.6%

ICU Level of Service D

Analysis Period (min) 15

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: 7: Brooklawn Street & Kingston Pike



Lanes, Volumes, Timings
8: Kingston Pike & Lendon Welch Way

Marketplace Concept - Ford Property
2027 Combined AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	362	1638	33	46	994	265	9	108	28	141	12	133
Future Volume (vph)	362	1638	33	46	994	265	9	108	28	141	12	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-2%			-1%			0%			-3%	
Storage Length (ft)	140		0	100		0	0		0	0		90
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	160			70			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.968				0.850			0.850
Flt Protected	0.950			0.950				0.996			0.956	
Satd. Flow (prot)	1787	3564	0	1778	3443	0	0	1855	1583	0	1807	1607
Flt Permitted	0.085			0.096				0.967			0.641	
Satd. Flow (perm)	160	3564	0	180	3443	0	0	1801	1583	0	1212	1607
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			48				170			170
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		516			828			384			743	
Travel Time (s)		7.8			12.5			10.5			20.3	
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)	393	1780	36	50	1080	288	10	117	30	153	13	145
Shared Lane Traffic (%)												
Lane Group Flow (vph)	393	1816	0	50	1368	0	0	127	30	0	166	145
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	1.00	1.00	1.00	0.98	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		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	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
Detector 1 Delay (s)	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	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6		5	2			4			8	

Timing Plan: AM Peak
Cannon & Cannon, Inc.

Synchro 10 Report
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Lanes, Volumes, Timings
8: Kingston Pike & Lendon Welch Way

Marketplace Concept - Ford Property
2027 Combined AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	6			2			4		4	8		8
Detector Phase	1	6		5	2		4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	6.0	15.0		6.0	15.0		8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	13.0	22.0		13.0	22.0		15.0	15.0	15.0	15.0	15.0	15.0
Total Split (s)	24.0	57.0		13.0	46.0		20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	26.7%	63.3%		14.4%	51.1%		22.2%	22.2%	22.2%	22.2%	22.2%	22.2%
Maximum Green (s)	18.5	51.0		7.5	40.0		14.5	14.5	14.5	14.5	14.5	14.5
Yellow Time (s)	4.0	4.5		4.0	4.5		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	5.5	6.0		5.5	6.0			5.5	5.5		5.5	5.5
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.5	4.0		2.5	4.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	None
Act Effct Green (s)	65.0	57.5		48.2	41.5			14.0	14.0		14.0	14.0
Actuated g/C Ratio	0.72	0.64		0.54	0.46			0.16	0.16		0.16	0.16
v/c Ratio	0.91	0.80		0.25	0.85			0.45	0.08		0.88	0.37
Control Delay	52.0	5.7		5.7	19.7			40.1	0.4		79.9	6.7
Queue Delay	0.0	0.3		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	52.0	6.0		5.7	19.7			40.1	0.4		79.9	6.7
LOS	D	A		A	B			D	A		E	A
Approach Delay		14.2			19.2			32.5			45.8	
Approach LOS		B			B			C			D	
Queue Length 50th (ft)	162	37		6	231			66	0		93	0
Queue Length 95th (ft)	m219	m100		m7	m240			121	0		#206	37
Internal Link Dist (ft)		436			748			304			663	
Turn Bay Length (ft)	140			100								90
Base Capacity (vph)	450	2277		232	1614			290	397		195	401
Starvation Cap Reductn	0	92		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.87	0.83		0.22	0.85			0.44	0.08		0.85	0.36

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 87 (97%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 19.0

Intersection LOS: B

Intersection Capacity Utilization 85.3%

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.

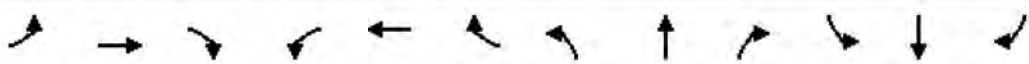
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Kingston Pike & Lendon Welch Way



Lanes, Volumes, Timings
9: Concord Road/West End Avenue & Kingston Pike

Marketplace Concept - Ford Property
2027 Combined AM

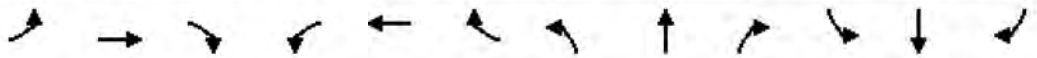
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	251	1346	75	173	775	267	236	363	651	450	133	222
Future Volume (vph)	251	1346	75	173	775	267	236	363	651	450	133	222
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			-2%			-1%			-1%	
Storage Length (ft)	125		0	130		0	175		0	125		0
Storage Lanes	1		0	1		0	2		2	1		0
Taper Length (ft)	80			75			60			90		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.97	1.00	0.88	0.97	1.00	1.00
Frt		0.992			0.962				0.850		0.906	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1778	3528	0	1787	3439	0	3450	1872	2801	3450	1696	0
Flt Permitted	0.129			0.138			0.950			0.950		
Satd. Flow (perm)	241	3528	0	260	3439	0	3450	1872	2801	3450	1696	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			56				109		78	
Link Speed (mph)		45			45			30			25	
Link Distance (ft)		828			1220			824			858	
Travel Time (s)		12.5			18.5			18.7			23.4	
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)	273	1463	82	188	842	290	257	395	708	489	145	241
Shared Lane Traffic (%)												
Lane Group Flow (vph)	273	1545	0	188	1132	0	257	395	708	489	386	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes			Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	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	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	
Detector 1 Delay (s)	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	pm+pt	NA		pm+pt	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	1	6		5	2		4	4	5	3	3	

Timing Plan: AM Peak
Cannon & Cannon, Inc.

Synchro 10 Report
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Lanes, Volumes, Timings
9: Concord Road/West End Avenue & Kingston Pike

Marketplace Concept - Ford Property
2027 Combined AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	6			2					4			
Detector Phase	1	6		5	2		4	4	5	3	3	
Switch Phase												
Minimum Initial (s)	6.0	12.0		6.0	12.0		8.0	8.0	6.0	8.0	8.0	
Minimum Split (s)	13.0	19.0		13.0	19.0		15.0	15.0	13.0	15.0	15.0	
Total Split (s)	15.0	37.0		13.0	35.0		21.0	21.0	13.0	19.0	19.0	
Total Split (%)	16.7%	41.1%		14.4%	38.9%		23.3%	23.3%	14.4%	21.1%	21.1%	
Maximum Green (s)	9.5	31.0		7.5	29.0		15.5	15.5	7.5	13.0	13.0	
Yellow Time (s)	4.0	4.5		4.0	4.5		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	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	
Total Lost Time (s)	5.5	6.0		5.5	6.0		5.5	5.5	5.5	6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	2.5	4.0		2.5	4.0		2.5	2.5	2.5	2.5	2.5	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	41.0	31.0		37.0	29.0		15.5	15.5	28.5	13.0	13.0	
Actuated g/C Ratio	0.46	0.34		0.41	0.32		0.17	0.17	0.32	0.14	0.14	
v/c Ratio	1.00	1.27		0.80	0.99		0.43	1.23	0.74	0.98	1.24	
Control Delay	75.7	152.7		43.5	53.9		35.9	160.8	28.4	76.1	161.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	75.7	152.7		43.5	53.9		35.9	160.8	28.4	76.1	161.6	
LOS	E	F		D	D		D	F	C	E	F	
Approach Delay		141.1			52.4			68.3			113.8	
Approach LOS		F			D			E			F	
Queue Length 50th (ft)	~133	~574		58	321		68	~279	172	144	~235	
Queue Length 95th (ft)	m#204	#714		#165	#468		105	#455	245	#244	#413	
Internal Link Dist (ft)		748			1140			744			778	
Turn Bay Length (ft)	125			130			175			125		
Base Capacity (vph)	272	1219		234	1146		594	322	961	498	311	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	1.00	1.27		0.80	0.99		0.43	1.23	0.74	0.98	1.24	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 69 (77%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.27

Intersection Signal Delay: 96.4

Intersection LOS: F

Intersection Capacity Utilization 100.3%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

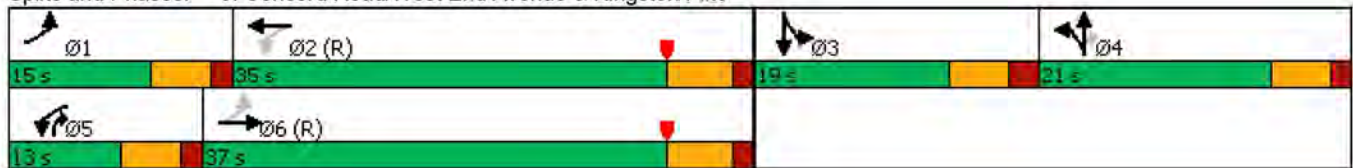
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 9: Concord Road/West End Avenue & Kingston Pike



Lanes, Volumes, Timings
4: Campbell Station Road & Jamestowne Blvd

Marketplace Concept - Ford Property
2027 Combined AM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	172	23	14	1146	945	145
Future Volume (vph)	172	23	14	1146	945	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%	1%	
Storage Length (ft)	0	100	100			150
Storage Lanes	1	1	1			0
Taper Length (ft)	25		80			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.980	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	3451	0
Flt Permitted	0.950		0.178			
Satd. Flow (perm)	1770	1583	332	3539	3451	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		25			25	
Link Speed (mph)	25			40	40	
Link Distance (ft)	567			1086	722	
Travel Time (s)	15.5			18.5	12.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	187	25	15	1246	1027	158
Shared Lane Traffic (%)						
Lane Group Flow (vph)	187	25	15	1246	1185	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.01	1.01
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	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	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	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	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	

Timing Plan: AM Peak
Cannon & Cannon, Inc.

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Lanes, Volumes, Timings
4: Campbell Station Road & Jamestowne Blvd

Marketplace Concept - Ford Property
2027 Combined AM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	15.0	15.0	
Minimum Split (s)	24.0	24.0	12.0	24.0	24.0	
Total Split (s)	31.0	31.0	12.0	79.0	67.0	
Total Split (%)	28.2%	28.2%	10.9%	71.8%	60.9%	
Maximum Green (s)	25.0	25.0	6.0	73.0	61.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	16.9	16.9	81.1	81.1	76.3	
Actuated g/C Ratio	0.15	0.15	0.74	0.74	0.69	
v/c Ratio	0.69	0.10	0.05	0.48	0.49	
Control Delay	56.8	14.4	5.2	7.1	10.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	56.8	14.4	5.2	7.1	10.1	
LOS	E	B	A	A	B	
Approach Delay	51.8			7.0	10.1	
Approach LOS	D			A	B	
Queue Length 50th (ft)	126	0	2	161	146	
Queue Length 95th (ft)	191	23	9	251	330	
Internal Link Dist (ft)	487			1006	642	
Turn Bay Length (ft)		100	100			
Base Capacity (vph)	402	379	324	2610	2400	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.47	0.07	0.05	0.48	0.49	
Intersection Summary						
Area Type:	Other					
Cycle Length: 110						
Actuated Cycle Length: 110						
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green						
Natural Cycle: 65						
Control Type: Actuated-Coordinated						
Maximum v/c Ratio: 0.69						
Intersection Signal Delay: 12.0				Intersection LOS: B		
Intersection Capacity Utilization 51.2%				ICU Level of Service A		
Analysis Period (min) 15						

Splits and Phases: 4: Campbell Station Road & Jamestowne Blvd



Lanes, Volumes, Timings
6: Campbell Station Road & Municipal Center Drive

Marketplace Concept - Ford Property
2027 Combined AM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	WT		WT	TT	TT	
Traffic Volume (vph)	179	105	123	582	371	199
Future Volume (vph)	179	105	123	582	371	199
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-2%			1%	-3%	
Storage Length (ft)	0	150	55			0
Storage Lanes	2	0	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	0.97	0.95	1.00	0.95	0.95	0.95
Frt	0.945				0.948	
Flt Protected	0.969		0.950			
Satd. Flow (prot)	3342	0	1761	3522	3406	0
Flt Permitted	0.969		0.366			
Satd. Flow (perm)	3342	0	678	3522	3406	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	114				137	
Link Speed (mph)	25			40	40	
Link Distance (ft)	557			675	689	
Travel Time (s)	15.2			11.5	11.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	195	114	134	633	403	216
Shared Lane Traffic (%)						
Lane Group Flow (vph)	309	0	134	633	619	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	0.99	0.99	1.01	1.01	0.98	0.98
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	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	Prot		pm+pt	NA	NA	
Protected Phases	8		1	6	2	

Timing Plan: AM Peak
Cannon & Cannon, Inc.

Synchro 10 Report
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Lanes, Volumes, Timings
6: Campbell Station Road & Municipal Center Drive

Marketplace Concept - Ford Property
2027 Combined AM



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases	6					
Detector Phase	8		1	6	2	
Switch Phase						
Minimum Initial (s)	6.0		6.0	10.0	10.0	
Minimum Split (s)	13.0		13.0	17.0	17.0	
Total Split (s)	26.0		20.0	64.0	44.0	
Total Split (%)	28.9%		22.2%	71.1%	48.9%	
Maximum Green (s)	20.5		14.5	58.5	38.5	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.5		5.5	5.5	5.5	
Lead/Lag	Lead			Lag		
Lead-Lag Optimize?	Yes			Yes		
Vehicle Extension (s)	3.0		2.5	4.0	4.0	
Recall Mode	None		None	C-Max	C-Max	
Act Effct Green (s)	10.7		68.3	68.3	55.7	
Actuated g/C Ratio	0.12		0.76	0.76	0.62	
v/c Ratio	0.62		0.22	0.24	0.29	
Control Delay	28.7		4.2	3.7	5.0	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	28.7		4.2	3.7	5.0	
LOS	C		A	A	A	
Approach Delay	28.7			3.8	5.0	
Approach LOS	C			A	A	
Queue Length 50th (ft)	54		16	44	34	
Queue Length 95th (ft)	91		36	74	66	
Internal Link Dist (ft)	477			595	609	
Turn Bay Length (ft)			55			
Base Capacity (vph)	849		688	2671	2161	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.36		0.19	0.24	0.29	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

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

Natural Cycle: 45

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 8.8

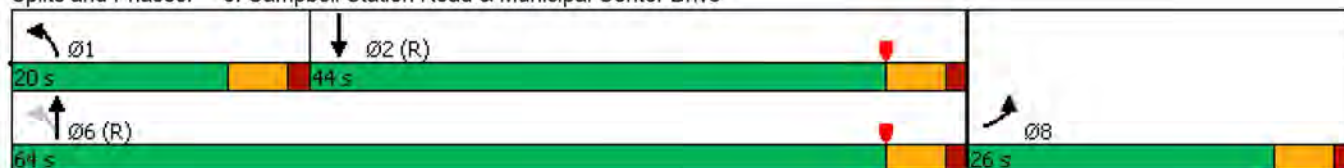
Intersection LOS: A

Intersection Capacity Utilization 45.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 6: Campbell Station Road & Municipal Center Drive



HCS7 Two-Way Stop-Control Report

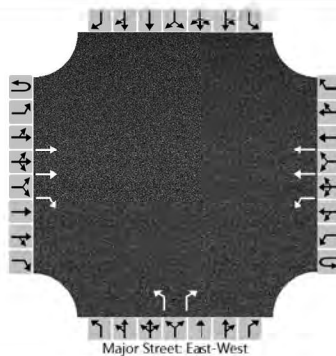
General Information

Analyst	WAS
Agency/Co.	CCI
Date Performed	6/9/2022
Analysis Year	2027
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Combined PM

Site Information

Intersection	Kingston at Glen Abbey
Jurisdiction	Town of Farragut
East/West Street	Kingston Pike
North/South Street	Glenn Abbey Blvd
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	1	0	1	2	0		1	0	1		0	0	0
Configuration			T	R		L	T			L		R				
Volume (veh/h)			1618	26	0	62	1890			31		51				
Percent Heavy Vehicles (%)					3	3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No								No							
Median Type Storage					Left Only								2			

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.86		6.96				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						67				34		55				
Capacity, c (veh/h)						339				98		289				
v/c Ratio						0.20				0.35		0.19				
95% Queue Length, Q ₉₅ (veh)						0.7				1.4		0.7				
Control Delay (s/veh)						18.3				60.2		20.4				
Level of Service (LOS)						C				F		C				
Approach Delay (s/veh)					0.6				35.5							
Approach LOS									E							

Lanes, Volumes, Timings
3: Kingston Pike & Jamestowne Blvd

Marketplace Concept - Ford Property
2027 Combined PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	1588	185	281	1881	18	180	156	274	6	163	49
Future Volume (vph)	51	1588	185	281	1881	18	180	156	274	6	163	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-5%			-1%			0%			0%	
Storage Length (ft)	45		225	450		0	200		200	100		50
Storage Lanes	1		1	1		0	2		1	1		1
Taper Length (ft)	40			25			120			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00	1.00	0.95	1.00
Fr _t			0.850		0.999				0.850			0.850
Fl _t Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1814	3628	1623	1778	3553	0	3433	1863	1583	1770	3539	1583
Fl _t Permitted	0.069			0.062			0.950			0.650		
Satd. Flow (perm)	132	3628	1623	116	3553	0	3433	1863	1583	1211	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			210		1				298			164
Link Speed (mph)		45			45			30			25	
Link Distance (ft)		1090			1664			762			629	
Travel Time (s)		16.5			25.2			17.3			17.2	
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)	55	1726	201	305	2045	20	196	170	298	7	177	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	1726	201	305	2065	0	196	170	298	7	177	53
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			50	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	0.97	0.97	0.97	0.99	0.99	0.99	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	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	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
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		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	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
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
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	pm+pt	NA	Free	pm+pt	NA		Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	

Timing Plan: PM Peak
Cannon & Cannon, Inc.

Synchro 10 Report
Page 1

Lanes, Volumes, Timings
3: Kingston Pike & Jamestowne Blvd

Marketplace Concept - Ford Property
2027 Combined PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		Free	6					4	8		8
Detector Phase	5	2		1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	6.0	15.0		6.0	15.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	24.0		12.0	24.0		12.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	12.0	69.0		23.0	80.0		19.0	24.0	24.0	24.0	29.0	29.0
Total Split (%)	8.6%	49.3%		16.4%	57.1%		13.6%	17.1%	17.1%	17.1%	20.7%	20.7%
Maximum Green (s)	6.0	63.0		17.0	74.0		13.0	18.0	18.0	18.0	23.0	23.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		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	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	Max		None	None	None	None	None	None
Walk Time (s)		7.0			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	11.0
Pedestrian Calls (#/hr)		0			0			0	0	0	0	0
Act Effct Green (s)	70.1	63.0	140.0	96.8	86.1		12.1	28.6	28.6	19.3	13.1	13.1
Actuated g/C Ratio	0.50	0.45	1.00	0.69	0.62		0.09	0.20	0.20	0.14	0.09	0.09
v/c Ratio	0.36	1.06	0.12	0.74	0.95		0.66	0.45	0.53	0.04	0.53	0.18
Control Delay	19.3	76.7	0.2	48.6	36.5		73.2	52.9	8.7	40.3	65.9	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.3	76.7	0.2	48.6	36.5		73.2	52.9	8.7	40.3	65.9	1.3
LOS	B	E	A	D	D		E	D	A	D	E	A
Approach Delay		67.3			38.0			39.1			50.7	
Approach LOS		E			D			D			D	
Queue Length 50th (ft)	15	~904	0	205	902		90	133	0	5	83	0
Queue Length 95th (ft)	35	#1044	0	#414	#1253		132	218	84	18	116	0
Internal Link Dist (ft)		1010			1584			682			549	
Turn Bay Length (ft)	45		225	450			200		200	100		50
Base Capacity (vph)	151	1632	1623	410	2185		318	380	560	336	581	397
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.36	1.06	0.12	0.74	0.95		0.62	0.45	0.53	0.02	0.30	0.13
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green												
Natural Cycle: 145												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 1.06												
Intersection Signal Delay: 49.8					Intersection LOS: D							
Intersection Capacity Utilization 92.7%					ICU Level of Service F							
Analysis Period (min) 15												

Lanes, Volumes, Timings 3: Kingston Pike & Jamestowne Blvd

Marketplace Concept - Ford Property
2027 Combined PM

~ 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: 3: Kingston Pike & Jamestowne Blvd



HCS7 Two-Way Stop-Control Report

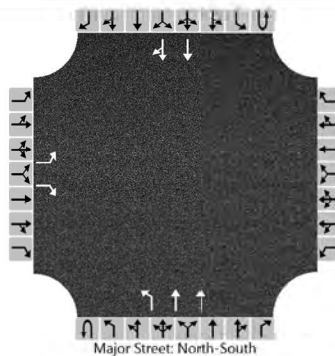
General Information

Analyst	WAS
Agency/Co.	CCI
Date Performed	6/9/2022
Analysis Year	2027
Time Analyzed	PM Peak
Intersection Orientation	North-South
Project Description	Combined AM

Site Information

Intersection	Jamestowne at Campb. Sta.
Jurisdiction	Town of Farragut
East/West Street	Jametowne Blvd
North/South Street	Campbell Station
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	2	0	0	0	2	0
Configuration		L		R						L	T				T	TR
Volume (veh/h)		190		36					0	23	1265				1281	193
Percent Heavy Vehicles (%)		2		3					3	3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No															
Median Type Storage	Left Only								2							

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5		6.9						4.1						
Critical Headway (sec)		6.84		6.96						4.16						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.33						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		207		39						25						
Capacity, c (veh/h)		151		325						400						
v/c Ratio		1.37		0.12						0.06						
95% Queue Length, Q ₉₅ (veh)		12.9		0.4						0.2						
Control Delay (s/veh)		258.0		17.6						14.6						
Level of Service (LOS)		F		C						B						
Approach Delay (s/veh)	219.7									0.3						
Approach LOS	F															

Lanes, Volumes, Timings
5: Campbell Station Road & Kingston Pike

Marketplace Concept - Ford Property
2027 Combined PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	399	1094	368	111	1364	456	357	420	142	374	581	450
Future Volume (vph)	399	1094	368	111	1364	456	357	420	142	374	581	450
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-5%			4%			4%			1%	
Storage Length (ft)	280		295	160		320	135		0	320		325
Storage Lanes	2		1	1		1	2		0	2		1
Taper Length (ft)	95			60			105			150		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95	0.97	0.95	1.00
Fr _t			0.850			0.850		0.962				0.850
Fl _t Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3519	3628	1623	1734	3468	1552	3364	3337	0	3416	3522	1575
Fl _t Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3519	3628	1623	1734	3468	1552	3364	3337	0	3416	3522	1575
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			77			77			33			77
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		1664			1037			689			1086	
Travel Time (s)		25.2			15.7			11.7			18.5	
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)	434	1189	400	121	1483	496	388	457	154	407	632	489
Shared Lane Traffic (%)												
Lane Group Flow (vph)	434	1189	400	121	1483	496	388	611	0	407	632	489
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	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		Yes			Yes			Yes			Yes	
Headway Factor	0.97	0.97	0.97	1.03	1.03	1.03	1.03	1.03	1.03	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	20
Trailing Detector (ft)	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
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	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	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
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
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	pm+ov	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	1	6	7	5	2	3	7	4		3	8	1

Timing Plan: PM Peak
Cannon & Cannon, Inc.

Synchro 10 Report
Page 1

Lanes, Volumes, Timings
5: Campbell Station Road & Kingston Pike

Marketplace Concept - Ford Property
2027 Combined PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	6					2		8				
Detector Phase	1	6	7	5	2	3	7	4		3	8	1
Switch Phase												
Minimum Initial (s)	6.0	12.0	6.0	6.0	12.0	6.0	6.0	8.0		6.0	8.0	6.0
Minimum Split (s)	13.0	19.0	13.0	13.0	19.0	13.0	13.0	15.0		13.0	15.0	13.0
Total Split (s)	20.0	58.0	19.0	17.0	55.0	20.0	19.0	25.0		20.0	26.0	20.0
Total Split (%)	16.7%	48.3%	15.8%	14.2%	45.8%	16.7%	15.8%	20.8%		16.7%	21.7%	16.7%
Maximum Green (s)	14.0	52.0	13.5	11.0	49.0	14.5	13.5	19.5		14.5	20.5	14.0
Yellow Time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	1.5	1.5	2.0	1.5	1.5	1.5	1.5		1.5	1.5	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
Total Lost Time (s)	6.0	6.0	5.5	6.0	6.0	5.5	5.5	5.5		5.5	5.5	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.5	4.0	3.0	2.5	4.0	3.0	3.0	2.5		3.0	2.5	2.5
Recall Mode	None	C-Max	None	None	C-Max	None	None	None		None	None	None
Act Effct Green (s)	14.0	52.5	72.0	10.5	49.0	69.5	13.5	19.5		14.5	20.5	40.0
Actuated g/C Ratio	0.12	0.44	0.60	0.09	0.41	0.58	0.11	0.16		0.12	0.17	0.33
v/c Ratio	1.06	0.75	0.40	0.80	1.05	0.53	1.03	1.07		0.99	1.05	0.85
Control Delay	111.3	32.1	11.4	82.8	62.6	8.0	105.4	104.1		94.3	98.9	46.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	111.3	32.1	11.4	82.8	62.6	8.0	105.4	104.1		94.3	98.9	46.4
LOS	F	C	B	F	E	A	F	F		F	F	D
Approach Delay	45.0				50.9			104.6		80.9		
Approach LOS	D				D			F		F		
Queue Length 50th (ft)	~190	401	123	89	~654	115	~164	~265		164	~281	302
Queue Length 95th (ft)	#294	487	189	m123	#791	m147	#265	#385		#269	#400	#492
Internal Link Dist (ft)	1584				957			609		1006		
Turn Bay Length (ft)	280		295	160		320	135			320		325
Base Capacity (vph)	410	1586	1004	158	1416	931	378	569		412	601	576
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	1.06	0.75	0.40	0.77	1.05	0.53	1.03	1.07		0.99	1.05	0.85

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 1 (1%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.07

Intersection Signal Delay: 64.0

Intersection LOS: E

Intersection Capacity Utilization 95.1%

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: 5: Campbell Station Road & Kingston Pike



Lanes, Volumes, Timings
6: Campbell Station Road & Municipal Center Drive

Marketplace Concept - Ford Property
2027 Combined PM

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	317	222	208	551	732	275
Future Volume (vph)	317	222	208	551	732	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-2%			1%	-3%	
Storage Length (ft)	0	0	55			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.944				0.959	
Flt Protected	0.971		0.950			
Satd. Flow (prot)	1725	0	1761	3522	3445	0
Flt Permitted	0.971		0.215			
Satd. Flow (perm)	1725	0	398	3522	3445	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	71				116	
Link Speed (mph)	25			40	40	
Link Distance (ft)	557			675	689	
Travel Time (s)	15.2			11.5	11.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	345	241	226	599	796	299
Shared Lane Traffic (%)						
Lane Group Flow (vph)	586	0	226	599	1095	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			24	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	0.99	0.99	1.01	1.01	0.98	0.98
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	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	Prot		pm+pt	NA	NA	
Protected Phases	8		1	6	2	

Timing Plan: PM Peak
Cannon & Cannon, Inc.

Synchro 10 Report
Page 9

Lanes, Volumes, Timings
6: Campbell Station Road & Municipal Center Drive

Marketplace Concept - Ford Property
2027 Combined PM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases	6					
Detector Phase	8		1	6	2	
Switch Phase						
Minimum Initial (s)	6.0		6.0	10.0	10.0	
Minimum Split (s)	13.0		13.0	17.0	17.0	
Total Split (s)	15.0		13.0	30.0	17.0	
Total Split (%)	33.3%		28.9%	66.7%	37.8%	
Maximum Green (s)	9.5		7.5	24.5	11.5	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.5		5.5	5.5	5.5	
Lead/Lag	Lead			Lag		
Lead-Lag Optimize?	Yes			Yes		
Vehicle Extension (s)	3.0		2.5	4.0	4.0	
Recall Mode	None		None	C-Max	C-Max	
Act Effect Green (s)	9.5		24.5	24.5	14.2	
Actuated g/C Ratio	0.21		0.54	0.54	0.32	
v/c Ratio	1.40		0.53	0.31	0.94	
Control Delay	212.7		10.1	6.2	36.0	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	212.7		10.1	6.2	36.0	
LOS	F		B	A	D	
Approach Delay	212.7			7.3	36.0	
Approach LOS	F			A	D	
Queue Length 50th (ft)	~201		26	38	~171	
Queue Length 95th (ft)	#358		53	60	#274	
Internal Link Dist (ft)	477			595	609	
Turn Bay Length (ft)			55			
Base Capacity (vph)	420		443	1917	1167	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	1.40		0.51	0.31	0.94	

Intersection Summary

Area Type: Other
Cycle Length: 45
Actuated Cycle Length: 45
Offset: 1 (2%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.40
Intersection Signal Delay: 67.9
Intersection Capacity Utilization 85.5%
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: 6: Campbell Station Road & Municipal Center Drive



Lanes, Volumes, Timings
7: Brooklawn Street & Kingston Pike

Marketplace Concept - Ford Property
2027 Combined PM

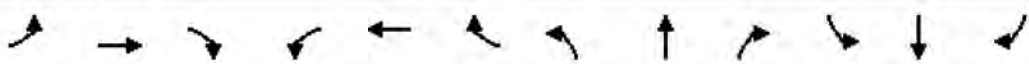
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	1380	135	145	1926	4	306	0	248	5	4	5
Future Volume (vph)	4	1380	135	145	1926	4	306	0	248	5	4	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			1%			-1%			-14%	
Storage Length (ft)	95		105	110		0	190		190	0		0
Storage Lanes	1		1	1		0	1		1	0		0
Taper Length (ft)	115			135			130			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850						0.850		0.952	
Flt Protected	0.950			0.950			0.950	0.950			0.982	
Satd. Flow (prot)	1778	3557	1591	1761	3522	0	1690	1690	1591	0	1863	0
Flt Permitted	0.059			0.080			0.950	0.950			0.982	
Satd. Flow (perm)	110	3557	1591	148	3522	0	1690	1690	1591	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			136						238		5	
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		1037			516			871			179	
Travel Time (s)		15.7			7.8			23.8			4.9	
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)	4	1500	147	158	2093	4	333	0	270	5	4	5
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	4	1500	147	158	2097	0	166	167	270	0	14	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes			Yes				
Headway Factor	0.99	0.99	0.99	1.01	1.01	1.01	0.99	0.99	0.99	0.91	0.91	0.91
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	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	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	
Detector 1 Delay (s)	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	Perm	NA	Perm	pm+pt	NA		Split	NA	Perm	Split	NA	
Protected Phases		2		1	6		4	4		3	3	

Timing Plan: PM Peak
Cannon & Cannon, Inc.

Synchro 10 Report
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Lanes, Volumes, Timings
7: Brooklawn Street & Kingston Pike

Marketplace Concept - Ford Property
2027 Combined PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6					4			
Detector Phase	2	2	2	1	6		4	4	4	3	3	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	8.0	15.0		8.0	8.0	8.0	6.0	6.0	
Minimum Split (s)	22.0	22.0	22.0	15.0	22.0		15.0	15.0	15.0	14.0	14.0	
Total Split (s)	70.0	70.0	70.0	15.0	85.0		21.0	21.0	21.0	14.0	14.0	
Total Split (%)	58.3%	58.3%	58.3%	12.5%	70.8%		17.5%	17.5%	17.5%	11.7%	11.7%	
Maximum Green (s)	64.0	64.0	64.0	9.5	79.0		15.0	15.0	15.0	7.5	7.5	
Yellow Time (s)	4.5	4.5	4.5	4.0	4.5		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		2.0	2.0	2.0	2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	6.0	5.5	6.0		6.0	6.0	6.0		6.5	
Lead/Lag	Lag	Lag	Lag	Lead			Lag	Lag	Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	5.0	5.0	5.0	2.5	5.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	72.2	72.2	72.2	87.4	86.9		15.7	15.7	15.7		6.4	
Actuated g/C Ratio	0.60	0.60	0.60	0.73	0.72		0.13	0.13	0.13		0.05	
v/c Ratio	0.06	0.70	0.15	0.68	0.82		0.75	0.76	0.65		0.13	
Control Delay	13.5	13.2	2.5	35.1	9.8		71.6	72.0	17.2		44.8	
Queue Delay	0.0	0.0	0.0	0.0	0.7		0.0	0.0	0.0		0.0	
Total Delay	13.5	13.2	2.5	35.1	10.5		71.6	72.0	17.2		44.8	
LOS	B	B	A	D	B		E	E	B		D	
Approach Delay		12.2			12.2			47.3			44.8	
Approach LOS		B			B			D			D	
Queue Length 50th (ft)	1	249	6	61	204		127	127	21		7	
Queue Length 95th (ft)	m1	m274	m12	m87	386		#251	#253	111		29	
Internal Link Dist (ft)		957			436			791			99	
Turn Bay Length (ft)	95		105	110			190		190			
Base Capacity (vph)	66	2139	1011	238	2549		230	230	422		121	
Starvation Cap Reductn	0	0	0	0	172		0	0	0		0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	
Reduced v/c Ratio	0.06	0.70	0.15	0.66	0.88		0.72	0.73	0.64		0.12	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 6 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 17.0

Intersection LOS: B

Intersection Capacity Utilization 96.0%

ICU Level of Service F

Analysis Period (min) 15

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: 7: Brooklawn Street & Kingston Pike



Lanes, Volumes, Timings
8: Kingston Pike & Lendon Welch Way

Marketplace Concept - Ford Property
2027 Combined PM

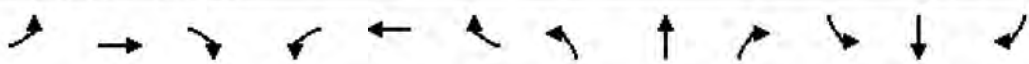
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	1537	59	92	2075	39	51	2	77	21	7	68
Future Volume (vph)	46	1537	59	92	2075	39	51	2	77	21	7	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-2%			-1%			0%			-3%	
Storage Length (ft)	140		0	100		0	0		0	0		90
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	160			70			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.997				0.850			0.850
Flt Protected	0.950			0.950				0.954			0.964	
Satd. Flow (prot)	1787	3553	0	1778	3546	0	0	1777	1583	0	1823	1607
Flt Permitted	0.046			0.092				0.711			0.745	
Satd. Flow (perm)	87	3553	0	172	3546	0	0	1324	1583	0	1409	1607
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			4				84			77
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		516			828			384			743	
Travel Time (s)		7.8			12.5			10.5			20.3	
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)	50	1671	64	100	2255	42	55	2	84	23	8	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	50	1735	0	100	2297	0	0	57	84	0	31	74
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	1.00	1.00	1.00	0.98	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		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	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
Detector 1 Delay (s)	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	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6		5	2			4			8	

Timing Plan: PM Peak
Cannon & Cannon, Inc.

Synchro 10 Report
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Lanes, Volumes, Timings
8: Kingston Pike & Lendon Welch Way

Marketplace Concept - Ford Property
2027 Combined PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	6			2			4		4	8		8
Detector Phase	1	6		5	2		4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	6.0	15.0		6.0	15.0		8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	13.0	22.0		13.0	22.0		15.0	15.0	15.0	15.0	15.0	15.0
Total Split (s)	13.0	91.0		14.0	92.0		15.0	15.0	15.0	15.0	15.0	15.0
Total Split (%)	10.8%	75.8%		11.7%	76.7%		12.5%	12.5%	12.5%	12.5%	12.5%	12.5%
Maximum Green (s)	7.5	85.0		8.5	86.0		9.5	9.5	9.5	9.5	9.5	9.5
Yellow Time (s)	4.0	4.5		4.0	4.5		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	5.5	6.0		5.5	6.0			5.5	5.5		5.5	5.5
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.5	4.0		2.5	4.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	None
Act Effct Green (s)	94.1	87.4		95.9	90.0			9.0	9.0		9.0	9.0
Actuated g/C Ratio	0.78	0.73		0.80	0.75			0.08	0.08		0.08	0.08
v/c Ratio	0.32	0.67		0.44	0.86			0.58	0.43		0.29	0.39
Control Delay	19.7	2.4		10.0	5.2			76.4	18.0		59.8	17.0
Queue Delay	0.0	0.1		0.0	1.1			0.0	0.0		0.0	0.0
Total Delay	19.7	2.5		10.0	6.3			76.4	18.0		59.8	17.0
LOS	B	A		B	A			E	B		E	B
Approach Delay		3.0			6.5			41.6			29.6	
Approach LOS		A			A			D			C	
Queue Length 50th (ft)	2	39		4	126			43	0		23	0
Queue Length 95th (ft)	m16	71		m4	m132			#98	50		56	45
Internal Link Dist (ft)		436			748			304			663	
Turn Bay Length (ft)	140			100								90
Base Capacity (vph)	175	2588		253	2660			104	202		111	198
Starvation Cap Reductn	0	143		0	162			0	0		0	0
Spillback Cap Reductn	0	0		0	76			0	0		0	1
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.29	0.71		0.40	0.92			0.55	0.42		0.28	0.38

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 19 (16%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 6.7

Intersection LOS: A

Intersection Capacity Utilization 87.4%

ICU Level of Service E

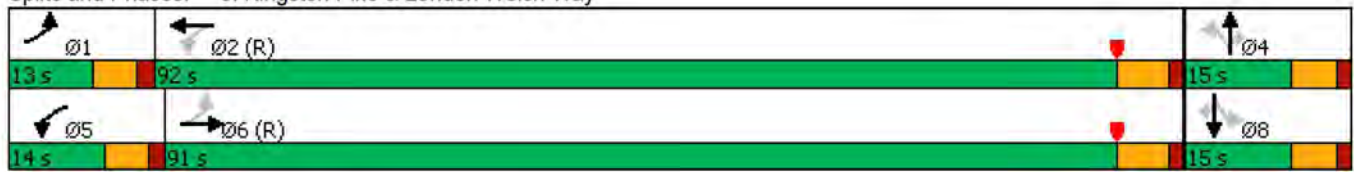
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 8: Kingston Pike & Lendon Welch Way



Lanes, Volumes, Timings
9: Concord Road/West End Avenue & Kingston Pike

Marketplace Concept - Ford Property

2027 Combined PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	1401	52	525	1814	115	151	91	369	147	87	91
Future Volume (vph)	58	1401	52	525	1814	115	151	91	369	147	87	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			-2%			-1%			-1%	
Storage Length (ft)	125		0	130		0	175		0	125		0
Storage Lanes	1		0	1		0	2		2	1		0
Taper Length (ft)	80			75			60			90		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.97	1.00	0.88	0.97	1.00	1.00
Frt		0.995			0.991				0.850		0.923	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1778	3539	0	1787	3542	0	3450	1872	2801	3450	1728	0
Flt Permitted	0.083			0.075			0.950			0.950		
Satd. Flow (perm)	155	3539	0	141	3542	0	3450	1872	2801	3450	1728	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			9				82		34	
Link Speed (mph)		45			45			30			25	
Link Distance (ft)		828			1220			824			858	
Travel Time (s)		12.5			18.5			18.7			23.4	
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)	63	1523	57	571	1972	125	164	99	401	160	95	99
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	1580	0	571	2097	0	164	99	401	160	194	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes			Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	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	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	
Detector 1 Delay (s)	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	pm+pt	NA		pm+pt	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	1	6		5	2		4	4	5	3	3	

Timing Plan: PM Peak
Cannon & Cannon, Inc.

Synchro 10 Report
Page 18

Lanes, Volumes, Timings
9: Concord Road/West End Avenue & Kingston Pike

Marketplace Concept - Ford Property
2027 Combined PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	6			2					4			
Detector Phase	1	6		5	2		4	4	5	3	3	
Switch Phase												
Minimum Initial (s)	6.0	12.0		6.0	12.0		8.0	8.0	6.0	8.0	8.0	
Minimum Split (s)	13.0	19.0		13.0	19.0		15.0	15.0	13.0	15.0	15.0	
Total Split (s)	13.0	54.0		35.0	76.0		15.0	15.0	35.0	16.0	16.0	
Total Split (%)	10.8%	45.0%		29.2%	63.3%		12.5%	12.5%	29.2%	13.3%	13.3%	
Maximum Green (s)	7.5	48.0		29.5	70.0		9.5	9.5	29.5	10.0	10.0	
Yellow Time (s)	4.0	4.5		4.0	4.5		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	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	
Total Lost Time (s)	5.5	6.0		5.5	6.0		5.5	5.5	5.5	6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	2.5	4.0		2.5	4.0		2.5	2.5	2.5	2.5	2.5	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	55.0	48.0		83.8	73.6		9.2	9.2	44.5	10.0	10.0	
Actuated g/C Ratio	0.46	0.40		0.70	0.61		0.08	0.08	0.37	0.08	0.08	
v/c Ratio	0.40	1.11		1.13	0.96		0.62	0.69	0.37	0.56	1.11	
Control Delay	17.1	85.1		113.8	35.8		64.4	78.5	22.6	60.9	141.7	
Queue Delay	0.0	0.0		0.0	2.4		0.0	0.0	0.0	0.0	0.0	
Total Delay	17.1	85.1		113.8	38.3		64.4	78.5	22.6	60.9	141.7	
LOS	B	F		F	D		E	E	C	E	F	
Approach Delay		82.5			54.4			41.3			105.1	
Approach LOS		F			D			D			F	
Queue Length 50th (ft)	13	~722		~464	801		64	76	100	62	~146	
Queue Length 95th (ft)	m26	#864		#687	#1039		101	#155	146	98	#299	
Internal Link Dist (ft)		748			1140			744			778	
Turn Bay Length (ft)	125			130			175			125		
Base Capacity (vph)	173	1418		507	2175		273	148	1090	287	175	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	43		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.36	1.11		1.13	0.98		0.60	0.67	0.37	0.56	1.11	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 2 (2%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.13

Intersection Signal Delay: 64.8

Intersection LOS: E

Intersection Capacity Utilization 105.4%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

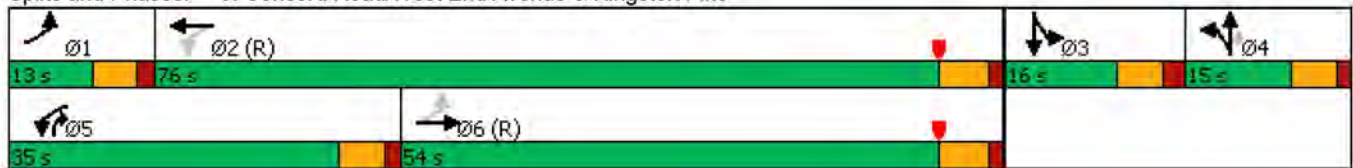
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 9: Concord Road/West End Avenue & Kingston Pike



Lanes, Volumes, Timings
4: Campbell Station Road & Jamestowne Blvd

Marketplace Concept - Ford Property
2027 Combined PM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	190	36	23	1265	1281	193
Future Volume (vph)	190	36	23	1265	1281	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%	1%	
Storage Length (ft)	0	100	100			150
Storage Lanes	1	1	1			0
Taper Length (ft)	25		80			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.980	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	3451	0
Flt Permitted	0.950		0.099			
Satd. Flow (perm)	1770	1583	184	3539	3451	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		30			23	
Link Speed (mph)	25			40	40	
Link Distance (ft)	567			1086	722	
Travel Time (s)	15.5			18.5	12.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	39	25	1375	1392	210
Shared Lane Traffic (%)						
Lane Group Flow (vph)	207	39	25	1375	1602	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.01	1.01
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	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	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	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	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	

Timing Plan: PM Peak
Cannon & Cannon, Inc.

Synchro 10 Report
Page 1

Lanes, Volumes, Timings
4: Campbell Station Road & Jamestowne Blvd

Marketplace Concept - Ford Property
2027 Combined PM



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	15.0	15.0	
Minimum Split (s)	24.0	24.0	12.0	24.0	24.0	
Total Split (s)	34.0	34.0	12.0	106.0	94.0	
Total Split (%)	24.3%	24.3%	8.6%	75.7%	67.1%	
Maximum Green (s)	28.0	28.0	6.0	100.0	88.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	21.4	21.4	106.6	106.6	99.3	
Actuated g/C Ratio	0.15	0.15	0.76	0.76	0.71	
v/c Ratio	0.77	0.15	0.12	0.51	0.65	
Control Delay	74.7	21.6	6.2	7.8	14.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	74.7	21.6	6.2	7.8	14.1	
LOS	E	C	A	A	B	
Approach Delay	66.3			7.8	14.1	
Approach LOS	E			A	B	
Queue Length 50th (ft)	183	7	5	226	425	
Queue Length 95th (ft)	260	40	15	329	583	
Internal Link Dist (ft)	487			1006	642	
Turn Bay Length (ft)		100	100			
Base Capacity (vph)	354	340	208	2694	2455	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.58	0.11	0.12	0.51	0.65	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 70 (50%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 15.3
Intersection Capacity Utilization 62.1%
Analysis Period (min) 15

Intersection LOS: B
ICU Level of Service B

Lanes, Volumes, Timings
 4: Campbell Station Road & Jamestowne Blvd

Marketplace Concept - Ford Property
 2027 Combined PM

Splits and Phases: 4: Campbell Station Road & Jamestowne Blvd



Lanes, Volumes, Timings
6: Campbell Station Road & Municipal Center Drive

Marketplace Concept - Ford Property
2027 Combined PM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	 			 	 	
Traffic Volume (vph)	317	222	208	551	732	275
Future Volume (vph)	317	222	208	551	732	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-2%			1%	-3%	
Storage Length (ft)	0	150	55			0
Storage Lanes	2	0	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	0.97	0.95	1.00	0.95	0.95	0.95
Frt	0.938				0.959	
Flt Protected	0.971		0.950			
Satd. Flow (prot)	3324	0	1761	3522	3445	0
Flt Permitted	0.971		0.158			
Satd. Flow (perm)	3324	0	293	3522	3445	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	178				74	
Link Speed (mph)	25			40	40	
Link Distance (ft)	557			675	689	
Travel Time (s)	15.2			11.5	11.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	345	241	226	599	796	299
Shared Lane Traffic (%)						
Lane Group Flow (vph)	586	0	226	599	1095	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	0.99	0.99	1.01	1.01	0.98	0.98
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	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	Prot		pm+pt	NA	NA	
Protected Phases	8		1	6	2	

Timing Plan: PM Peak
Cannon & Cannon, Inc.

Synchro 10 Report
Page 1

Lanes, Volumes, Timings
6: Campbell Station Road & Municipal Center Drive

Marketplace Concept - Ford Property
2027 Combined PM



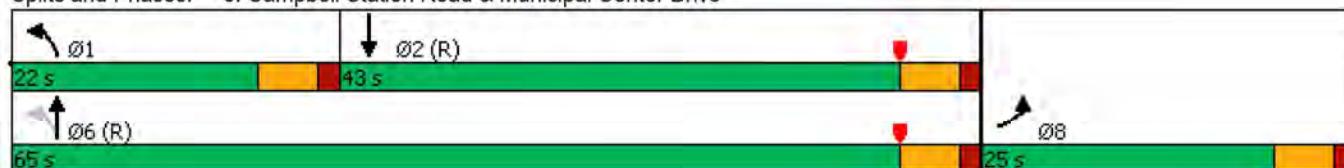
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases	6					
Detector Phase	8		1	6	2	
Switch Phase						
Minimum Initial (s)	6.0		6.0	10.0	10.0	
Minimum Split (s)	13.0		13.0	17.0	17.0	
Total Split (s)	25.0		22.0	65.0	43.0	
Total Split (%)	27.8%		24.4%	72.2%	47.8%	
Maximum Green (s)	19.5		16.5	59.5	37.5	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.5		5.5	5.5	5.5	
Lead/Lag	Lead			Lag		
Lead-Lag Optimize?	Yes			Yes		
Vehicle Extension (s)	3.0		2.5	4.0	4.0	
Recall Mode	None		None	C-Max	C-Max	
Act Effct Green (s)	16.3		62.7	62.7	46.6	
Actuated g/C Ratio	0.18		0.70	0.70	0.52	
v/c Ratio	0.79		0.60	0.24	0.60	
Control Delay	32.1		13.5	5.6	17.2	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	32.1		13.5	5.6	17.2	
LOS	C		B	A	B	
Approach Delay	32.1			7.8	17.2	
Approach LOS	C			A	B	
Queue Length 50th (ft)	114		39	57	200	
Queue Length 95th (ft)	167		92	87	330	
Internal Link Dist (ft)	477			595	609	
Turn Bay Length (ft)			55			
Base Capacity (vph)	859		473	2455	1817	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.68		0.48	0.24	0.60	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 17.6
Intersection Capacity Utilization 70.3%
Analysis Period (min) 15

Intersection LOS: B
ICU Level of Service C

Splits and Phases: 6: Campbell Station Road & Municipal Center Drive



REPORT TO THE FARRAGUT MUNICIPAL PLANNING COMMISSION

PREPARED BY: Mark Shipley, Community Development Director

SUBJECT: Discussion and public hearing on a request to amend the Farragut Zoning Map for 11500 Kingston Pike, 68.31 Acres, from C-1, O-1, B-1, and R-1 to C-1, O-S, R-4, and R-3 (John Brehm, Hy-Vee, Applicant)

INTRODUCTION AND BACKGROUND: This item was also reviewed last month for workshop discussion purposes. Staff provided an overview of the current and proposed zoning associated with the property at 11500 Kingston Pike. Though the applicant's concept plan was shown and discussed, staff reminded commissioners that the focus should primarily be on whether the requested district(s) is(are) appropriate for the property, its context, and the community's vision. Concept plans and property owners can change but once the zoning changes, any use permitted within that zoning district could result.

RECOMMENDATION: For the reasons noted in the previous agenda item, staff does not support Resolution PC-22-13 which recommends approval of Ordinance 22-16 which would amend the Zoning Map as requested by the applicant.

RESOLUTION PC-22-13

FARRAGUT MUNICIPAL PLANNING COMMISSION

A RESOLUTION TO APPROVE AN AMENDMENT TO THE FARRAGUT ZONING MAP, ORDINANCE 86-16, TO RECOMMEND THE APPROVAL OF THE REZONING OF THE PROPERTY AT 11500 KINGSTON PIKE, 68.31 ACRES, FROM C-1, O-1, B-1, AND R-1 TO C-1, O-S, R-4, AND R-3

WHEREAS, the Tennessee Code Annotated, Section 13-4-201et seq, provides that the Municipal Planning Commission shall make and adopt a general plan for the physical development of the municipality; and

WHEREAS, the Farragut Municipal Planning Commission has adopted various elements of a zoning plan as an element of the general plan for physical development; and

WHEREAS, a public hearing was held on this request on November 17, 2022;

NOW, THEREFORE, BE IT RESOLVED that the Farragut Municipal Planning Commission hereby recommends approval of Ordinance 22-16 to the Farragut Board of Mayor and Aldermen, an ordinance amending the Farragut Zoning Ordinance and Map, Ordinance 86-16, by rezoning the above noted property.

ADOPTED this 17th day of November 2022.

Rita Holladay, Chairman

Scott Russ, Secretary

ORDINANCE: 22-16
PREPARED BY: Shipley
REQUESTED BY: John Brehm, Hy-Vee
CERTIFIED BY FMPC: November 17, 2022
PUBLIC HEARING: _____
PUBLISHED IN: _____
DATE: _____
1ST READING: _____
2ND READING: _____
PUBLISHED IN: _____
DATE: _____

AN ORDINANCE AMENDING THE ZONING ORDINANCE OF THE TOWN OF FARRAGUT, TENNESSEE, ORDINANCE 86-16, AS AMENDED, PURSUANT TO SECTION 13-4-201, TENNESSEE CODE ANNOTATED.

BE IT ORDAINED by the Board of Mayor and Aldermen of the Town of Farragut, Tennessee, that the Farragut Zoning Ordinance, Ordinance 86-16, as amended, is hereby amended as follows:

SECTION 1.

The Farragut Zoning Ordinance, Ordinance 86-16, as amended, is hereby amended by rezoning 11500 Kingston Pike, 68.31 Acres, from C-1, O-1, B-1, and R-1 to C-1, O-S, R-4, and R-3 (See Exhibit A).

SECTION 2.

This ordinance shall take effect from and after its final passage and publication, the public welfare requiring it.

Ron Williams, Mayor

Allison Myers, Town Recorder

Certified to the Farragut Board of Mayor and Aldermen this ____ day of _____, 2022, with approval recommended by the Farragut Municipal Planning Commission (FMPC).

Rita Holladay, Chairman

Scott Russ, Secretary



Exhibit A Ordinance 22-16

Rezoning Map

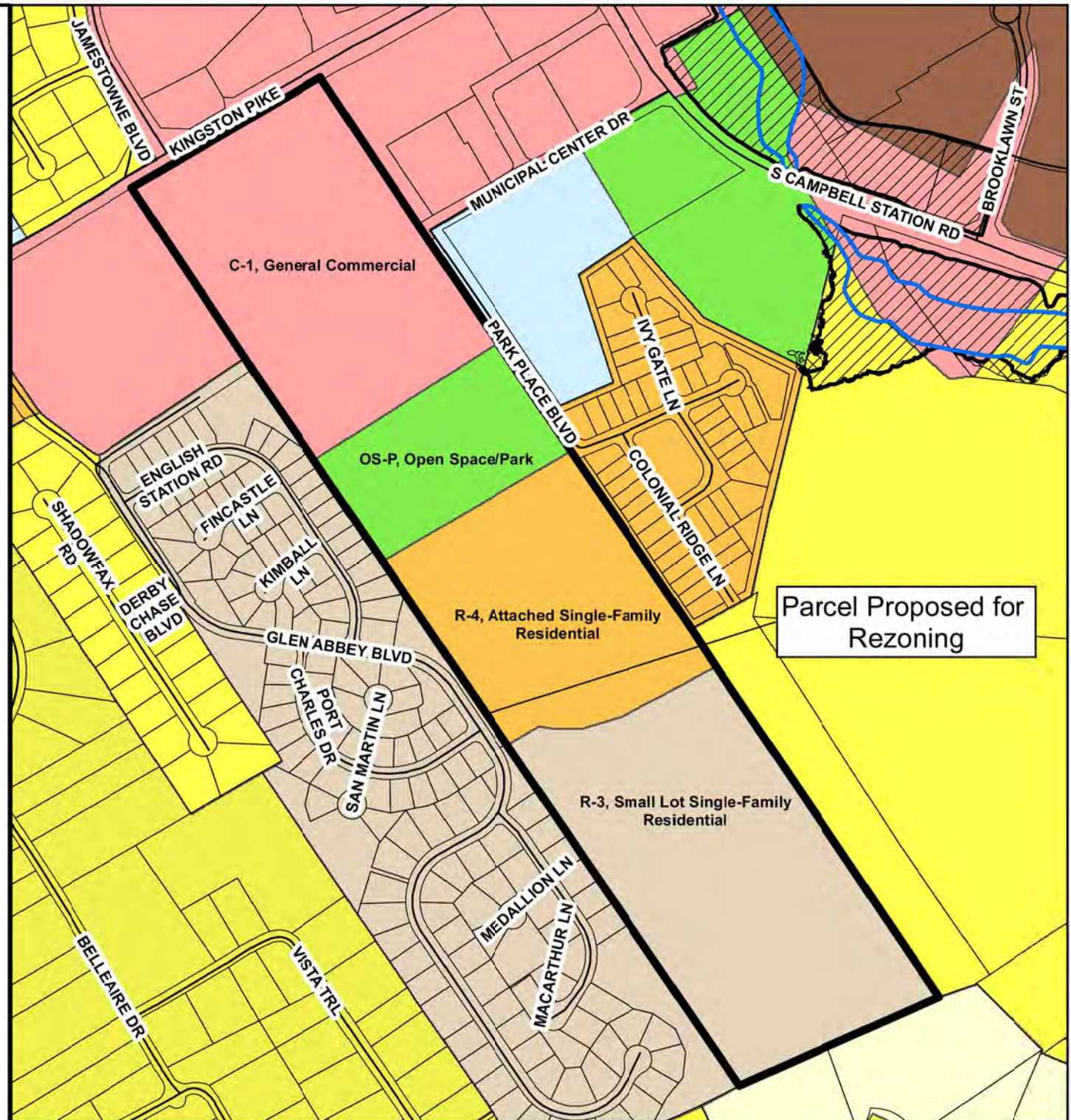
11500 Kingston Pike

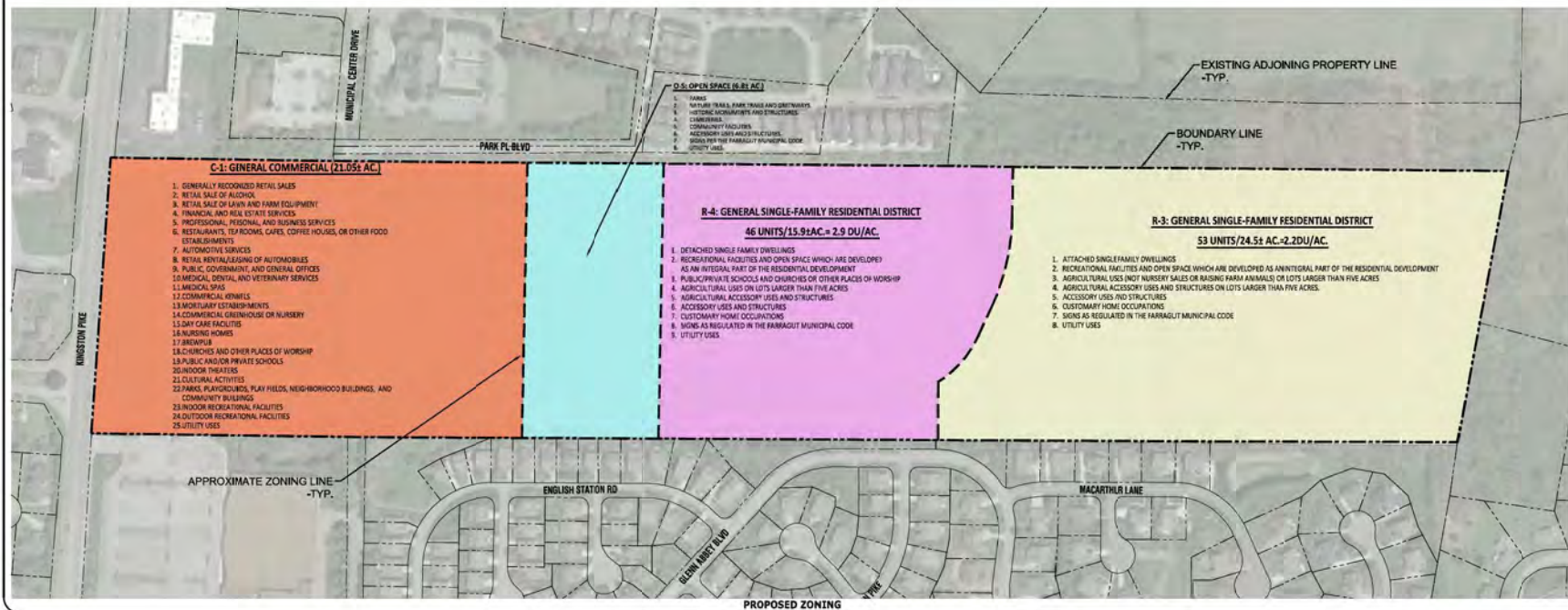
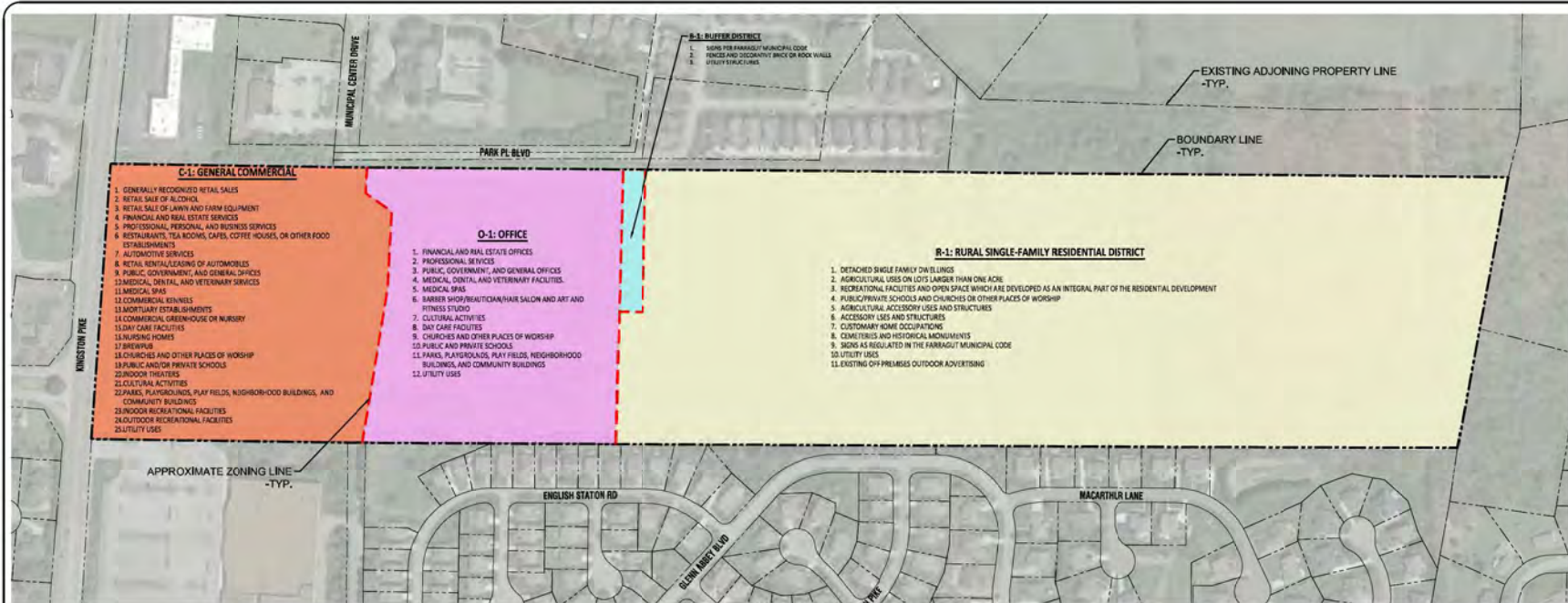
Legend

-  Subject Property
-  Floodway
-  100 year Flood Zone
-  500 year Flood Zone
-  Streets
-  Parcels
-  OS-P, Open Space/Park
-  R-1, Rural Single-Family Residential
-  R-1-S-A, Rural Single-Family Acre Residential
-  R-2, General Single-Family Residential
-  R-3, Small Lot Single-Family Residential
-  R-4, Attached Single-Family Residential
-  O-1, Office
-  C-1, General Commercial
-  PCD, Planned Commercial Development



1 in = 500 ft





REVISIONS		DATE
 CANNON & CANNON INC. CONSULTING ENGINEERS - FIELD SURVEYORS 805 670 9555 5811 Kingston Pike Knoxville, TN 37919		
CLIENT:	HY-VEE, INC. 3825 WESTOWN PARKWAY WEBSTER, MO 64595	
PROJECT:	FARRAGUT DEVELOPMENT 11500 KINGSTON PIKE KNOXVILLE, TN	
REZONING EXHIBIT		
DATE PREPARED:	01/24/2020	
DRAWING DATE:	SEPTEMBER 12, 2022	
PREPARED BY:	AWC	PC
CHECKED BY:	LEO	CHICKED
1		

REPORT TO THE FARRAGUT MUNICIPAL PLANNING COMMISSION

PREPARED BY: Mark Shipley, Community Development Director

SUBJECT: Discussion and public hearing on an ordinance, Ordinance 22-12, to amend the Farragut Municipal Code, Appendix A., Zoning, Chapter 2., Definitions. to define Ballfield, and Chapter 4., General Provisions and Exceptions, Section XIII., Outdoor Site Lighting, Subsection A., to clarify street lighting provisions, establish where ballfield lighting may be provided, and prohibit lighting that would be a nuisance due to uncontrolled glare on any adjacent properties, rights-of-ways, access easements, or driveways (Farragut Neighborhood Preservation Partnership, Applicant)

INTRODUCTION AND BACKGROUND: This item was most recently discussed at the September 15 Planning Commission meeting. At that time a discussion ensued regarding the applicant's request and language included in Ordinance 22-12. This discussion involved staff, the applicant, commissioners, and the Town Attorney. It was suggested that staff, the Town Attorney, and the applicant work together on amending Ordinance 22-12 to address the comments noted.

Those comments primarily involved ballfield vs. court lighting, where ballfield lighting may be envisioned in the future on government property and clarifying where different lighting provisions may be permitted in other sections of the Zoning Ordinance or for other uses.

DISCUSSION: Staff has worked with both the applicant and Town Attorney to address the issues raised. The updated Ordinance 22-12 includes language developed by the Town Attorney and that was shared with the applicant.

RECOMMENDATION: Included in the packet is Resolution PC-22-09 which recommends approval of Ordinance 22-12. This ordinance specifically amends Chapter 2 to provide a definition for Ballfield and amends Chapter 4, Section XIII., Subsection A, to clarify street lighting provisions and acknowledge lighting that may be specific to a use or zoning district, and to establish where ballfield lighting may be provided, and prohibit lighting that would be a nuisance due to uncontrolled glare on any adjacent properties, rights-of-ways, access easements, or driveways.

Sec. XIII. Outdoor site lighting. (changes are shown in red)

- A. *Intent.* It is the intent of this section to establish outdoor lighting requirements that reduce the negative effects of lighting and protect residents that may otherwise be adversely affected, but at the same time address the need for adequate lighting for safety and visibility concerns. Unless provided for otherwise in this ordinance or the Subdivision Regulations, the following requirements shall apply to all developments and/or facilities, excluding single-family and two-family dwellings, and street lighting, and lighting associated with a government owned facility that hosts activities for public use and attendance. Ballfield lighting, temporary or permanent, shall only be permitted in areas where it is directly associated with such government facilities. In no case, however, shall any light shine or glare to create a traffic safety hazard or nuisance due to uncontrolled glare on any adjacent properties, rights-of-way, access easements, or driveways.

RESOLUTION PC-22-09

FARRAGUT MUNICIPAL PLANNING COMMISSION

A RESOLUTION TO AMEND THE TEXT OF THE FARRAGUT ZONING ORDINANCE, ORDINANCE 86-16, AS AMENDED, PURSUANT TO AUTHORITY GRANTED BY SECTION 13-4-201, TENNESSEE CODE ANNOTATED, BY AMENDING CHAPTER 2., DEFINITIONS, TO DEFINE BALLFIELD, AND CHAPTER 4., GENERAL PROVISIONS AND EXCEPTIONS, SECTION XIII. – OUTDOOR SITE LIGHTING, SUBSECTION A., TO CLARIFY STREET LIGHTING PROVISIONS, ESTABLISH WHERE BALLFIELD LIGHTING MAY BE PROVIDED, AND PROHIBIT LIGHTING THAT WOULD BE A NUISANCE DUE TO UNCONTROLLED GLARE ON ANY ADJACENT PROPERTIES, RIGHTS OF WAYS, ACCESS EASEMENTS, OR DRIVEWAYS

WHEREAS, the Tennessee Code Annotated, Section 13-4-201 et seq, provides that the Municipal Planning Commission shall make and adopt a general plan for the physical development of the municipality; and

WHEREAS, the Farragut Municipal Planning Commission has adopted various elements of a zoning plan as an element of the general plan for physical development; and

WHEREAS, a public hearing was held on this request on November 17, 2022;

NOW, THEREFORE, BE IT RESOLVED that the Farragut Municipal Planning Commission hereby recommends approval to the Farragut Board of Mayor and Aldermen of an ordinance, amending Ordinance 86-16, of the Farragut Zoning Ordinance, by adding Ordinance 22-12.

ADOPTED this 17th day of November 2022.

Rita Holladay, Chairman

Scott Russ, Secretary

ORDINANCE:	22-12
PREPARED BY:	Shipley/Hale
REQUESTED BY:	Farragut Neighborhood Preservation Partnership
1ST READING:	_____
2ND READING:	_____
PUBLISHED IN:	_____
DATE:	_____

AN ORDINANCE TO AMEND THE TEXT OF THE FARRAGUT ZONING ORDINANCE, ORDINANCE 86-16, AS AMENDED, PURSUANT TO AUTHORITY GRANTED BY SECTION 13-4-201, TENNESSEE CODE ANNOTATED, BY AMENDING THE FARRAGUT MUNICIPAL CODE, APPENDIX A., ZONING, CHAPTER 2., DEFINITIONS, TO DEFINE BALLFIELD, AND CHAPTER 4., GENERAL PROVISIONS AND EXCEPTIONS, SECTION XIII. – OUTDOOR SITE LIGHTING, SUBSECTION A., TO CLARIFY STREET LIGHTING PROVISIONS, ESTABLISH WHERE BALLFIELD LIGHTING MAY BE PROVIDED, AND PROHIBIT LIGHTING THAT WOULD BE A NUISANCE DUE TO UNCONTROLLED GLARE ON ANY ADJACENT PROPERTIES, RIGHTS OF WAYS, ACCESS EASEMENTS, OR DRIVEWAYS

WHEREAS, the Board of Mayor and Aldermen of the Town of Farragut, Tennessee, wishes to amend the Farragut Municipal Code, Appendix A., Zoning, Chapter 2., Definitions. To define ballfield

NOW, THEREFORE, BE IT ORDAINED by the Board of Mayor and Aldermen of the Town of Farragut, Tennessee, that the Farragut Municipal Code, Appendix A., Zoning be amended as follows:

SECTION 1.

The Farragut Municipal Code, Appendix A, Zoning, Chapter 2, Definitions, is amended by adding the following definition:

Ballfield – An outdoor playing surface designed for recreational and sport activities, but not including tennis and/or pickleball courts.

SECTION 2.

The Farragut Municipal Code, Appendix A, Zoning, Chapter 4., General Provisions and Exceptions, Section XIII., Outdoor Site Lighting, Subsection A, is amended as follows:

A. Intent

It is the intent of this section to establish outdoor lighting requirements that reduce the negative effects of lighting and protect residents that may otherwise be adversely affected but at the same time address the need for adequate lighting for safety and visibility concerns. Unless provided for otherwise in this ordinance or the Subdivision Regulations,

the following requirements shall apply to all developments and/or facilities, excluding single-family and two-family dwellings, street lighting, and lighting associated with a government owned facility that hosts activities for public use and attendance. Ballfield lighting, temporary or permanent, shall only be permitted in areas where it is directly associated with such government facilities. In no case, however, shall any light shine or glare to create a traffic safety hazard or nuisance due to uncontrolled glare on any adjacent properties, rights-of-way, access easements, or driveways.

SECTION 3.

This ordinance shall take effect from and after its final passage and publication, the public welfare requiring it.

Ron Williams, Mayor

Allison Myers, Town Recorder

Certified to the Farragut Board of Mayor and Aldermen this ____ day of _____, 2022, with approval recommended.

Rita Holladay, Chairman

Scott Russ, Secretary

FARRAGUT MUNICIPAL PLANNING COMMISSION

REPORT TO THE FARRAGUT MUNICIPAL PLANNING COMMISSION

PREPARED BY: Mark Shipley, Community Development Director

SUBJECT: Discussion and public hearing on the installation of new small cell poles in the rights of ways adjacent to 102 Glen Abbey Boulevard, 126 West End Avenue, 100 Smith Road, 11403 Municipal Center Drive, 11509 Parkside Drive, 101 West End Avenue, 100 Brooklawn Street, and 11425 Kingston Pike (TeleCAD Wireless, Applicant)

INTRODUCTION AND BACKGROUND: This agenda item involve a request on behalf of Verizon to install eight small cell poles within the Town of Farragut rights of ways. These poles are the first requested since the approval of 11 small cell poles at the January 16, 2020, Planning Commission meeting. At that meeting, four of the 11 poles were placed within developed residential areas affecting Stonecrest, Farragut View, and the Cove at Turkey Creek Subdivisions.

These requests drew concerns from some residents, but the Town was ultimately bound by the State of Tennessee parameters that were adopted by the State to facilitate implementation of 4G and 5G coverage with the assistance of small cell poles that would supplement macro tower structures. Unlike macro tower structures which often exceed 100 feet in height, small cell poles generally range in height from 25 to 50 feet and are placed in public rights of ways similar to other utilities. Though the State limited the ability of municipalities to regulate certain aspects of small cell pole installation, it did provide for the opportunity to address the appearance of such structures through an aesthetic plan that would apply to all comparable utility structures within public rights of ways.

DISCUSSION: To address resident concerns and create more permitted control over namely the appearance of small cell structures and other vertical utilities, Town staff began working on the development of an aesthetic plan in the Spring of 2020. A small committee was appointed to assist Town staff. After developing the document over a series of months, the Planning Commission was presented with the Aesthetic Plan for Vertical Utility Infrastructure in Public Rights of Ways. The Plan was approved by the Commission at their meeting on January 21, 2021. The Board of Mayor and Aldermen then approved the Plan at their meeting on February 11, 2021.

The eight poles being considered for approval at this time are the first submitted since approval of the Aesthetic Plan. From staffs' perspective, the Aesthetic Plan has greatly enhanced this round of applications. As encouraged in the Aesthetic Plan, all eight poles are proposed in areas zoned commercial. Five of the eight poles are Type 2 Replacement Poles that swap existing light poles with new light poles that also accommodate small cell antenna. The other three poles are Type 3 New Freestanding Poles. As required in the Aesthetic Plan, the applicant has provided for co-location with this round of applications to help lessen the need for new freestanding poles. The applicant initially discussed with LCUB the option of using existing poles owned by LCUB but could not achieve the minimum height needed for proper antenna function. LCUB does not permit antenna to be above the power lines on their overhead utility system. Instead, as mentioned above, the applicant has tried to use existing light poles where available to minimize installation of Type 3 poles.

Consistent with the Aesthetic Plan, the applicant has demonstrated compliance with the physical parameters provided for in the Aesthetic Plan for the pole height, pole material, antenna, and all cables and wiring. The result, as shown on the images included in the packet, are structures that minimize bulk and contain everything within the pole and cantenna (a shroud that covers the antenna).

At the staff developer meeting on November 1, each pole was reviewed along with initial staff comments which mostly related to pole color and other considerations based on the surrounding context and/or envisioned development. Five of the eight poles are proposed within the Mixed-Use Town Center land use area since this is also an area with a need for improved coverage. It was suggested that the replacement or new freestanding poles be painted black in this area and, where applicable (e.g., the pole at 100 Brooklawn Street), include a decorative light fixture like the new light poles along Concord Road. The Town is working with the Town Center at Biddle Farms developer to potentially replace all of the streetlights along Brooklawn Street with decorative poles and fixtures to match those along Concord Road.

Another discussion item was the new freestanding pole proposed to the west of the Campbell Station Inn in the area near 11425 Kingston Pike. Staff asked the applicant to evaluate whether this pole could be moved to the west to line up with the side lease lot lines associated with the Truist Bank and the vacant area west of the Campbell Station Inn. This vacant area is being considered for a restaurant and as proposed, the pole would be in front of the building. The applicant will review this in more detail at the meeting as they have encountered a conflict with the separation requirements associated with the LCUB overhead utility lines and are unable to move the pole to the west.

The only pole proposed near a residential area is at the east intersection of Glen Abbey Boulevard and Kingston Pike. This pole is not internal to Glen Abbey but would be visible entering and exiting the subdivision. Consequently, a representative for the Glen Abbey Subdivision was present at the staff developer meeting and indicated that he would review the pole color with the Homeowners Association Board and provide staff with a recommendation. Staff was subsequently informed that Glen Abbey would prefer the pole along Glen Abbey Boulevard to be painted green so it would blend in better with nearby tree cover.

RECOMMENDATION: The applicant has provided revised plans that are included in the packet. Staff will review these plans and provide a recommendation. Staff will also review each pole and location at the meeting. A letter of credit to ensure that all affected areas are restored to their previous condition will be recommended as well as clarity on compliance with some of the ancillary requirements associated with these poles, as specified in Section K of the Aesthetic Plan. This section includes pole ownership, maintenance, liability, removal, health and safety standards, and regulatory signage. Staff will evaluate the revised plans for information related to these items.

PROJECT SUMMARY

SITE NAME: SMC_FARRAGUT_23_5G_023
 SITE ADDRESS: 102 GLEN ABBEY BLVD
 FARRAGUT, TN 37934
 COUNTY: KNOX
 JURISDICTION: TOWN OF FARRAGUT
 SITE COORDINATES: 1A
 LATITUDE: 35°52' 39.576" N (NAD 83)
 LATITUDE: 35.87786°
 LONGITUDE: 84°10' 3.684" W (NAD 83)
 LONGITUDE: -84.16769°
 ELEVATION: 914'-9" (NAVD 88)
 PROPERTY DEFINITION: R.O.W.
 FUZE PROJECT ID: 16813041
 PSLC CODE: 572833
 PROPOSED POLE HEIGHT: 32'-3.9"
 PROPOSED POLE CLASS: N/A
 POLE OWNER: VERIZON
 POLE OWNER:
 NAME: VERIZON WIRELESS
 CONTACT: JASON KOZORA
 PHONE: (252) 201-6602
 CIVIL ENGINEER:
 NAME: TELECAD WIRELESS
 CONTACT: CHRIS ROBERTS, P.E.
 PHONE: (904) 559-6794
 ELECTRICAL ENGINEER:
 NAME: TELECAD WIRELESS
 CONTACT: STEPHEN HUNT, P.E.
 PHONE: (423) 843-9500
 UTILITIES:
 POWER COMPANY: LENOIR CITY UTILITY BOARD
 CONTACT: CUSTOMER SERVICE
 PHONE: (844) 687-5282
 FIBER COMPANY: VERIZON ONE FIBER
 CONTACT: CUSTOMER SERVICE
 PHONE: (855) 594-1243

PROJECT DESCRIPTION

THESE DRAWINGS DEPICT A PORTION OF A PROPOSED SMALL CELL NETWORK BUILD INVOLVING THE SETTING OF AN ANTENNA (OR ANTENNAS) ATOP THE NEW 32'-3.9" A.G.L. (GREEN) METAL VERIZON OWNED UTILITY POLE.

CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING:

- 2018 INTERNATIONAL BUILDING CODE
- TENNESSEE CODE COUNCIL
- ANSI/TIA-222-H
- 2017 NEC - NFPA 70
- 2012 NESC
- LOCAL BUILDING CODE
- CITY/COUNTY ORDINANCES

STRUCTURAL REVIEW

STRUCTURAL REPORT AND FOUNDATION DESIGN PERFORMED BY OTHERS.

verizon

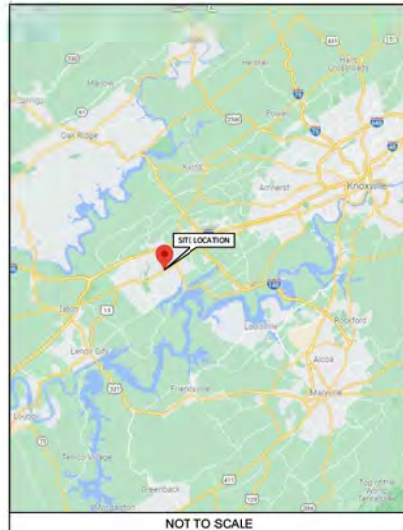
KNOXVILLE MARKET

NODE NAME: SMC_FARRAGUT_23_5G_023

SITE ADDRESS:
 102 GLEN ABBEY BLVD
 FARRAGUT, TN 37934

CANDIDATE D

VICINITY MAP



NOT TO SCALE

LOCATION MAP



NOT TO SCALE

SHEET SCALE FACTOR:

PLOT SIZE:
 11" x 17": TO SCALE



1 (800) 351-1111
 www.tenn811.com
 CONTRACTOR TO CALL TENNESSEE
 ONE-CALL SYSTEMS AT LEAST (2) WORKING
 DAYS PRIOR TO DIGGING.

SHEET INDEX

NO.	DESCRIPTION
A1	TITLE SHEET
GN1	GENERAL NOTES
B1	SITE PLAN - AERIAL
B2	SITE PLAN
B3	PLAT
C1	POLE ELEVATION
C2	TRAFFIC CONTROL
C3	SITE DETAILS
C4	PHOTO SIMS
C4A	PHOTO SIMS
E1	UTILITY SITE PLAN
E1A	POWER DESIGN
—	GPRS FINDINGS MAP
E2	SINGLE LINE DIAGRAM
E3	ELECTRICAL DETAILS
S1	EQUIPMENT DETAILS
S2	FOUNDATION DETAIL
RF1	RFDS
RF2	RFDS
RF3	RFDS
RF4	RFDS
RF5	RFDS
RF6	RFDS

SCOPE OF WORK

- INSTALL A NEW 32'-3.9" AGL (GREEN) METAL UTILITY POLE
- INSTALL NEW EQUIPMENT
 - (3) ERICSSON AIR1652 ANTENNA(S)
 - (3) ERICSSON STREETMACRO 6705 ANTENNA(S)
 - ELECTRIC METER
 - POWER DISCONNECT
 - FIBER PANEL

STATE COUNTY MAP



PREPARED FOR:

verizon

PREPARED BY:

TeleCAD Wireless
 1961 NORTHPOINT BLVD, SUITE 130
 HIXSON, TN 37343
 PH: 423-843-9500
 FAX: 423-843-9500

DRAWING NOTICE:
 THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO THE CLIENT IS STRICTLY PROHIBITED.

DRAWN BY: JAE
 CHECKED BY: SEH

REVISIONS

#	DATE	BY	DESCRIPTION
1	11/07/22	JAE	CONSTRUCTION ISSUE
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7	09/19/22	JAE	PRELIMINARY ISSUE



SITE NAME: SMC_FARRAGUT_23_5G_023
 ADDRESS: 102 GLEN ABBEY BLVD
 FARRAGUT, TN 37934
 COUNTY: KNOX
 LATITUDE: 35°52' 39.576" N
 LONGITUDE: 84°10' 3.684" W
 DESIGN TYPE: SMALL CELL

SHEET TITLE:
 TITLE SHEET

DRAWING NO: A1
 REVISION: 5

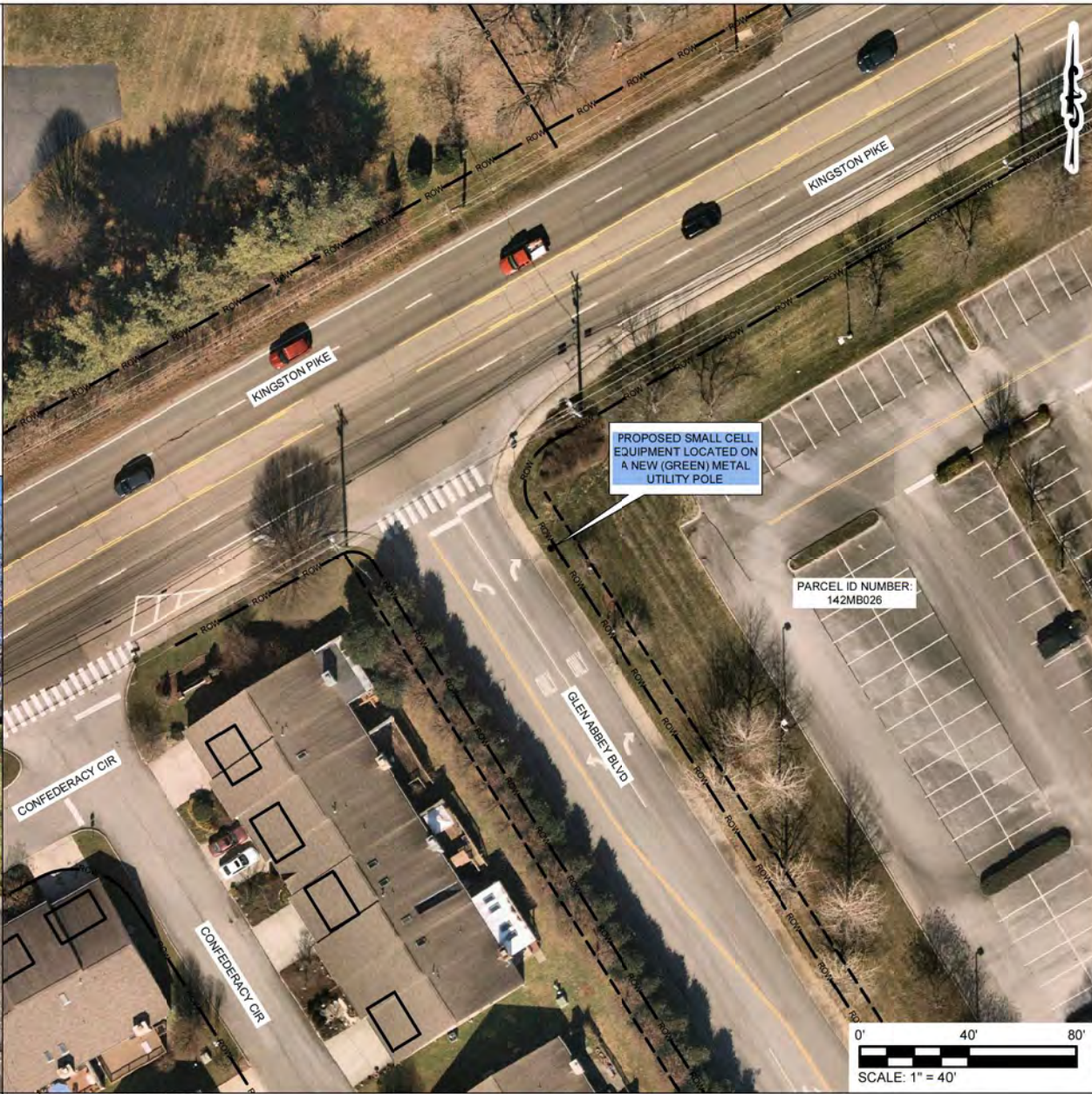
NOTES:

1. THE SITE PLAN SHOWN BELOW WAS REPRODUCED FROM INFORMATION PROVIDED BY KNOX COUNTY GIS. CONTRACTOR TO VERIFY ALL EXISTING INFORMATION AS INDICATED ON THE SITE PLAN. CONTRACTOR IS TO ESTABLISH THE EXISTENCE AND LOCATION OF ALL EXISTING UNDERGROUND AND OVERHEAD UTILITIES. CONTRACTOR TO IMMEDIATELY NOTIFY THE VERIZON CONSTRUCTION OF ANY DISCREPANCIES.
2. CONTRACTOR SHALL MAINTAIN UNINTERRUPTED ACCESS TO ALL DRIVEWAYS, SIDE STREETS, AND WALKWAYS AT ALL TIMES UNLESS OTHERWISE PERMITTED.
3. CONTRACTOR SHALL PREPARE A MAINTENANCE OF TRAFFIC (M.O.T.) PLAN FROM PEDESTRIAN TRAFFIC AND WORK WITHIN THE RIGHT-OF-WAY, INCLUDING VEHICLE PARKING AND EQUIPMENT STAGING.
4. CONTRACTOR SHALL RESTORE ANY DISTURBED AREAS TO ORIGINAL CONDITION OR BETTER.
5. POWER DELIVERY BY LENOIR CITY UTILITY BOARD AT THEIR RECOMMENDATION, PERMITTED SEPARATELY.
6. FIBER DELIVERY PROVIDED BY ONE FIBER, PERMITTED SEPARATELY.
7. FOR GENERAL SITE WORK NOTES, SEE SHEET GN1.
8. ALL NORTH ARROWS ON SITE PLANS ARE TRUE NORTH, UNLESS OTHERWISE SPECIFIED.



1 POLE LOCATION PHOTO

N.T.S.



2 SITE PLAN - AERIAL

PREPARED FOR:

PREPARED BY:

1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
PH: 423-843-9500
FAX: 423-843-9509

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CHECKED BY:	SEH

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0	09/23/22	JAE	CONSTRUCTION ISSUE
A	09/19/22	JAE	PRELIMINARY ISSUE

ENGINEER'S SEAL

STEPHEN E. HUNT
REGISTERED ENGINEER
COMMERCIAL
No. 107654
STATE OF TENNESSEE

SITE NAME:
SMC_FARRAGUT_23_5G_023

ADDRESS:
102 GLEN ABBEY BLVD
FARRAGUT, TN 37934

COUNTY:
KNOX

LATITUDE:
35°52' 39.576" N

LONGITUDE:
84°10' 3.684" W

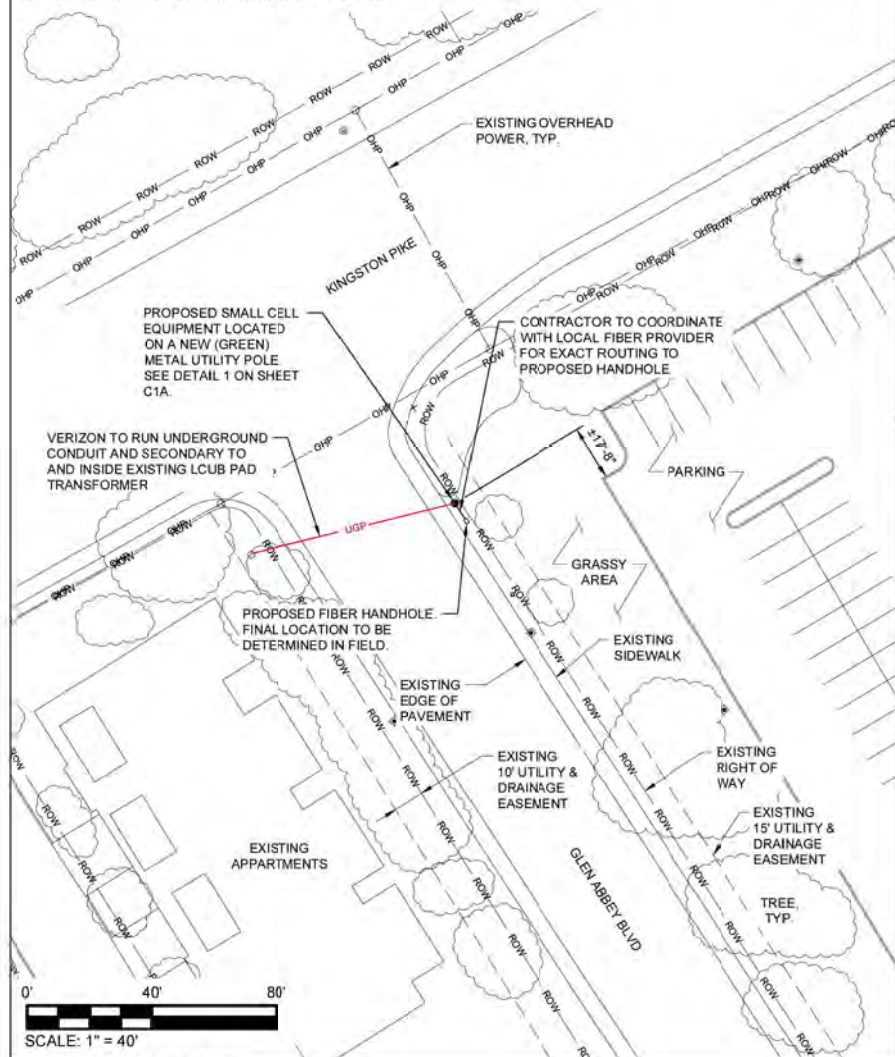
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SHEET TITLE:
SITE PLAN - AERIAL

DRAWING NO. B1	REVISION: 5
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NOTES:

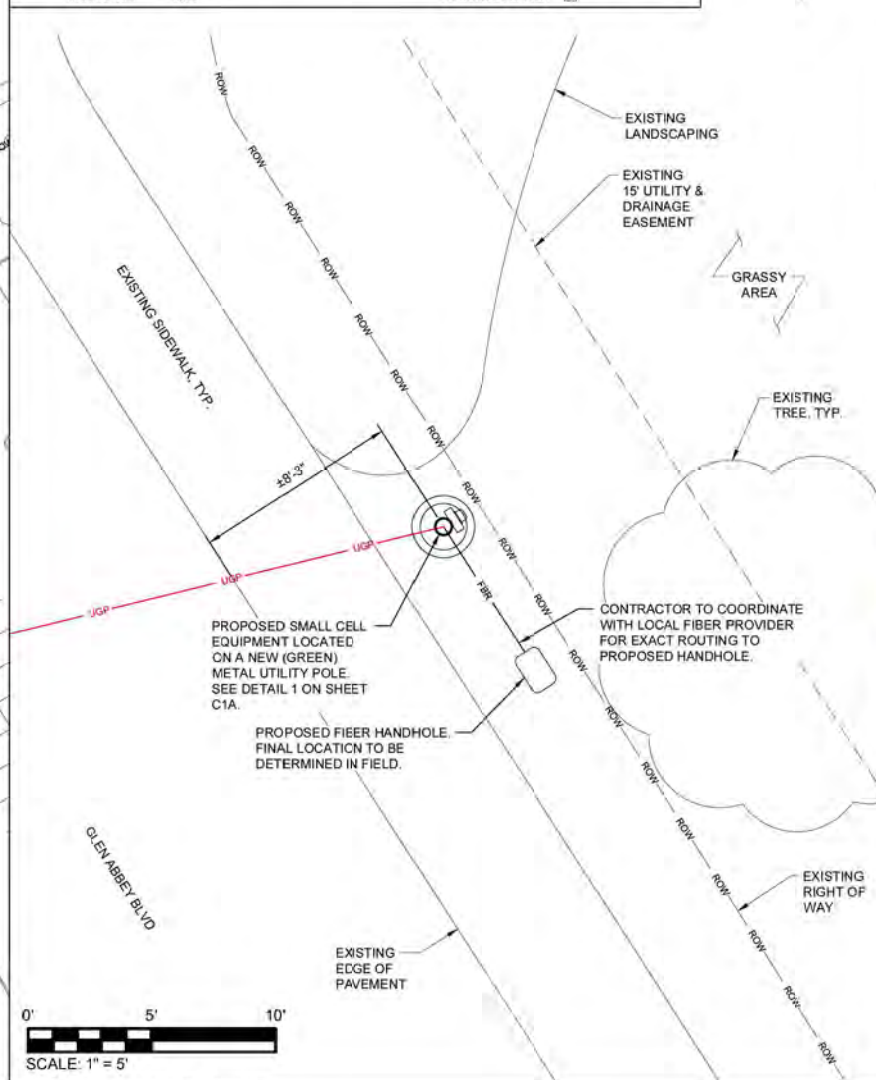
1. THIS DRAWING IS BASED ON AERIAL IMAGERY AND FIELD OBSERVATIONS. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
2. THE PROPOSED USE DOES NOT REQUIRE FULL OR PART TIME EMPLOYEES AT THE SITE.
3. FOR GENERAL SITE WORK NOTES, SEE SHEET GNI.
4. ALL NORTH ARROWS ON SITE PLANS ARE TRUE NORTH, UNLESS OTHERWISE SPECIFIED.
5. OPEN CUT CONSTRUCTION THROUGH EXISTING PAVEMENT, I.E. ROADWAYS, PARKING AREAS, SIDEWALKS WILL NOT BE ALLOWED. CONSTRUCTION UNDER EXISTING PAVEMENTS WILL BE REQUIRED TO BE INSTALLED WITH DIRECTIONAL BORING TECHNIQUE.
6. RIGHT OF WAY INFORMATION ACQUIRED FROM GIS.



1 OVERALL SITE PLAN

LEGEND

UNDERGROUND POWER	UGP	GAS LINE	GAS	IRON PIN SET (IPF) 5/8" REBAR	IPF
OVERHEAD POWER	OHP	FENCE	X	IRON PIN FOUND (PF)	PF
OVERHEAD UTILITIES	OHU	SEWER LINE	SWR	CONCRETE MON. FOUND	CMF
UNDERGROUND TELCO	UGT	WATER LINE	WTR	CONCRETE MON. SET	CMS
OVERHEAD TELCO	OHT	COAX CABLE	C	TRAFFIC LIGHT POLE	TLP
HIGH VOLTAGE POWER	HVP	HYBRID CABLE	HYB	FIRE HYDRANT	FH
PROPERTY LINE	PL	FIBER	FBR	TELCO PEDESTAL	TP
RIGHT-OF-WAY	ROW			ELECTRICAL PULL BOX	EPB
				CATCH BASIN	CB
				BENCHMARK	BM
				UTILITY POLE	UP
				WATER VALVE	WV
				MANHOLE	MH
				GAS VALVE	GV



2 ENLARGED SITE PLAN

PREPARED FOR:

verizon

PREPARED BY:

TeleCAD Wireless

1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
PH: 423-843-9500
FAX: 423-843-9500

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CHECKED BY: SEH

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2	10/24/22	JAE	CONSTRUCTION ISSUE
1	10/18/22	JAE	CONSTRUCTION ISSUE
0	09/03/22	JAE	CONSTRUCTION ISSUE
A	09/19/22	JAE	PRELIMINARY ISSUE
NO	DATE	BY	DESCRIPTION

ENGINEER'S TITLE:

STEPHEN E. HUNT

REGISTERED ENGINEER

COMMERCIAL

NO. 107654

STATE OF TENNESSEE

NOT VALID WITHOUT SIGNATURE

SITE NAME:

SMC_FARRAGUT_23_5G_023

ADDRESS:

102 GLEN ABBEY BLVD

FARRAGUT, TN 37934

COUNTY:

KNOX

LATITUDE:

35°52' 39.576" N

LONGITUDE:

84°10' 3.684" W

DESIGN TYPE:

SMALL CELL

SHEET TITLE:

SITE PLAN

DRAWING NO.

B2

REVISION:

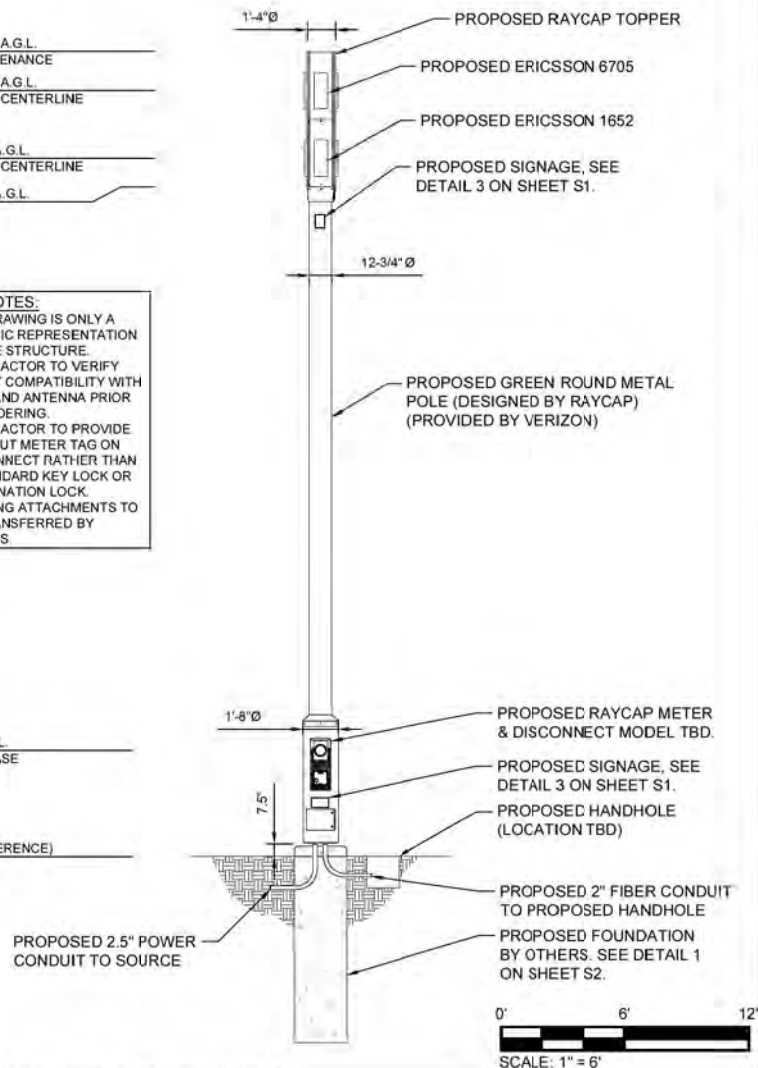
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- 38'-10.5" ± A.G.L.
T/APPERTENANCE
- 36'-11.9" ± A.G.L.
ANTENNA CENTERLINE
- 33'-8.7" ± A.G.L.
ANTENNA CENTERLINE
- 32'-3.9" ± A.G.L.
T/POLE

POLE NOTES:

1. THE DRAWING IS ONLY A GRAPHIC REPRESENTATION OF THE STRUCTURE.
2. CONTRACTOR TO VERIFY MOUNT COMPATIBILITY WITH POLE AND ANTENNA PRIOR TO ORDERING.
3. CONTRACTOR TO PROVIDE LOCKOUT METER TAG ON DISCONNECT RATHER THAN A STANDARD KEY LOCK OR COMBINATION LOCK.
4. EXISTING ATTACHMENTS TO BE TRANSFERRED BY OTHERS.

- 5'-0" ± A.G.L.
METER BASE
- 0'-0" (REFERENCE)
GRADE



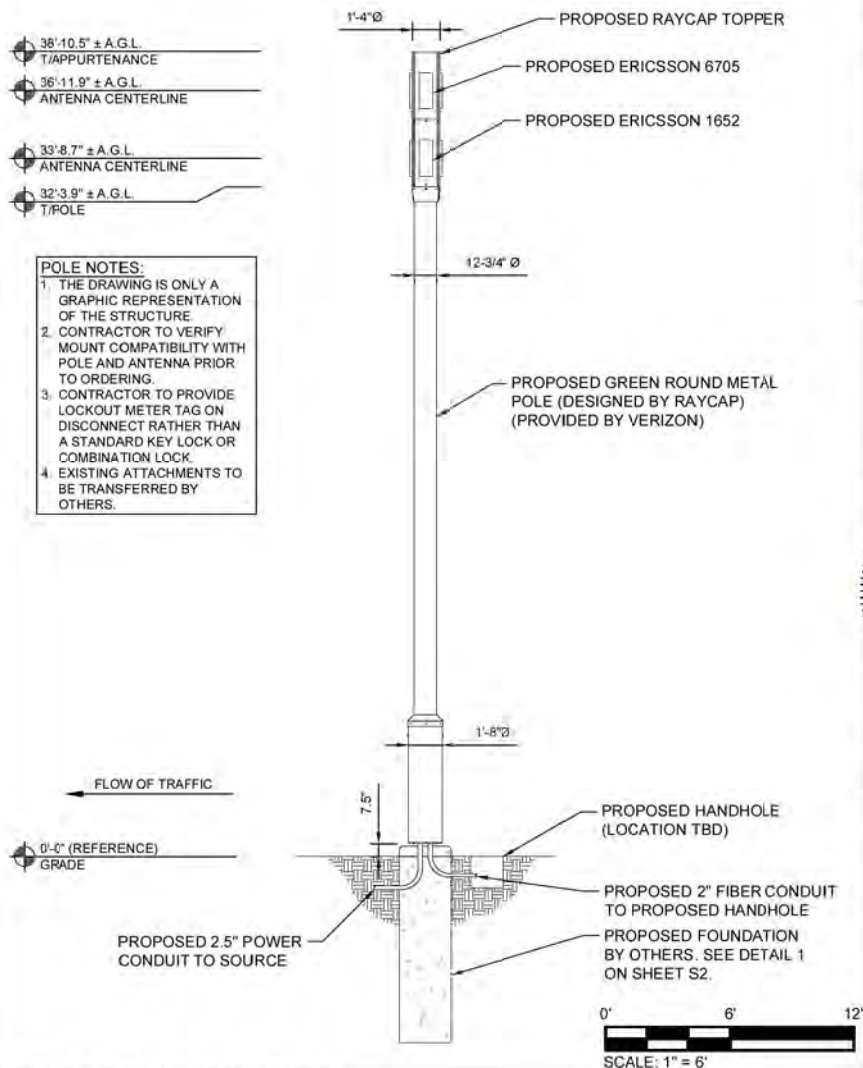
1 POLE ELEVATION (FACING TRAFFIC FLOW)

- 38'-10.5" ± A.G.L.
T/APPERTENANCE
- 36'-11.9" ± A.G.L.
ANTENNA CENTERLINE
- 33'-8.7" ± A.G.L.
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4. EXISTING ATTACHMENTS TO BE TRANSFERRED BY OTHERS.

- 0'-0" (REFERENCE)
GRADE



2 POLE ELEVATION (FROM STREET)

PREPARED FOR:

verizon

PREPARED BY:

TeleCAD
Wireless

1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
PH: 423-843-9500
FAX: 423-843-9500

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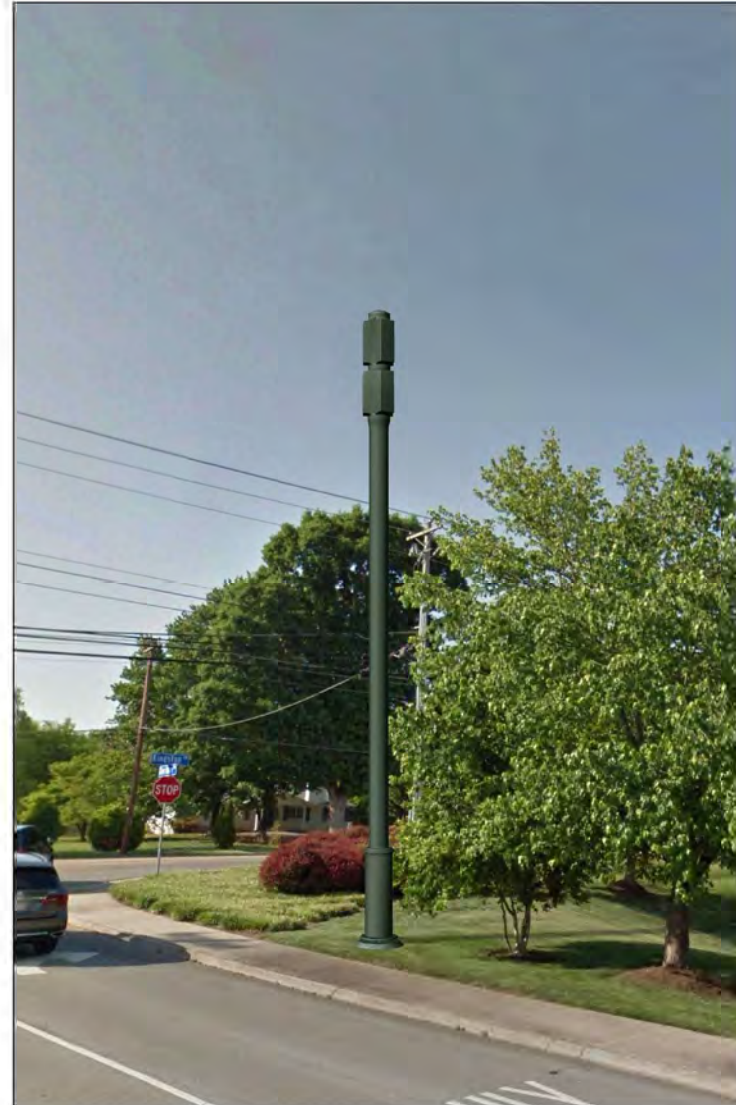
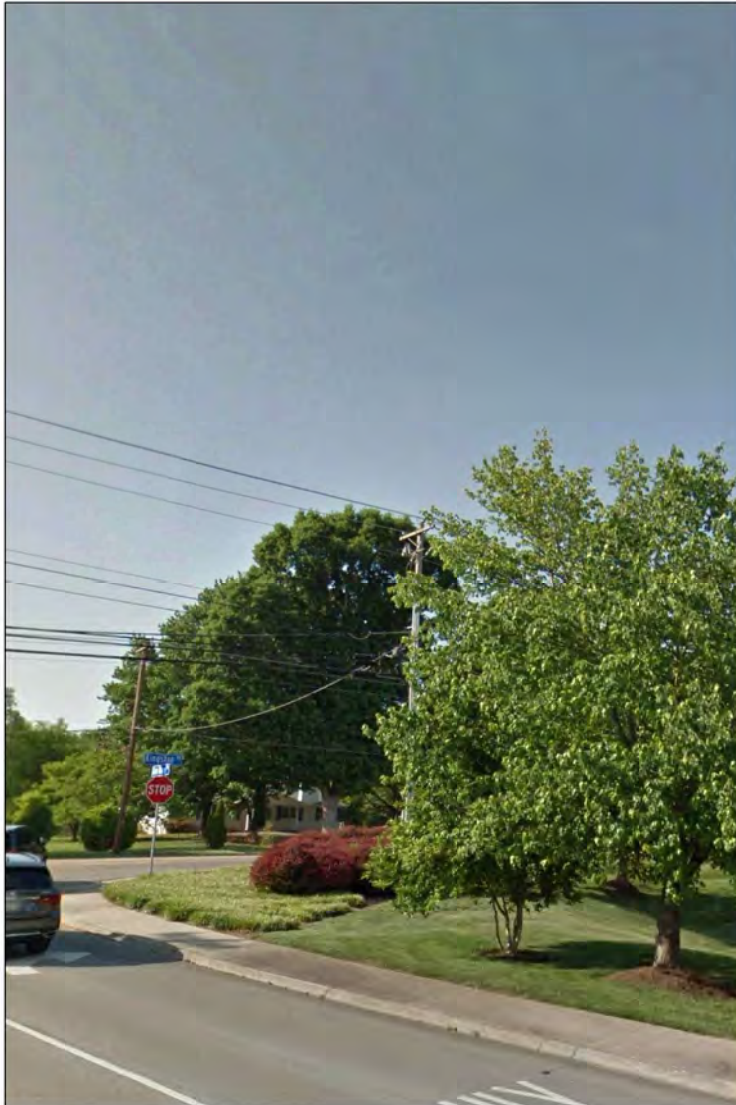
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DESIGN TYPE:
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SHEET TITLE:
POLE ELEVATION

DRAWING NO.: C1
REVISION: 5

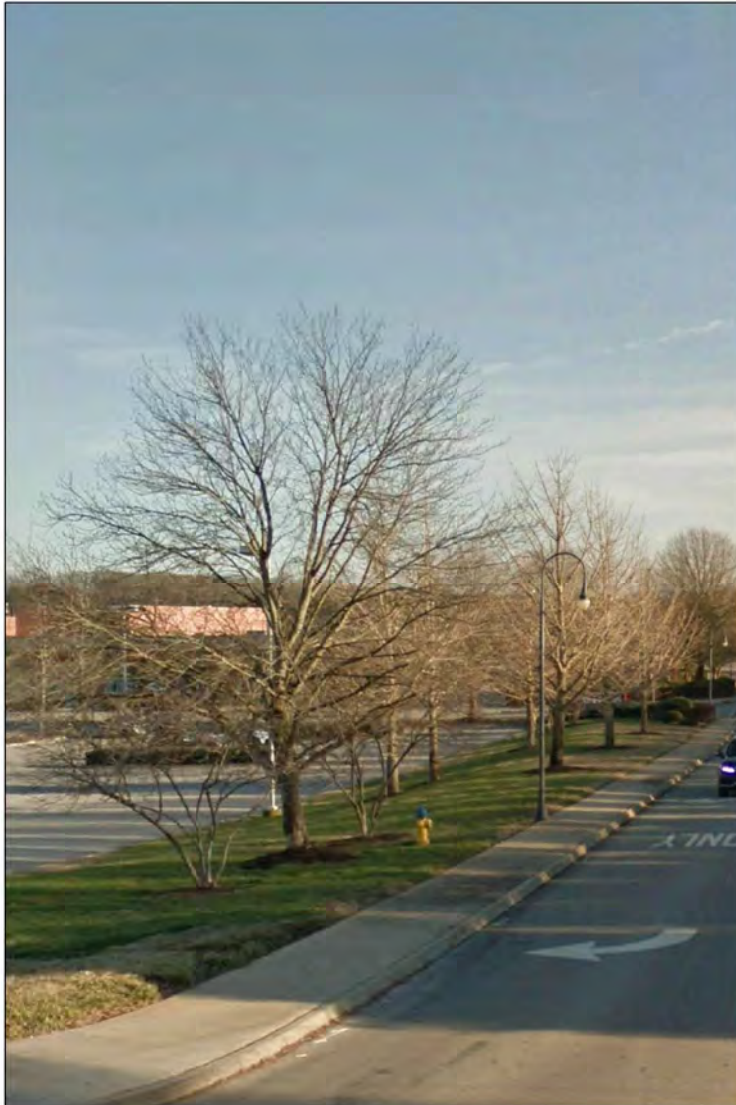


PREPARED FOR:																																	
																																	
PREPARED BY:																																	
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SHEET TITLE: PHOTO SIMS																																	
DRAWING NO. C4	REVISION: 5																																

1 CURRENT VIEW (FROM SOUTH LOOKING NORTH)

NTS 2 PROPOSED VIEW (FROM SOUTH LOOKING NORTH)

NTS



1 CURRENT VIEW (FROM NORTH LOOKING SOUTH)



2 PROPOSED VIEW (FROM NORTH LOOKING SOUTH)

PREPARED FOR:

verizon

PREPARED BY:

TeleCAD
Wireless

1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
PH: 423-843-9500
FAX: 423-843-9503

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ADDRESS:
102 GLEN ABBEY BLVD
FARRAGUT, TN 37934

COUNTY:
KNOX

LATITUDE:
35°52' 39.576" N

LONGITUDE:
84°10' 3.684" W

DESIGN TYPE:
SMALL CELL

SHEET TITLE:
PHOTO SIMS

DRAWING NO. C4A
REVISION: 5

NTS

PROJECT SUMMARY

SITE NAME: SMC_FARRAGUT_20_5G_020
 SITE ADDRESS: 126 WEST END AVE
 (E911 VERIFIED) FARRAGUT, TN 37934
 COUNTY: KNOX
 JURISDICTION: TOWN OF FARRAGUT
SITE COORDINATES: 1A
 LATITUDE: 35° 53' 11.436" N (NAD 83)
 LATITUDE: 35.88651°
 LONGITUDE: 84° 9' 18.252" W (NAD 83)
 LONGITUDE: -84.15507°
 ELEVATION: 860'-0" (NAVD 88)
 PROPERTY DEFINITION: R.O.W.
 FUZE PROJECT ID: 16874826
 PSLC CODE: 572830
 PROPOSED POLE HEIGHT: 32'-3.9" A.G.L.
 PROPOSED POLE CLASS: N/A
 POLE OWNER: VERIZON
 EXISTING POLE HEIGHT: 30'-6"
LESSEE:
 NAME: VERIZON WIRELESS
 CONTACT: JASON KOZORA
 PHONE: (252) 201-6602
CIVIL ENGINEER:
 NAME: TELECAD WIRELESS
 CONTACT: CHRIS ROBERTS, P.E.
 PHONE: (904) 559-6794
ELECTRICAL ENGINEER:
 NAME: TELECAD WIRELESS
 CONTACT: STEPHEN HUNT, P.E.
 PHONE: (423) 843-9500
UTILITIES:
 POWER COMPANY: LENOIR CITY UTILITY BOARD
 CONTACT: CUSTOMER SERVICE
 PHONE: (644) 687-5282
 FIBER COMPANY: VERIZON ONE FIBER
 CONTACT: CUSTOMER SERVICE
 PHONE: (855) 594-1243

PROJECT DESCRIPTION

THESE DRAWINGS DEPICT A PORTION OF A PROPOSED SMALL CELL NETWORK BUILD INVOLVING THE SETTING OF AN ANTENNA (OR ANTENNAS) ATOP THE REPLACEMENT 32'-3.9" A.G.L. (GREY) METAL VERIZON OWNED LIGHT POLE.

CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING:

- 2018 INTERNATIONAL BUILDING CODE
- TENNESSEE CODE COUNCIL
- ANSI/TIA-222-H
- 2017 NEC - NFPA 70
- 2012 NESC
- LOCAL BUILDING CODE
- CITY/COUNTY ORDINANCES

STRUCTURAL REVIEW

STRUCTURAL REPORT AND FOUNDATION DESIGN PERFORMED BY OTHERS.

verizon

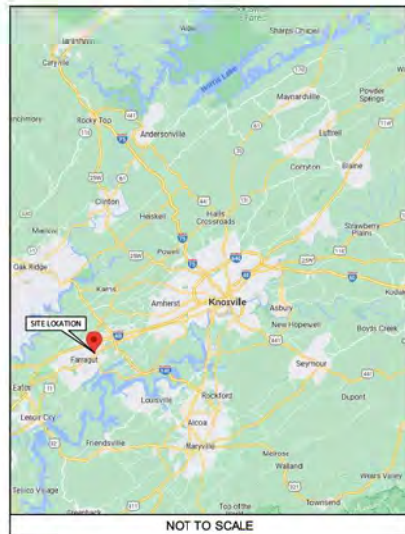
KNOXVILLE MARKET

NODE NAME: SMC_FARRAGUT_20_5G_020

SITE ADDRESS:
 126 WEST END AVE
 FARRAGUT, TN 37934

CANDIDATE D

VICINITY MAP



NOT TO SCALE

LOCATION MAP



NOT TO SCALE

SHEET SCALE FACTOR:

PLOT SIZE:
 11" x 17" TO SCALE



1 (800) 351-1111
 www.tenn811.com
 CONTRACTOR TO CALL TENNESSEE
 ONE-CALL SYSTEM AT LEAST (2) WORKING
 DAYS PRIOR TO DIGGING.

SHEET INDEX

NO.	DESCRIPTION
A1	TITLE SHEET
GN1	GENERAL NOTES
B1	SITE PLAN - AERIAL
B2	SITE PLAN
B3	PLAT
C1	EXISTING POLE ELEVATION
C1A	PROPOSED POLE ELEVATION
C2	TRAFFIC CONTROL
C3	SITE DETAILS
C4	PHOTO SIMS
C4A	PHOTO SIMS
E1	UTILITY SITE PLAN
E1A	POWER DESIGN
-	GPRS FINDINGS MAP
E2	SINGLE LINE DIAGRAM
E3	ELECTRICAL DETAILS
S1	EQUIPMENT DETAILS
S2	FOUNDATION DESIGN
RF1	RFDS
RF2	RFDS
RF3	RFDS
RF4	RFDS
RF5	RFDS
RF6	RFDS

SCOPE OF WORK

- INSTALL A REPLACEMENT 32'-3.9" A.G.L. (GREY) METAL LIGHT POLE
- INSTALL NEW EQUIPMENT
 - (3) ERICSSON AIR1652 ANTENNA(S)
 - (3) ERICSSON STREETMACRO 6705 ANTENNA(S)
 - ELECTRIC METER
 - POWER DISCONNECT
 - FIBER PANEL

STATE COUNTY MAP



KNOX COUNTY

PREPARED FOR:

verizon

PREPARED BY:

TeleCAD
 Wireless

1961 NORTHPOINT BLVD, SUITE 130
 HIXSON, TN 37343
 PH: 423-843-9500
 FAX: 423-843-9599

DRAWING NOTICE:
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DRAWN BY: JAE
 CHECKED BY: SEH

REVISIONS

NO.	DATE	BY	DESCRIPTION
3	11/07/22	JAE	PERMITTING ISSUE
2	10/28/22	JAE	PERMITTING ISSUE
1	10/18/22	JAE	PERMITTING ISSUE
0	09/27/22	JAE	PERMITTING ISSUE
A	09/19/22	JAE	PRELIMINARY ISSUE



SITE NAME: SMC_FARRAGUT_20_5G_020
 ADDRESS: 126 WEST END AVE
 FARRAGUT, TN 37934
 COUNTY: KNOX
 LATITUDE: 35° 53' 11.436" N
 LONGITUDE: 84° 9' 18.252" W
 DESIGN TYPE: SMALL CELL
 SHEET TITLE: TITLE SHEET

DRAWING NO: A1
 REVISION: 3

NOTES:

1. THE SITE PLAN SHOWN BELOW WAS REPRODUCED FROM INFORMATION PROVIDED BY KNOX COUNTY GIS. CONTRACTOR TO VERIFY ALL EXISTING INFORMATION AS INDICATED ON THE SITE PLAN. CONTRACTOR IS TO ESTABLISH THE EXISTENCE AND LOCATION OF ALL EXISTING UNDERGROUND AND OVERHEAD UTILITIES. CONTRACTOR TO IMMEDIATELY NOTIFY THE VERIZON CONSTRUCTION OF ANY DISCREPANCIES.
2. CONTRACTOR SHALL MAINTAIN UNINTERRUPTED ACCESS TO ALL DRIVEWAYS, SIDE STREETS, AND WALKWAYS AT ALL TIMES UNLESS OTHERWISE PERMITTED.
3. CONTRACTOR SHALL PREPARE A MAINTENANCE OF TRAFFIC (M.O.T.) PLAN FROM PEDESTRIAN TRAFFIC AND WORK WITHIN THE RIGHT-OF-WAY, INCLUDING VEHICLE PARKING AND EQUIPMENT STAGING.
4. CONTRACTOR SHALL RESTORE ANY DISTURBED AREAS TO ORIGINAL CONDITION OR BETTER.
5. POWER DELIVERY BY LENOIR CITY UTILITY BOARD AT THEIR RECOMMENDATION, PERMITTED SEPARATELY.
6. FIBER DELIVERY PROVIDED BY ONE FIBER, PERMITTED SEPARATELY.
7. FOR GENERAL SITE WORK NOTES, SEE SHEET GN1.
8. ALL NORTH ARROWS ON SITE PLANS ARE TRUE NORTH, UNLESS OTHERWISE SPECIFIED.



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verizon

PREPARED BY:

TeleCAD
Wireless

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0	09/27/22	JAE	PERMITTING ISSUE
A	09/19/22	JAE	PRELIMINARY ISSUE

ENGINEER'S SIGNATURE



SITE NAME:
SMC_FARRAGUT_20_5G_020

ADDRESS:
126 WEST END AVE
FARRAGUT, TN 37934

COUNTY:
KNOX

LATITUDE:
35° 53' 11.436" N

LONGITUDE:
84° 9' 18.252" W

DESIGN TYPE:
SMALL CELL

SHEET TITLE:
SITE PLAN - AERIAL

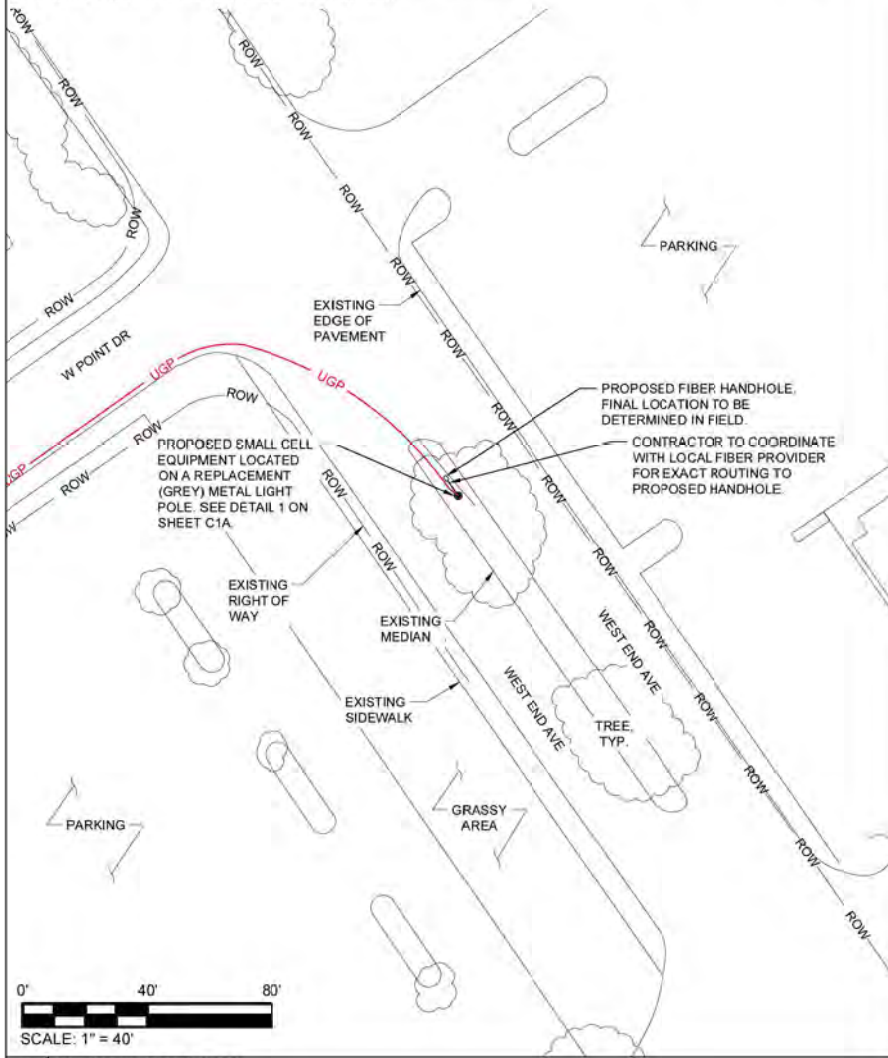
DRAWING NO. B1
REVISION: 3

1 POLE LOCATION PHOTO

N.T.S. 2 SITE PLAN - AERIAL

NOTES:

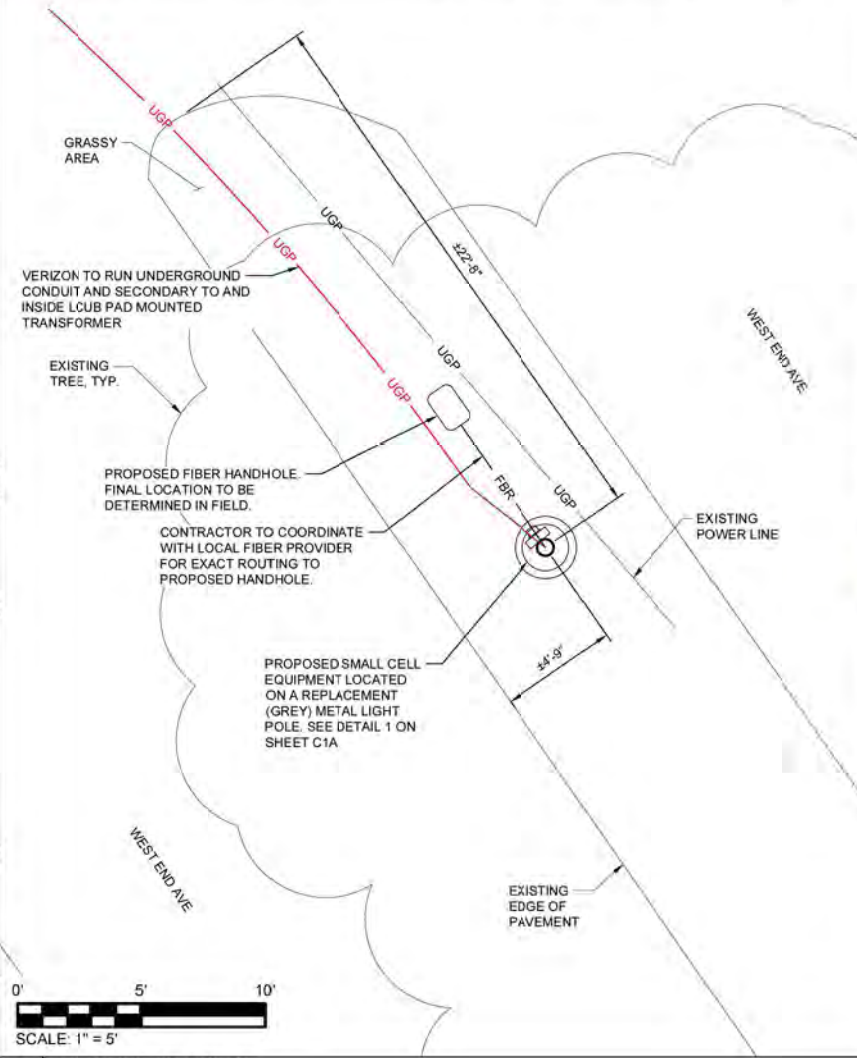
1. THIS DRAWING IS BASED ON AERIAL IMAGERY AND FIELD OBSERVATIONS. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
2. THE PROPOSED USE DOES NOT REQUIRE FULL OR PART TIME EMPLOYEES AT THE SITE.
3. FOR GENERAL SITE WORK NOTES, SEE SHEET GN1.
4. ALL NORTH ARROWS ON SITE PLANS ARE TRUE NORTH, UNLESS OTHERWISE SPECIFIED.
5. OPEN CUT CONSTRUCTION THROUGH EXISTING PAVEMENT, I.E. ROADWAYS, PARKING AREAS, SIDEWALKS WILL NOT BE ALLOWED. CONSTRUCTION UNDER EXISTING PAVEMENTS WILL BE REQUIRED TO BE INSTALLED WITH DIRECTIONAL BORING TECHNIQUE.
6. RIGHT OF WAY INFORMATION ACQUIRED FROM GIS.



1 OVERALL SITE PLAN

LEGEND

UNDERGROUND POWER	UGP	GAS LINE	GAS	IRON PIN SET (IPF) 5/8" REBAR	IPF
OVERHEAD POWER	OHP	FENCE	X	IRON PIN FOUND (IPF)	IPF
OVERHEAD UTILITIES	OHU	SEWER LINE	SWR	CONCRETE MON. FOUND	CMF
UNDERGROUND TELCO	UGT	WATER LINE	WTR	CONCRETE MON. SET	CMS
OVERHEAD TELCO	OHT	COAX CABLE	C	TRAFFIC LIGHT POLE	TLP
HIGH VOLTAGE POWER	HVP	HYBRID CABLE	HYB	FIRE HYDRANT	FH
PROPERTY LINE	PL	FIBER	FBR	TELCO PEDESTAL	TP
RIGHT-OF-WAY	ROW			ELECTRICAL PULL BOX	EPB
				CATCH BASIN	CB
				BENCHMARK	BM
				UTILITY POLE	UP
				LIGHT POLE	LP
				WATER VALVE	WV
				MANHOLE	MH
				GAS VALVE	GV



2 ENLARGED SITE PLAN

PREPARED FOR:

verizon

PREPARED BY:

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HIXSON, TN 37343
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DRAWN BY: JAE
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0	09/27/22	JAE	PERMITTING ISSUE
A	09/19/22	JAE	PRELIMINARY ISSUE

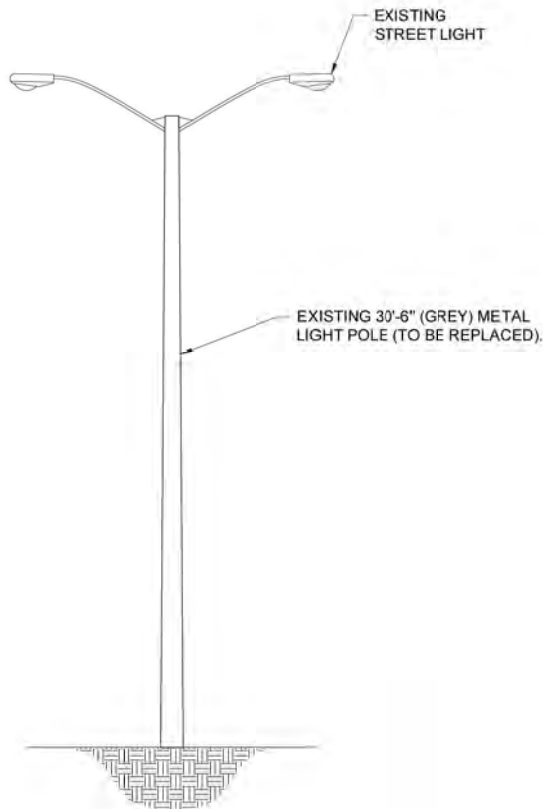


SITE NAME: SMC_FARRAGUT_20_5G_020
ADDRESS: 126 WEST END AVE
FARRAGUT, TN 37934
COUNTY: KNOX
LATITUDE: 35° 53' 11.436"N
LONGITUDE: 84° 9' 18.252" W
DESIGN TYPE: SMALL CELL

SHEET TITLE: SITE PLAN

DRAWING NO: B2
REVISION: 3

32'-7" ± A.G.L.
T/APPURTENANCE
32'-7" ± A.G.L.
T/LIGHT
30'-6" ± A.G.L.
T/EXISTING POLE



0'-0" (REFERENCE)
GRADE

0' 6' 12'
SCALE: 1" = 6'

1 EXISTING POLE ELEVATION (FACING TRAFFIC FLOW)

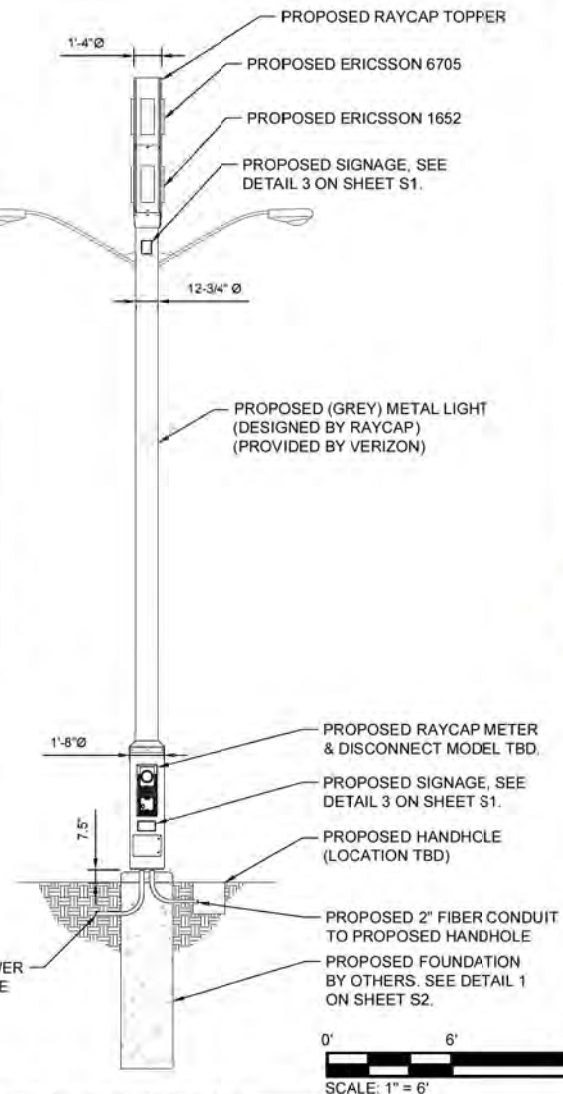
38'-10.5" ± A.G.L.
T/APPURTENANCE
35'-11.9" ± A.G.L.
ANTENNA CENTERLINE
33'-8.7" ± A.G.L.
ANTENNA CENTERLINE
32'-7" ± A.G.L.
T/LIGHT
32'-3.9" ± A.G.L.
T/POLE

POLE NOTES:
1. THE DRAWING IS ONLY A GRAPHIC REPRESENTATION OF THE STRUCTURE.
2. CONTRACTOR TO VERIFY MOUNT COMPATIBILITY WITH POLE AND ANTENNA PRIOR TO ORDERING.
3. CONTRACTOR TO PROVIDE LOCKOUT METER TAG ON DISCONNECT RATHER THAN A STANDARD KEY LOCK OR COMBINATION LOCK.
4. EXISTING ATTACHMENTS TO BE TRANSFERRED BY OTHERS.

5'-1.5" ± A.G.L.
METER BASE

0'-0" (REFERENCE)
GRADE

PROPOSED 2.5" POWER
CONDUIT TO SOURCE



0' 6' 12'
SCALE: 1" = 6'

2 PROPOSED POLE ELEVATION (FACING TRAFFIC FLOW)

PREPARED FOR:

verizon

PREPARED BY:

TeleCAD
Wireless

1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
PH: 423-843-9500
FAX: 423-843-9599

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4	09/19/22	JAE	PRELIMINARY ISSUE



SITE NAME:
SMC_FARRAGUT_20_5G_020

ADDRESS:
126 WEST END AVE
FARRAGUT, TN 37934

COUNTY:
KNOX

LATITUDE:
35° 53' 11.436" N

LONGITUDE:
84° 9' 18.252" W

DESIGN TYPE:
SMALL CELL

SHEET TITLE:
POLE ELEVATION

DRAWING NO. C1
REVISION: 3



1 CURRENT VIEW (FROM WEST LOOKING EAST)



2 PROPOSED VIEW (FROM WEST LOOKING EAST)

PREPARED FOR:

verizon

PREPARED BY:

TeleCAD
Wireless

1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
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DRAWN BY:	JAE
CHECKED BY:	SEH

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SITE NAME:
SMC_FARRAGUT_20_5G_020

ADDRESS:
126 WEST END AVE
FARRAGUT, TN 37934

COUNTY:
KNOX

LATITUDE:
35° 53' 11.436"N

LONGITUDE:
84° 9' 18.252" W

DESIGN TYPE:
SMALL CELL

SHEET TITLE:
PHOTO SIMS

DRAWING NO. C4	REVISION: 3
--------------------------	-----------------------

NTS



1 CURRENT VIEW (FROM NORTHWEST LOOKING SOUTHEAST)



2 PROPOSED VIEW (FROM NORTH-WEST LOOKING SOUTHEAST)

PREPARED FOR:

verizon

PREPARED BY:

TeleCAD
Wireless

1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
PH: 423-843-9500
FAX: 423-843-9599

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CHECKED BY:	SEH

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SITE NAME:
SMC_FARRAGUT_20_5G_020

ADDRESS:
126 WEST END AVE
FARRAGUT, TN 37934

COUNTY:
KNOX

LATITUDE:
35° 53' 11.436" N

LONGITUDE:
84° 9' 18.252" W

DESIGN TYPE:
SMALL CELL

SHEET TITLE:
PHOTO SIMS

DRAWING NO. C4A	REVISION: 3
---------------------------	-----------------------

NTS

PROJECT SUMMARY

SITE NAME: SMC_FARRAGUT_16
 SITE ADDRESS: 100 SMITH RD
 (E911 VERIFIED) FARRAGUT, TN 37934
 COUNTY: KNOX
 JURISDICTION: TOWN OF FARRAGUT
SITE COORDINATES: 1A
 LATITUDE: 35° 52' 18.300" N (NAD 83)
 LATITUDE: 35.87175
 LONGITUDE: 84° 10' 54.588" W (NAD 83)
 LONGITUDE: -84.18183
 ELEVATION: 927'-1" (NAVD 88)
 PROPERTY DEFINITION: R.O.W.
 FUZE PROJECT ID: 16671204
 PSLC CODE: 507970
 PROPOSED POLE HEIGHT: 42'-3.5"
 PROPOSED POLE CLASS: N/A
 POLE OWNER: VERIZON
POLE OWNER:
 NAME: VERIZON WIRELESS
 CONTACT: JASON KOZORA
 PHONE: (252) 201-6602
CIVIL ENGINEER:
 NAME: TELECAD WIRELESS
 CONTACT: CHRIS ROBERTS, P.E.
 PHONE: (904) 559-6794
ELECTRICAL ENGINEER:
 NAME: TELECAD WIRELESS
 CONTACT: STEPHEN HUNT, P.E.
 PHONE: (423) 843-9500
UTILITIES:
 POWER COMPANY: LENOIR CITY UTILITY BOARD
 CONTACT: CUSTOMER SERVICE
 PHONE: (844) 687-6282
 FIBER COMPANY: VERIZON ONE FIBER
 CONTACT: CUSTOMER SERVICE
 PHONE: (855) 594-1243

PROJECT DESCRIPTION

THESE DRAWINGS DEPICT A PORTION OF A PROPOSED SMALL CELL NETWORK BUILD INVOLVING THE SETTING OF AN ANTENNA (OR ANTENNAS) ATOP THE NEW 42'-3.5" A.G.L. (GREY) METAL VERIZON OWNED UTILITY POLE.

CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING:

- 2018 INTERNATIONAL BUILDING CODE
- TENNESSEE CODE COUNCIL
- ANSI/AIA-222-H
- 2017 NEC - NFPA 70
- 2012 NESC
- LOCAL BUILDING CODE
- CITY/COUNTY ORDINANCES

STRUCTURAL REVIEW

STRUCTURAL REPORT AND FOUNDATION DESIGN PERFORMED BY OTHERS.

verizon

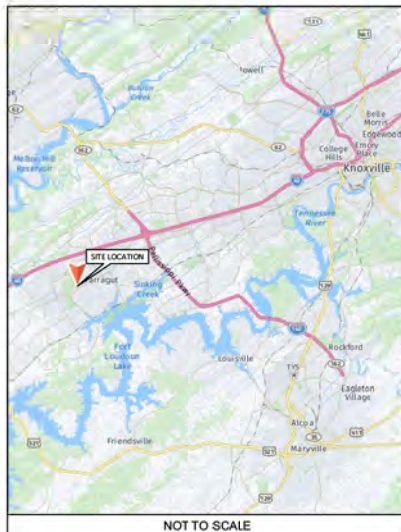
KNOXVILLE MARKET

NODE NAME: SMC_FARRAGUT_16

SITE ADDRESS:
 100 SMITH RD
 FARRAGUT, TN 37934

CANDIDATE E

VICINITY MAP



NOT TO SCALE

LOCATION MAP



NOT TO SCALE

SHEET SCALE FACTOR:

PLOT SIZE:
 11" x 17": TO SCALE



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 www.tenn811.com
 CONTRACTOR TO CALL TENNESSEE
 ONE-CALL SYSTEMS AT LEAST (2) WORKING
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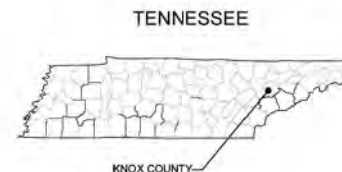
SHEET INDEX

NO.	DESCRIPTION
A1	TITLE SHEET
GN1	GENERAL NOTES
B1	SITE PLAN - AERIAL
B2	SITE PLAN
B3	PLAT
C1	POLE ELEVATION
C2	TRAFFIC CONTROL
C3	SITE DETAILS
C4	PHOTO SIMS
C4A	PHOTO SIMS
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S2	EQUIPMENT DETAILS
S3	EQUIPMENT DETAILS
S4	FOUNDATION DESIGN
RF1	RFDS
RF2	RFDS
RF3	RFDS
RF4	RFDS
RF5	RFDS
RF6	RFDS

SCOPE OF WORK

- INSTALL A NEW 42'-3.5" AGL (GREY) METAL UTILITY POLE
- INSTALL NEW EQUIPMENT
 - (1) JMA WIRELESS CY200M236-1C ANTENNA
 - (1) ERICSSON 8843 RRU
 - (1) ERICSSON 4408 RRU
 - INSTALL POWER AND FIBER FOR RADIOS (INSIDE OF POLE)
 - ELECTRIC METER
 - POWER DISCONNECT
 - FIBER PANEL

STATE COUNTY MAP



PREPARED FOR:

verizon

PREPARED BY:

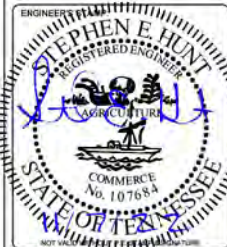
TeleCAD Wireless
 1961 NORTHPOINT BLVD, SUITE 130
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DRAWN BY: JAE
 CHECKED BY: SEH

REVISIONS

NO.	DATE	BY	DESCRIPTION
1	11/07/22	JAE	CONSTRUCTION ISSUE
2	10/26/22	JAE	CONSTRUCTION ISSUE
3	10/26/22	JAE	CONSTRUCTION ISSUE
4	10/18/22	JAE	CONSTRUCTION ISSUE
5	09/23/22	JAE	CONSTRUCTION ISSUE
6	09/19/22	JAE	PRELIMINARY ISSUE



SITE NAME: SMC_FARRAGUT_16

ADDRESS: 100 SMITH RD
 FARRAGUT, TN 37934

COUNTY: KNOX

LATITUDE: 35° 52' 18.300" N

LONGITUDE: 84° 10' 54.588" W

DESIGN TYPE: SMALL CELL

SHEET TITLE: TITLE SHEET

DRAWING NO.

A1

REVISION:

4

NOTES:

1. THE SITE PLAN SHOWN BELOW WAS REPRODUCED FROM INFORMATION PROVIDED BY KNOX COUNTY GIS. CONTRACTOR TO VERIFY ALL EXISTING INFORMATION AS INDICATED ON THE SITE PLAN. CONTRACTOR IS TO ESTABLISH THE EXISTENCE AND LOCATION OF ALL EXISTING UNDERGROUND AND OVERHEAD UTILITIES. CONTRACTOR TO IMMEDIATELY NOTIFY THE VERIZON CONSTRUCTION OF ANY DISCREPANCIES.
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4. CONTRACTOR SHALL RESTORE ANY DISTURBED AREAS TO ORIGINAL CONDITION OR BETTER.
5. POWER DELIVERY BY LENOIR CITY UTILITY BOARD AT THEIR RECOMMENDATION, PERMITTED SEPARATELY.
6. FIBER DELIVERY PROVIDED BY ONE FIBER, PERMITTED SEPARATELY.
7. FOR GENERAL SITE WORK NOTES, SEE SHEET GN1.
8. ALL NORTH ARROWS ON SITE PLANS ARE TRUE NORTH, UNLESS OTHERWISE SPECIFIED.



1 POLE LOCATION PHOTO

N.T.S.



2 SITE PLAN - AERIAL

PREPARED FOR:

verizon

PREPARED BY:

TeleCAD Wireless
1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
PH: 423-843-9500
FAX: 423-843-9509

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CHECKED BY: SEH

REVISIONS

NO	DATE	BY	DESCRIPTION
4	11/07/22	JAE	CONSTRUCTION ISSUE
3	10/26/22	JAE	CONSTRUCTION ISSUE
2	10/25/22	JAE	CONSTRUCTION ISSUE
1	10/18/22	JAE	CONSTRUCTION ISSUE
0	09/23/22	JAE	CONSTRUCTION ISSUE
A	09/19/22	JAE	PRELIMINARY ISSUE



SITE NAME: SMC_FARRAGUT_16
ADDRESS: 100 SMITH RD
FARRAGUT, TN 37934
COUNTY: KNOX
LATITUDE: 35° 52' 18.300" N
LONGITUDE: 84° 10' 54.588" W
DESIGN TYPE: SMALL CELL

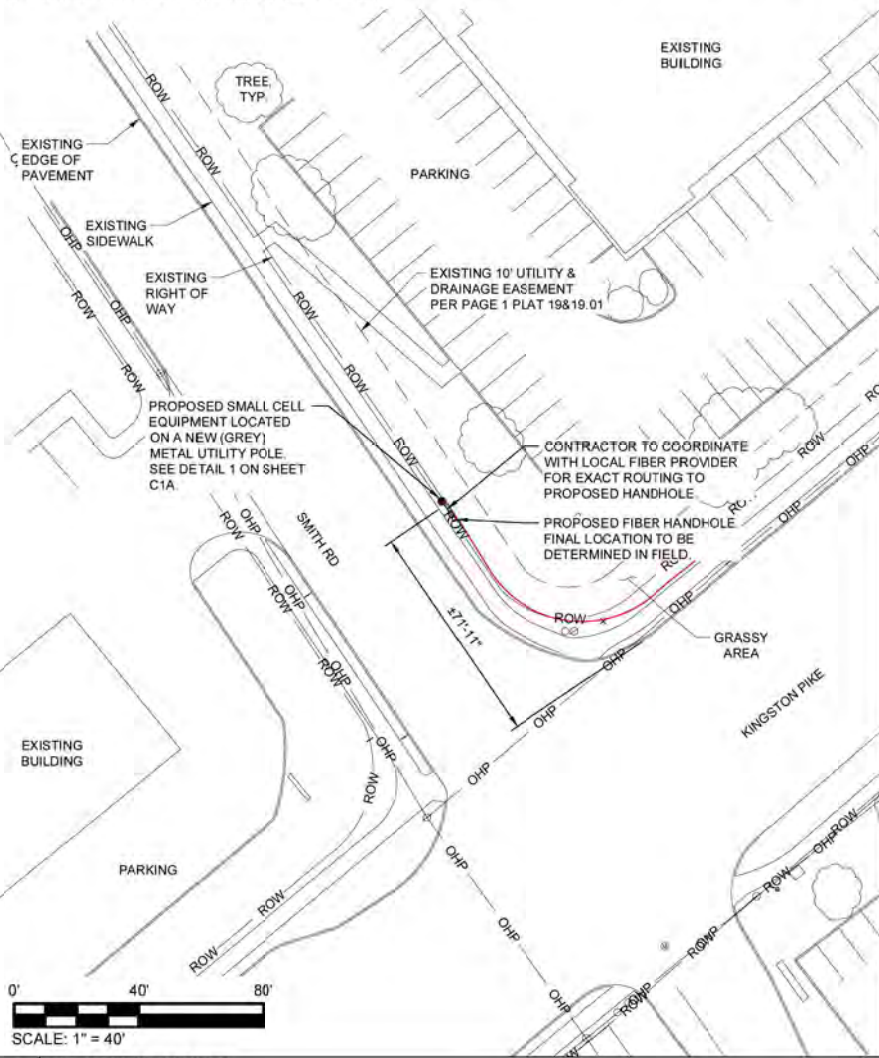
SHEET TITLE:
SITE PLAN - AERIAL

DRAWING NO: B1
REVISION: 4

0' 40' 80'
SCALE: 1" = 40'

NOTES:

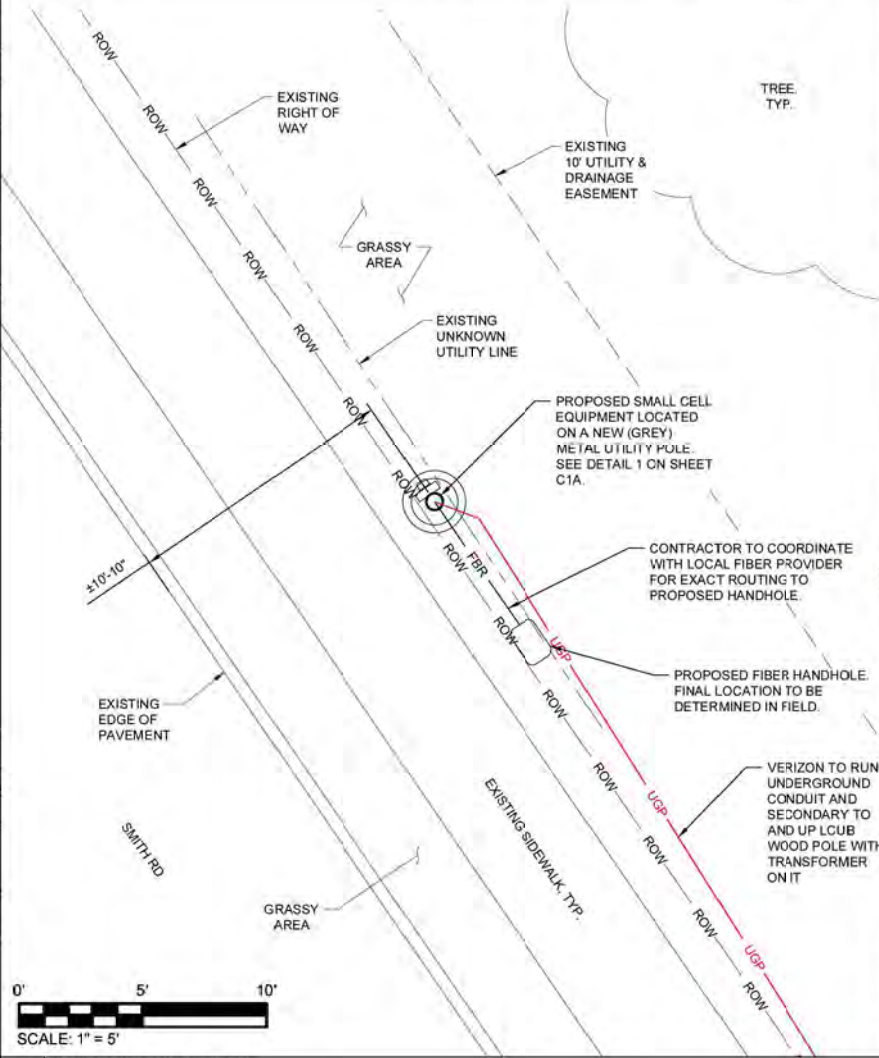
1. THIS DRAWING IS BASED ON AERIAL IMAGERY AND FIELD OBSERVATIONS. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
2. THE PROPOSED USE DOES NOT REQUIRE FULL OR PART TIME EMPLOYEES AT THE SITE.
3. FOR GENERAL SITE WORK NOTES, SEE SHEET GN1.
4. ALL NORTH ARROWS ON SITE PLANS ARE TRUE NORTH, UNLESS OTHERWISE SPECIFIED.
5. OPEN CUT CONSTRUCTION THROUGH EXISTING PAVEMENT, I.E. ROADWAYS, PARKING AREAS, SIDEWALKS WILL NOT BE ALLOWED. CONSTRUCTION UNDER EXISTING PAVEMENTS WILL BE REQUIRED TO BE INSTALLED WITH DIRECTIONAL BORING TECHNIQUE.
6. RIGHT OF WAY INFORMATION ACQUIRED FROM GIS.



1 OVERALL SITE PLAN

LEGEND

UNDERGROUND POWER	UGP	GAS LINE	GAS	IRON PIN SET (IPF) 5/8" REBAR	IPF
OVERHEAD POWER	OHP	FENCE	X	IRON PIN FOUND (PF)	PF
OVERHEAD UTILITIES	OHU	SEWER LINE	SWR	CONCRETE MON. FOUND	CMF
UNDERGROUND TELCO	UGT	WATER LINE	WTR	CONCRETE MON. SET	CMS
OVERHEAD TELCO	OHT	COAX CABLE	C	TRAFFIC LIGHT POLE	TLP
HIGH VOLTAGE POWER	HVP	HYBRID CABLE	HYB	FIRE HYDRANT	FH
PROPERTY LINE	PL	FIBER	FBR	TELCO PEDESTAL	TP
RIGHT-OF-WAY	ROW			ELECTRICAL PULL BOX	EPB
				CATCH BASIN	CB
				BENCHMARK	BM
				UTILITY POLE	UP
				LIGHT POLE	LP
				WATER VALVE	WV
				MANHOLE	MH
				GAS VALVE	GV



2 ENLARGED SITE PLAN

PREPARED FOR:

verizon

PREPARED BY:

TeleCAD Wireless
1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
PH: 423-843-9500
FAX: 423-843-9509

DRAWING NOTICE:
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DRAWN BY: JAE
CHECKED BY: SEH

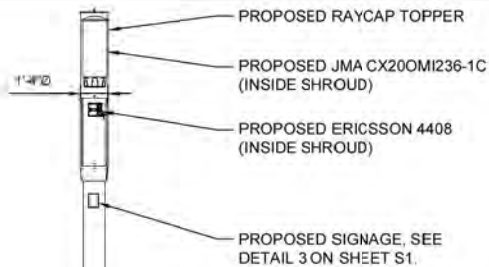
REVISIONS

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5	09/23/22	JAE	CONSTRUCTION ISSUE
6	09/19/22	JAE	PRELIMINARY ISSUE



SITE NAME: SMC_FARRAGUT_16
ADDRESS: 100 SMITH RD, FARRAGUT, TN 37934
COUNTY: KNOX
LATITUDE: 35° 52' 18.300" N
LONGITUDE: 84° 10' 54.588" W
DESIGN TYPE: SMALL CELL
SHEET TITLE: SITE PLAN
DRAWING NO: B2
REVISION: 4

- 49'-9.5" ± A.G.L.
T/APPERTENANCE
- 47'-11.5" ± A.G.L.
ANTENNA CENTERLINE
- 45'-1.5" ± A.G.L.
RADIO ELEVATION
- 42'-3.5" ± A.G.L.
T/POLE



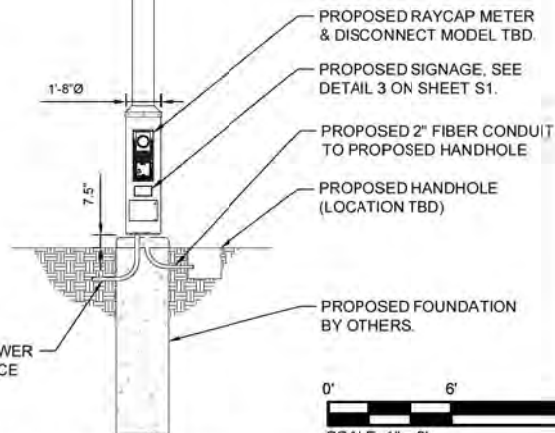
PROPOSED GREY ROUND METAL
POLE (DESIGNED BY RAYCAP)
(PROVIDED BY VERIZON)

POLE NOTES:

1. THE DRAWING IS ONLY A GRAPHIC REPRESENTATION OF THE STRUCTURE.
2. CONTRACTOR TO VERIFY MOUNT COMPATIBILITY WITH POLE AND ANTENNA PRIOR TO ORDERING.
3. CONTRACTOR TO PROVIDE LOCKOUT METER TAG ON DISCONNECT RATHER THAN A STANDARD KEY LOCK OR COMBINATION LOCK.
4. EXISTING ATTACHMENTS TO BE TRANSFERRED BY OTHERS.

- 5'-1.5" ± A.G.L.
METER BASE
- 0'-0" (REFERENCE)
GRADE

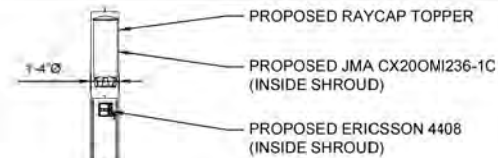
PROPOSED 2.5" POWER
CONDUIT TO SOURCE



0' 6' 12'
SCALE: 1" = 6'

1 POLE ELEVATION (FACING TRAFFIC FLOW)

- 49'-9.5" ± A.G.L.
T/APPERTENANCE
- 47'-11.5" ± A.G.L.
ANTENNA CENTERLINE
- 45'-1.5" ± A.G.L.
RADIO ELEVATION
- 42'-3.5" ± A.G.L.
T/POLE



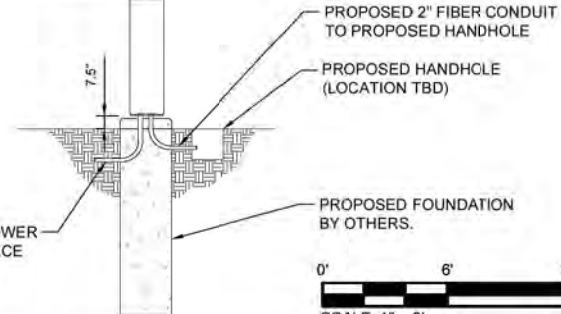
PROPOSED GREY ROUND METAL
POLE (DESIGNED BY RAYCAP)
(PROVIDED BY VERIZON)

POLE NOTES:

1. THE DRAWING IS ONLY A GRAPHIC REPRESENTATION OF THE STRUCTURE.
2. CONTRACTOR TO VERIFY MOUNT COMPATIBILITY WITH POLE AND ANTENNA PRIOR TO ORDERING.
3. CONTRACTOR TO PROVIDE LOCKOUT METER TAG ON DISCONNECT RATHER THAN A STANDARD KEY LOCK OR COMBINATION LOCK.
4. EXISTING ATTACHMENTS TO BE TRANSFERRED BY OTHERS.

- 3'-0" (REFERENCE)
GRADE

PROPOSED 2.5" POWER
CONDUIT TO SOURCE



0' 6' 12'
SCALE: 1" = 6'

2 POLE ELEVATION (FROM STREET)

PREPARED FOR:

verizon

PREPARED BY:

TeleCAD
Wireless
1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
PH: 423-843-9500
FAX: 423-843-9500

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CHECKED BY: SEH

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6	09/19/22	JAE	PRELIMINARY ISSUE



SITE NAME:
SMC_FARRAGUT_16
ADDRESS:
100 SMITH RD
FARRAGUT, TN 37934
COUNTY:
KNOX
LATITUDE:
35° 52' 18.300" N
LONGITUDE:
84° 10' 54.588" W
DESIGN TYPE:
SMALL CELL

SHEET TITLE:
POLE ELEVATION

DRAWING NO.
C1
REVISION:
4



PREPARED FOR:

verizon

PREPARED BY:

TeleCAD
Wireless
1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
PH: 423-843-9500
FAX: 423-843-9503

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CHECKED BY: SEH

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0	09/23/22	JAE	CONSTRUCTION ISSUE
A	09/19/22	JAE	PRELIMINARY ISSUE
NO	DATE	BY	DESCRIPTION



SITE NAME:
SMC_FARRAGUT_16
ADDRESS:
100 SMITH RD
FARRAGUT, TN 37934
COUNTY:
KNOX
LATITUDE:
35° 52' 18.300" N
LONGITUDE:
84° 10' 54.588" W
DESIGN TYPE:
SMALL CELL

SHEET TITLE:
PHOTO SIMS

DRAWING NO. C4
REVISION: 4

1 CURRENT VIEW (FROM SOUTH LOOKING NORTH)

NTS 2 PROPOSED VIEW (FROM SOUTH LOOKING NORTH)

NTS



1 CURRENT VIEW (FROM NORTHWEST LOOKING SOUTHEAST)



2 PROPOSED VIEW (FROM NORTHWEST LOOKING SOUTHEAST)

PREPARED FOR:

verizon

PREPARED BY:

TeleCAD
Wireless
1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
PH: 423-843-9500
FAX: 423-843-9503

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NO	DATE	BY	DESCRIPTION



SITE NAME:
SMC_FARRAGUT_16
ADDRESS:
100 SMITH RD
FARRAGUT, TN 37934
COUNTY:
KNOX
LATITUDE:
35° 52' 18.300" N
LONGITUDE:
84° 10' 54.588" W
DESIGN TYPE:
SMALL CELL

SHEET TITLE:
PHOTO SIMS

DRAWING NO.:
C4A
REVISION:
4

NTS

PROJECT SUMMARY

SITE NAME: FARRAGUT 12
SITE ADDRESS: 11403 MUNICIPAL CENTER DR. FARRAGUT, TN 37934
COUNTY: KNOX
JURISDICTION: TOWN OF FARRAGUT
SITE COORDINATES: 1A
LATITUDE: 35° 52' 45.372" N (NAD 83)
LONGITUDE: 84° 9' 36.468" W (NAD 83)
ELEVATION: 886'-11" (NAVD 88)
PROPERTY DEFINITION: R.O.W.
FUZE PROJECT ID: 16976481
PSLC CODE: 507966
PROPOSED POLE HEIGHT: 42'-3.5" AGL
PROPOSED POLE CLASS: N/A
POLE OWNER: TOWN OF FARRAGUT
EXISTING POLE HEIGHT: 46'-3" AGL
LESSEE:
NAME: VERIZON WIRELESS
CONTACT: JASON KOZORA
PHONE: (252) 201-6602
CIVIL ENGINEER:
NAME: TELECAD WIRELESS
CONTACT: CHRIS ROBERTS, P.E.
PHONE: (904) 559-6794
ELECTRICAL ENGINEER:
NAME: TELECAD WIRELESS
CONTACT: STEPHEN HUNT, P.E.
PHONE: (423) 843-9500
UTILITIES:
POWER COMPANY: LENOIR CITY UTILITY BOARD
CONTACT: CUSTOMER SERVICE
PHONE: (844) 687-6282
FIBER COMPANY: VERIZON ONE FIBER
CONTACT: CUSTOMER SERVICE
PHONE: (855) 594-1243

PROJECT DESCRIPTION

THESE DRAWINGS DEPICT A PORTION OF A PROPOSED SMALL CELL NETWORK BUILD INVOLVING THE SETTING OF AN ANTENNA (OR ANTENNAS) ATOP THE REPLACEMENT 42'-3.5" A.G.L. (BLACK) METAL TOWN OF FARRAGUT OWNED LIGHT POLE.

CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING:

- 2018 INTERNATIONAL BUILDING CODE
- TENNESSEE CODE COUNCIL
- ANSI/TIA-222-H
- 2017 NEC - NFPA 70
- 2012 NESC
- LOCAL BUILDING CODE
- CITY/COUNTY ORDINANCES

STRUCTURAL REVIEW

STRUCTURAL REPORT AND FOUNDATION DESIGN PERFORMED BY OTHERS.

verizon

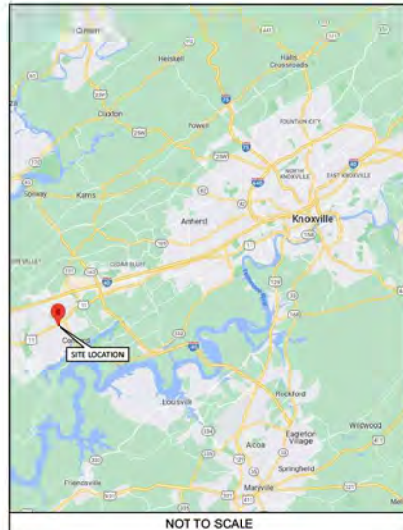
KNOXVILLE MARKET

NODE NAME: FARRAGUT 12

SITE ADDRESS:
 11403 MUNICIPAL CENTER DR.
 FARRAGUT, TN 37934

CANDIDATE F

VICINITY MAP



NOT TO SCALE

LOCATION MAP



NOT TO SCALE

SHEET SCALE FACTOR:

PLOT SIZE:
 11" x 17" TO SCALE



1 (800) 351-1111
 www.tenn811.com
 CONTRACTOR TO CALL TENNESSEE
 ONE-CALL SYSTEMS AT LEAST (2) WORKING
 DAYS PRIOR TO DIGGING.

SHEET INDEX

NO.	DESCRIPTION
A1	TITLE SHEET
GN1	GENERAL NOTES
B1	SITE PLAN - AERIAL
B2	SITE PLAN
B3	PLAT
C1	POLE ELEVATION
C1A	POLE ELEVATION
C2	TRAFFIC CONTROL
C3	SITE DETAILS
C4	PHOTO SIMS
C4A	PHOTO SIMS
E1	UTILITY SITE PLAN
E1A	POWER DESIGN
-	GPRS FINDINGS MAP
E2	SINGLE LINE DIAGRAM
E3	ELECTRICAL DETAILS
S1	EQUIPMENT DETAILS
S2	EQUIPMENT DETAILS
S3	EQUIPMENT DETAILS
S4	FOUNDATION DESIGN
RF1	RFDS
RF2	RFDS
RF3	RFDS
RF4	RFDS
RF5	RFDS
RF6	RFDS

SCOPE OF WORK

- INSTALL A REPLACEMENT 42'-3.5" AGL (BLACK) METAL LIGHT POLE
- INSTALL NEW EQUIPMENT
 - (3) ERICSSON AIR1652 ANTENNA(S)
 - (1) JMA WIRELESS CX200M236-1C CANTENNA
 - (1) ERICSSON 8843 RRU
 - INSTALL POWER AND FIBER FOR RADIOS (INSIDE OF POLE)
 - ELECTRIC METER
 - POWER DISCONNECT
 - FIBER PANEL

STATE COUNTY MAP



PREPARED FOR:

verizon

PREPARED BY:

TeleCAD Wireless

1961 NORTHPOINT BLVD, SUITE 130
 HIXSON, TN 37343
 PH: 423-843-9500
 FAX: 423-843-9500

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SITE NAME: FARRAGUT 12
ADDRESS: 11403 MUNICIPAL CENTER DR. FARRAGUT, TN 37934
COUNTY: KNOX
LATITUDE: 35° 52' 45.372" N
LONGITUDE: 84° 9' 36.468" W
DESIGN TYPE: SMALL CELL

SHEET TITLE:
 TITLE SHEET

DRAWING NO.: A1
REVISION: 3

NOTES:

1. THE SITE PLAN SHOWN BELOW WAS REPRODUCED FROM INFORMATION PROVIDED BY KNOX COUNTY GIS. CONTRACTOR TO VERIFY ALL EXISTING INFORMATION AS INDICATED ON THE SITE PLAN. CONTRACTOR IS TO ESTABLISH THE EXISTENCE AND LOCATION OF ALL EXISTING UNDERGROUND AND OVERHEAD UTILITIES. CONTRACTOR TO IMMEDIATELY NOTIFY THE VERIZON CONSTRUCTION OF ANY DISCREPANCIES.
2. CONTRACTOR SHALL MAINTAIN UNINTERRUPTED ACCESS TO ALL DRIVEWAYS, SIDE STREETS, AND WALKWAYS AT ALL TIMES UNLESS OTHERWISE PERMITTED.
3. CONTRACTOR SHALL PREPARE A MAINTENANCE OF TRAFFIC (M.O.T.) PLAN FROM PEDESTRIAN TRAFFIC AND WORK WITHIN THE RIGHT-OF-WAY, INCLUDING VEHICLE PARKING AND EQUIPMENT STAGING.
4. CONTRACTOR SHALL RESTORE ANY DISTURBED AREAS TO ORIGINAL CONDITION OR BETTER.
5. POWER DELIVERY BY LENOIR CITY UTILITY BOARD AT THEIR RECOMMENDATION, PERMITTED SEPARATELY.
6. FIBER DELIVERY PROVIDED BY ONE FIBER, PERMITTED SEPARATELY.
7. FOR GENERAL SITE WORK NOTES, SEE SHEET GN1.
8. ALL NORTH ARROWS ON SITE NOTES ARE TRUE NORTH, UNLESS OTHERWISE SPECIFIED.



PREPARED FOR:

verizon

PREPARED BY:

TeleCAD
Wireless
1961 NORTHPOINT BLVD, SUITE 130
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SITE NAME: FARRAGUT 12
ADDRESS: 11403 MUNICIPAL CENTER DR.
FARRAGUT, TN 37934
COUNTY: KNOX
LATITUDE: 35° 52' 45.372" N
LONGITUDE: 84° 9' 36.468" W
DESIGN TYPE: SMALL CELL

SHEET TITLE:
SITE PLAN - AERIAL

DRAWING NO: B1
REVISION: 3

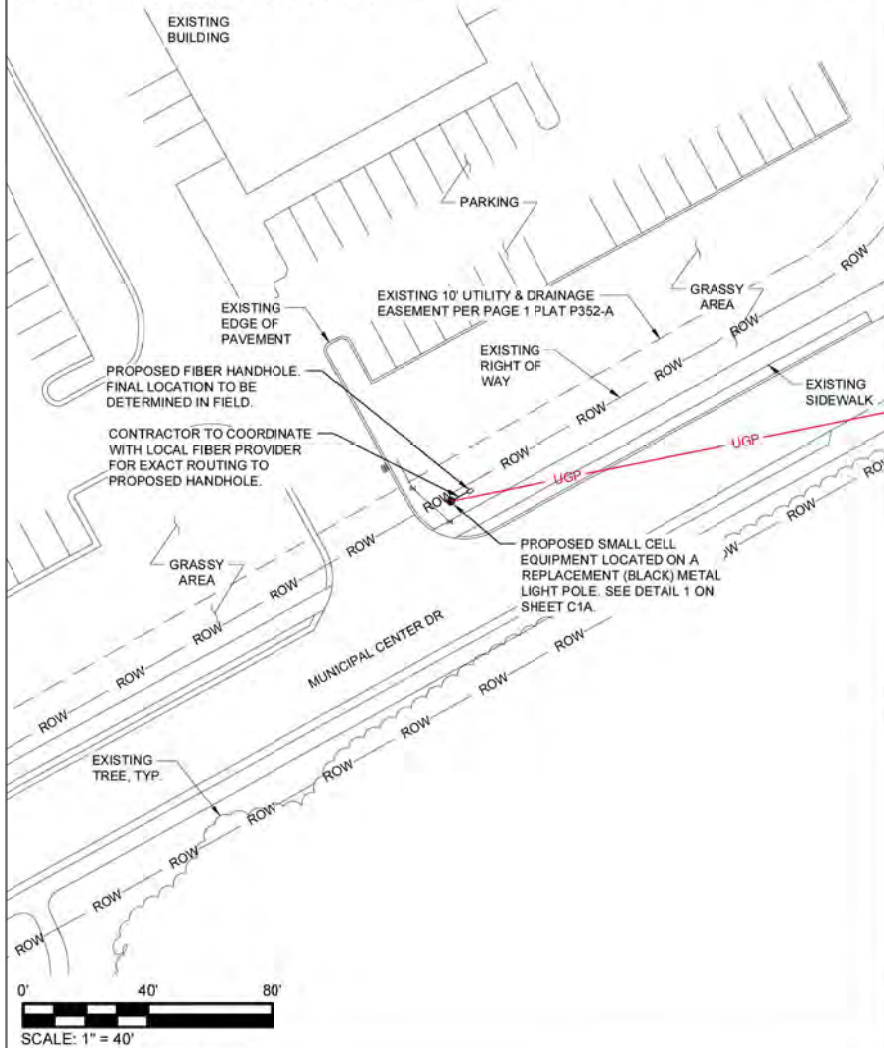
1 POLE LOCATION PHOTO

N.T.S. 2 SITE PLAN - AERIAL

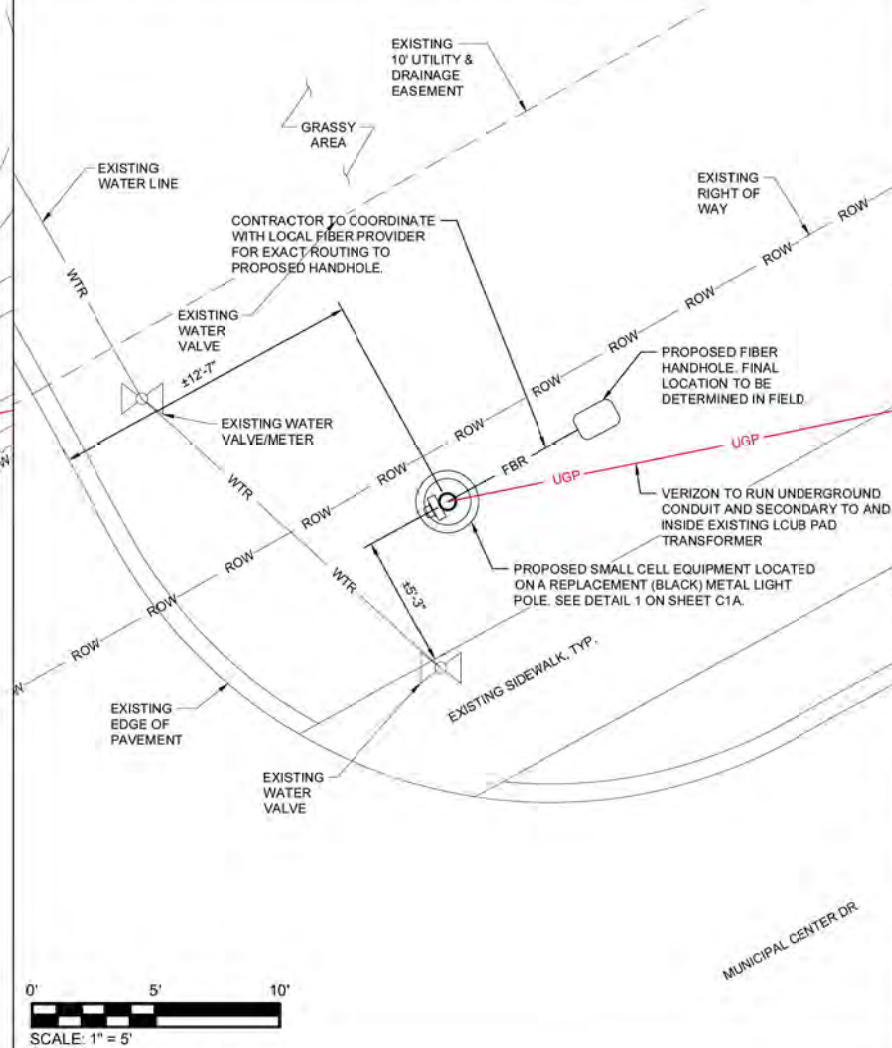
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2. THE PROPOSED USE DOES NOT REQUIRE FULL OR PART TIME EMPLOYEES AT THE SITE.
3. FOR GENERAL SITE WORK NOTES, SEE SHEET GN1.
4. ALL NORTH ARROWS ON SITE PLANS ARE TRUE NORTH, UNLESS OTHERWISE SPECIFIED.
5. OPEN CUT CONSTRUCTION THROUGH EXISTING PAVEMENT, I.E. ROADWAYS, PARKING AREAS, SIDEWALKS WILL NOT BE ALLOWED. CONSTRUCTION UNDER EXISTING PAVEMENTS WILL BE REQUIRED TO BE INSTALLED WITH DIRECTIONAL BORING TECHNIQUE.
6. RIGHT OF WAY INFORMATION ACQUIRED FROM GIS.

LEGEND			
UNDERGROUND POWER	UGP	GAS LINE	GAS
OVERHEAD POWER	OPH	FENCE	X
OVERHEAD UTILITIES	OHU	SEWER LINE	SWR
UNDERGROUND TELCO	UGT	WATER LINE	WTR
OVERHEAD TELCO	OHT	COAX CABLE	C
HIGH VOLTAGE POWER	HVP	HYBRID CABLE	HYB
PROPERTY LINE	PL	FIBER	FBR
RIGHT-OF-WAY	ROW	IRON PIN SET (IPF) 5/8" REBAR	IPF
		IRON PIN FOUND (PF)	PF
		CONCRETE MON. FOUND	CMF
		CONCRETE MON. SET	CMS
		TRAFFIC LIGHT POLE	TLP
		FIRE HYDRANT	FH
		TELCO PEDESTAL	TEP
		ELECTRICAL PULL BOX	EPB
		CATCH BASIN	CB
		BENCHMARK	BM
		UTILITY POLE	UP
		LIGHT POLE	LP
		WATER VALVE	WV
		MANHOLE	MH
		GAS VALVE	GV



1 OVERALL SITE PLAN



2 ENLARGED SITE PLAN

PREPARED FOR:

verizon

PREPARED BY:

TeleCAD Wireless
1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
PH: 423-843-9500
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ENGINEER'S SIGNATURE



SITE NAME: FARRAGUT 12
ADDRESS: 11403 MUNICIPAL CENTER DR.
FARRAGUT, TN 37934
COUNTY: KNOX
LATITUDE: 35° 52' 45.372" N
LONGITUDE: 84° 9' 36.468" W
DESIGN TYPE: SMALL CELL

SHEET TITLE: SITE PLAN

DRAWING NO: B2
REVISION: 3

- 47'-9" ± A.G.L.
T/APPURTENANCE
- 46'-3" ± A.G.L.
T/EXISTING POLE
- 45'-10" ± A.G.L.
LIGHT MOUNT

EXISTING
STREET LIGHT

EXISTING 46'-3" (GREY) METAL
LIGHT POLE (TO BE REPLACED).
SEE DETAIL SHEET C1A.

- 17'-0" ± A.G.L.
BANNER TOP

- 11'-6" ± A.G.L.
BANNER BOTTOM

- 0'-0" (REFERENCE)
GRADE



1 EXISTING POLE ELEVATION (FACING TRAFFIC FLOW)

- 49'-9.5" ± A.G.L.
T/APPURTENANCE
- 47'-11.5" ± A.G.L.
ANTENNA CENTERLINE
- 45'-1.5" ± A.G.L.
RADIO ELEVATION
- 43'-8.5" ± A.G.L.
ANTENNA CENTERLINE
- 42'-3.5" ± A.G.L.
T/POLE
- 39'-5" ± A.G.L.
LIGHT MOUNT

PROPOSED LIGHT
DESIGNED BY OTHERS

POLE NOTES:

1. THE DRAWING IS ONLY A GRAPHIC REPRESENTATION OF THE STRUCTURE.
2. CONTRACTOR TO VERIFY MOUNT COMPATIBILITY WITH POLE AND ANTENNA PRIOR TO ORDERING.
3. CONTRACTOR TO PROVIDE LOCKOUT METER TAG ON DISCONNECT RATHER THAN A STANDARD KEY LOCK OR COMBINATION LOCK.
4. EXISTING ATTACHMENTS TO BE TRANSFERRED BY OTHERS.

- 17'-0" ± A.G.L.
BANNER TOP

- 11'-6" ± A.G.L.
BANNER BOTTOM

- 5'-1.5" ± A.G.L.
METER BASE

- 0'-0" (REFERENCE)
GRADE

PROPOSED 2.5" POWER
CONDUIT TO SOURCE

- PROPOSED RAYCAP TOPPER
- PROPOSED JMA CX200MI236-1C
(INSIDE SHROUD)

- PROPOSED ERICSSON 1652
- PROPOSED SIGNAGE, SEE
DETAIL 2 ON SHEET S1.

- PROPOSED BLACK ROUND METAL
POLE (DESIGNED BY RAYCAP)
(PROVIDED BY VERIZON)

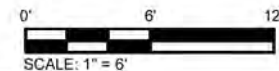
- PROPOSED RAYCAP METER
& DISCONNECT MODEL TBD.

- PROPOSED SIGNAGE, SEE
DETAIL 2 ON SHEET S1.

- PROPOSED 2" FIBER CONDUIT
TO PROPOSED HANDHOLE

- PROPOSED HANDHOLE
(LOCATION TBD)

- PROPOSED FOUNDATION
BY OTHERS.



2 PROPOSED POLE ELEVATION (FACING TRAFFIC FLOW)

PREPARED FOR:

verizon

PREPARED BY:

TeleCAD
Wireless
1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
PH: 423-843-9500
FAX: 423-843-9503

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DRAWN BY: JAE
CHECKED BY: SEH

REVISIONS

NO	DATE	BY	DESCRIPTION
3	11/01/22	JAE	CONSTRUCTION ISSUE
2	10/26/22	JAE	CONSTRUCTION ISSUE
1	10/18/22	JAE	CONSTRUCTION ISSUE
0	09/23/22	JAE	CONSTRUCTION ISSUE
A	09/19/22	JAE	PRELIMINARY ISSUE



SITE NAME: FARRAGUT 12
ADDRESS: 11403 MUNICIPAL CENTER DR.
FARRAGUT, TN 37934
COUNTY: KNOX
LATITUDE: 35° 52' 45.372" N
LONGITUDE: 84° 9' 36.468" W
DESIGN TYPE: SMALL CELL

SHEET TITLE:
POLE ELEVATION

DRAWING NO. C1
REVISION: 3



1 CURRENT VIEW (FROM SOUTHWEST LOOKING NORTHEAST)



2 PROPOSED VIEW (FROM SOUTHWEST LOOKING NORTHEAST)

PREPARED FOR:

verizon

PREPARED BY:

TeleCAD
Wireless
1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
PH: 423-843-9500
FAX: 423-843-9503

DRAWING NOTICE:
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DRAWN BY:	JAE
CHECKED BY:	SEH

REVISIONS			
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0	09/23/22	JAE	CONSTRUCTION ISSUE
A	09/19/22	JAE	PRELIMINARY ISSUE



SITE NAME:
FARRAGUT 12

ADDRESS:
11403 MUNICIPAL CENTER DR.
FARRAGUT, TN 37934

COUNTY:
KNOX

LATITUDE:
35° 52' 45.372" N

LONGITUDE:
84° 9' 36.468" W

DESIGN TYPE:
SMALL CELL

SHEET TITLE:
PHOTO SIMS

DRAWING NO. C4	REVISION: 3
--------------------------	-----------------------

NTS



1 CURRENT VIEW (FROM NORTHEAST LOOKING SOUTHWEST)



2 PROPOSED VIEW (FROM NORTHEAST LOOKING SOUTHWEST)

PREPARED FOR:

verizon

PREPARED BY:

TeleCAD Wireless
1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
PH: 423-843-9500
FAX: 423-843-9503

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DRAWN BY: JAE
CHECKED BY: SEH

REVISIONS			
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1	10/18/22	JAE	CONSTRUCTION ISSUE
0	09/03/22	JAE	CONSTRUCTION ISSUE
A	09/19/22	JAE	PRELIMINARY ISSUE

ENGINEER'S SEAL: STEPHEN E. HUNT, REGISTERED ENGINEER, COMMERCIAL, No. 107654, STATE OF TENNESSEE

SITE NAME: FARRAGUT 12
ADDRESS: 11403 MUNICIPAL CENTER DR., FARRAGUT, TN 37934
COUNTY: KNOX
LATITUDE: 35° 52' 45.372" N
LONGITUDE: 84° 9' 36.468" W
DESIGN TYPE: SMALL CELL
SHEET TITLE: PHOTO SIMS
DRAWING NO.: C4A
REVISION: 3

NTS

PROJECT SUMMARY

SITE NAME: SMC_FARRAGUT_6_5G_006
 SITE ADDRESS: 11509 PARKSIDE DR
 (E911 VERIFIED) FARRAGUT, TN 37934
 COUNTY: KNOX
 JURISDICTION: TOWN OF FARRAGUT
SITE COORDINATES: 1A
 LATITUDE: 35°53' 53.376" N (NAD 83)
 LONGITUDE: 84°10' 7.032" W (NAD 83)
 ELEVATION: 978'-10" (NAVD 88)
 PROPERTY DEFINITION: R.O.W.
 FUZE PROJECT ID: 16547813
 PSLC CODE: 572816
 PROPOSED POLE HEIGHT: 41'-8"
 PROPOSED POLE CLASS: N/A
 POLE OWNER: TOWN OF FARRAGUT
 EXISTING POLE HEIGHT: 41'-0"
LESSEE:
 NAME: VERIZON WIRELESS
 CONTACT: JASON KOZORA
 PHONE: (252) 201-6602
CIVIL ENGINEER:
 NAME: TELECAD WIRELESS
 CONTACT: CHRIS ROBERTS, P.E.
 PHONE: (904) 559-6794
ELECTRICAL ENGINEER:
 NAME: TELECAD WIRELESS
 CONTACT: STEPHEN HUNT, P.E.
 PHONE: (423) 843-9500
UTILITIES:
 POWER COMPANY: LENOIR CITY UTILITY BOARD
 CONTACT: CUSTOMER SERVICE
 PHONE: (844) 687-6282
 FIBER COMPANY: VERIZON ONE FIBER
 CONTACT: CUSTOMER SERVICE
 PHONE: (855) 594-1243

PROJECT DESCRIPTION

THESE DRAWINGS DEPICT A PORTION OF A PROPOSED SMALL CELL NETWORK BUILD INVOLVING THE SETTING OF AN ANTENNA (OR ANTENNAS) ATOP THE REPLACEMENT 41'-8" A.G.L. GREEN METAL TOWN OF FARRAGUT OWNED LIGHT POLE.

CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING:

- 2018 INTERNATIONAL BUILDING CODE
- TENNESSEE CODE COUNCIL
- ANSI/A-222-H
- 2017 NEC - NFPA 70
- 2012 NESC
- LOCAL BUILDING CODE
- CITY/COUNTY ORDINANCES

STRUCTURAL REVIEW

STRUCTURAL REPORT AND FOUNDATION DESIGN PERFORMED BY OTHERS.

verizon

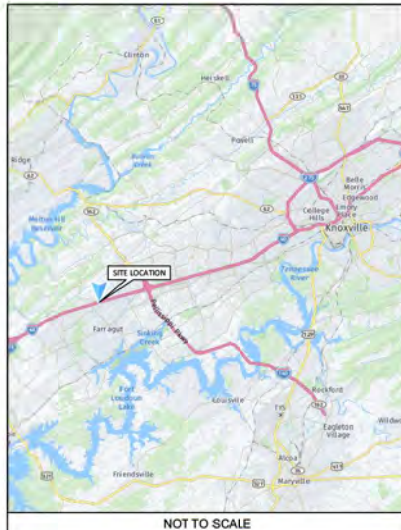
KNOXVILLE MARKET

NODE NAME: SMC_FARRAGUT_6_5G_006

SITE ADDRESS:
 11509 PARKSIDE DR
 FARRAGUT, TN 37934

CANDIDATE B

VICINITY MAP



NOT TO SCALE

LOCATION MAP



NOT TO SCALE

SHEET SCALE FACTOR:

PLOT SIZE:
 11" x 17": TO SCALE



1 (800) 351-1111
 www.tenn811.com
 CONTRACTOR TO CALL TENNESSEE
 ONE-CALL SYSTEMS AT LEAST (2) WORKING
 DAYS PRIOR TO DIGGING.

SHEET INDEX

NO.	DESCRIPTION
A1	TITLE SHEET
GN1	GENERAL NOTES
B1	SITE PLAN - AERIAL
B2	SITE PLAN
B3	PLAT
B3A	PLAT
B3B	PLAT
C1	POLE ELEVATION
C1A	POLE ELEVATION
C2	TRAFFIC CONTROL
C3	SITE DETAILS
C4	PHOTO SIMS
C4A	PHOTO SIMS
E1	UTILITY SITE PLAN
E1A	POWER DESIGN
—	GPRS FINDINGS MAP
E2	SINGLE LINE DIAGRAM
E3	ELECTRICAL DETAILS
S1	EQUIPMENT DETAILS
S2	FOUNDATION DESIGN
RF1	RFDS
RF2	RFDS
RF3	RFDS
RF4	RFDS
RF5	RFDS
RF6	RFDS

SCOPE OF WORK

- INSTALL A REPLACEMENT 41'-8" AGL GREEN METAL LIGHT POLE
- INSTALL NEW EQUIPMENT
- (3) ERICSSON AIR1652 ANTENNA(S)
- (3) ERICSSON STREETMACRO 8705 ANTENNA(S)
- INSTALL POWER AND FIBER FOR RADIOS (INSIDE OF POLE)
- ELECTRIC METER
- POWER DISCONNECT
- FIBER PANEL

STATE COUNTY MAP



KNOX COUNTY

PREPARED FOR:

verizon

PREPARED BY:

TeleCAD
 Wireless
 1961 NORTHPOINT BLVD, SUITE 130
 HIXSON, TN 37343
 PH: 423-843-9500
 FAX: 423-843-9500

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DRAWN BY: JAE
 CHECKED BY: SEH

REVISIONS

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6	09/22/22	JAE	PRELIMINARY ISSUE



SITE NAME: SMC_FARRAGUT_6_5G_006

ADDRESS: 11509 PARKSIDE DR
 FARRAGUT, TN 37934

COUNTY: KNOX

LATITUDE: 35°53' 53.376" N

LONGITUDE: 84°10' 7.032" W

DESIGN TYPE: SMALL CELL

SHEET TITLE: TITLE SHEET

DRAWING NO: A1
 REVISION: 4

NOTES:

1. THE SITE PLAN SHOWN BELOW WAS REPRODUCED FROM INFORMATION PROVIDED BY KNOX COUNTY GIS. CONTRACTOR TO VERIFY ALL EXISTING INFORMATION AS INDICATED ON THE SITE PLAN. CONTRACTOR IS TO ESTABLISH THE EXISTENCE AND LOCATION OF ALL EXISTING UNDERGROUND AND OVERHEAD UTILITIES. CONTRACTOR TO IMMEDIATELY NOTIFY THE VERIZON CONSTRUCTION OF ANY DISCREPANCIES.
2. CONTRACTOR SHALL MAINTAIN UNINTERRUPTED ACCESS TO ALL DRIVEWAYS, SIDE STREETS, AND WALKWAYS AT ALL TIMES UNLESS OTHERWISE PERMITTED.
3. CONTRACTOR SHALL PREPARE A MAINTENANCE OF TRAFFIC (M.O.T.) PLAN FROM PEDESTRIAN TRAFFIC AND WORK WITHIN THE RIGHT-OF-WAY, INCLUDING VEHICLE PARKING AND EQUIPMENT STAGING.
4. CONTRACTOR SHALL RESTORE ANY DISTURBED AREAS TO ORIGINAL CONDITION OR BETTER.
5. POWER DELIVERY BY LENOIR CITY UTILITY BOARD AT THEIR RECOMMENDATION, PERMITTED SEPARATELY.
6. FIBER DELIVERY PROVIDED BY ONE FIBER, PERMITTED SEPARATELY.
7. FOR GENERAL SITE WORK NOTES, SEE SHEET GN1.
8. ALL NORTH ARROWS ON SITE PLANS ARE TRUE NORTH, UNLESS OTHERWISE SPECIFIED.



1 | POLE LOCATION PHOTO

N.T.S.



2 | SITE PLAN - AERIAL

PREPARED FOR:

PREPARED BY:

1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
PH: 423-843-9500
FAX: 423-843-9509

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1	10/18/22	JAE	CONSTRUCTION ISSUE
0	09/23/22	JAE	CONSTRUCTION ISSUE
A	09/22/22	JAE	PRELIMINARY ISSUE

ENGINEER'S NAME:
SMC_FARRAGUT_6.5G_006

ADDRESS:
11509 PARKSIDE DR
FARRAGUT, TN 37934

COUNTY:
KNOX

LATITUDE:
35°53' 53.376" N

LONGITUDE:
84°10' 7.032" W

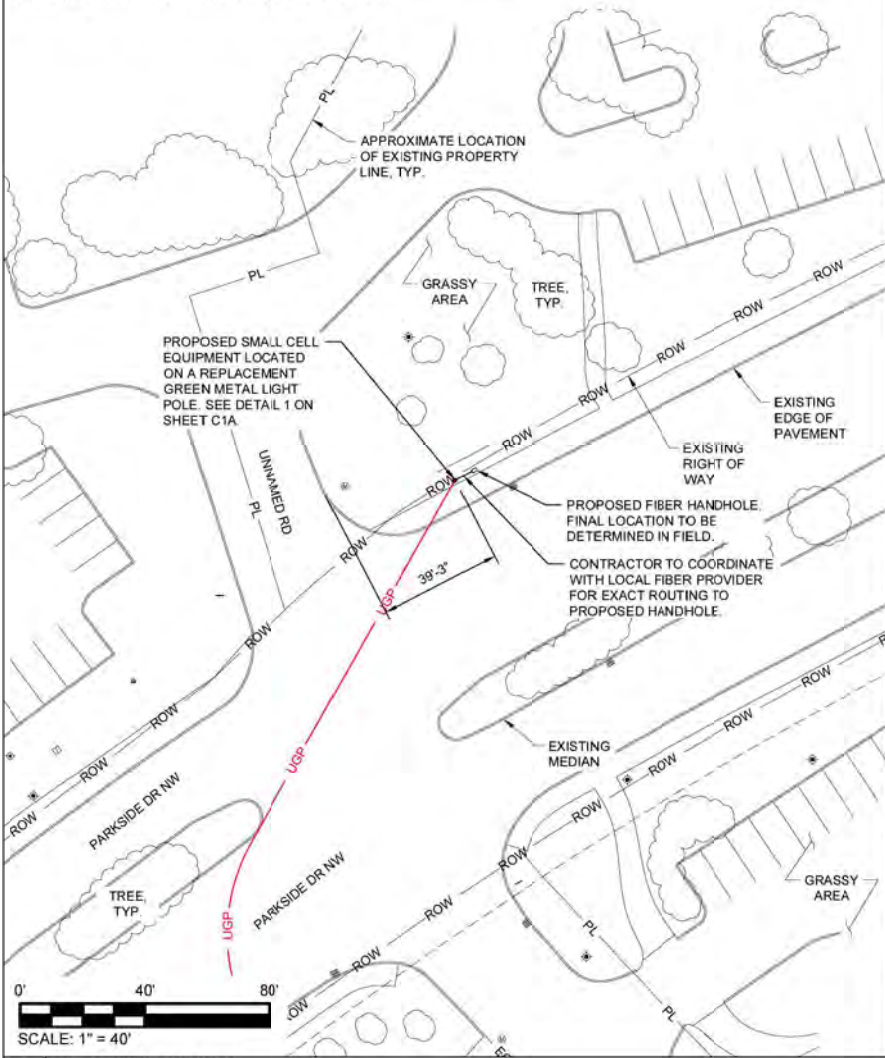
DESIGN TYPE:
SMALL CELL

SHEET TITLE:
SITE PLAN - AERIAL

DRAWING NO: B1	REVISION: 4
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NOTES:

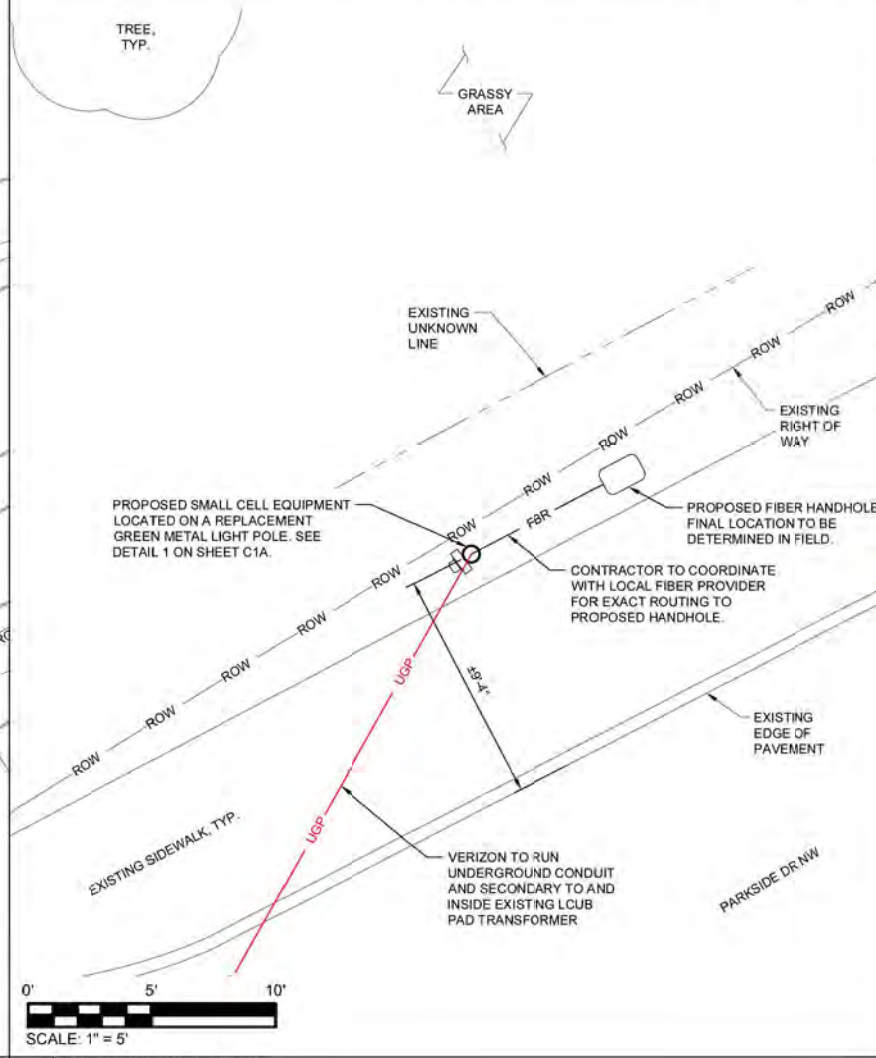
1. THIS DRAWING IS BASED ON AERIAL IMAGERY AND FIELD OBSERVATIONS. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
2. THE PROPOSED USE DOES NOT REQUIRE FULL OR PART TIME EMPLOYEES AT THE SITE.
3. FOR GENERAL SITE WORK NOTES, SEE SHEET GN1.
4. ALL NORTH ARROWS ON SITE PLANS ARE TRUE NORTH, UNLESS OTHERWISE SPECIFIED.
5. OPEN CUT CONSTRUCTION THROUGH EXISTING PAVEMENT, I.E. ROADWAYS, PARKING AREAS, SIDEWALKS WILL NOT BE ALLOWED. CONSTRUCTION UNDER EXISTING PAVEMENTS WILL BE REQUIRED TO BE INSTALLED WITH DIRECTIONAL BORING TECHNIQUE.
6. RIGHT OF WAY INFORMATION ACQUIRED FROM GIS.



1 OVERALL SITE PLAN

LEGEND

UNDERGROUND POWER	UGP	GAS LINE	GAS	IRON PIN SET (IPF) 58" REBAR		CATCH BASIN	
OVERHEAD POWER	OHP	FENCE	X	IRON PIN FOUND (PF)		BENCHMARK	
OVERHEAD UTILITIES	OHT	SEWER LINE	SWR	CONCRETE MON. FOUND		UTILITY POLE	
UNDERGROUND TELCO	UGT	WATER LINE	WTR	CONCRETE MON. SET		WATER VALVE	
OVERHEAD TELCO	OHT	COAX CABLE	C	TRAFFIC LIGHT POLE		MANHOLE	
HIGH VOLTAGE POWER	HVP	HYBRID CABLE	HYB	FIRE HYDRANT		GAS VALVE	
PROPERTY LINE	PL	FIBER	FBR	TELCO PEDESTAL			
RIGHT-OF-WAY	ROW			ELECTRICAL PULL BOX			



2 ENLARGED SITE PLAN

PREPARED FOR:

verizon

PREPARED BY:

TeleCAD Wireless
1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
PH: 423-843-9500
FAX: 423-843-9500

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DRAWN BY: JAE
CHECKED BY: SEH

REVISIONS

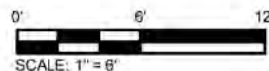
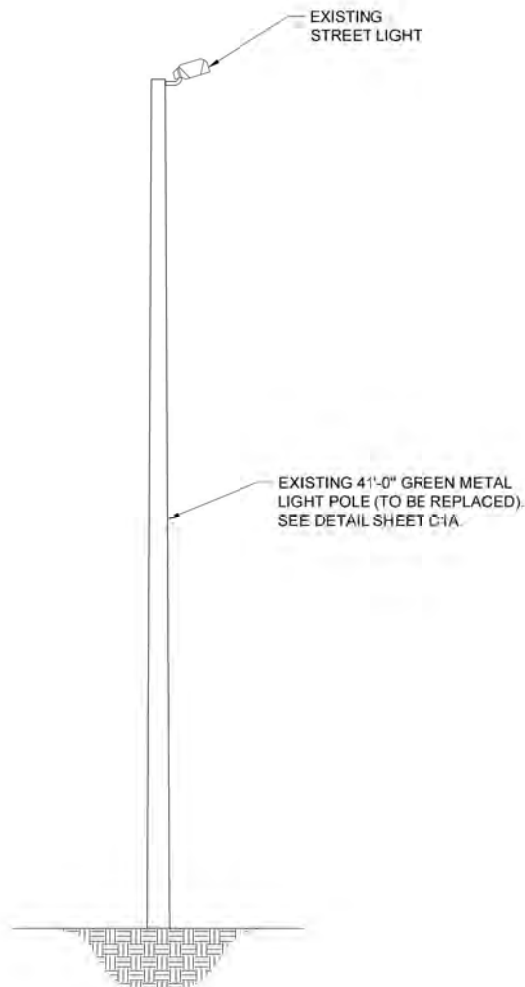
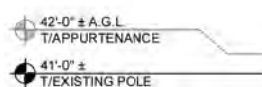
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3	10/24/22	JAE	CONSTRUCTION ISSUE
4	10/18/22	JAE	CONSTRUCTION ISSUE
5	09/23/22	JAE	CONSTRUCTION ISSUE
6	09/22/22	JAE	PRELIMINARY ISSUE



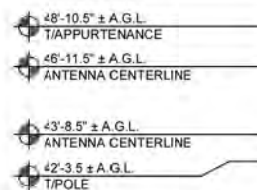
SITE NAME: SMC_FARRAGUT_6_5G_006
ADDRESS: 11509 PARKSIDE DR, FARRAGUT, TN 37934
COUNTY: KNOX
LATITUDE: 35°53' 53.376" N
LONGITUDE: 84°10' 7.032" W
DESIGN TYPE: SMALL CELL

SHEET TITLE: SITE PLAN

DRAWING NO. B2
REVISION: 4

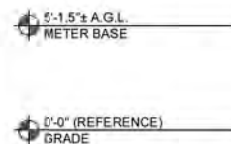


1 EXISTING POLE ELEVATION (FACING TRAFFIC FLOW)

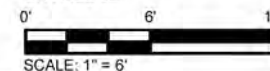
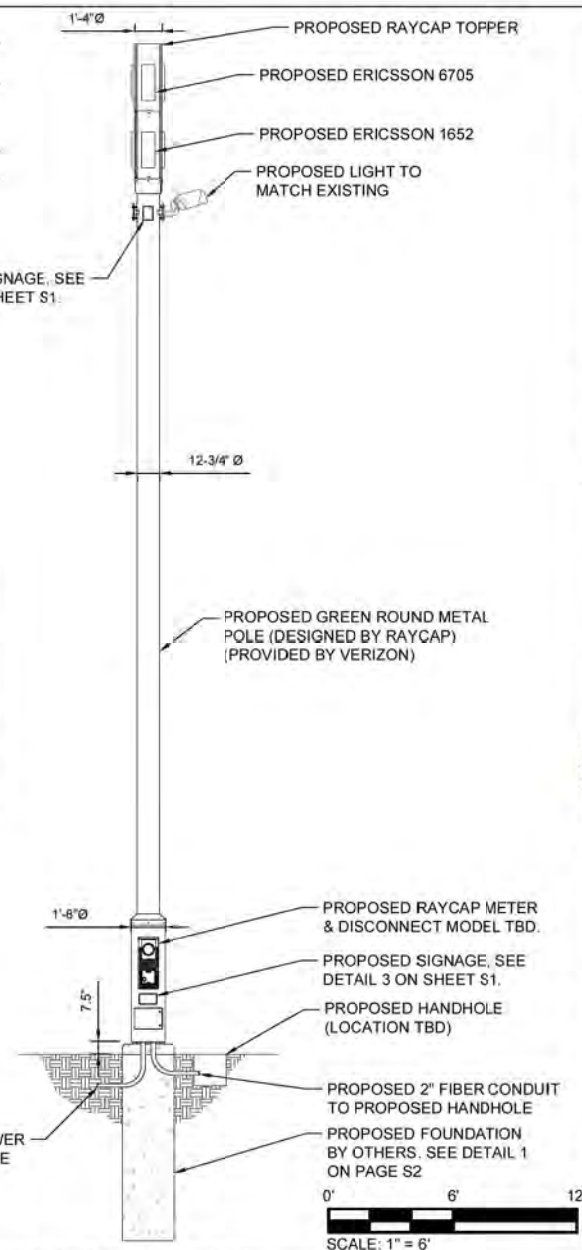


PROPOSED SIGNAGE, SEE
DETAIL 3 ON SHEET S1.

- POLE NOTES:**
1. THE DRAWING IS ONLY A GRAPHIC REPRESENTATION OF THE STRUCTURE.
 2. CONTRACTOR TO VERIFY MOUNT COMPATIBILITY WITH POLE AND ANTENNA PRIOR TO ORDERING.
 3. CONTRACTOR TO PROVIDE LOCKOUT METER TAG ON DISCONNECT RATHER THAN A STANDARD KEY LOCK OR COMBINATION LOCK.
 4. EXISTING ATTACHMENTS TO BE TRANSFERRED BY OTHERS.



PROPOSED 2.5" POWER
CONDUIT TO SOURCE



2 PROPOSED POLE ELEVATION (FACING TRAFFIC FLOW)

PREPARED FOR:

verizon

PREPARED BY:

TeleCAD Wireless
1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
PH: 423-843-9500
FAX: 423-843-9509

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CHECKED BY: SEH

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SITE NAME:
SMC_FARRAGUT_6_5G_006
ADDRESS:
11509 PARKSIDE DR.
FARRAGUT, TN 37934
COUNTY:
KNOX
LATITUDE:
35°53' 53.376" N
LONGITUDE:
84°10' 7.032" W
DESIGN TYPE:
SMALL CELL

SHEET TITLE:
POLE ELEVATION

DRAWING NO.:
C1
REVISION:
4



1 CURRENT VIEW (FROM WEST LOOKING EAST)



2 PROPOSED VIEW (FROM WEST LOOKING EAST)

PREPARED FOR:

verizon

PREPARED BY:

TeleCAD
Wireless
1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
PH: 423-843-9500
FAX: 423-843-9503

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09/23/22	JAE	CONSTRUCTION ISSUE	
09/22/22	JAE	PRELIMINARY ISSUE	
NO.	DATE	BY	DESCRIPTION



SITE NAME:
SMC_FARRAGUT_6_5G_006

ADDRESS:
11509 PARKSIDE DR
FARRAGUT, TN 37934

COUNTY:
KNOX

LATITUDE:
35°53' 53.376" N

LONGITUDE:
84°10' 7.032" W

DESIGN TYPE:
SMALL CELL

SHEET TITLE:
PHOTO SIMS

DRAWING NO. C4
REVISION: 4

NTS



1 CURRENT VIEW (FROM EAST LOOKING WEST)



2 PROPOSED VIEW (FROM EAST LOOKING WEST)

PREPARED FOR:

verizon

PREPARED BY:

TeleCAD
Wireless
1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
PH: 423-843-9500
FAX: 423-843-9503

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4	10/18/22	JAE	CONSTRUCTION ISSUE
5	09/03/22	JAE	CONSTRUCTION ISSUE
6	08/22/22	JAE	PRELIMINARY ISSUE

NO DATE BY DESCRIPTION



SITE NAME:
SMC_FARRAGUT_6_5G_006

ADDRESS:
11509 PARKSIDE DR.
FARRAGUT, TN 37934

COUNTY:
KNOX

LATITUDE:
35°53' 53.376" N

LONGITUDE:
84°10' 7.032" W

DESIGN TYPE:
SMALL CELL

SHEET TITLE:
PHOTO SIMS

DRAWING NO. C4A
REVISION: 4

NTS

PROJECT SUMMARY

SITE NAME: SMC_FARRAGUT_6
 SITE ADDRESS: 101 WEST END AVE
 (ESTIMATED) FARRAGUT, TN 37934
 COUNTY: KNOX
 JURISDICTION: TOWN OF FARRAGUT
SITE COORDINATES: 1A
 LATITUDE: 35° 53' 5.028" N (NAD 83)
 LATITUDE: 35.88473°
 LONGITUDE: 84° 9' 13.752" W (NAD 83)
 LONGITUDE: -84.15382°
 ELEVATION: ±577'-4" (NAVD 88)
 PROPERTY DEFINITION: R.O.W.
 FUZE PROJECT ID: 466102
 PSLC CODE: 16876702
 PROPOSED POLE HEIGHT: 42'-3.5"
 PROPOSED POLE CLASS: N/A
 POLE OWNER: TOWN OF FARRAGUT
 EXISTING POLE HEIGHT: 34'-11"
LESSEE:
 NAME: VERIZON WIRELESS
 CONTACT: JASON KOZORA
 PHONE: (252) 201-6602
CIVIL ENGINEER:
 NAME: TELECAD WIRELESS
 CONTACT: CHRIS ROBERTS, P.E.
 PHONE: (904) 559-6794
ELECTRICAL ENGINEER:
 NAME: TELECAD WIRELESS
 CONTACT: STEPHEN HUNT, P.E.
 PHONE: (423) 843-9500
UTILITIES:
 POWER COMPANY: LENOIR CITY UTILITY BOARD
 CONTACT: CUSTOMER SERVICE
 PHONE: (844) 687-6282
 FIBER COMPANY: VERIZON ONE FIBER
 CONTACT: CUSTOMER SERVICE
 PHONE: (855) 594-1243

PROJECT DESCRIPTION

THESE DRAWINGS DEPICT A PORTION OF A PROPOSED SMALL CELL NETWORK BUILD INVOLVING THE SETTING OF AN ANTENNA (OR ANTENNAS) ATOP THE REPLACEMENT 42'-3.5" A.G.L. (BLACK) METAL TOWN OF FARRAGUT OWNED LIGHT POLE.

CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING:

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- TENNESSEE CODE COUNCIL
- ANSI/AIA-222-H
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- 2012 NESC
- LOCAL BUILDING CODE
- CITY/COUNTY ORDINANCES

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STRUCTURAL REPORT AND FOUNDATION DESIGN PERFORMED BY OTHERS.

verizon

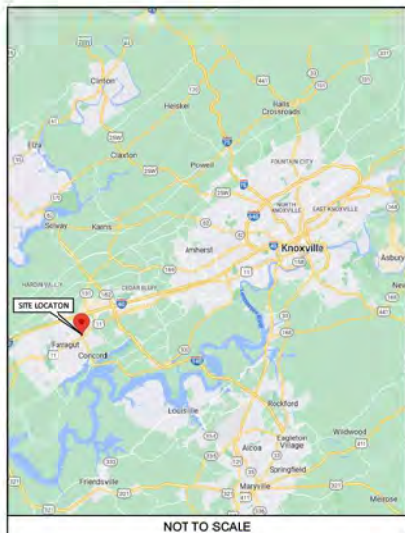
KNOXVILLE MARKET

NODE NAME: SMC_FARRAGUT_6

SITE ADDRESS:
 101 WEST END AVE
 FARRAGUT, TN 37934

CANDIDATE D

VICINITY MAP



NOT TO SCALE

LOCATION MAP



NOT TO SCALE

SHEET SCALE FACTOR:

PLOT SIZE:
 11" x 17": TO SCALE



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 www.tenn811.com
 CONTRACTOR TO CALL TENNESSEE
 ONE-CALL SYSTEMS AT LEAST (2) WORKING
 DAYS PRIOR TO DIGGING.

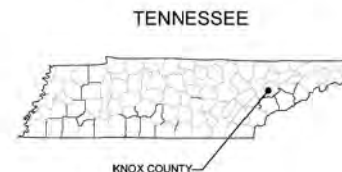
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C4	PHOTO SIMS
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S1	EQUIPMENT DETAILS
S2	EQUIPMENT DETAILS
S3	EQUIPMENT DETAILS
S4	FOUNDATION DESIGN
RF1	RFDS
RF2	RFDS
RF3	RFDS
RF4	RFDS
RF5	RFDS
RF6	RFDS

SCOPE OF WORK

- INSTALL A REPLACEMENT 42'-3.5" AGL (BLACK) METAL LIGHT POLE
- INSTALL NEW EQUIPMENT
 - (3) ERICSSON AIR1652 ANTENNA(S)
 - (1) JMA WIRELESS CX200M236-1C CANTENNA
 - (1) ERICSSON 8843 RRU
 - (1) ERICSSON 4408 RRU
 - INSTALL POWER AND FIBER FOR RADIOS (INSIDE OF POLE)
 - ELECTRIC METER
 - POWER DISCONNECT
 - FIBER PANEL

STATE COUNTY MAP



PREPARED FOR:

verizon

PREPARED BY:

TeleCAD Wireless
 1961 NORTHPOINT BLVD, SUITE 130
 HIXSON, TN 37343
 PH: 423-843-9500
 FAX: 423-843-9500

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DRAWN BY: JAE
 CHECKED BY: SEH

REVISIONS

NO.	DATE	BY	DESCRIPTION
3	11/01/22	JAE	C CONSTRUCTION ISSUE
2	10/28/22	JAE	C CONSTRUCTION ISSUE
1	10/18/22	JAE	C CONSTRUCTION ISSUE
0	09/27/22	JAE	C CONSTRUCTION ISSUE
A	09/19/22	JAE	PRELIMINARY ISSUE



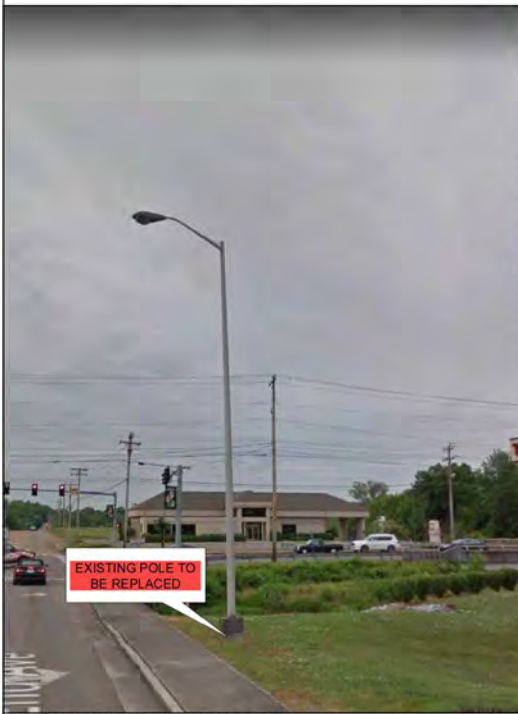
SITE NAME: SMC_FARRAGUT_6
 ADDRESS: 101 WEST END AVE
 FARRAGUT, TN 37934
 COUNTY: KNOX
 LATITUDE: 35° 53' 5.028" N
 LONGITUDE: 84° 9' 13.752" W
 DESIGN TYPE: SMALL CELL

SHEET TITLE:
 TITLE SHEET

DRAWING NO: A1
 REVISION: 3

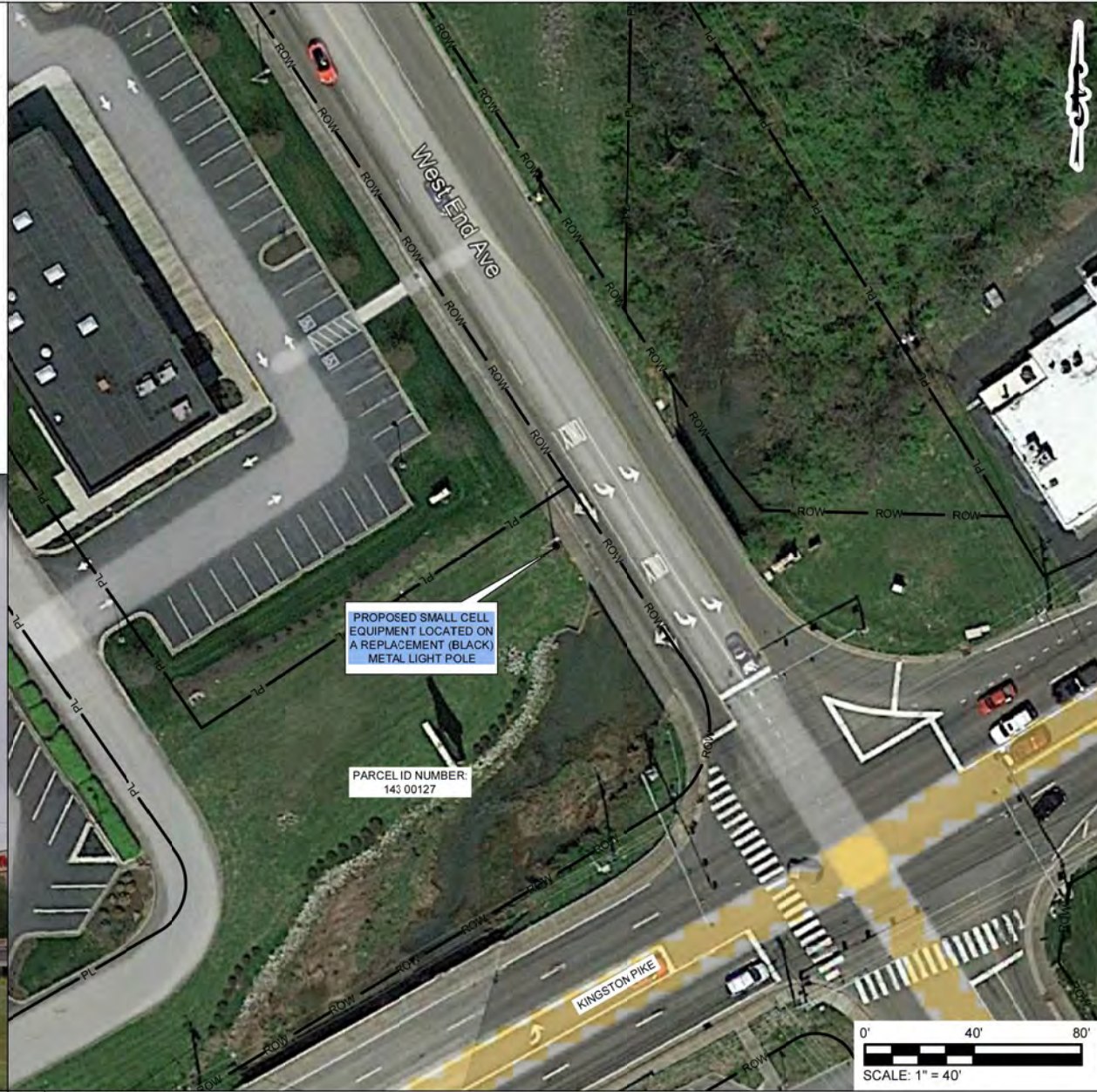
NOTES:

1. THE SITE PLAN SHOWN BELOW WAS REPRODUCED FROM INFORMATION PROVIDED BY KNOX COUNTY GIS. CONTRACTOR TO VERIFY ALL EXISTING INFORMATION AS INDICATED ON THE SITE PLAN. CONTRACTOR IS TO ESTABLISH THE EXISTENCE AND LOCATION OF ALL EXISTING UNDERGROUND AND OVERHEAD UTILITIES. CONTRACTOR TO IMMEDIATELY NOTIFY THE VERIZON CONSTRUCTION OF ANY DISCREPANCIES.
2. CONTRACTOR SHALL MAINTAIN UNINTERRUPTED ACCESS TO ALL DRIVEWAYS, SIDE STREETS, AND WALKWAYS AT ALL TIMES UNLESS OTHERWISE PERMITTED.
3. CONTRACTOR SHALL PREPARE A MAINTENANCE OF TRAFFIC (M.O.T.) PLAN FROM PEDESTRIAN TRAFFIC AND WORK WITHIN THE RIGHT-OF-WAY, INCLUDING VEHICLE PARKING AND EQUIPMENT STAGING.
4. CONTRACTOR SHALL RESTORE ANY DISTURBED AREAS TO ORIGINAL CONDITION OR BETTER.
5. POWER DELIVERY BY LENOIR CITY UTILITY BOARD AT THEIR RECOMMENDATION, PERMITTED SEPARATELY.
6. FIBER DELIVERY PROVIDED BY ONE FIBER, PERMITTED SEPARATELY.
7. FOR GENERAL SITE WORK NOTES, SEE SHEET GN1.
8. ALL NORTH ARROWS ON SITE PLANS ARE TRUE NORTH, UNLESS OTHERWISE SPECIFIED.



1 POLE LOCATION PHOTO

N.T.S.



2 SITE PLAN - AERIAL

PREPARED FOR:

PREPARED BY:

1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
PH: 423-843-9500
FAX: 423-843-9509

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CHECKED BY:	SEH

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0	09/02/22	JAE	CONSTRUCTION ISSUE
A	09/19/22	JAE	PRELIMINARY ISSUE

ENGINEER'S SIGNATURE: *Stephen E. Hunt*

SITE NAME:
SMC_FARRAGUT_6

ADDRESS:
101 WEST END AVE
FARRAGUT, TN 37934

COUNTY:
KNOX

LATITUDE:
35° 53' 5.028" N

LONGITUDE:
84° 9' 13.752" W

DESIGN TYPE:
SMALL CELL

SHEET TITLE:
SITE PLAN - AERIAL

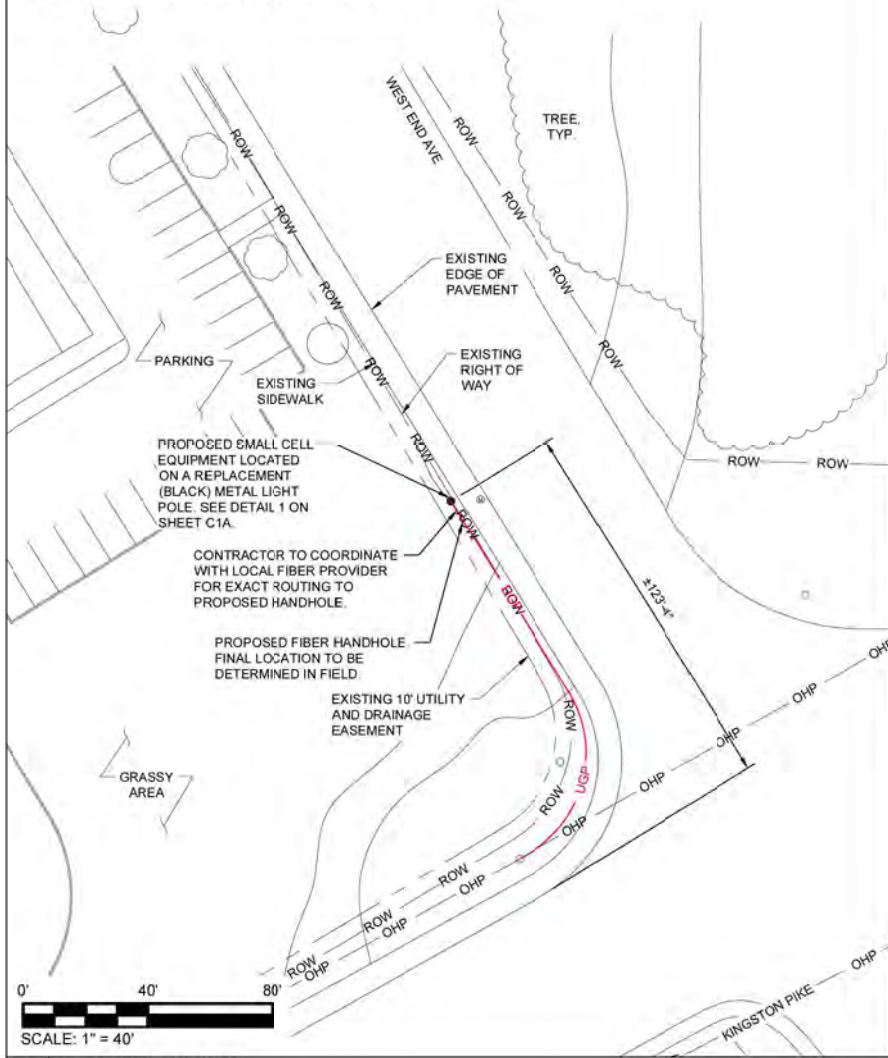
DRAWING NO. B1	REVISION: 3
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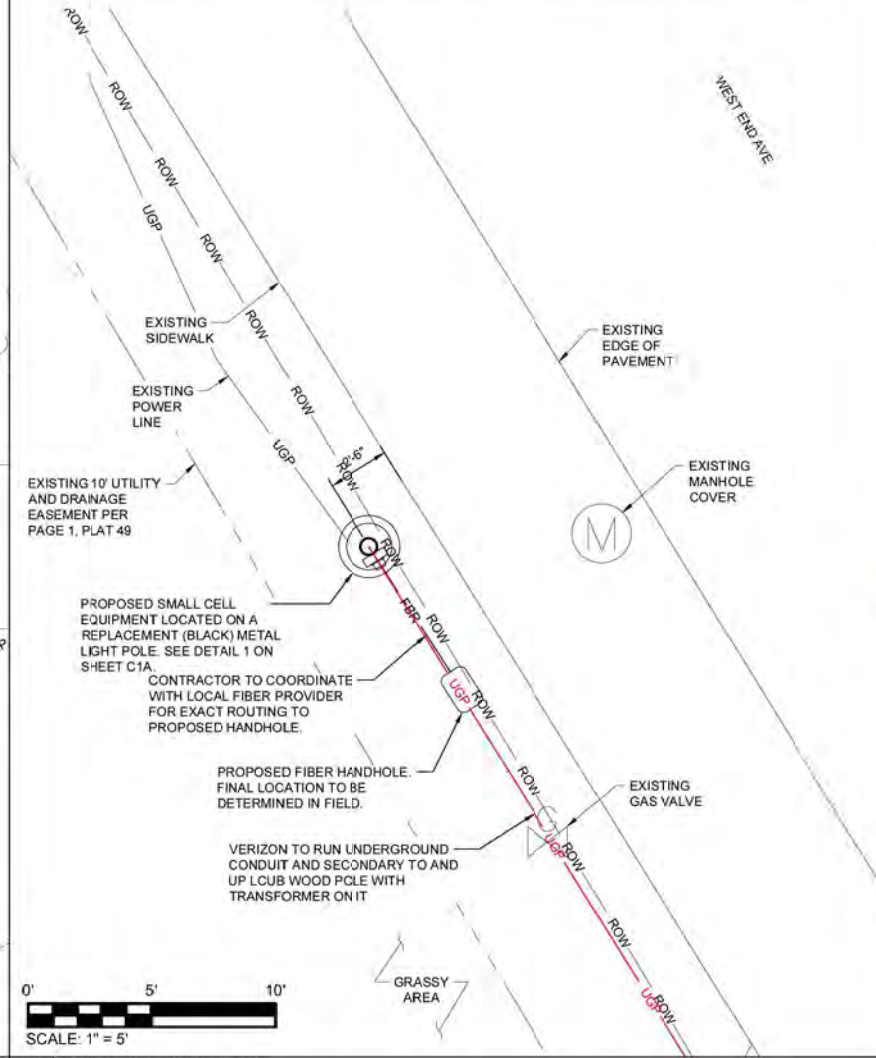
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3. FOR GENERAL SITE WORK NOTES, SEE SHEET GN1.
4. ALL NORTH ARROWS ON SITE PLANS ARE TRUE NORTH, UNLESS OTHERWISE SPECIFIED.
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6. RIGHT OF WAY INFORMATION ACQUIRED FROM GIS.

LEGEND

UNDERGROUND POWER	UGP	GAS LINE	GAS	IRON PIN SET (IPF) 5/8" REBAR		CATCH BASIN	
OVERHEAD POWER	OHP	FENCE	X	IRON PIN FOUND (PF)		BENCHMARK	
OVERHEAD UTILITIES	OHU	SEWER LINE	SWR	CONCRETE MON. FOUND		UTILITY POLE	
UNDERGROUND TELCO	UGT	WATER LINE	WTR	CONCRETE MON. SET		WATER VALVE	
OVERHEAD TELCO	OHT	COAX CABLE	C	TRAFFIC LIGHT POLE		MANHOLE	
HIGH VOLTAGE POWER	HVP	HYBRID CABLE	HYB	FIRE HYDRANT		GAS VALVE	
PROPERTY LINE	PL	FIBER	FBR	TELCO PEDESTAL			
RIGHT-OF-WAY	ROW			ELECTRICAL PULL BOX			



1 OVERALL SITE PLAN



2 ENLARGED SITE PLAN

PREPARED FOR:

verizon

PREPARED BY:

TeleCAD Wireless
1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
PH: 423-843-9500
FAX: 423-843-9500

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CHECKED BY: SEH

REVISIONS

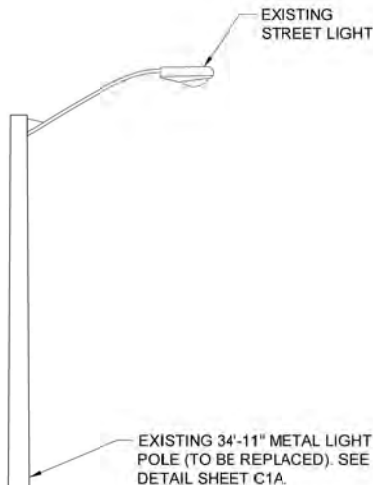
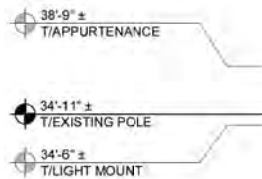
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0	09/19/22	JAE	PRELIMINARY ISSUE



SITE NAME:
SMC_FARRAGUT_8
ADDRESS:
101 WEST END AVE
FARRAGUT, TN 37934
COUNTY:
KNOX
LATITUDE:
35° 53' 5.028" N
LONGITUDE:
84° 9' 13.752" W
DESIGN TYPE:
SMALL CELL

SHEET TITLE:
SITE PLAN

DRAWING NO.
B2
REVISION:
3

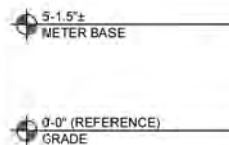


1 EXISTING POLE ELEVATION (FACING TRAFFIC FLOW)

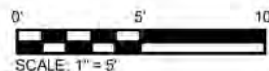


PROPOSED SIGNAGE, SEE
DETAIL 2 ON SHEET S1.

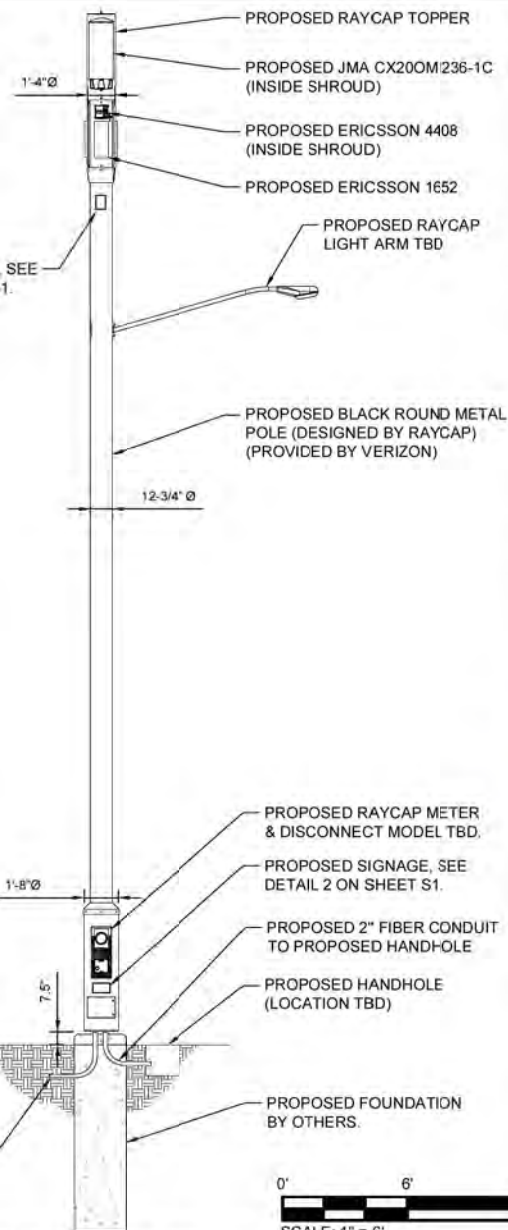
- POLE NOTES:**
1. THE DRAWING IS ONLY A GRAPHIC REPRESENTATION OF THE STRUCTURE.
 2. CONTRACTOR TO VERIFY MOUNT COMPATIBILITY WITH POLE AND ANTENNA PRIOR TO ORDERING.
 3. CONTRACTOR TO PROVIDE LOCKOUT METER TAG ON DISCONNECT RATHER THAN A STANDARD KEY LOCK OR COMBINATION LOCK.
 4. EXISTING ATTACHMENTS TO BE TRANSFERRED BY OTHERS.



PROPOSED 2.5" POWER
CONDUIT TO SOURCE



2 PROPOSED POLE ELEVATION (FACING TRAFFIC FLOW)



PREPARED FOR:

verizon

PREPARED BY:

TeleCAD Wireless
1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
PH: 423-843-9500
FAX: 423-843-9503

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A	09/19/22	JAE	PRELIMINARY ISSUE



SITE NAME:
SMC_FARRAGUT_6
ADDRESS:
101 WEST END AVE
FARRAGUT, TN 37934
COUNTY:
KNOX
LATITUDE:
35° 53' 5.028" N
LONGITUDE:
84° 9' 13.752" W
DESIGN TYPE:
SMALL CELL

SHEET TITLE:
POLE ELEVATION

DRAWING NO.
C1
REVISION:
3



1 CURRENT VIEW (FROM SOUTHEAST LOOKING NORTHWEST)



2 PROPOSED VIEW (FROM SOUTHEAST LOOKING NORTHWEST)

PREPARED FOR:

verizon

PREPARED BY:

TeleCAD
Wireless
1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
PH: 423-843-9500
FAX: 423-843-9503

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A	09/19/22	JAE	PRELIMINARY ISSUE



SITE NAME:
SMC_FARRAGUT_6
ADDRESS:
101 WEST END AVE
FARRAGUT, TN 37934
COUNTY:
KNOX
LATITUDE:
35° 53' 5.028" N
LONGITUDE:
84° 9' 13.752" W
DESIGN TYPE:
SMALL CELL

SHEET TITLE:
PHOTO SIMS

DRAWING NO.
C4
REVISION:
3

NTS



PREPARED FOR:

verizon

PREPARED BY:

TeleCAD
Wireless

1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
PH: 423-843-9500
FAX: 423-843-9509

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A	09/19/22	JAE	PRELIMINARY ISSUE



SITE NAME:
SMC_FARRAGUT_6
ADDRESS:
101 WEST END AVE
FARRAGUT, TN 37934
COUNTY:
KNOX
LATITUDE:
35° 53' 5.028" N
LONGITUDE:
84° 9' 13.752" W
DESIGN TYPE:
SMALL CELL

SHEET TITLE:
PHOTO SIMS

DRAWING NO. C4A
REVISION: 3

1 CURRENT VIEW (FROM NORTH LOOKING SOUTH)

NTS 2 PROPOSED VIEW (FROM NORTH LOOKING SOUTH)

NTS

PROJECT SUMMARY

SITE NAME: FARRAGUT 5
SITE ADDRESS: 100 BROOKLAWN ST
 FARRAGUT, TN 37394
COUNTY: KNOX
JURISDICTION: TOWN OF FARRAGUT
SITE COORDINATES: 1A
 LATITUDE: 35° 52' 56.73" (NAD 83)
 LATITUDE: 35.88242°
 LONGITUDE: 84° 09' 25.70" (NAD 83)
 LONGITUDE: -84.15714°
 ELEVATION: 884'-0" (NAVD 88)
PROPERTY DEFINITION: R.O.W.
FUZE PROJECT ID: 16547820
PSLC CODE: 466100
PROPOSED POLE HEIGHT: 32'-4.5"
PROPOSED POLE CLASS: N/A
POLE OWNER: TOWN OF FARRAGUT
EXISTING POLE HEIGHT: 30'-6"
LESSEE:
NAME: VERIZON WIRELESS
CONTACT: JASON KOZORA
PHONE: (252) 201-6602
CIVIL ENGINEER:
NAME: TELECAD WIRELESS
CONTACT: CHRIS ROBERTS, P.E.
PHONE: (904) 559-6794
ELECTRICAL ENGINEER:
NAME: TELECAD WIRELESS
CONTACT: STEPHEN HUNT, P.E.
PHONE: (423) 843-9500
UTILITIES:
POWER COMPANY: LENOIR CITY UTILITY BOARD
CONTACT: CUSTOMER SERVICE
PHONE: (844) 687-6282
FIBER COMPANY: VERIZON ONE FIBER
CONTACT: CUSTOMER SERVICE
PHONE: (855) 594-1243

PROJECT DESCRIPTION

THESE DRAWINGS DEPICT A PORTION OF A PROPOSED SMALL CELL NETWORK BUILD INVOLVING THE SETTING OF AN ANTENNA (OR ANTENNAS) ATOP THE REPLACEMENT 32'-4.5" A.G.L. (BLACK) METAL TOWN OF FARRAGUT OWNED LIGHT POLE.

CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING:

- 2018 INTERNATIONAL BUILDING CODE
- TENNESSEE CODE COUNCIL
- ANSI/A-222-H
- 2017 NEC - NFPA 70
- 2012 NESC
- LOCAL BUILDING CODE
- CITY/COUNTY ORDINANCES

STRUCTURAL REVIEW

STRUCTURAL REPORT AND FOUNDATION DESIGN PERFORMED BY OTHERS.

verizon

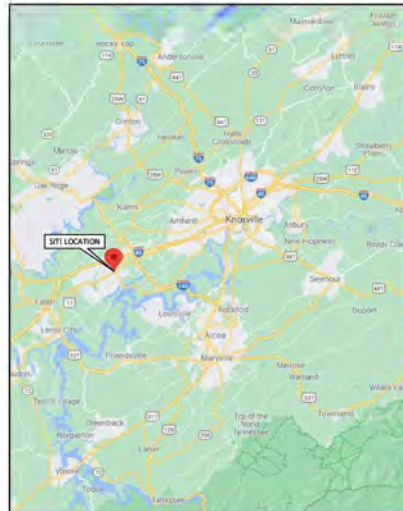
KNOXVILLE MARKET

NODE NAME: FARRAGUT 5

SITE ADDRESS:
 100 BROOKLAWN ST
 FARRAGUT, TN 37394

CANDIDATE C

VICINITY MAP



NOT TO SCALE

LOCATION MAP



NOT TO SCALE

SHEET SCALE FACTOR:

PLOT SIZE:
 11" x 17" TO SCALE



1 (800) 351-1111
 www.tenn811.com
 CONTRACTOR TO CALL TENNESSEE
 ONE-CALL SYSTEMS AT LEAST (2) WORKING
 DAYS PRIOR TO DIGGING.

SHEET INDEX

NO.	DESCRIPTION
A1	TITLE SHEET
GN1	GENERAL NOTES
B1	SITE PLAN - AERIAL
B2	SITE PLAN
B3	PLAT
C1	POLE ELEVATION
C1A	POLE ELEVATION
C2	TRAFFIC CONTROL
C3	SITE DETAILS
C4	PHOTO SIMS
C4A	PHOTO SIMS
E1	UTILITY SITE PLAN
E1A	POWER DESIGN
-	GPRS FINDINGS MAP
E2	SINGLE LINE DIAGRAM
E3	ELECTRICAL DETAILS
S1	EQUIPMENT DETAILS
S2	EQUIPMENT DETAILS
S3	EQUIPMENT DETAILS
S4	EQUIPMENT DETAILS
S5	FOUNDATION DESIGN
RF1	RFDS
RF2	RFDS
RF3	RFDS
RF4	RFDS
RF5	RFDS
RF6	RFDS

SCOPE OF WORK

- INSTALL A REPLACEMENT 32'-4.5" A.G.L. (BLACK) METAL LIGHT POLE
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 - (3) ERICSSON AIR1652 ANTENNA(S)
 - (1) JMA WIRELESS CX200M236-1C CANTENNA
 - (1) ERICSSON 5843 RRU
 - (1) ERICSSON 4408 RRU
 - INSTALL POWER AND FIBER FOR RADIOS (INSIDE OF POLE)
 - ELECTRIC METER
 - POWER DISCONNECT
 - FIBER PANEL

STATE COUNTY MAP



PREPARED FOR:

verizon

PREPARED BY:

TeleCAD Wireless
 1961 NORTHPOINT BLVD, SUITE 130
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6	09/16/22	JAE	PRELIMINARY ISSUE



SITE NAME: FARRAGUT 5
ADDRESS: 100 BROOKLAWN ST
 FARRAGUT, TN 37394
COUNTY: KNOX
LATITUDE: 35° 52' 56.73" N
LONGITUDE: 84° 09' 25.70" W
DESIGN TYPE: SMALL CELL
SHEET TITLE: TITLE SHEET

DRAWING NO: A1
 REVISION: 4

NOTES:

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1 POLE LOCATION PHOTO

N.T.S.



2 SITE PLAN - AERIAL

PREPARED FOR:

PREPARED BY:

1961 NORTHPOINT BLVD, SUITE 130
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0	09/23/22	JAE	CONSTRUCTION ISSUE
A	09/16/22	JAE	PRELIMINARY ISSUE

ENGINEER'S SEAL: STEPHEN E. HUNT, REGISTERED ENGINEER, COMMERCIAL, No. 107654, STATE OF TENNESSEE

SITE NAME: FARRAGUT 5
ADDRESS: 100 BROOKLAWN ST, FARRAGUT, TN 37394
COUNTY: KNOX
LATITUDE: 35° 52' 56.73" N
LONGITUDE: 84° 09' 25.70" W
DESIGN TYPE: SMALL CELL

SHEET TITLE: SITE PLAN - AERIAL

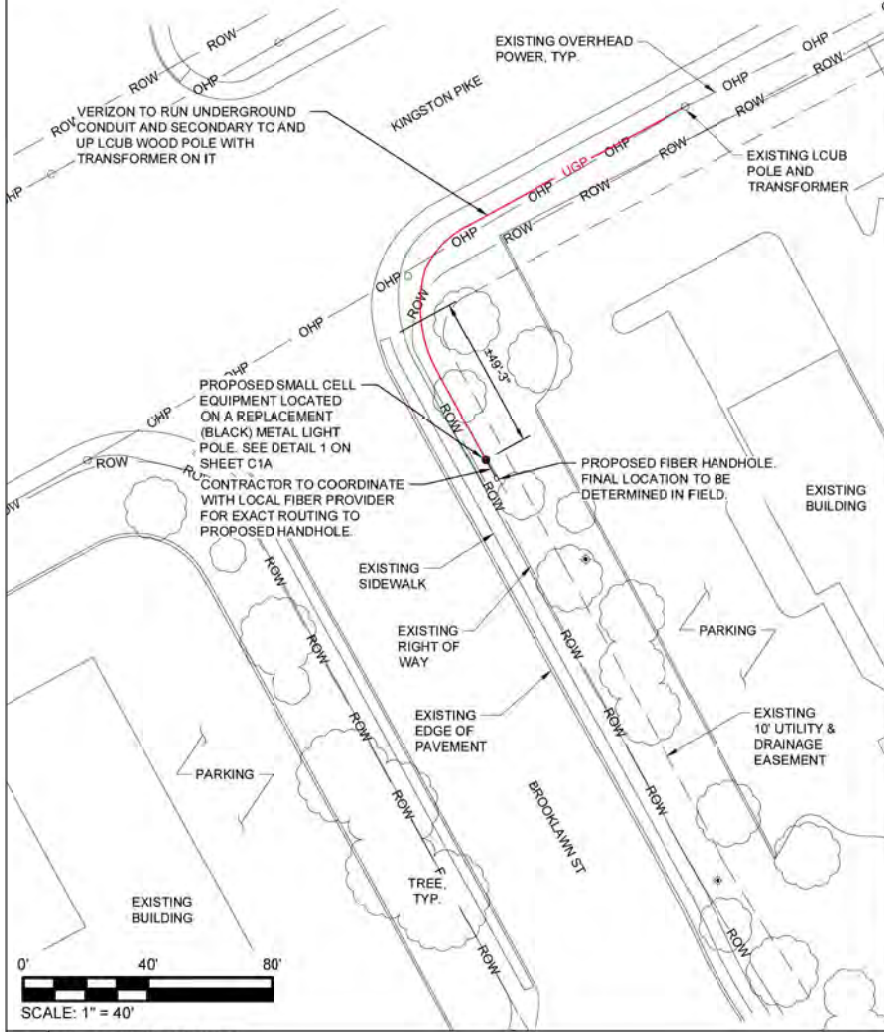
DRAWING NO: B1	REVISION: 4
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NOTES:

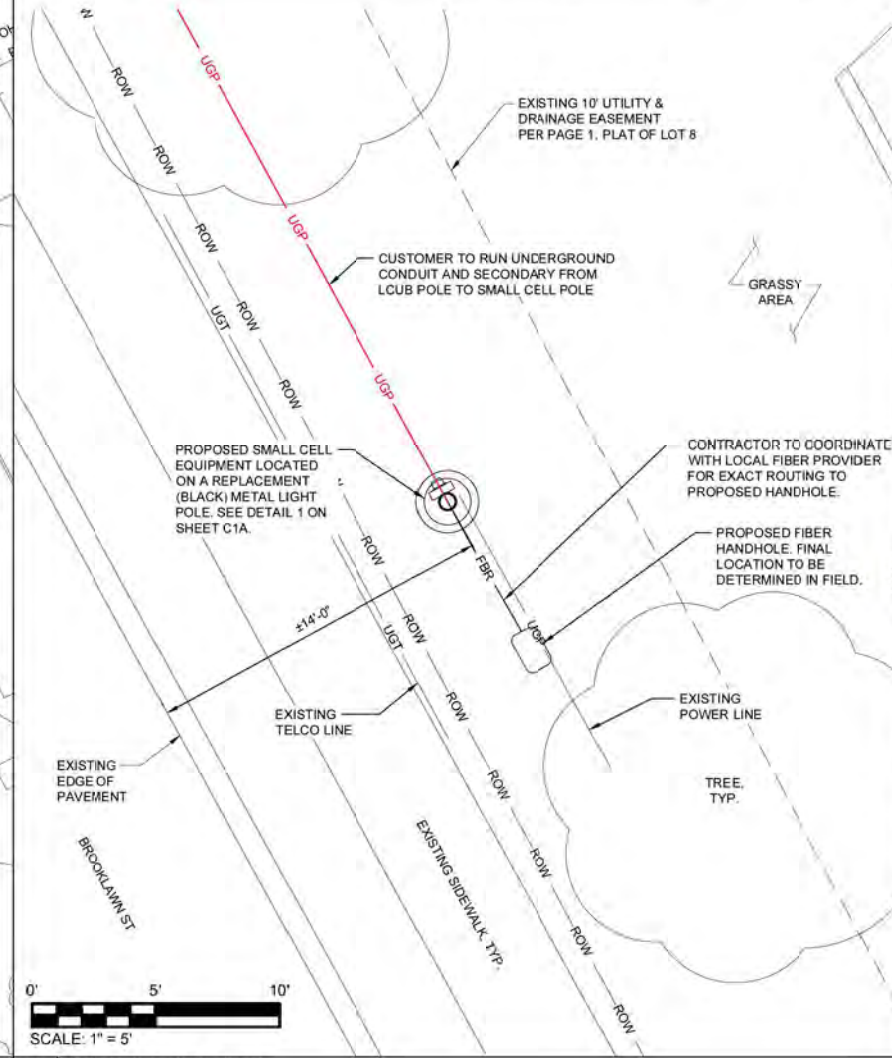
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6. RIGHT OF WAY INFORMATION ACQUIRED FROM GIS.

LEGEND

UNDERGROUND POWER	UGP	GAS LINE	GAS	IRON PIN SET (IPF) 58" REBAR		CATCH BASIN	
OVERHEAD POWER	OHP	FENCE	X	IRON PIN FOUND (PF)		BENCHMARK	
OVERHEAD UTILITIES	OHU	SEWER LINE	SWR	CONCRETE MON. FOUND		UTILITY POLE	
UNDERGROUND TELCO	UGT	WATER LINE	WTR	CONCRETE MON. SET		WATER VALVE	
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HIGH VOLTAGE POWER	HVP	HYBRID CABLE	HYB	FIRE HYDRANT		GAS VALVE	
PROPERTY LINE	PL	FIBER	FBR	TELCO PEDESTAL			
RIGHT-OF-WAY	ROW			ELECTRICAL PULL BOX			



1 OVERALL SITE PLAN



2 ENLARGED SITE PLAN

PREPARED FOR:

verizon

PREPARED BY:

TeleCAD Wireless
1961 NORTHPOINT BLVD, SUITE 130
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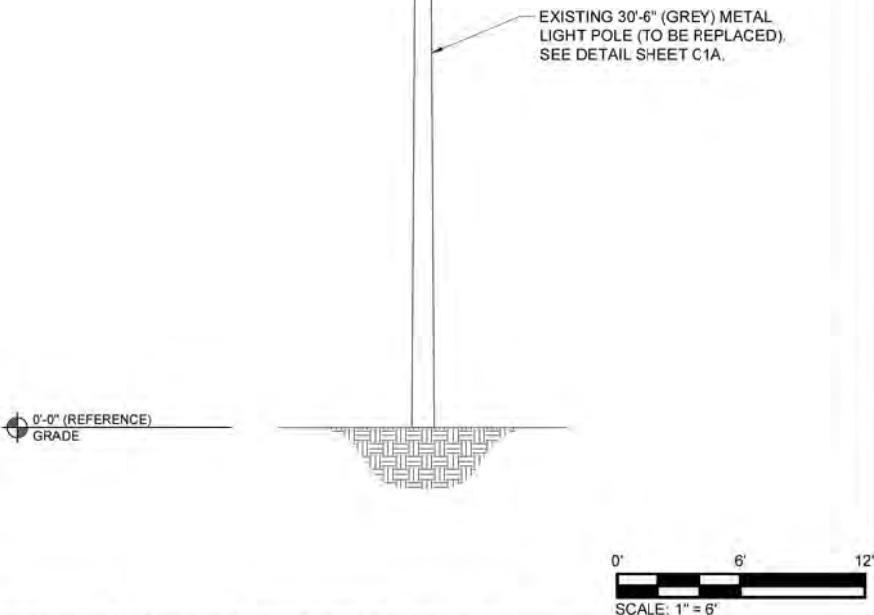
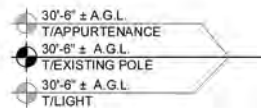
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5	09/23/22	JAE	CONSTRUCTION ISSUE
6	09/16/22	JAE	PRELIMINARY ISSUE



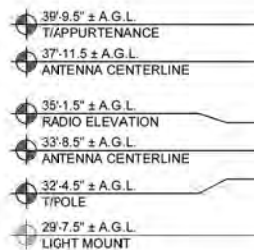
SITE NAME: FARRAGUT 5
ADDRESS: 100 BROOKLAWN ST.
FARRAGUT, TN 37394
COUNTY: KNOX
LATITUDE: 35° 52' 56.73" N
LONGITUDE: 84° 09' 25.70" W
DESIGN TYPE: SMALL CELL

SHEET TITLE: SITE PLAN

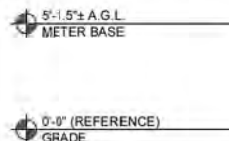
DRAWING NO. B2
REVISION: 4



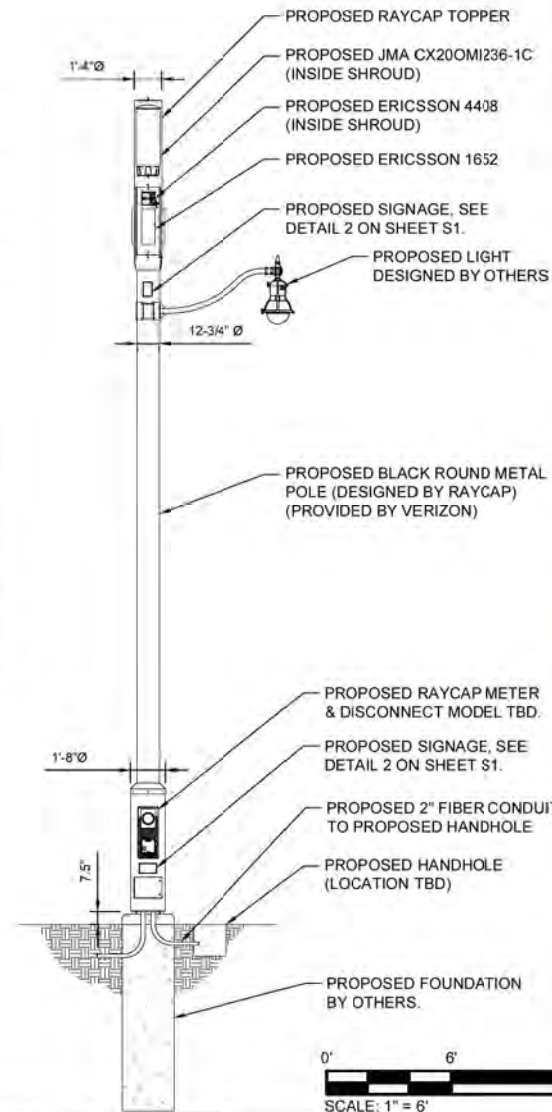
1 EXISTING POLE ELEVATION (FACING TRAFFIC FLOW)



- POLE NOTES:**
1. THE DRAWING IS ONLY A GRAPHIC REPRESENTATION OF THE STRUCTURE.
 2. CONTRACTOR TO VERIFY MOUNT COMPATIBILITY WITH POLE AND ANTENNA PRIOR TO ORDERING.
 3. CONTRACTOR TO PROVIDE LOCKOUT METER TAG ON DISCONNECT RATHER THAN A STANDARD KEY LOCK OR COMBINATION LOCK.
 4. EXISTING ATTACHMENTS TO BE TRANSFERRED BY OTHERS.



2 PROPOSED POLE ELEVATION (FACING TRAFFIC FLOW)



PREPARED FOR:

verizon

PREPARED BY:

TeleCAD Wireless
 1961 NORTHPOINT BLVD, SUITE 130
 HIXSON, TN 37343
 PH: 423-843-9500
 FAX: 423-843-9500

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DRAWN BY: JAE
 CHECKED BY: SEH

REVISIONS

#	DATE	BY	DESCRIPTION
1	11/01/22	JAE	CONSTRUCTION ISSUE
2	10/26/22	JAE	CONSTRUCTION ISSUE
3	10/18/22	JAE	CONSTRUCTION ISSUE
4	09/29/22	JAE	CONSTRUCTION ISSUE
5	09/23/22	JAE	CONSTRUCTION ISSUE
6	09/16/22	JAE	PRELIMINARY ISSUE



SITE NAME: FARRAGUT 5
ADDRESS: 100 BROOKLAWN ST.
 FARRAGUT, TN 37394
COUNTY: KNOX
LATITUDE: 35° 52' 56.73" N
LONGITUDE: 84° 09' 25.70" W
DESIGN TYPE: SMALL CELL

SHEET TITLE:
 POLE ELEVATION

DRAWING NO. C1
 REVISION: 4



1 CURRENT VIEW (FROM WEST LOOKING EAST)



2 PROPOSED VIEW (FROM WEST LOOKING EAST)

PREPARED FOR:

verizon

PREPARED BY:

TeleCAD
Wireless
1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
PH: 423-843-9500
FAX: 423-843-9503

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CHECKED BY: SEH

REVISIONS

#	DATE	BY	DESCRIPTION
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2	10/18/22	JAE	CONSTRUCTION ISSUE
1	09/29/22	JAE	CONSTRUCTION ISSUE
0	09/23/22	JAE	CONSTRUCTION ISSUE
A	09/16/22	JAE	PRELIMINARY ISSUE
NO	DATE	BY	DESCRIPTION



SITE NAME:
FARRAGUT 5
ADDRESS:
100 BROOKLAWN ST.
FARRAGUT, TN 37394
COUNTY:
KNOX
LATITUDE:
35° 52' 56.73" N
LONGITUDE:
84° 09' 25.70" W
DESIGN TYPE:
SMALL CELL

SHEET TITLE:
PHOTO SIMS

DRAWING NO.
C4
REVISION:
4

NTS



1 CURRENT VIEW (FROM SOUTH LOOKING NORTH)



2 PROPOSED VIEW (FROM SOUTH LOOKING NORTH)

PREPARED FOR:

verizon

PREPARED BY:

TeleCAD
Wireless

1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
PH: 423-843-9500
FAX: 423-843-9503

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CHECKED BY:	SEH

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6	09/16/22	JAE	PRELIMINARY ISSUE



SITE NAME:
FARRAGUT 5

ADDRESS:
100 BROOKLAWN ST.
FARRAGUT, TN 37394

COUNTY:
KNOX

LATITUDE:
35° 52' 56.73" N

LONGITUDE:
84° 09' 25.70" W

DESIGN TYPE:
SMALL CELL

SHEET TITLE:
PHOTO SIMS

DRAWING NO. C4A	REVISION: 4
---------------------------	-----------------------

NTS

PROJECT SUMMARY

SITE NAME: SMC_FARRAGUT_4
SITE ADDRESS: 11425 KINGSTON PIKE
(E911 VERIFIED) KNOXVILLE, TN 37934
COUNTY: KNOX
JURISDICTION: TOWN OF FARRAGUT
SITE COORDINATES: 1A
LATITUDE: 35° 52' 49.800" N (NAD 83)
LONGITUDE: -84° 9' 44.136" W (NAD 83)
ELEVATION: 917'-2" (NAVD 88)
PROPERTY DEFINITION: R.O.W.
FUZE PROJECT ID: 2545911
PSLC CODE: 458419
PROPOSED POLE HEIGHT: 32'-4.5" AGL
PROPOSED POLE CLASS: N/A
POLE OWNER: VERIZON
POLE OWNER:
NAME: VERIZON WIRELESS
CONTACT: JASON KOZORA
PHONE: (252) 201-6602
CIVIL ENGINEER:
NAME: TELECAD WIRELESS
CONTACT: CHRIS ROBERTS, P.E.
PHONE: (904) 559-6794
ELECTRICAL ENGINEER:
NAME: TELECAD WIRELESS
CONTACT: STEPHEN HUNT, P.E.
PHONE: (423) 843-9500
UTILITIES:
POWER COMPANY: LENOIR CITY UTILITY BOARD
CONTACT: CUSTOMER SERVICE
PHONE: (844) 687-5282
FIBER COMPANY: VERIZON ONE FIBER
CONTACT: CUSTOMER SERVICE
PHONE: (855) 594-1243

PROJECT DESCRIPTION

THESE DRAWINGS DEPICT A PORTION OF A PROPOSED SMALL CELL NETWORK BUILD INVOLVING THE SETTING OF AN ANTENNA (OR ANTENNAS) ATOP THE NEW 32'-4.5" A.G.L. (BLACK) METAL VERIZON OWNED UTILITY POLE.

CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING:

- 2018 INTERNATIONAL BUILDING CODE
- TENNESSEE CODE COUNCIL
- ANSI/TIA-222-H
- 2017 NEC - NFPA 70
- 2012 NESC
- LOCAL BUILDING CODE
- CITY/COUNTY ORDINANCES

STRUCTURAL REVIEW

STRUCTURAL REPORT AND FOUNDATION DESIGN PERFORMED BY OTHERS.

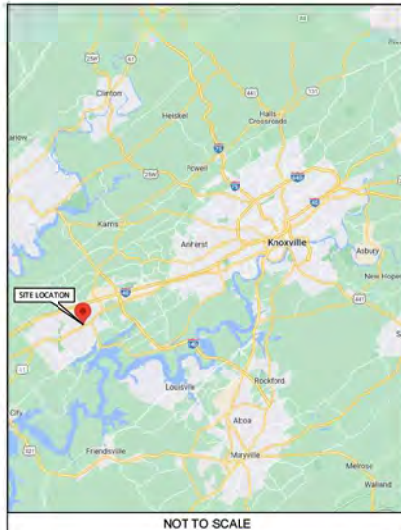
verizon

KNOXVILLE MARKET
 NODE NAME: SMC_FARRAGUT_4

SITE ADDRESS:
 11425 KINGSTON PIKE
 KNOXVILLE, TN 37934

CANDIDATE E

VICINITY MAP



NOT TO SCALE

LOCATION MAP



NOT TO SCALE

SHEET SCALE FACTOR:
 PLOT SIZE:
 11" x 17": TO SCALE



1 (800) 351-1111
 www.tennb11.com
 CONTRACTOR TO CALL TENNESSEE
 ONE-CALL SYSTEMS AT LEAST (2) WORKING
 DAYS PRIOR TO DIGGING.

SHEET INDEX

NO.	DESCRIPTION
A1	TITLE SHEET
GN1	GENERAL NOTES
B1	SITE PLAN - AERIAL
B2	SITE PLAN
B3	PLAT
C1	POLE ELEVATION
C2	TRAFFIC CONTROL
C3	SITE DETAILS
C4	PHOTO SIMS
C4A	PHOTO SIMS
E1	UTILITY SITE PLAN
E1A	POWER DESIGN
-	GPRS FINDINGS MAP
E2	SINGLE LINE DIAGRAM
E3	ELECTRICAL DETAILS
S1	EQUIPMENT DETAILS
S2	EQUIPMENT DETAILS
S3	EQUIPMENT DETAILS
S4	FOUNDATION DESIGN
RF1	RFDS
RF2	RFDS
RF3	RFDS
RF4	RFDS
RF5	RFDS
RF6	RFDS

SCOPE OF WORK

- INSTALL A NEW 32'-4.5" AGL (BLACK) METAL UTILITY POLE
- INSTALL NEW EQUIPMENT
 - (3) ERICSSON AIR1652 ANTENNA(S)
 - (1) JMA WIRELESS CX200M236-1C ANTENNA
 - (1) ERICSSON 8843 RRU
 - (1) ERICSSON 4408 RRU
 - INSTALL POWER AND FIBER FOR RADIOS (INSIDE OF POLE)
 - ELECTRIC METER
 - POWER DISCONNECT
 - FIBER PANEL

STATE COUNTY MAP



PREPARED FOR:

verizon

PREPARED BY:

TeleCAD Wireless
 1961 NORTHPOINT BLVD, SUITE 130
 HIXSON, TN 37343
 PH: 423-843-9500
 FAX: 423-843-9500

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 CHECKED BY: SEH

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5	10/26/22	JAE	CONSTRUCTION ISSUE
6	09/03/22	JAE	CONSTRUCTION ISSUE
7	09/19/22	JAE	PRELIMINARY ISSUE



SITE NAME: SMC_FARRAGUT_4
ADDRESS: 11425 KINGSTON PIKE
 KNOXVILLE, TN 37934
COUNTY: KNOX
LATITUDE: 35° 52' 49.800" N
LONGITUDE: -84° 9' 44.136" W
DESIGN TYPE: SMALL CELL
SHEET TITLE: TITLE SHEET

DRAWING NO: A1
 REVISION: 4

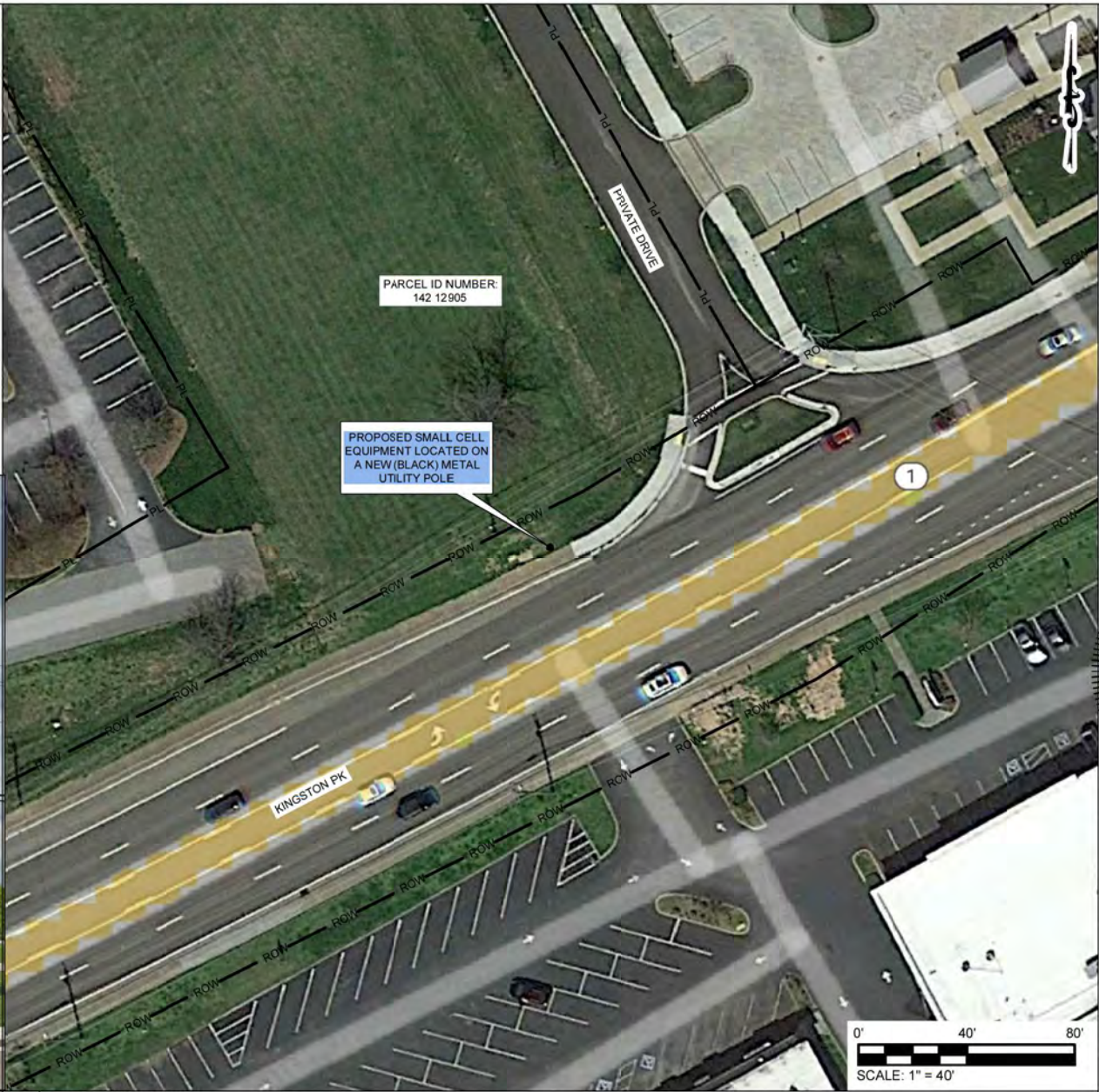
NOTES:

1. THE SITE PLAN SHOWN BELOW WAS REPRODUCED FROM INFORMATION PROVIDED BY KNOX COUNTY GIS. CONTRACTOR TO VERIFY ALL EXISTING INFORMATION AS INDICATED ON THE SITE PLAN. CONTRACTOR IS TO ESTABLISH THE EXISTENCE AND LOCATION OF ALL EXISTING UNDERGROUND AND OVERHEAD UTILITIES. CONTRACTOR TO IMMEDIATELY NOTIFY THE VERIZON CONSTRUCTION OF ANY DISCREPANCIES.
2. CONTRACTOR SHALL MAINTAIN UNINTERRUPTED ACCESS TO ALL DRIVEWAYS, SIDE STREETS, AND WALKWAYS AT ALL TIMES UNLESS OTHERWISE PERMITTED.
3. CONTRACTOR SHALL PREPARE A MAINTENANCE OF TRAFFIC (M.O.T.) PLAN FROM PEDESTRIAN TRAFFIC AND WORK WITHIN THE RIGHT-OF-WAY, INCLUDING VEHICLE PARKING AND EQUIPMENT STAGING.
4. CONTRACTOR SHALL RESTORE ANY DISTURBED AREAS TO ORIGINAL CONDITION OR BETTER.
5. POWER DELIVERY BY LENOIR CITY UTILITY BOARD AT THEIR RECOMMENDATION, PERMITTED SEPARATELY.
6. FIBER DELIVERY PROVIDED BY ONE FIBER, PERMITTED SEPARATELY.
7. FOR GENERAL SITE WORK NOTES, SEE SHEET GN1.
8. ALL NORTH ARROWS ON SITE PLANS ARE TRUE NORTH, UNLESS OTHERWISE SPECIFIED.



1 | POLE LOCATION PHOTO

N.T.S.



2 | SITE PLAN - AERIAL

PREPARED FOR:

PREPARED BY:

1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
PH: 423-843-9500
FAX: 423-843-9509

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CHECKED BY:	SEH

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0	09/23/22	JAE	CONSTRUCTION ISSUE
A	08/19/22	JAE	PRELIMINARY ISSUE

SITE NAME:
SMC_FARRAGUT_4

ADDRESS:
11425 KINGSTON PIKE
KNOXVILLE, TN 37934

COUNTY:
KNOX

LATITUDE:
35° 52' 49.800" N

LONGITUDE:
-84° 9' 44.136" W

DESIGN TYPE:
SMALL CELL

SHEET TITLE:
SITE PLAN - AERIAL

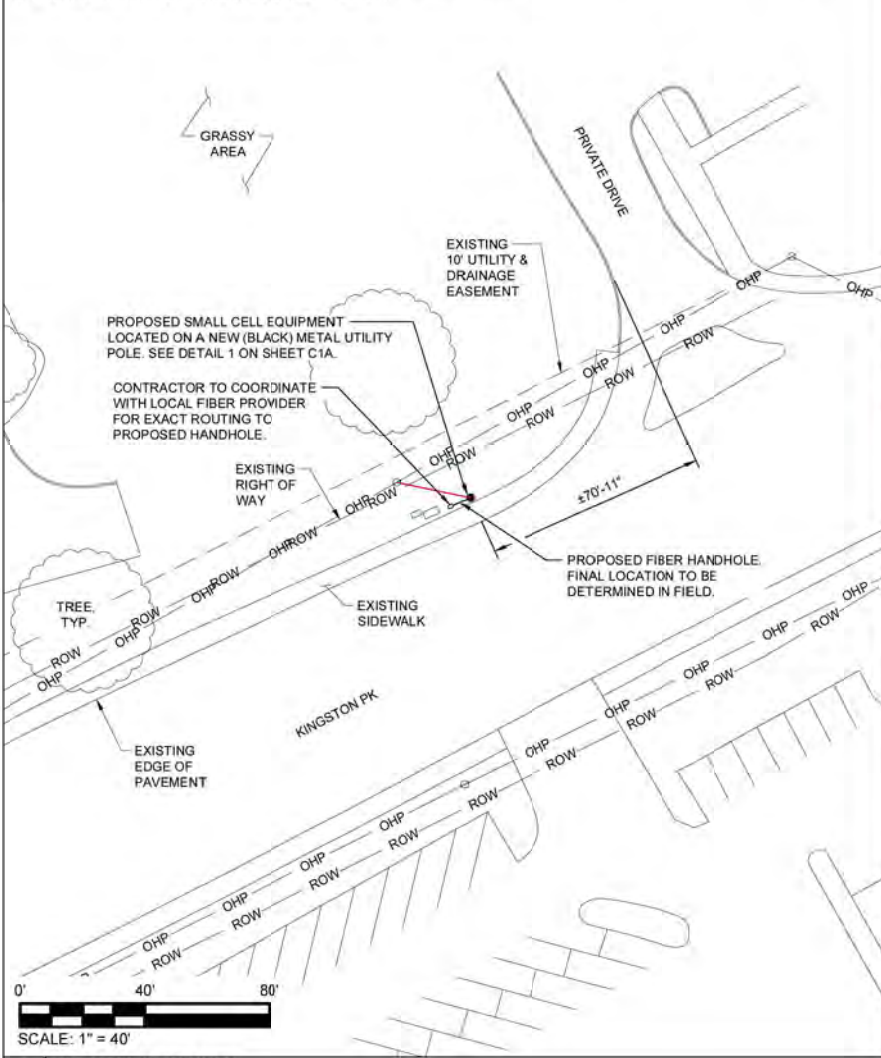
DRAWING NO. B1	REVISION: 4
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NOTES:

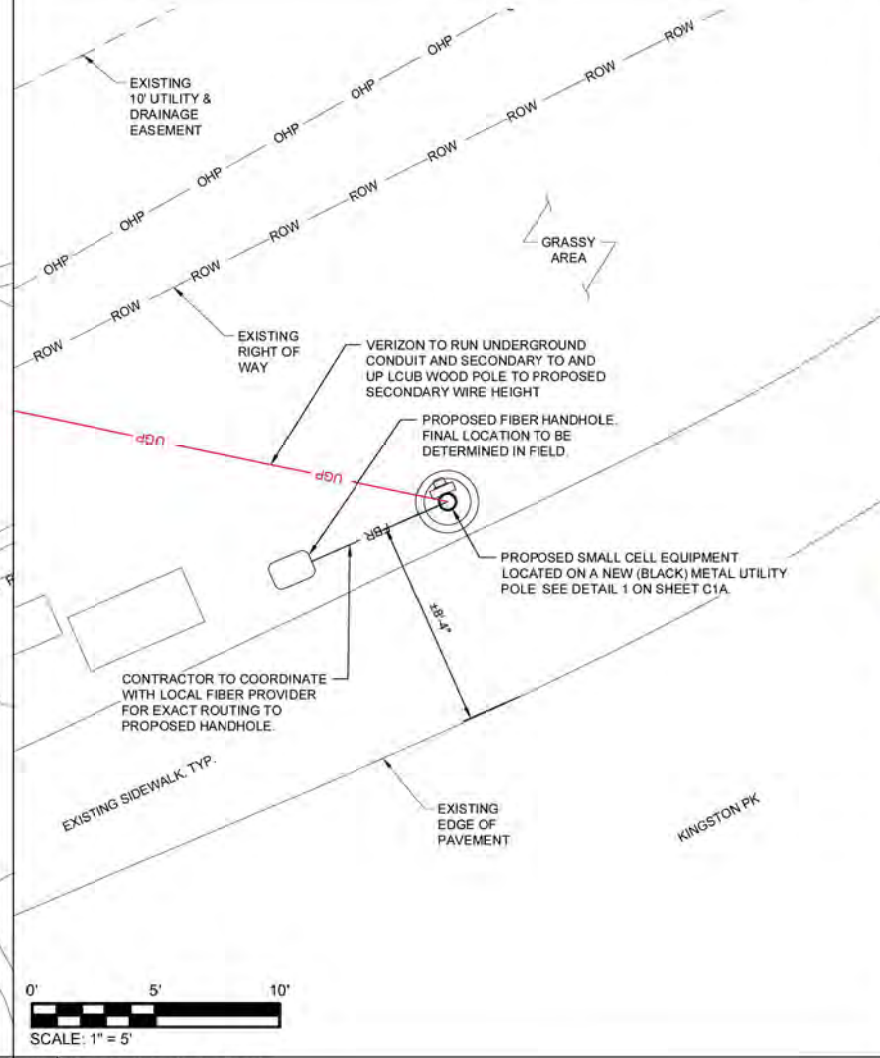
1. THIS DRAWING IS BASED ON AERIAL IMAGERY AND FIELD OBSERVATIONS. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
2. THE PROPOSED USE DOES NOT REQUIRE FULL OR PART TIME EMPLOYEES AT THE SITE.
3. FOR GENERAL SITE WORK NOTES, SEE SHEET GN1.
4. ALL NORTH ARROWS ON SITE PLANS ARE TRUE NORTH, UNLESS OTHERWISE SPECIFIED.
5. OPEN CUT CONSTRUCTION THROUGH EXISTING PAVEMENT, I.E. ROADWAYS, PARKING AREAS, SIDEWALKS WILL NOT BE ALLOWED. CONSTRUCTION UNDER EXISTING PAVEMENTS WILL BE REQUIRED TO BE INSTALLED WITH DIRECTIONAL BORING TECHNIQUE.
6. RIGHT OF WAY INFORMATION ACQUIRED FROM GIS.

LEGEND

UNDERGROUND POWER	UGP	GAS LINE	GAS	IRON PIN SET (IPF) 5/8" REBAR	IPF
OVERHEAD POWER	OHP	FENCE	X	IRON PIN FOUND (PF)	PF
OVERHEAD UTILITIES	OHU	SEWER LINE	SWR	CONCRETE MON. FOUND	CMF
UNDERGROUND TELCO	UGT	WATER LINE	WTR	CONCRETE MON. SET	CMS
OVERHEAD TELCO	OHT	COAX CABLE	C	TRAFFIC LIGHT POLE	TLP
HIGH VOLTAGE POWER	HVP	HYBRID CABLE	HYB	FIRE HYDRANT	FH
PROPERTY LINE	PL	FIBER	FBR	TELCO PEDESTAL	TP
RIGHT-OF-WAY	ROW			ELECTRICAL PULL BOX	EPB
				CATCH BASIN	CB
				BENCHMARK	BM
				UTILITY POLE	UP
				LIGHT POLE	LP
				WATER VALVE	WV
				MANHOLE	MH
				GAS VALVE	GV



1 OVERALL SITE PLAN



2 ENLARGED SITE PLAN

PREPARED FOR:

verizon

PREPARED BY:

TeleCAD Wireless
1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
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FAX: 423-843-9500

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CHECKED BY: SEH

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6	09/19/22	JAE	PRELIMINARY ISSUE

ENGINEER'S SEAL

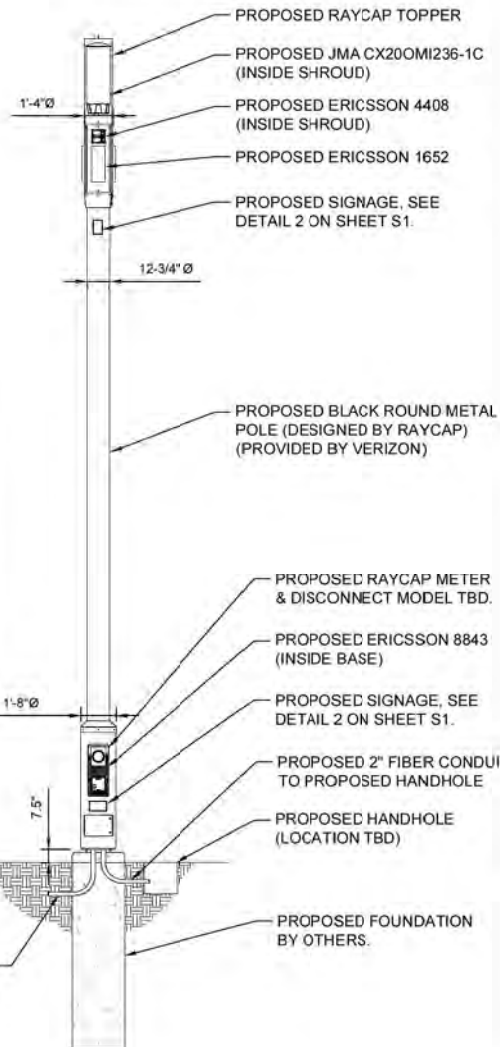


SITE NAME: SMC_FARRAGUT_4
ADDRESS: 11425 KINGSTON PIKE
KNOXVILLE, TN 37934
COUNTY: KNOX
LATITUDE: 35° 52' 49.800" N
LONGITUDE: -84° 9' 44.136" W
DESIGN TYPE: SMALL CELL

SHEET TITLE: SITE PLAN

DRAWING NO: B2
REVISION: 4

- 39'-9.5" ± A.G.L.
T/APPURTENANCE
- 37'-11.5" ± A.G.L.
ANTENNA CENTERLINE
- 35'-1.5" ± A.G.L.
RADIO ELEVATION
- 33'-8.5" ± A.G.L.
ANTENNA CENTERLINE
- 32'-4.5" ± A.G.L.
T/POLE



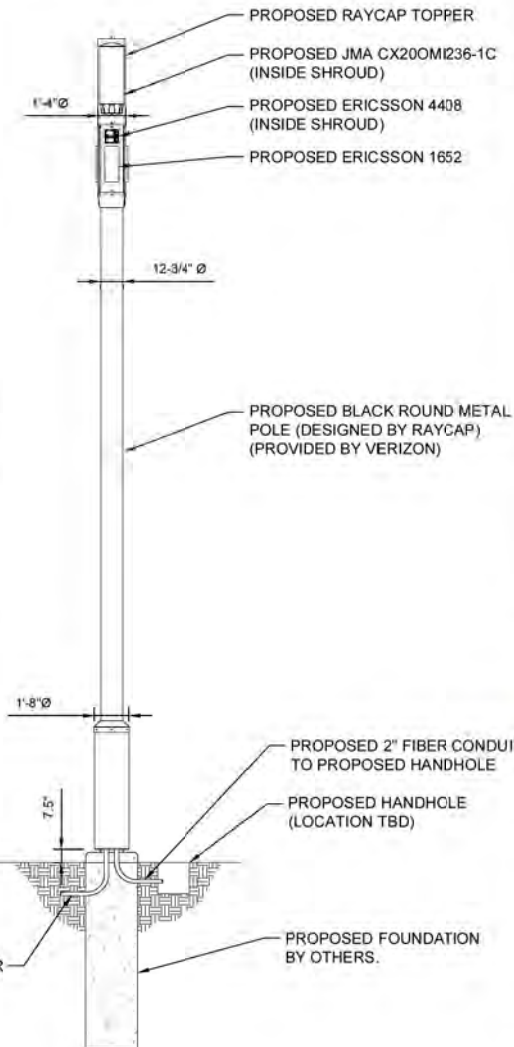
- POLE NOTES:**
1. THE DRAWING IS ONLY A GRAPHIC REPRESENTATION OF THE STRUCTURE.
 2. CONTRACTOR TO VERIFY MOUNT COMPATIBILITY WITH POLE AND ANTENNA PRIOR TO ORDERING.
 3. CONTRACTOR TO PROVIDE LOCKOUT METER TAG ON DISCONNECT RATHER THAN A STANDARD KEY LOCK OR COMBINATION LOCK.
 4. EXISTING ATTACHMENTS TO BE TRANSFERRED BY OTHERS.

- 5'-1.5" ± A.G.L.
METER BASE
- 0'-0" (REFERENCE)
GRADE

0' 6' 12'
SCALE: 1" = 6'

1 POLE ELEVATION (FACING TRAFFIC FLOW)

- 39'-9.5" ± A.G.L.
T/APPURTENANCE
- 37'-11.5" ± A.G.L.
ANTENNA CENTERLINE
- 35'-1.5" ± A.G.L.
RADIO ELEVATION
- 33'-8.5" ± A.G.L.
ANTENNA CENTERLINE
- 32'-4.5" ± A.G.L.
T/POLE



- POLE NOTES:**
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 3. CONTRACTOR TO PROVIDE LOCKOUT METER TAG ON DISCONNECT RATHER THAN A STANDARD KEY LOCK OR COMBINATION LOCK.
 4. EXISTING ATTACHMENTS TO BE TRANSFERRED BY OTHERS.

- 0'-0" (REFERENCE)
GRADE

0' 6' 12'
SCALE: 1" = 6'

2 POLE ELEVATION (FROM STREET)

PREPARED FOR:

verizon

PREPARED BY:

TeleCAD Wireless
1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
PH: 423-843-9500
FAX: 423-843-9500

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5	09/23/22	JAE	PRELIMINARY ISSUE



SITE NAME:
SMC_FARRAGUT_4
ADDRESS:
11425 KINGSTON PIKE
KNOXVILLE, TN 37934
COUNTY:
KNOX
LATITUDE:
35° 52' 49.800" N
LONGITUDE:
-84° 9' 44.136" W
DESIGN TYPE:
SMALL CELL

SHEET TITLE:
POLE ELEVATION

DRAWING NO.:
C1
REVISION:
4



1 CURRENT VIEW (FROM SOUTHEAST LOOKING NORTHWEST)



2 PROPOSED VIEW (FROM SOUTHEAST LOOKING NORTHWEST)

PREPARED FOR:

verizon

PREPARED BY:

TeleCAD
Wireless
1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
PH: 423-843-9500
FAX: 423-843-9503

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5	10/26/22	JAE	CONSTRUCTION ISSUE
6	09/03/22	JAE	CONSTRUCTION ISSUE
7	09/03/22	JAE	PRELIMINARY ISSUE
8	09/19/22	JAE	PRELIMINARY ISSUE



SITE NAME:
SMC_FARRAGUT_4
ADDRESS:
11425 KINGSTON PIKE
KNOXVILLE, TN 37934
COUNTY:
KNOX
LATITUDE:
35° 52' 49.800" N
LONGITUDE:
-84° 9' 44.136" W
DESIGN TYPE:
SMALL CELL

SHEET TITLE:
PHOTO SIMS

DRAWING NO. C4
REVISION: 4

NTS



1 CURRENT VIEW (FROM EAST LOOKING WEST)

NTS



2 PROPOSED VIEW (FROM EAST LOOKING WEST)

NTS

PREPARED FOR:

verizon

PREPARED BY:

TeleCAD
Wireless
1961 NORTHPOINT BLVD, SUITE 130
HIXSON, TN 37343
PH: 423-843-9500
FAX: 423-843-9503

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0	09/23/22	JAE	CONSTRUCTION ISSUE
A	09/19/22	JAE	PRELIMINARY ISSUE



SITE NAME:
SMC_FARRAGUT_4

ADDRESS:
**11425 KINGSTON PIKE
KNOXVILLE, TN 37934**

COUNTY:
KNOX

LATITUDE:
35° 52' 49.800" N

LONGITUDE:
-84° 9' 44.136" W

DESIGN TYPE:
SMALL CELL

SHEET TITLE:
PHOTO SIMS

DRAWING NO. C4A	REVISION: 4
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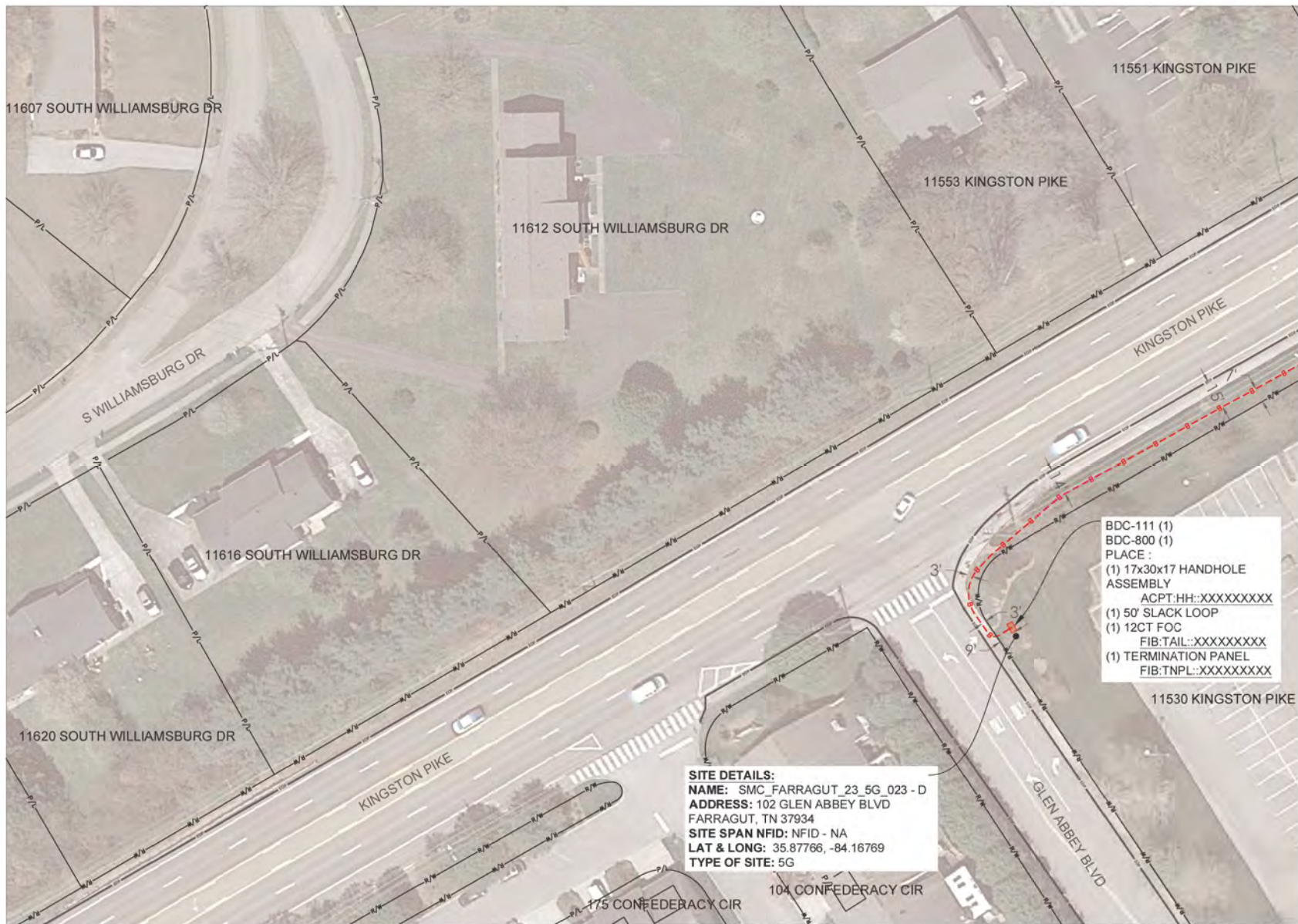
REPORT TO THE FARRAGUT MUNICIPAL PLANNING COMMISSION

PREPARED BY: Mark Shipley, Community Development Director

SUBJECT: Discussion and public hearing on the installation of underground fiber optic cable to service new small cell poles in the rights of ways adjacent to 102 Glen Abbey Boulevard, 126 West End Avenue, 100 Smith Road, 11403 Municipal Center Drive, 11509 Parkside Drive, 101 West End Avenue, 100 Brooklawn Street, and 11425 Kingston Pike (Fiberlink, Applicant)

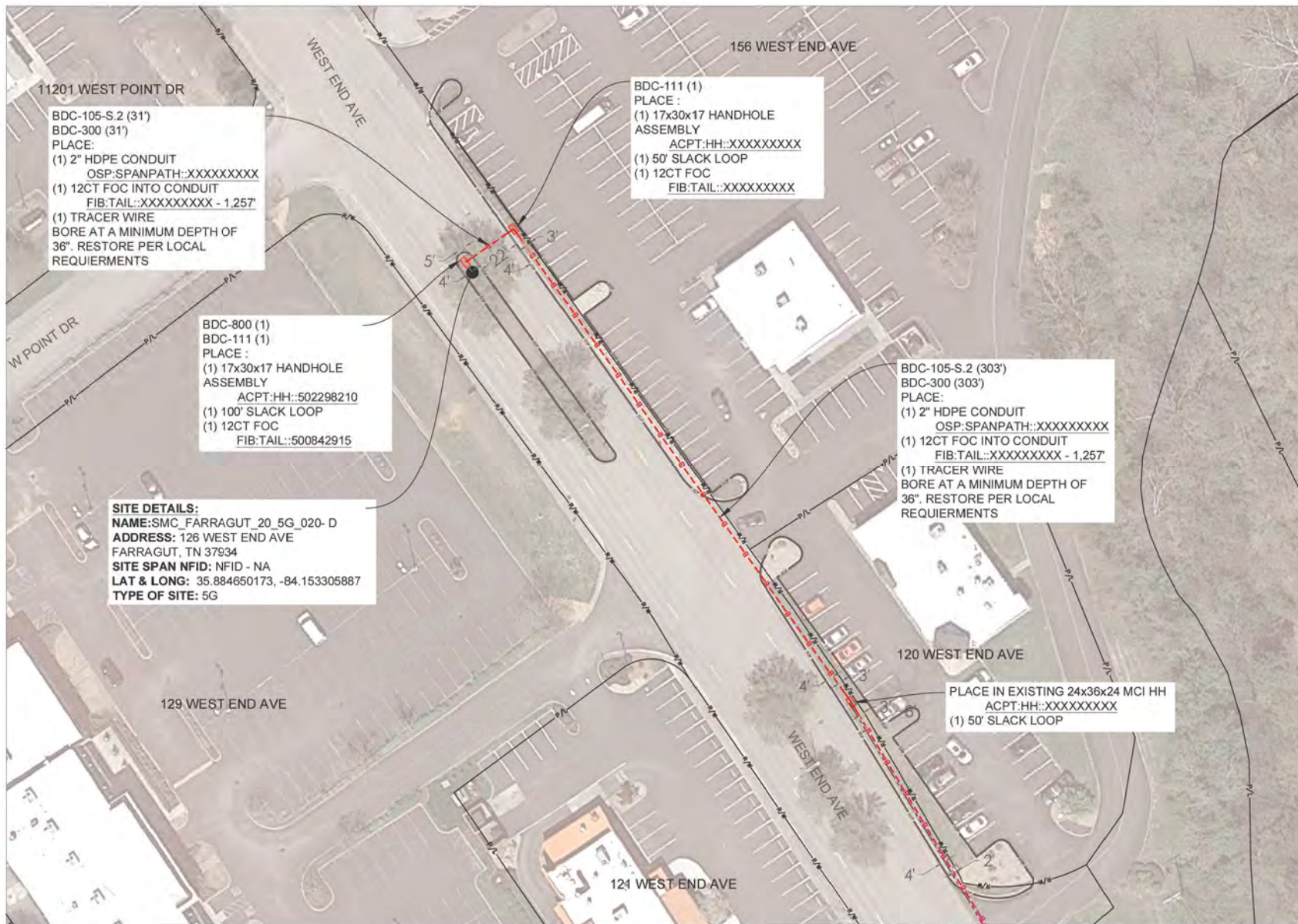
INTRODUCTION AND BACKGROUND: This item is related to the previous item and involves underground fiber optic cable installation to service the proposed small cell poles. All work will involve directional boring and will be coordinated with the Town's engineering department under a right of way permit. A letter of credit will be recommended for this work to ensure that any affected areas are restored to their previous condition.

Included in the packet are the location sheets for each installation. Staff will be recommending approval subject to coordination with the Town's engineering department through the right of way permit process and a letter of credit being provided as mentioned above.



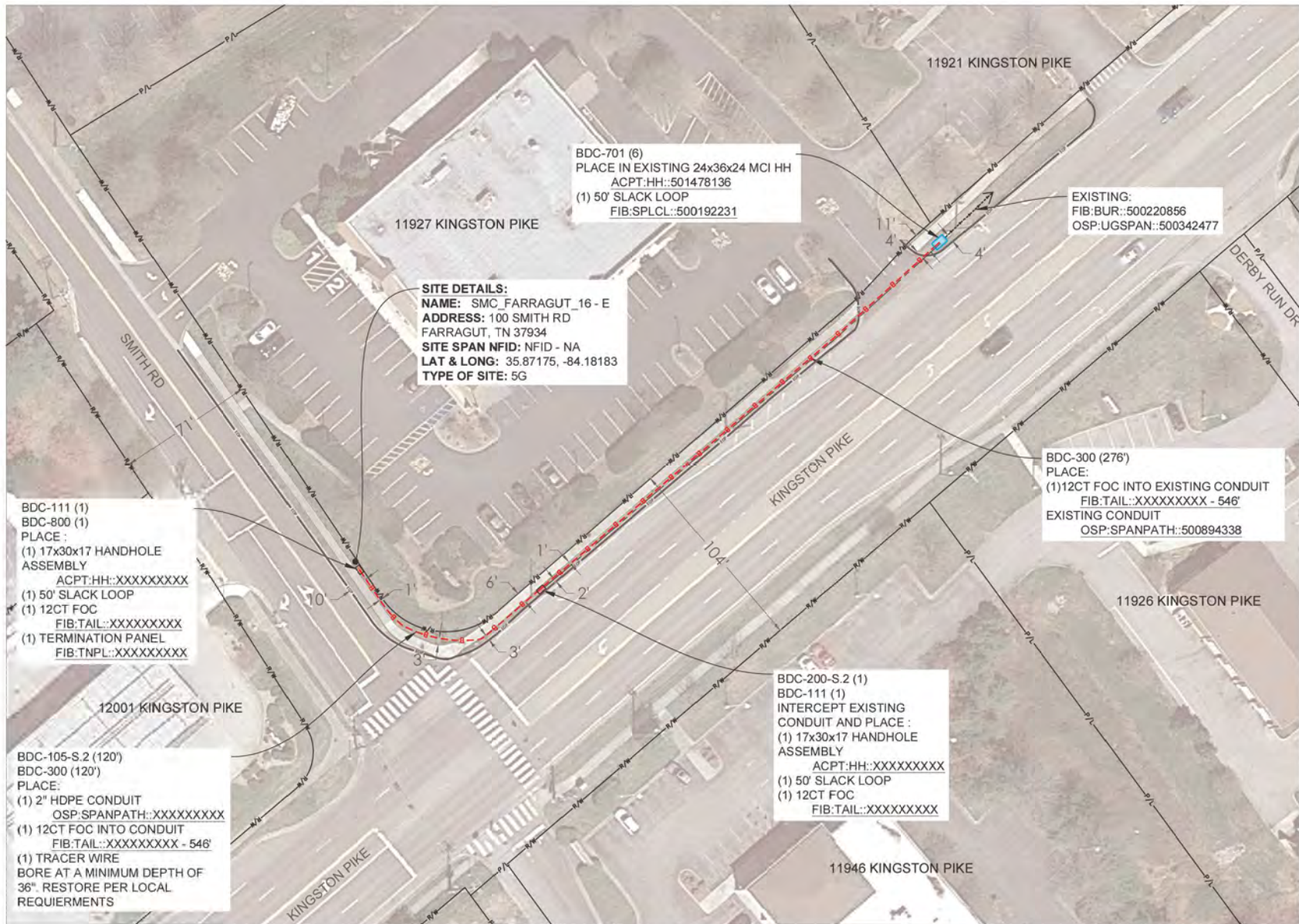
MATCH TO PS-1

REV	DESCRIPTION	BY	DATE
SHEET			
 MCI McImetro ACCESS TRANSMISSION SERVICE, LLC Julie Anglin janglin@mciaccess.com (615) 238-4863			
 MasTec Utility Services		CONTRACTOR CONTACT Lorry Cook lorry.cook@masotec.com 804 674-7355	
 FiberLink		ENGINEERING CONTACT Justin Gray justin@fiber-link.net 615-952-4402	
SID NFID - NA			
ADDRESS 102 GLEN ABBEY BLVD FARRAGUT, TN 37934			
SCALE 1" = 50'	DATE 10/06/2022	DESIGN JF	CHECKED JJD
DWG 2209CKYI	SHEET NO. PS-2	REVISION	



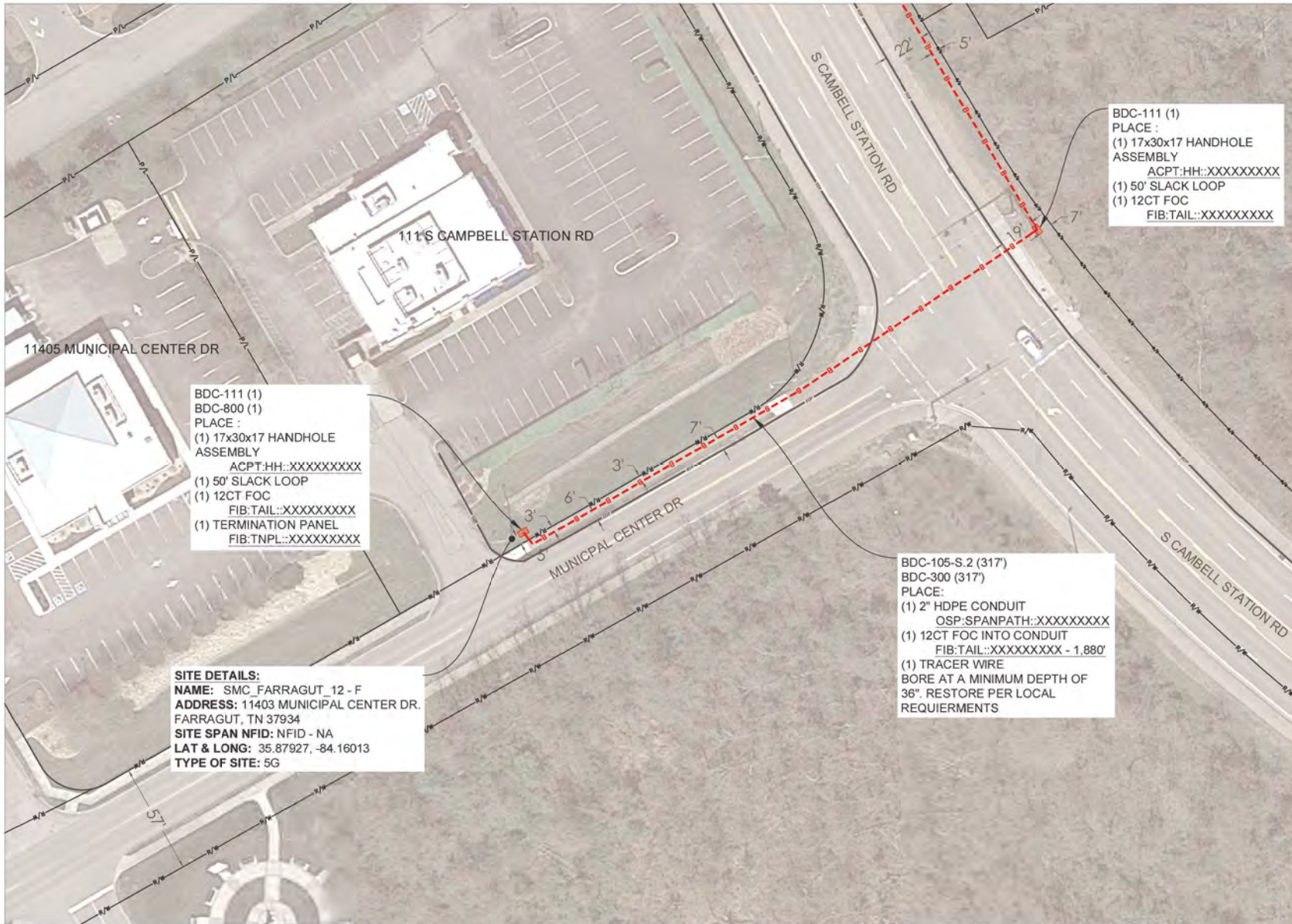
MATCH TO PS-1

REV	DESCRIPTION	BY	DATE
SHEET			
 MCI McInfo ACCESS TRANSMISSION SERVICE, LLC Justin Engle justin.engle@mciaccess.com (615) 284-4403			
 MasTec Utility Services		CONTRACTOR CONTACT Larry Cook larry.cook@masotec.com 804 474-7305	
 FiberLink		ENGINEERING CONTACT Justin Gray justin@fiber-link.net 615-952-4402	
SFD NFID - NA			
ADDRESS 126 WEST END AVE FARRAGUT, TN 37934			
SCALE	DATE	DRAWN	CHECKED
1" = 50'	10/04/2022	JF	JJD
DATE	SHEET NO.	REVISION	
2210ADJX	PS-2		

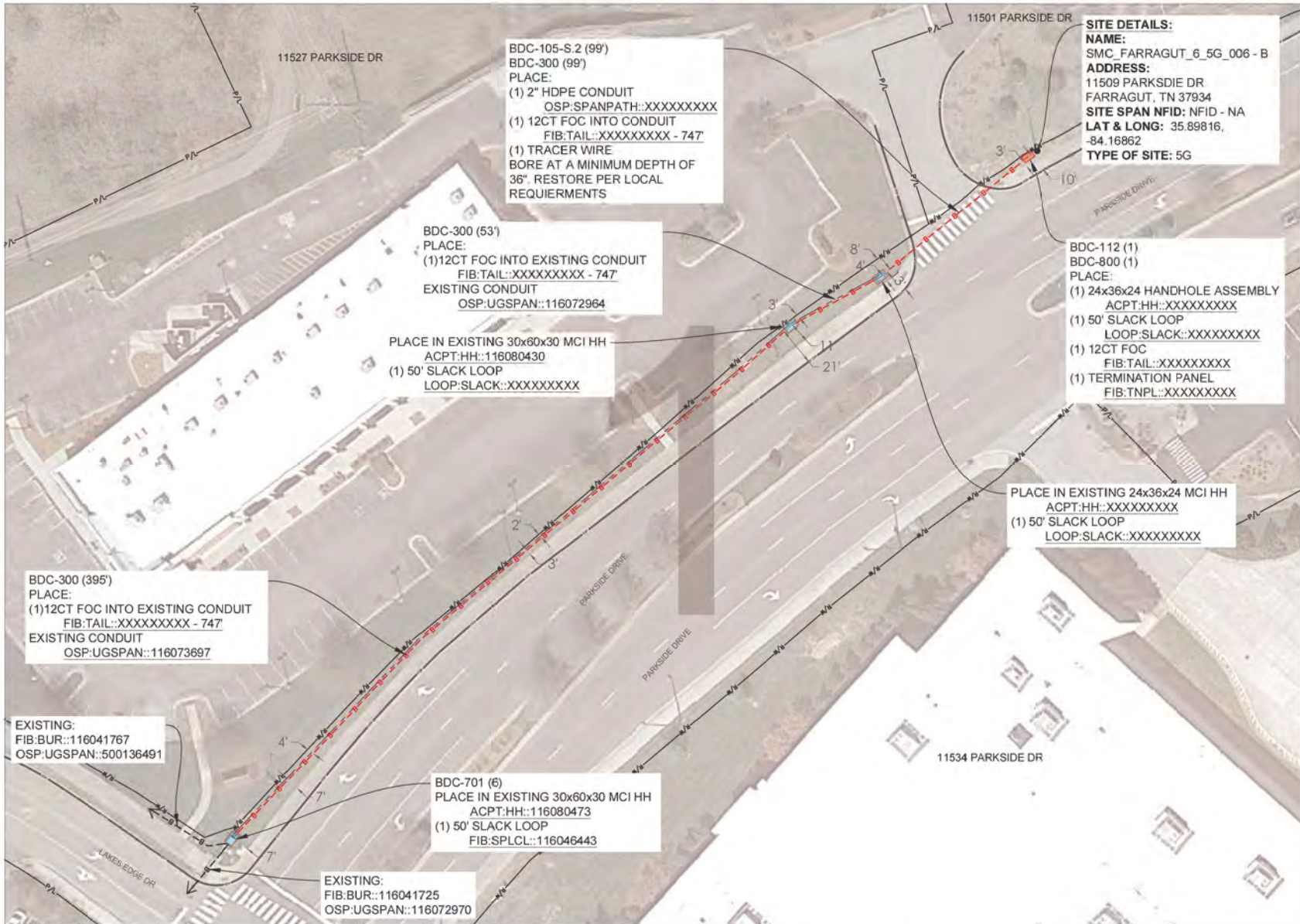


REV	DESCRIPTION	BY	DATE
CONTRACTOR CONTACT Loryn Cook loryn.cook@mas-tec.com 804.674.7355			
ENGINEERING CONTACT Justin Gray jgray@fiber-link.net 615.952.4432			
SID NFID - NA			
ADDRESS 100 SMITH RD FARRAGUT, TN 37934			
SCALE 1" = 50'	DATE 10/06/2022	DESIGNED JFG	CHECKED JFG
DWG 2209CLB1	SHEET NO. PS-1	REGION 	

MATCH TO PS-2

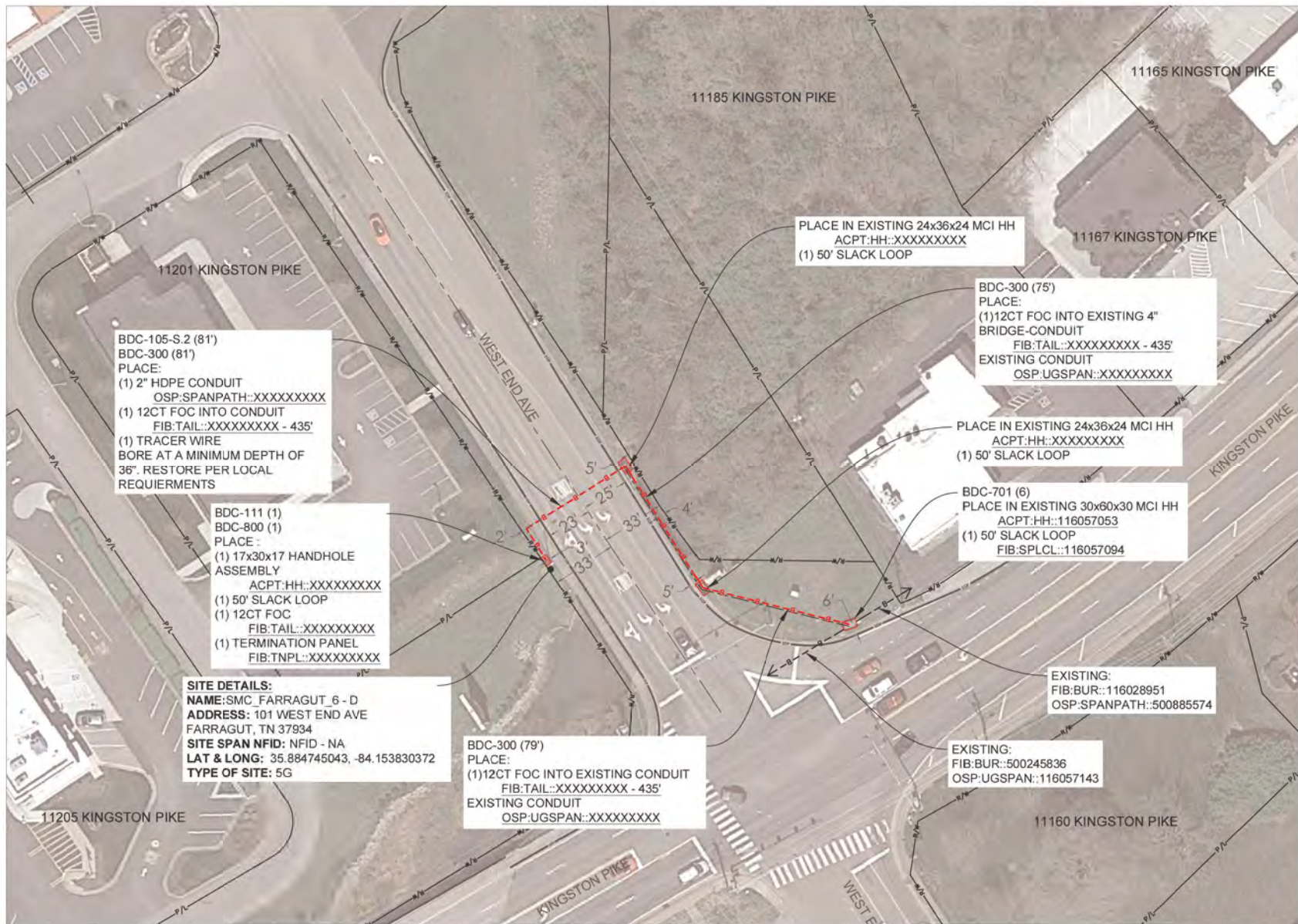


REV	DESCRIPTION	BY	DATE
001	ISSUED		
 MCI McImetro ACCESS TRANSMISSION SERVICE, LLC Justin Ogilvie jogilvie@mciaccess.com (615) 288-4863			
 MasTec Utility Services		CONTRACTOR CONTACT Loryn Cook lcook@masotec.com 804 674-7355	
 FiberLink		ENGINEERING CONTACT Justin Gray jgray@fiber-link.net 615-952-4402	
SID NFID - NA			
ADDRESS 11403 MUNICIPAL CENTER DR. FARRAGUT, TN 37934			
SCALE 1" = 50'	DATE 10/06/2022	DRAWN JF	CHECKED JJD
DATE 2209CJOT	SHEET NO. PS-3	REVISION	



SITE DETAILS:
NAME:
SMC_FARRAGUT_6_5G_006 - B
ADDRESS:
11509 PARKSIDE DR
FARRAGUT, TN 37934
SITE SPAN NFID: NFID - NA
LAT & LONG: 35.89816,
-84.16862
TYPE OF SITE: 5G

REV	DESCRIPTION	BY	DATE
SHEET			
		CONTRACTOR CONTACT Larry Cook larry.cook@mastec.com 804.674.7355	
		ENGINEERING CONTACT Justin Gray justin@fiber-link.net 615.952.4432	
SID 1710AISU.138 ADDRESS 11509 PARKSIDE DR FARRAGUT, TN 37934			
SCALE 1" = 50'	DATE 10/06/2022	DESIGN JF	CHECK JGD
DATE NA	SHEET NO. PS-1	REVISION	



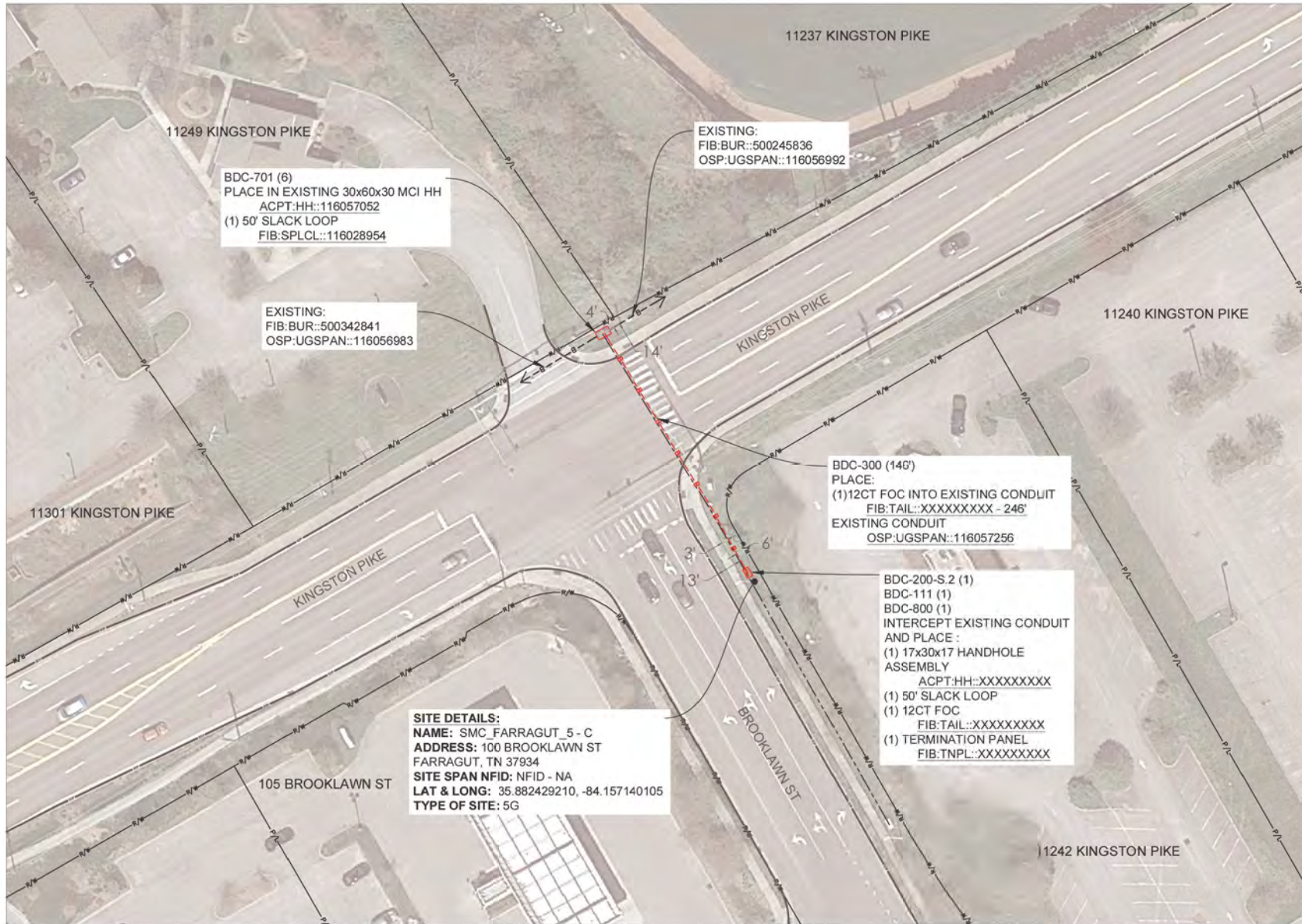
REV	DESCRIPTION	BY	DATE
001	ISSUED		

MCI
McIntelro
ACCESS TRANSMISSION SERVICE, LLC
Jesse England
jessie@mcintelro.com
(615) 288-4863

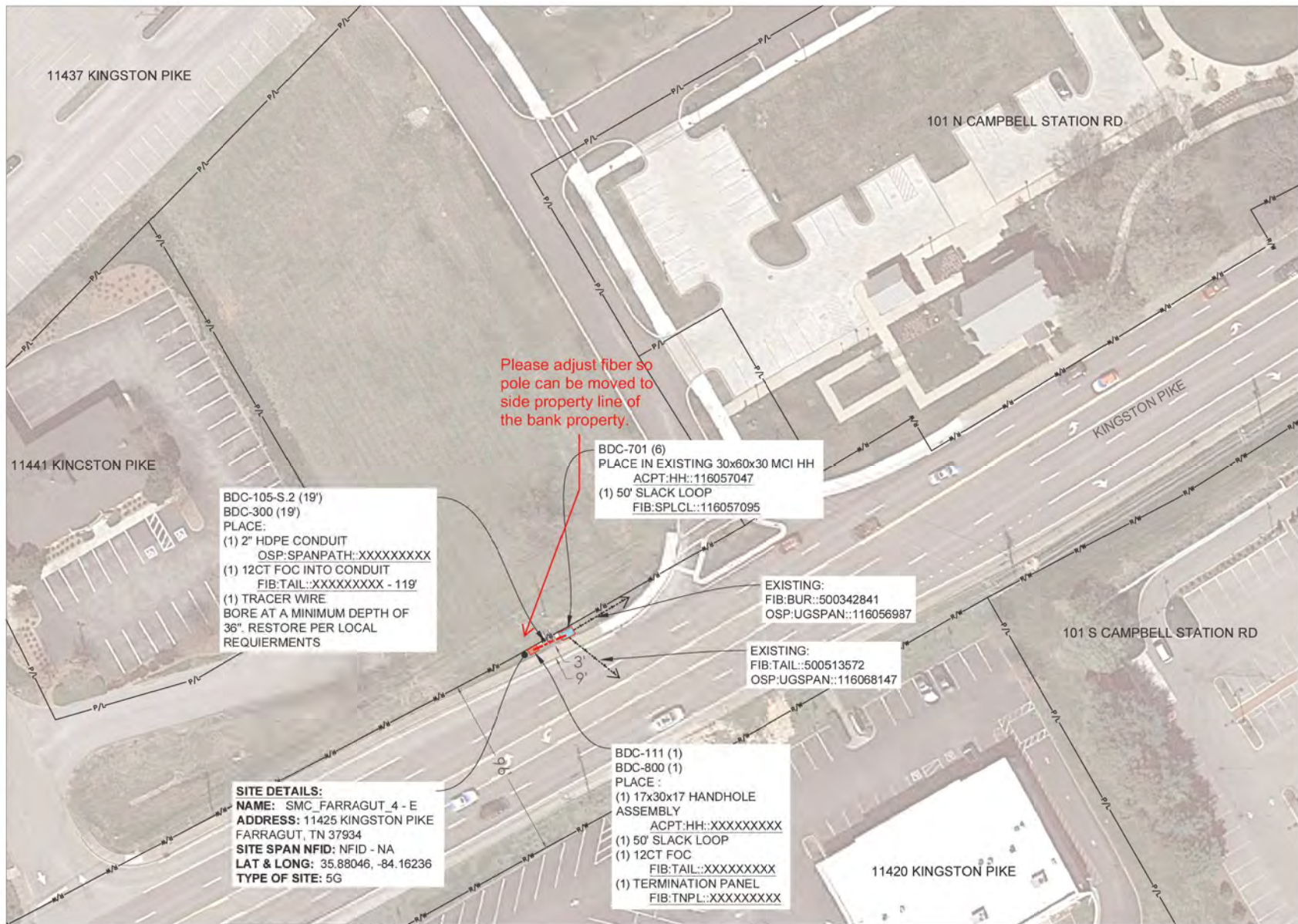
MasTec
CONTRACTOR CONTACT
Lenny Cook
lenny.cook@mas-tec.com
804 674-7355

FiberLink
ENGINEERING CONTACT
Justin Gray
justin@fiber-link.net
615-952-4402

NFID - NA			
ADDRESS: 101 WEST END AVE FARRAGUT, TN 37934			
SCALE: 1" = 50'	DATE: 10/05/2022	DRAWN: JF	CHECKED: JJD
DWG: 2209CKWA	SHEET NO: PS-1	REVISION:	



REV	DESCRIPTION	BY	DATE
SHEET			
 MCI ACCESS TRANSMISSION SERVICE, LLC Jesse Anglin jessie.anglin@mcitransmission.com (615) 288-4863			
 MasTec Utility Services		CONTRACTOR CONTACT Loryn Cook loryn.cook@mastec.com 804 674-7355	
 FiberLink		ENGINEERING CONTACT Justin Gray justin.gray@fiberlink.net 615-952-4402	
SID NFID - NA			
ADDRESS 100 BROOKLAWN ST FARRAGUT, TN 37934			
SCALE 1" = 50' DATE 10/05/2022 CHKD 2209CKJX	DATE 10/05/2022 BY JF SHEET NO. PS-1	DESIGN JG REVISION	



REV	DESCRIPTION	BY	DATE
001	ISSUED		



MasTec Utility Services	CONTRACTOR CONTACT Loryn Cook lcook@mas-tec.com 804 674-7355
-----------------------------------	---

FiberLink	ENGINEERING CONTACT John Day jday@fiber-link.net 615-952-4402
------------------	--

SID NFID - NA
ADDRESS 11425 KINGSTON PIKE
FARRAGUT, TN 37934

SCALE 1" = 50'	DATE 10/06/2022	DESIGN JF	CHECKED JD
DWG 2209CKBO	SHEET NO. PS-1	REVISION	

REPORT TO THE FARRAGUT MUNICIPAL PLANNING COMMISSION

PREPARED BY: Mark Shipley, Community Development Director

SUBJECT: Discussion and public hearing on a site plan for the Farragut Town Center at Biddle Farms Townhouses, Parcel 3.24, Tax Map 143, 47 Units, Zoned PCD (Budd Cullom, Applicant)

INTRODUCTION AND BACKGROUND: This item involves a request for approval for a site plan (preliminary plat) for the townhouse portion of the Farragut Town Center at Biddle Farms project. At the Planning Commission meeting on July 21, 2022, approval was recommended to the Board of Mayor and Aldermen for a concept plan that included 47 townhouse units and associated infrastructure in a portion of the Biddle Farms development that was shown as “future development” on the original concept plan that was associated with the rezoning to Planned Commercial Development (PCD). The addition of the townhomes to the PCD project was considered a major change to the PCD and as required, was subsequently approved by the Board of Mayor and Aldermen.

DISCUSSION: Since that time the applicant’s engineers and architects have been working on the more detailed site plan (preliminary plat) documents for the grading, utility, and other infrastructure needed for this aspect of the PCD. Included in the packet are revised site plan sheets and building elevations for each building type envisioned. The buildings will be mostly brick with a mixture of two- and three-story units with some terraces. The applicant has included in the revision two different lighting styles for your consideration. One is a black gooseneck fixture and the other a decorative copper lantern style fixture. Since the townhomes are single-family residential, they are exempt from the Outdoor Site Lighting provisions if the fixtures do not create a nuisance or traffic hazard due to uncontrolled glare.

At the staff developer meeting on November 1, some of the initial staff comments were reviewed with the applicant. One comment that was noted included the requirement for local streets to have a six-foot minimum grass strip to provide for the opportunity for street trees and create a greater buffer between the pedestrian and motorist. The applicant has indicated on resubmittal that they would like to request a variance from this requirement. The applicant will review this with the Commission and discuss their rationale for approval. This will be included later when the staff recommendations are provided in response to whether the revised plans address initial staff comments. The variance from the grass strip width will need to be acted on separate from the site plan (preliminary plat).

RECOMMENDATION: Initial staff comments and applicant responses are included in the packet along with the revised plans. Staff will provide recommendations based on a review of the revisions.

Biddle Farms Townhouses Site Plan Staff Comments on Initial Site Plan.pdf Markup Summary

Callout (11)



Subject: Callout
Page Label: 5
Author: mshipley
Date: 10/20/2022 5:37:04 PM
Status:
Color: ■
Layer:
Space:

Aquatic buffer around wetlands will require wire backed silt fence.

This is to be installed as a part of the original development plans



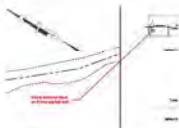
Subject: Callout
Page Label: 2
Author: Lori Saal
Date: 10/26/2022 10:57:09 AM
Status:
Color: ■
Layer:
Space:

Remove the term "perimeter" when referencing sediment control BMPs since not all BMPs on the EPSC plans will be installed along the site perimeter



Subject: Callout
Page Label: 2
Author: Lori Saal
Date: 10/26/2022 10:59:00 AM
Status:
Color: ■
Layer:
Space:

Request pre-construction meeting with town staff to obtain grading permit prior to beginning work in stage II.



Subject: Callout
Page Label: 7
Author: mshipley
Date: 10/26/2022 8:23:57 AM
Status:
Color: ■
Layer:
Space:

Some sections have an 8 foot asphalt trail.

8' trail is to part of the original development plans.
Only 5' sidewalks within townhouse development



Subject: Callout
Page Label: 5
Author: bhose
Date: 10/26/2022 8:38:26 AM
Status:
Color: ■
Layer:
Space:

Any work must also be in conformance with the approved CLOMR



Subject: Callout
Page Label: 17
Author: bhose
Date: 10/26/2022 8:51:34 AM
Status:
Color: ■
Layer:
Space:

Please provide more detail on the Roof Top Terraces including look with any required railings, etc.

Detail added to architectural plans



Subject: Callout
Page Label: 6
Author: mshipley
Date: 10/26/2022 9:04:12 AM
Status:
Color: ■
Layer:
Space:

Due to space considerations street trees would make more sense here and should be included with a streetscaping plan sheet.

We will add street trees as suggested



Subject: Callout
Page Label: 6
Author: mshipley
Date: 10/26/2022 9:05:57 AM
Status:
Color: ■
Layer:
Space:

Due to space considerations street trees would make more sense here and should be included with a streetscaping plan sheet.

We will add street trees as suggested



Subject: Callout
Page Label: 6
Author: bhose
Date: 10/26/2022 9:08:31 AM
Status:
Color: ■
Layer:
Space:

A minimum 6' grass strip is required along all local streets. This also applies to the internal public road section.



Subject: Callout
Page Label: 6
Author: mshipley
Date: 10/26/2022 9:08:53 AM
Status:
Color: ■
Layer:
Space:

6 foot grass strip with street trees along this public street section.

**We have shown grass strip as 3.5' on original design plans.
We will request a variance.**

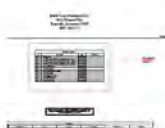


Subject: Callout
Page Label: 5
Author: bhose
Date: 10/26/2022 9:53:23 AM
Status:
Color: ■
Layer:
Space:

**Property line beside pond has been removed.
We will provide easements on all facilities as required.**

Facilities and grading are crossing proposed property lines. All necessary easements and legal documentation needs to be clearly shown and provided. The overall PCD includes the creation of internal parcels and property lines and cross lot activity, facilities, and maintenance/access needs to be clearly identified and spelled out.

Cloud+ (6)



Subject: Cloud+
Page Label: 1
Author: mshipley
Date: 10/20/2022 5:24:36 PM
Status:
Color: ■
Layer:
Space:

Please ensure that all sheets are listed and numbered on the cover sheet.



Subject: Cloud+
Page Label: 7
Author: mshipley
Date: 10/26/2022 8:33:34 AM
Status:
Color: ■
Layer:
Space:

Local streets are required a 6 foot grass strip for street tree space. The width needs to be coordinated with streetscaping so that appropriate widths are provided where street trees make sense to install.

We have shown grass strip as 3.5' on original design plans.
We will request a variance.



Subject: Cloud+
Page Label: 6
Author: mshipley
Date: 10/26/2022 8:35:28 AM
Status:
Color: ■
Layer:
Space:

Is this just a concrete transition area between sidewalk and trail? Please show truncated dome placements throughout where required.

Ramps and bottom landings will be concrete. We will indicate truncated domes



Subject: Cloud+
Page Label: 6
Author: mshipley
Date: 10/26/2022 8:46:44 AM
Status:
Color: ■
Layer:
Space:

This is close to the unit.



Subject: Cloud+
Page Label: 7
Author: mshipley
Date: 10/26/2022 9:00:08 AM
Status:
Color: ■
Layer:
Space:

A plan sheet may be helpful that clearly delineates what will be public vs. private in terms of maintenance and liability. Such an exhibit could also be included with the covenants and those must be reviewed by the Town Attorney.



Subject: Cloud+
Page Label: 6
Author: mshipley
Date: 10/26/2022 9:10:49 AM
Status:
Color: ■
Layer:
Space:

Need to discuss grass strip, ped facility width and streetscaping.

We have shown grass strip as 3.5' on original design plans.
We will request a variance.

Highlight (5)



Subject: Highlight
Page Label: 6
Author: mshipley
Date: 10/26/2022 9:02:22 AM
Status:
Color: ■
Layer:
Space:



Subject: Highlight
Page Label: 6
Author: mshipley
Date: 10/26/2022 9:03:36 AM
Status:
Color: 
Layer:
Space:



Subject: Highlight
Page Label: 6
Author: mshipley
Date: 10/26/2022 9:03:44 AM
Status:
Color: 
Layer:
Space:



Subject: Highlight
Page Label: 6
Author: mshipley
Date: 10/26/2022 9:06:35 AM
Status:
Color: 
Layer:
Space:



Subject: Highlight
Page Label: 6
Author: mshipley
Date: 10/26/2022 9:09:02 AM
Status:
Color: 
Layer:
Space:

Text Box (10)



Subject: Text Box
Page Label: 1
Author: Dsmith
Date: 10/20/2022 4:51:56 PM
Status:
Color: 
Layer:
Space:

Please submit Drainage Fee of \$1880.



Subject: Text Box
Page Label: 1
Author: Dsmith
Date: 10/20/2022 4:53:00 PM
Status:
Color: 
Layer:
Space:

Has TDEC permit been amended to include these improvements?

This is within the original limits of disturbance. Any new land disturbing contractors will need to sign onto the NOI.

Original Erosion Control Letter of Credit included into portion of the development, as it was based upon total disturbed area.

Subject: Text Box
Page Label: 1
Author: Dsmith
Date: 10/20/2022 4:54:07 PM
Status:
Color: ■
Layer:
Space:

Original Erosion Control Letter of Credit included this portion of the development, as it was based upon total disturbed area.

Please ensure that the bulb is not visible so as not to create uncontrolled glare.

Subject: Text Box
Page Label: 25
Author: mshipley
Date: 10/20/2022 5:32:06 PM
Status:
Color: ■
Layer:
Space:

Please ensure that the bulb is not visible so as not to create uncontrolled glare.

Please label where different materials are proposed on the buildings.

RENDERING: 10/20/2022 5:35:13 PM

Subject: Text Box
Page Label: 17
Author: mshipley
Date: 10/20/2022 5:35:13 PM
Status:
Color: ■
Layer:
Space:

Please label where different materials are proposed on the buildings.

Please incorporate street trees into the design, similar to the attached units at Northshore Town Center.

RENDERING: 10/25/2022 5:02:27 PM

Subject: Text Box
Page Label: 6
Author: mshipley
Date: 10/25/2022 5:02:27 PM
Status:
Color: ■
Layer:
Space:

Please incorporate street trees into the design, similar to the attached units at Northshore Town Center.

Streetscaping plan has been added

The covenants and plat will need to be clear about the improvements that are to be maintained by the Town vs. an HOA.

RENDERING: 10/25/2022 5:04:17 PM

Subject: Text Box
Page Label: 6
Author: mshipley
Date: 10/25/2022 5:04:17 PM
Status:
Color: ■
Layer:
Space:

The covenants and plat will need to be clear about the improvements that are to be maintained by the Town vs. an HOA.

Please provide a detail for bollards and ensure they are at least 4 feet apart with yellow reflective tape at tops.

RENDERING: 10/26/2022 8:30:13 AM

Subject: Text Box
Page Label: 10
Author: mshipley
Date: 10/26/2022 8:30:13 AM
Status:
Color: ■
Layer:
Space:

Please provide a detail for bollards and ensure they are at least 4 feet apart with yellow reflective tape at tops.

No bollards as part of the townhouse project

Glossary

FUD will need to sign off on water and sewer plan sheets.

6	7	8	9	10
---	---	---	---	----

Please include BFE and MFE and note that Elevation Certificates will be required for any units/lots within a flood hazard area.

Shown on sheet C3.0

Site Development Plans for Farragut Town Center at Biddle Farms - Townhouses

Biddle Farms Residential LLC
6312 Kingston Pike
Knoxville, Tennessee 37919
(865) 588-5171

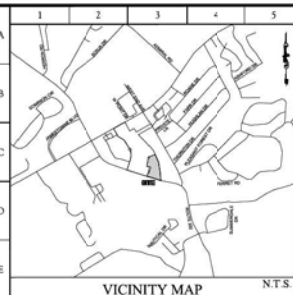


Cover Sheet
Farragut Town Center at Biddle Farms - Townhouses
Biddle Farms Blvd
Farragut, Tennessee 37934
Biddle Farms Residential LLC

NO.	DATE	COMMENTS
1	11/07/2022	Revised per Town Comments

ORIGINAL ISSUE: 11/07/2022
SITE PROJECT #: 1994
FILE: Cover
SHEET: 1 OF 33

C0.0



Biddle Farms Blvd

Farragut, Tennessee 37934

SHEET INDEX			
#	Sheet Title	Date	Revision #
C0.0	Cover Sheet	11/07/2022	
C2.0	Site Stormwater Pollution Prevention Plan - Notes	11/07/2022	
C2.1	Site Stormwater Pollution Prevention Plan - Stage IV	11/07/2022	
C3.0	Site Grading Plan	11/07/2022	
C4.0	Site Layout Plan	11/07/2022	
C4.1	Proposed Public Access Plan	11/07/2022	
C4.2	Streetscape Plan	11/07/2022	
C5.0	Site Utility Plan	11/07/2022	
C8.0	Site Drainage Details	11/07/2022	
C8.1	Site Details	11/07/2022	
C8.2	Site Utility Details	11/07/2022	
12/3	Fire Lane Diagram	11/07/2022	
13/3	Community Fire Pit and Grilling Pavilion	11/07/2022	
14/3	Color Schemes	11/07/2022	
15/3	Color Schemes	11/07/2022	
16/3	Color Schemes	11/07/2022	
17/3	Color Schemes	11/07/2022	
18/3	Color Schemes	11/07/2022	
19/3	Lighting Detail	11/07/2022	
20/3	Lighting Detail	11/07/2022	
21/3	Front Elevation - Bldg 1 & 3	11/07/2022	
22/3	Side Elevation - Bldg 1, 3 & 8	11/07/2022	
23/3	Rear Elevation - Building 1 & 3	11/07/2022	
24/3	Front Elevation - Building 2	11/07/2022	
25/3	Side Elevation Building 2, 4, 5, 6 & 7	11/07/2022	
26/3	Front Elevation Building 4 & 7	11/07/2022	
27/3	Front Elevation Building 5 & 6	11/07/2022	
28/3	Front Elevation Building 8	11/07/2022	
29/3	Front Elevation Building 9	11/07/2022	
30/3	Townhouse Floor Plan 1	11/07/2022	
31/3	Townhouse Floor Plan 2	11/07/2022	
32/3	Townhouse Floor Plan 3	11/07/2022	
33/3	Roof Top Terrace and Waste Disposal Details	11/07/2022	

All necessary inspections and/or certifications required by codes and/or utility service companies shall be performed prior to the final connection of services.

Contacts						
Water	Sanitary Sewer	Gas	Electric	Telephone	Transportation	Stormwater
Edwin Deyton First Utility District of Knox County 122 Durwood Rd Knoxville, Tennessee 37922 Phone: (865) 966-9741 Email: newdevelopment@fudknox.org	Edwin Deyton First Utility District of Knox County 122 Durwood Rd Knoxville, Tennessee 37922 Phone: (865) 966-9741 Email: newdevelopment@fudknox.org	New Service Department Knoxville Utility Board 445 S. Gay Street Knoxville, Tennessee 37902 Phone: (865) 524-2911	Jay Hines Lenoir City Utilities Board 136 N. Campbell Station Rd. Farragut, Tennessee 37934 Phone: (865) 986-6591 Fax: (865) 986-0605	Tom Nitz TDS Telecom 11505 Kingston Pike Farragut, Tennessee 37934 Phone: (865) 671-2100 Fax: (865) 671-4595	Duane Rainbolt TDOT Region 1 Traffic Office Transportation Mgmt. Center, 2nd Floor 7238 Region Lane Knoxville, TN 37914 Phone: (865) 594-2456	Contact: Darryl Smith Town of Farragut 11408 Municipal Town Center Dr. Farragut, Tennessee 37934 Phone: (865) 966-7057 Fax: (865) 966-2096





SWPPP UPDATES AND AMENDMENTS

THE GC MUST UPDATE THE SWPPP INCLUDING THE SITE MAPS, TO REFLECT THE PROGRESS OF CONSTRUCTION ACTIVITIES AND GENERAL CHANGES TO THE PROJECT SITE. UPDATES SHOULD BE MADE DAILY TO TRACK PROGRESS WHEN ANY OF THE FOLLOWING ACTIVITIES OCCUR: BMP INSTALLATION, MODIFICATION OR REMOVAL, CONSTRUCTION ACTIVITIES (E.G., PAVING, STORM SEWER INSTALLATION, UTILITY INSTALLATION, ETC.), CLEARING, GRUBBING OR GRADING, OR TEMPORARY OR PERMANENT STABILIZATION.

IMPORTANT:

THE GENERAL CONTRACTOR MUST SUBMIT A REQUEST FOR INFORMATION (RFI) TO THE DEC AND OBTAIN WRITTEN DEC APPROVAL BEFORE DOING ANY OF THE FOLLOWING:

1. MODIFYING EROSION OR SEDIMENT CONTROL BMPs (SUBSTITUTIONS ARE TYPICALLY ONLY APPROVED IF SPECIFIED MATERIALS ARE NOT AVAILABLE OR THERE IS A VALID REASON THE SPECIFIED BMP WILL NOT WORK).
2. ADDING/CHANGING EROSION OR SEDIMENT CONTROL BMPs.
3. MODIFYING THE SWPPP MAP LAYOUT/BOUNDARY OR
4. PERFORMING ANY ACTIONS OR IN ANY MANNER THAT IS CONTRARY TO THE SWPPP.

THE CONTRACTOR MAY MODIFY OR ADD ADDITIONAL BMPs, WITHOUT DEC APPROVAL, IN AN EMERGENCY SITUATION TO PREVENT RUNOFF OR PROTECT WATER QUALITY. HOWEVER, GC MUST NOTIFY THE DEC AS SOON AS PRACTICAL AS TO THEIR ACTIONS TO DISCLOSE THE NEED FOR ADDITIONAL OR SUPPLEMENTAL MEASURES AND TO OBTAIN THE REQUIRED APPROVALS. THE CONTRACTOR IS ULTIMATELY RESPONSIBLE TO ENSURE COMPLIANCE WITH THE PERMIT AND PROTECTION OF DOWNSTREAM WATER QUALITY.

AMENDING THE SWPPP DOES NOT MEAN THAT IT HAS TO BE REPRINTED. IT IS ACCEPTABLE TO ADD ADDENDA, SKETCHES, NEW SECTION DETAILS, AND/OR REVISED DRAWINGS THAT HAVE THE DEC NAME IN PRINT, ARE STAMPED, DATED, AND ARE ACCOMPANIED BY WRITTEN COPY OF THE ASSOCIATED RFI AND ITS RESPONSE FROM DEC. ENGINEERED FORMS MUST BE SIGNED AND STAMPED BY THE DEC OF RECORD FOR THE PROJECT.

LEGEND OF SYMBOLS

---	PROPERTY LINE
---	LIMITS OF DISTURBANCE
---	EXISTING CONTOURS
---	PROPOSED CONTOURS
---	LIMITS OF EXISTING DRAINAGE AREAS
---	LIMITS OF EXISTING SOL AREAS
---	EXISTING STORM PIPE
---	PROPOSED STORM PIPE
---	EXISTING 100 YEAR FLOOD LINE
---	EXISTING 500 YEAR FLOOD LINE
---	PROPOSED NO-FILL LINE
---	PROPOSED 100 YEAR FLOOD LINE
---	PROPOSED 500 YEAR FLOOD LINE
---	PROPOSED NO-FILL LINE
---	DIRECTION OF OVERLAND FLOW
---	SALT FENCE
---	DOUBLE ROW SALT FENCE
---	CONSTRUCTION EXIST
---	EROSION CONTROL MATTING
---	SWPPP INFORMATION SIGN
---	PERMANENT SODDING
---	SALT PROTECTION
---	BASE/RESIN RETROFIT
---	TEMPORARY SEDIMENT BASIN SHOWER
---	OUTLET PROTECTION

DEVELOPER/OWNER:

BIDDLE FARMS RESIDENTIAL LLC
6312 KINGTON FIVE
KNOXVILLE, TENNESSEE 37919
(615) 589-5171

SITE OPERATOR/GENERAL CONTRACTOR:

SUPERINTENDENT:

IMPORTANT: GC MUST SIGN ALL PLAN SHEETS AND ANY NEW PLAN SHEETS ISSUED BY THE DEC.

REFERENCE EROSION AND SEDIMENT CONTROL PLANS FOR TOWN CENTER AT BIDDLE FARMS BY SITE, INCORPORATED FOR INITIAL CONSTRUCTION SWPPP I, II, & III AND DETAILS. NOTICE OF COVERAGE FOR PROJECT PROVIDED BY TDEC TRACING NUMBER: TNY131111



10215 Technology Drive, Suite 304
Knoxville, TN 37932
(615) 777-4160
www.site-incorporated.com



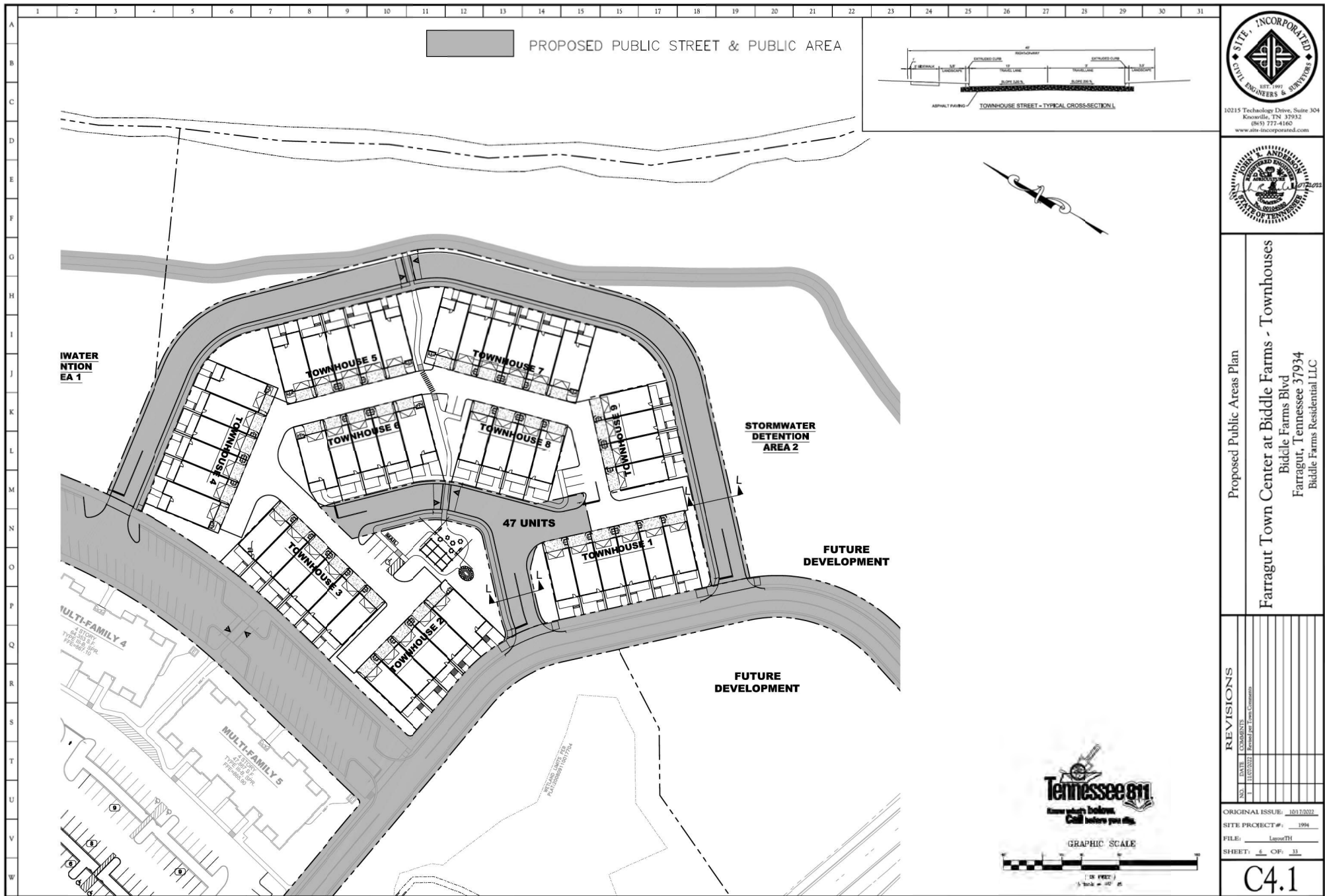
Stormwater Pollution Prevention Plan - Stage IV
Farragut Town Center at Biddle Farms - Townhouses
Biddle Farms Blvd
Farragut, Tennessee 37934
Biddle Farms Residential LLC

NO.	DATE	COMMENTS
1	10/17/2017	Revised per Town Center

ORIGINAL ISSUE: 10/17/2017
SITE PROJECT #: 1994
FILE: SWT777TH
SHEET: 1 OF 33

C2.1





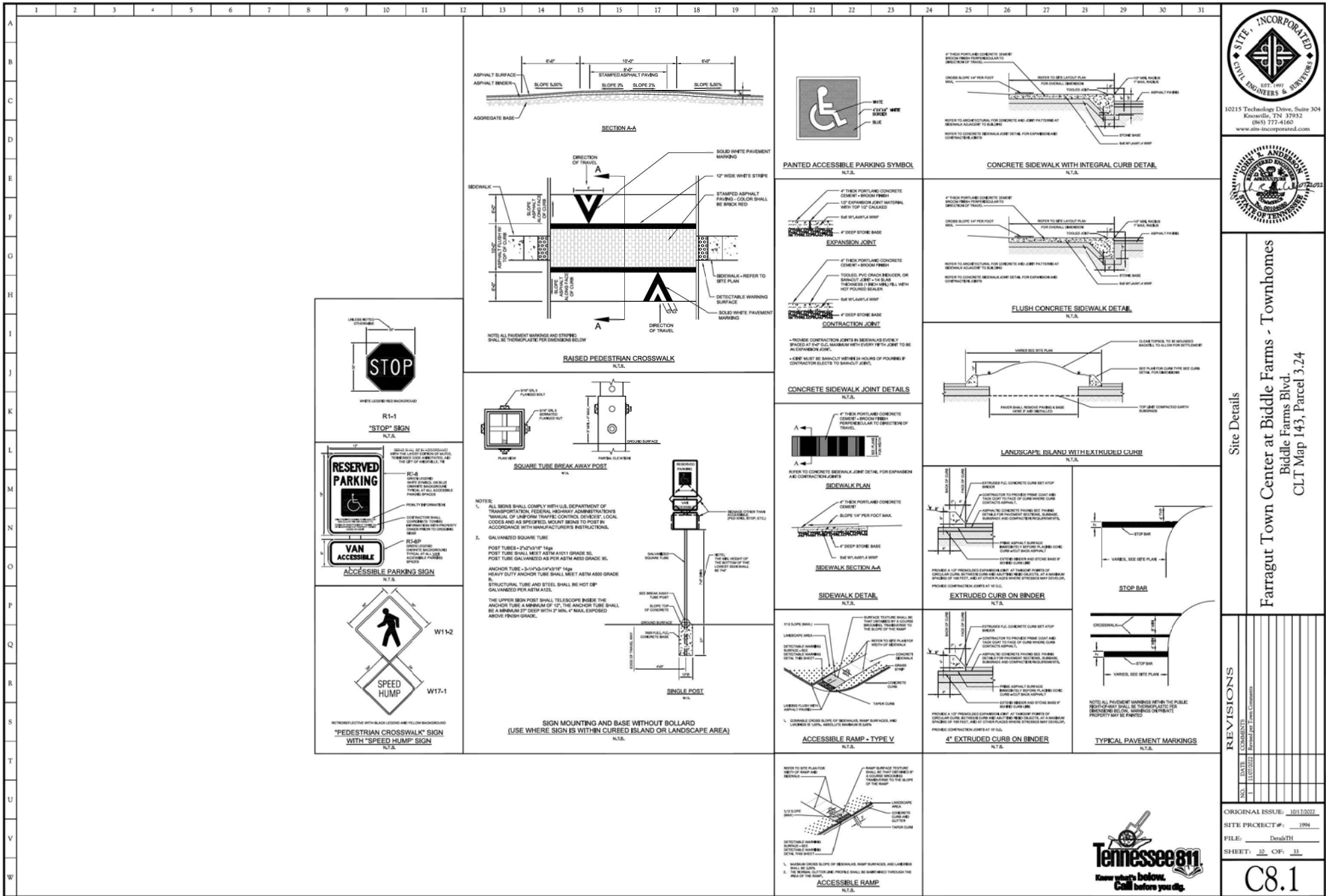
Proposed Public Areas Plan

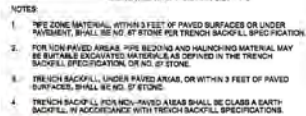
Farragut Town Center at Biddle Farms - Townhouses
 Biddle Farms Blvd
 Farragut, Tennessee 37934
 Biddle Farms Residential LLC

NO.	DATE	COMMENTS
1	10/17/2017	Revised per Town Commission

ORIGINAL ISSUE: 10/17/2017
 SITE PROJECT #: 1994
 FILE: LarcoseTH
 SHEET: 4 OF 33

C4.1





BEARING AREA OF THE JOINT IN SQ. FT.										VOLUME OF JOINT IN CUBIC YARDS (VERTICAL LENGTH)			
BEARING AREA OF THE JOINT IN SQ. FT.										VOLUME OF JOINT IN CUBIC YARDS (VERTICAL LENGTH)			
SIZE OF PIPE	SIZE OF PIPE	SIZE OF PIPE	SIZE OF PIPE	SIZE OF PIPE	SIZE OF PIPE	SIZE OF PIPE	SIZE OF PIPE	SIZE OF PIPE	SIZE OF PIPE	FITTING INCHES	BEND ANGLES		
1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"	1/2"	22 1/2°	45°	11 1/4°
4	1.0	1.4	2.1	3.2	4.8	7.2	10.1	14.1	20.1	4	1.1	0.4	0.4
6	1.4	2.0	3.0	4.5	6.8	10.2	14.6	21.1	30.1	6	3.7	1.0	0.4
8	2.1	3.0	4.5	6.8	10.2	14.6	21.1	30.1	43.1	8	6.0	1.8	0.6
10	3.0	4.5	6.8	10.2	14.6	21.1	30.1	43.1	61.1	10	9.3	2.6	0.9
12	4.0	6.0	9.0	13.5	20.2	30.3	43.6	61.1	85.1	12	13.5	3.9	1.3
14	5.0	7.5	11.2	16.8	25.2	37.8	54.1	77.1	109.1	14	18.1	5.1	1.7
16	6.0	9.0	13.5	20.2	30.3	43.6	61.1	85.1	129.1	16	24.1	6.8	2.3
18	7.0	10.5	15.8	23.7	35.5	53.2	75.1	107.1	151.1	18	30.1	8.5	2.9
20	8.0	12.0	18.0	27.0	40.5	60.8	85.1	121.1	171.1	20	36.1	10.2	3.5
22	9.0	13.5	20.2	30.3	45.5	68.2	97.1	139.1	196.1	22	42.1	11.9	4.1
24	10.0	15.0	22.5	33.8	50.7	75.1	107.1	151.1	216.1	24	48.1	13.6	4.7
26	11.0	16.5	24.8	37.0	55.8	82.1	117.1	167.1	236.1	26	54.1	15.3	5.3
28	12.0	18.0	27.0	40.5	60.8	89.1	127.1	183.1	256.1	28	60.1	17.0	5.9
30	13.0	19.5	29.2	43.6	66.0	96.1	137.1	199.1	276.1	30	66.1	18.7	6.5
32	14.0	21.0	31.5	46.7	71.1	103.1	147.1	215.1	296.1	32	72.1	20.4	7.1
34	15.0	22.5	33.8	49.8	76.1	110.1	157.1	231.1	316.1	34	78.1	22.1	7.7
36	16.0	24.0	36.0	52.9	81.1	117.1	167.1	247.1	336.1	36	84.1	23.8	8.3
38	17.0	25.5	38.2	56.0	86.1	124.1	177.1	263.1	356.1	38	90.1	25.5	8.9
40	18.0	27.0	40.5	59.1	91.1	131.1	187.1	279.1	376.1	40	96.1	27.2	9.5
42	19.0	28.5	42.7	62.2	96.1	138.1	197.1	295.1	396.1	42	102.1	28.9	10.1
44	20.0	30.0	45.0	65.3	101.1	145.1	207.1	311.1	416.1	44	108.1	30.6	10.7
46	21.0	31.5	47.2	68.4	106.1	152.1	217.1	327.1	436.1	46	114.1	32.3	11.3
48	22.0	33.0	49.4	71.5	111.1	159.1	227.1	343.1	456.1	48	120.1	34.0	11.9
50	23.0	34.5	51.7	74.6	116.1	166.1	237.1	359.1	476.1	50	126.1	35.7	12.5
52	24.0	36.0	53.9	77.7	121.1	173.1	247.1	375.1	496.1	52	132.1	37.4	13.1
54	25.0	37.5	56.2	80.8	126.1	180.1	257.1	391.1	516.1	54	138.1	39.1	13.7
56	26.0	39.0	58.4	83.9	131.1	187.1	267.1	407.1	536.1	56	144.1	40.8	14.3

TEE

PLUG WELDED CROSS

BEND

PLUG WELDED BEND

WYE

1/2" IN. REDUCER
FACE OF BEND

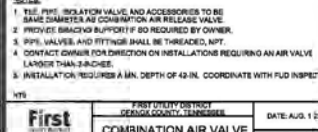
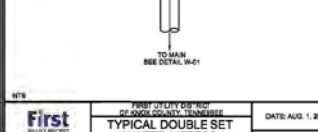
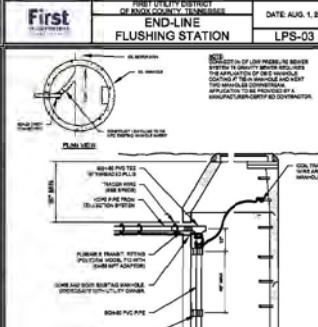
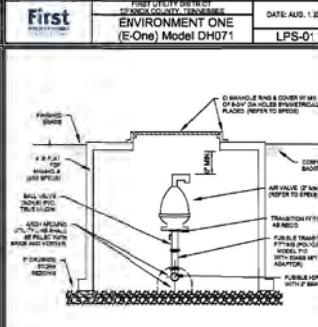
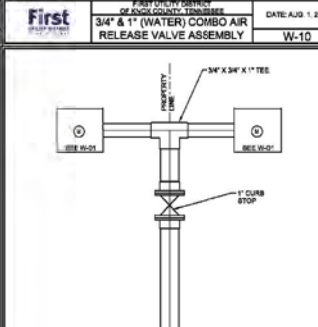
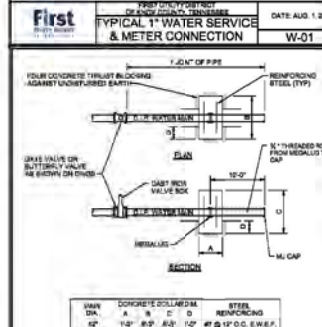
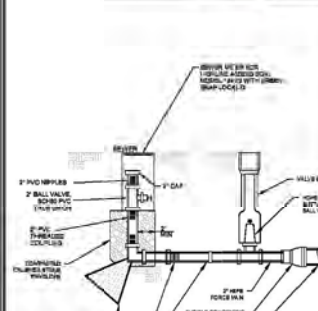
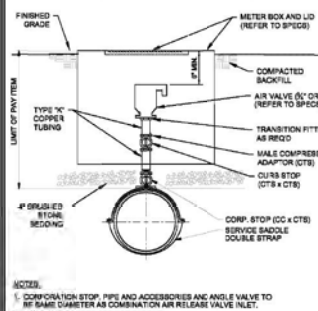
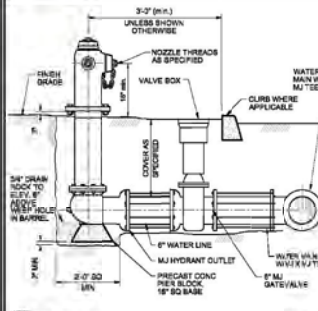
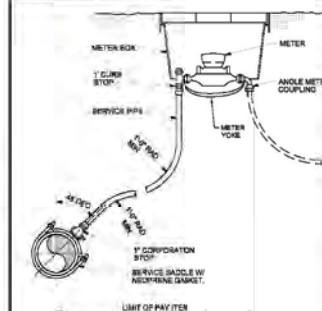
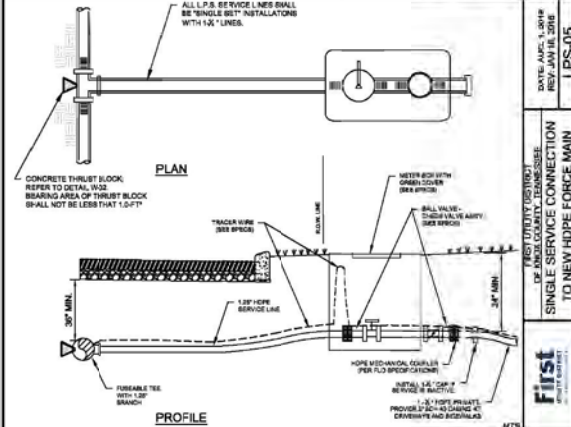
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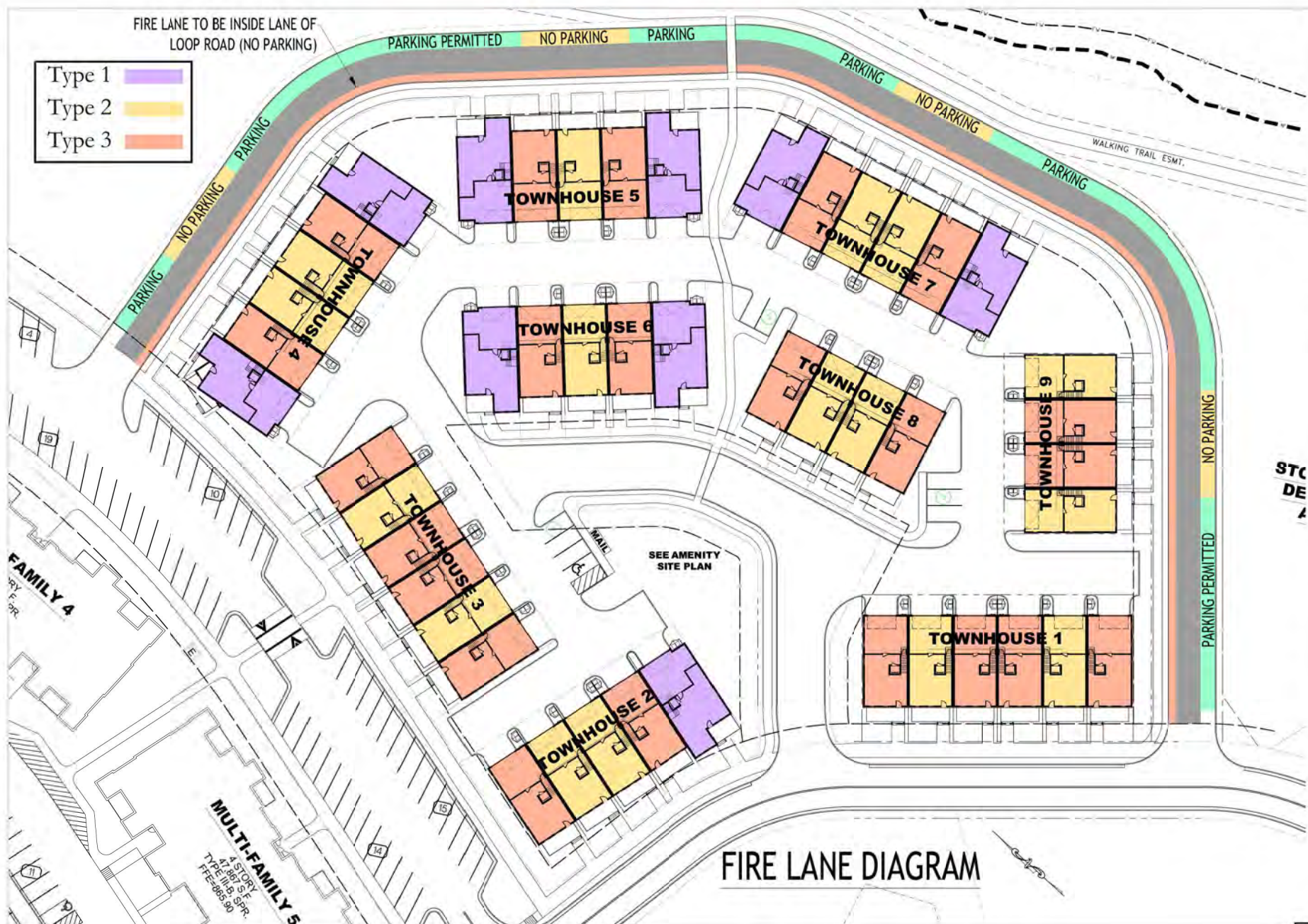
PLUG WELDED TEE

PLUG WELDED BEND

PLUG WELDED WYE

1/2" IN. REDUCER
FACE OF BEND





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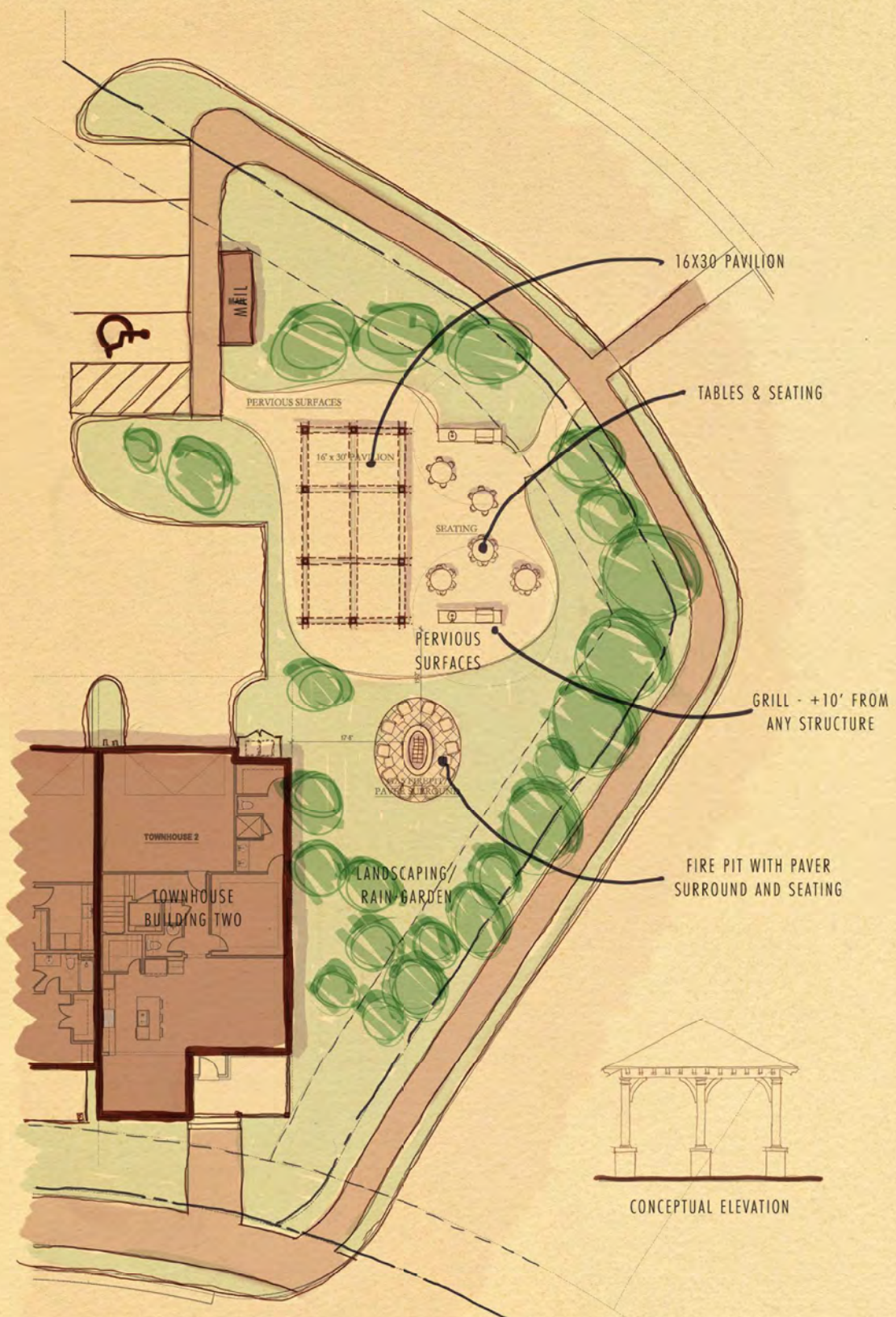
C3 Studio LLC
133 W. Jackson Ave.
Knoxville, TN 37902
865-309-4461
www.C3StudioLLC.com



**BIDDLE FARMS
TOWNHOUSES**
FARRAGUT, TN

Not For
Construction

SHEET 12 OF 33



BIDDLE FARMS FARRAGUT

COMMUNITY FIRE PIT & GRILLING PAVILION

OCT. 6TH, 2022 · © C3 STUDIO, LLC

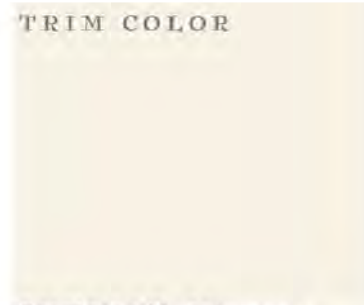
SHEET 13 OF 33

BRADFORD HALL TUDOR COLOR SCHEME



BRADFORD HALL TUDOR - GENERAL SHALE

TRIM COLOR



CHEVIOT SW 9503

SIDING COLOR



RIVERS EDGE SW 7517

ACCENT COLOR



TOILE RED SW 0006

ACCENT COLOR



WEATHERVANE SW 2929



BIDDLE FARMS TOWNHOUSES COLOR SCHEMES

October 14th, 2022 · © C3 Studio, LLC

MILLSTONE COLOR SCHEME



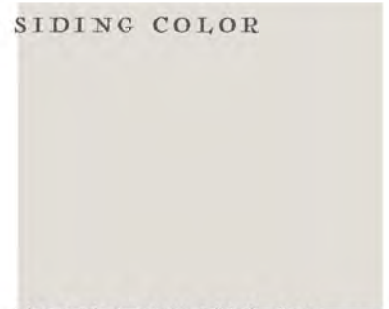
MILLSTONE - GENERAL SHALE

ACCENT COLOR



BLUSTERY SKY SW 9140

SIDING COLOR



EIDER WHITE SW 7014

ACCENT COLOR



INKWELL SW 6992



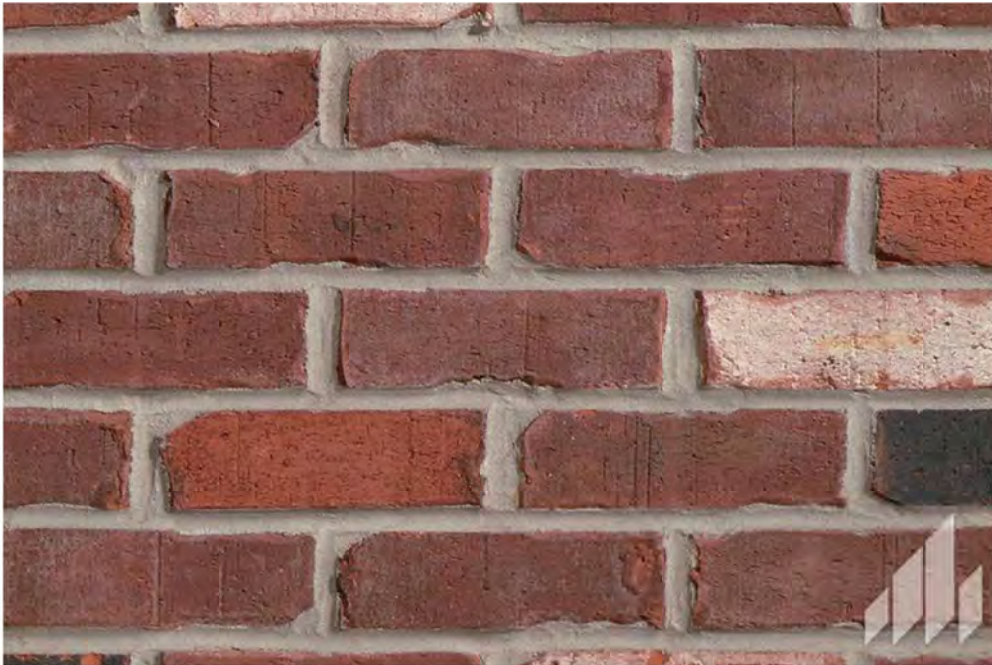
BLACK ARCHITECTURAL
SHINGLES



BIDDLE FARMS TOWNHOUSES COLOR SCHEMES

October 14th, 2022 · © C3 Studio, LLC

OLD LOUISVILLE TUDOR COLOR SCHEME



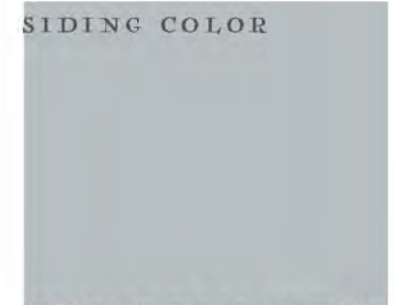
OLD LOUISVILLE TUDOR - GENERAL SHALE

TRIM COLOR



PURE WHITE SW 7005

SIDING COLOR



SAMOVAR SILVER SW 7014

ACCENT COLOR



SEA SERPENT SW 7615



BLACK ARCHITECTURAL
SHINGLES



BIDDLE FARMS TOWNHOUSES COLOR SCHEMES

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SAVANNAH GRAY COLOR SCHEME



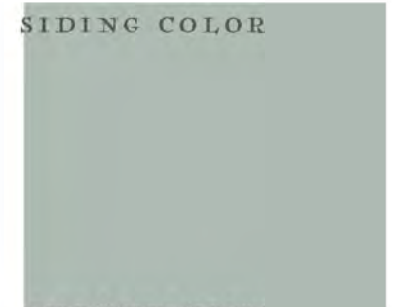
SAVANNAH GRAY - GENERAL SHALE

TRIM COLOR



PURE WHITE SW 7005

SIDING COLOR



QUIETUDE SW 6212

ACCENT COLOR



ANCHORS AWAY SW 9179



BLACK ARCHITECTURAL
SHINGLES



BIDDLE FARMS TOWNHOUSES COLOR SCHEMES

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VINTAGE PORT COLOR SCHEME



VINTAGE PORT - GENERAL SHALE

TRIM COLOR



DIVINE WHITE SW 6105

SIDING COLOR



GALLERY GREEN SW 0015

ACCENT COLOR



LATTE SW 6108



BLACK ARCHITECTURAL
SHINGLES



BIDDLE FARMS TOWNHOUSES COLOR SCHEMES

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7 Southern Oaks Ct
Savannah, GA 31405



pacelighting.com

912-920-4090
Fax: 912-544-1081



hello@pacelighting.com



Three Light Wall Lantern



Item ID: **0918677**
MFG #: **CO1383NCP**
Manufacturer: **Generation Lighting**
Finish: **Natural Copper**
Collection: **Hyannis**
Width: **10.50"**
Height: **20.25"**

The Hyannis three light outdoor wall fixture in natural copper by Chapman & Myers has a classic copper lantern profile with top and bottom glass panels. Assembled with an overlapping metal frame which is accented by rivet details. Each light has a historically inspired spun metal chimney cap. The sconces are supported by a traditional bent metal architectural bracket.

Bulbs

Voltage: 120 V

Qty.	Type	Base	Watt	Incl.	Source	LM.	CCT	CRI	Avg.Life	Dim	Beam
3	Torpedo	Candelabra	60.00 W	-	-	-	-	-	-	-	-

Details

Safety Listing:	cETL	Weight:	9.80 lb
Safety Rating:	Wet	UPC:	014817615340
Glass:	Clear		
Canopy:	DP:0.75" W:4.75" H:12.75"		
Wire:	8"		
Extension:	11.25"		



7 Southern Oaks Ct
Savannah, GA 31405



pacelighting.com



hello@pacelighting.com

912-920-4090
Fax: 912-544-1081



One Light Pendant

Comment: Gooseneck



Item ID: **449493**
MFG #: **RAS10-SB**
Manufacturer: **Millennium**
Finish: **Satin Black**
Collection: **R Series**
Width: **10.00"**
Height: **11.00"**

Notes

Shade Only. Choose A Goose Neck For Wall Mount-Not Included, Sold Separately. Rated For Wet Locations.

From the R Series Collection, this angle shade (only) has been designed for versatility. This product is constructed in metal and durable. Customize your shade by selecting from a variety of shade finishes. This shade can be converted to a pendant of a wall sconce with the purchase of separate compatible downrod (stems) or arm (gooseneck) accessory.

Bulbs

Voltage: 120 V

Qty.	Type	Base	Watt	Incl.	Source	LM.	CCT	CRI	Avg.Life	Dim	Beam
1	A	Medium	200.00 W	-	1	-	-	-	-	-	-

Details

Safety Listing: **UL**
Safety Rating: **Wet**
Connection: **Hardwired**
Manufacturer Warranty: **1 year limited manufacture's warranty**
UPC: **842639008824**

REFERENCE COLOR BOARD
FOR COLORS

- 1 - TANKED ARCHITECTURAL SHINGLES
- 2 - FIBER CEMENT SIDING
- 3 - FIBER CEMENT TRIM
- 4 - PAINTED BRACKETS
- 5 - PAINTED P.T. COLUMNS
- 6 - PAINTED RAILS & PICKETS
- 7 - GENERAL SHALE BRICK
(SEE COLOR SHEETS)
- 8 - PANEL SHUTTERS
- 9 - DOUBLE HUNG WINDOWS (STANDARD)

BRADFORD HALL TUDOR
COLOR SCHEME

MILLSTONE
COLOR SCHEME

SAVANNAH GRAY
COLOR SCHEME

OLD LOUISVILLE TUDOR
COLOR SCHEME

VINTAGE PORT
COLOR SCHEME

BRADFORD HALL TUDOR
COLOR SCHEME



PLAN #3

PLAN #2

PLAN #3

PLAN #3

PLAN #2

PLAN #3



BIDDLE FARMS BUILDING ONE & THREE

FRONT ELEVATION

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VINTAGE PORT
COLOR SCHEME

BRADFORD HALL TUDOR
COLOR SCHEME

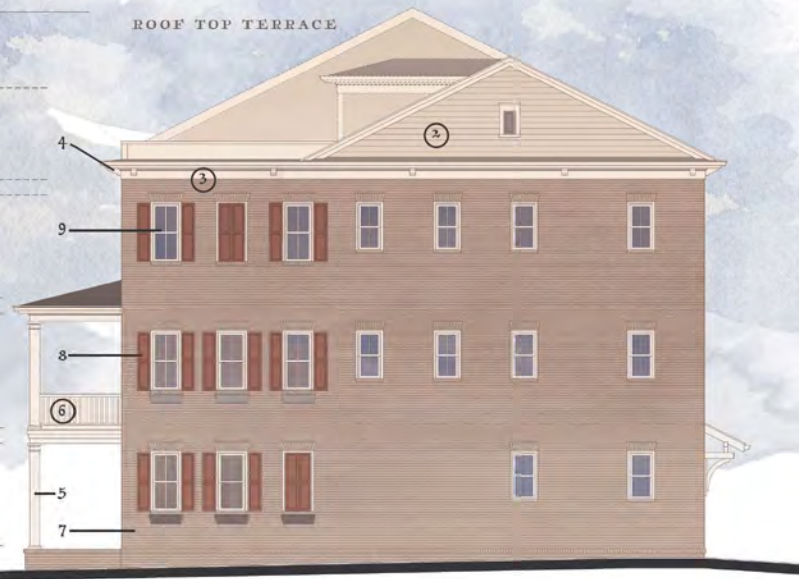
BRADFORD HALL TUDOR
COLOR SCHEME

REFERENCE COLOR BOARD
FOR COLORS

- 1 - TAMKO ARCHITECTURAL SHINGLES
- 2 - FIBER CEMENT SIDING
- 3 - FIBER CEMENT TRIM
- 4 - PAINTED BRACKETS
- 5 - PAINTED P.T. COLUMNS
- 6 - PAINTED RAILS & PICKETS
- 7 - GENERAL SHALE BRICK (SEE COLOR SHEETS)
- 8 - PANEL SHUTTERS
- 9 - DOUBLE HUNG WINDOWS



PLAN #3



PLAN #3 SIDE ELEVATION

3

BIDDLE FARMS BUILDING AT ONE, THREE, & EIGHT FRONT ELEVATION

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- REFERENCE COLOR BOARD FOR COLORS
- *FASCO ARCHITECTURAL SHINGLES
- *FIBER CEMENT SIDING
- *FIBER CEMENT TRIM
- *PAINTED BRACEETS
- *PAINTED P.T. COLUMNS
- *PAINTED RAILS & PICKETS
- *GENERAL SHALE BRICK (SEE COLOR SHEETS)
- *PANEL SHUTTERS
- *DOUBLE HUNG WINDOWS

BRADFORD HALL TUDOR
COLOR SCHEME

MILLSTONE
COLOR SCHEME

SAVANNAH GRAY
COLOR SCHEME

OLD LOUISVILLE TUDOR
COLOR SCHEME

VINTAGE PORT
COLOR SCHEME

BRADFORD HALL TUDOR
COLOR SCHEME

ROOF TOP TERRACE

ROOF TOP TERRACE

ROOF TOP TERRACE

ROOF TOP TERRACE

PLAN # 3

PLAN # 2

PLAN # 3

PLAN # 3

PLAN # 2

PLAN # 3

3

BIDDLE FARMS BUILDING ONE & THREE

REAR ELEVATION

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3

BIDDLE FARMS BUILDING TWO

FRONT ELEVATION

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BRADFORD HALL TUDOR
COLOR SCHEME

OLD LOUISVILLE TUDOR
COLOR SCHEME

OLD LOUISVILLE TUDOR
COLOR SCHEME

REFERENCE COLOR BOARD
FOR COLORS

- 1 - TAMKO ARCHITECTURAL SHINGLES
- 2 - FIBER CEMENT SIDING
- 3 - FIBER CEMENT TRIM
- 4 - PAINTED BRACKETS
- 5 - PAINTED P.T. COLUMNS
- 6 - PAINTED RAILS & PICKETS
- 7 - GENERAL SHALE BRICK (SEE COLOR SHEETS)
- 8 - PANEL SHUTTERS
- 9 - DOUBLE HUNG WINDOWS



PLAN #3

PLAN #1

PLAN #1

3

BIDDLE FARMS BUILDING TWO, FOUR, FIVE, SIX, & SEVEN
SIDE ELEVATION

October 17th, 2022 · © C3 Studio, LLC

REFERENCE COLOR BOARD
FOR COLORS

- 1 - TAMKO ARCHITECTURAL SHINGLES
- 2 - FIBER CEMENT SIDING
- 3 - FIBER CEMENT TRIM
- 4 - PAINTED BRACKETS
- 5 - PAINTED FT. COLUMNS
- 6 - PAINTED RAILS & PICKETS
- 7 - GENERAL SHALE BRICK (SEE COLOR SHEETS)
- 8 - PANEL SHUTTERS
- 9 - DOUBLE HUNG WINDOWS

BRADFORD HALL TUDOR
COLOR SCHEME

MILLSTONE
COLOR SCHEME

VINTAGE PORT
COLOR SCHEME

BRADFORD HALL TUDOR
COLOR SCHEME

OLD LOUISVILLE TUDOR
COLOR SCHEME

OLD LOUISVILLE TUDOR
COLOR SCHEME

ROOF TOP TERRACE

ROOF TOP TERRACE

PLAN # 1

PLAN # 3

PLAN # 2

PLAN # 2

PLAN # 3

PLAN # 1

3

BIDDLE FARMS BUILDING FOUR & SEVEN

FRONT ELEVATION

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SHEET 26 OF 33

- REFERENCE COLOR BOARD
FOR COLORS
- 1 - TAMKO ARCHITECTURAL SHINGLES
 - 2 - FIBRE CEMENT SIDING
 - 3 - FIBRE CEMENT TRIM
 - 4 - PAINTED BRACKETS
 - 5 - PAINTED FT. COLUMNS
 - 6 - PAINTED RAILS & PICKETS
 - 7 - GENERAL SHALE BRICK (SEE COLOR SHEETS)
 - 8 - PANEL SHUTTERS
 - 9 - DOUBLE HUNG WINDOWS

OLD LOUISVILLE TUDOR
COLOR SCHEME

BRADFORD HALL TUDOR
COLOR SCHEME

VINTAGE PORT
COLOR SCHEME

BRADFORD HALL TUDOR
COLOR SCHEME

OLD LOUISVILLE TUDOR
COLOR SCHEME



PLAN # 1

PLAN # 3

PLAN # 2

PLAN # 3

PLAN # 1



BIDDLE FARMS BUILDING FIVE & SIX

FRONT ELEVATION

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3

BIDDLE FARMS BUILDING EIGHT

FRONT ELEVATION

October 17th, 2022 · © C3 Studio, LLC



3

BIDDLE FARMS BUILDING NINE

FRONT ELEVATION

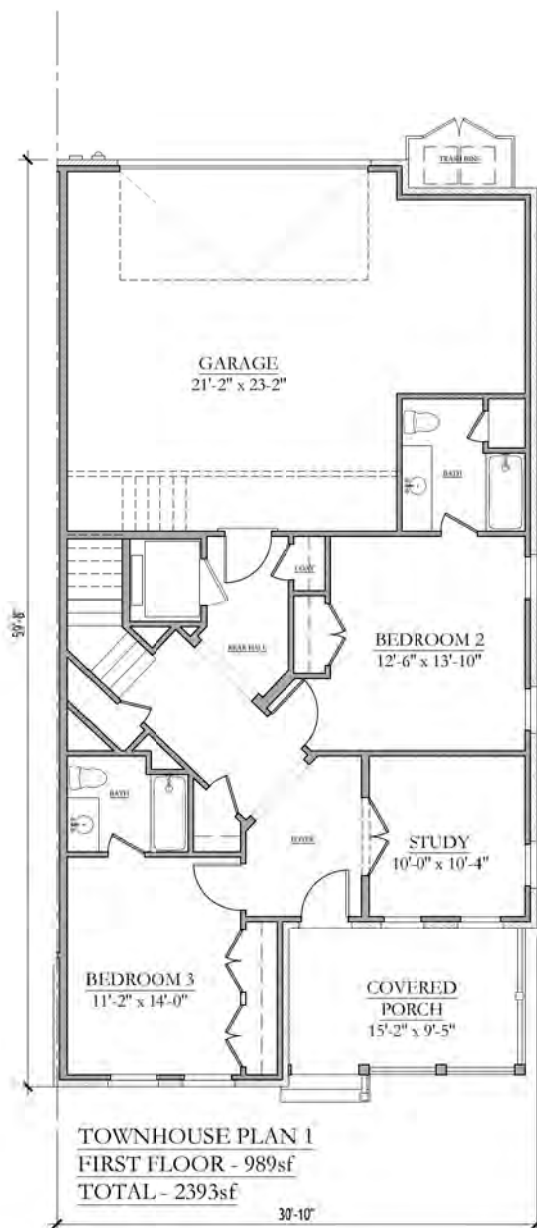
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**BIDDLE FARMS
TOWNHOUSES**
FARRAGUT, TN

Not For
Construction

SHEET 30 OF 33





SECOND FLOOR - 1196sf



THIRD FLOOR - 1196sf

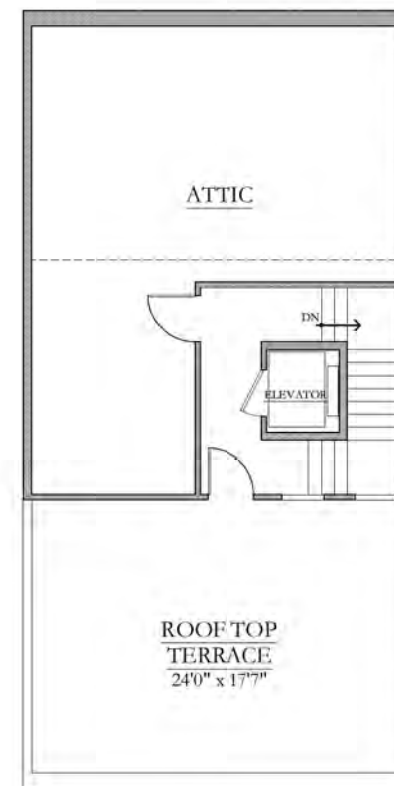
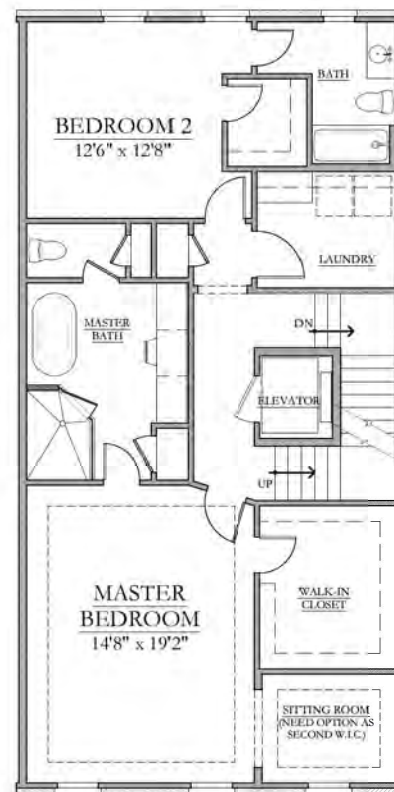
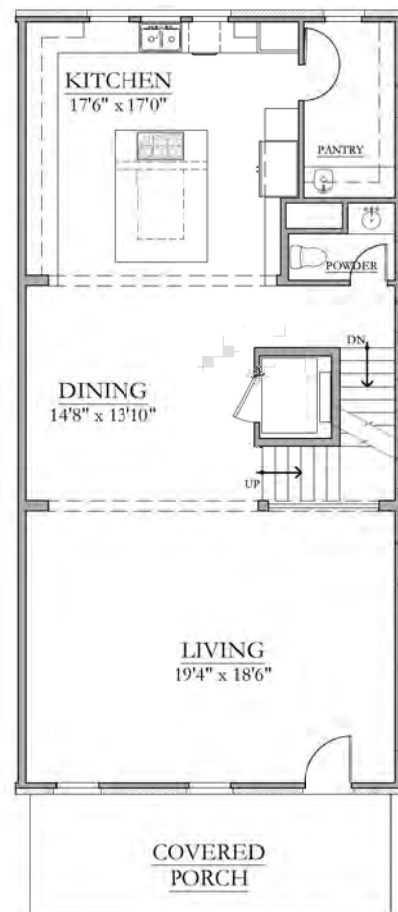


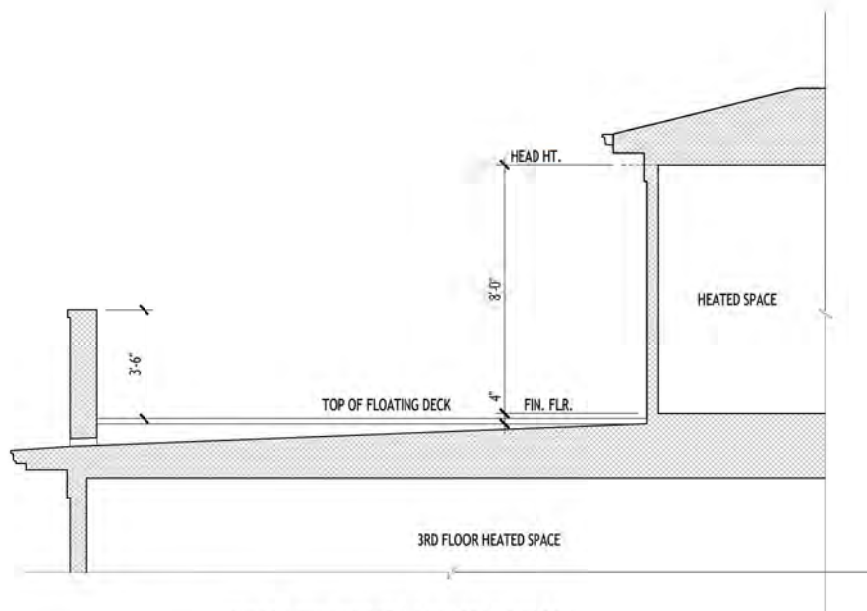


**BIDDLE FARMS
TOWNHOUSES**
FARRAGUT, TN

Not For
Construction

SHEET 32 OF 33

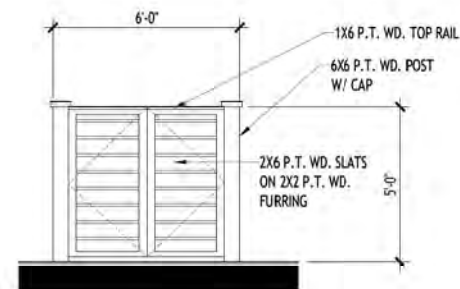




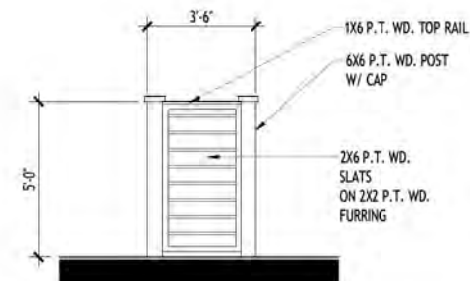
ROOF TOP TERRACE DIAGRAM



WASTE DISPOSAL PLAN



WASTE DISPOSAL ENCLOSURE



WASTE DISPOSAL ENCLOSURE
SIDE ELEVATION



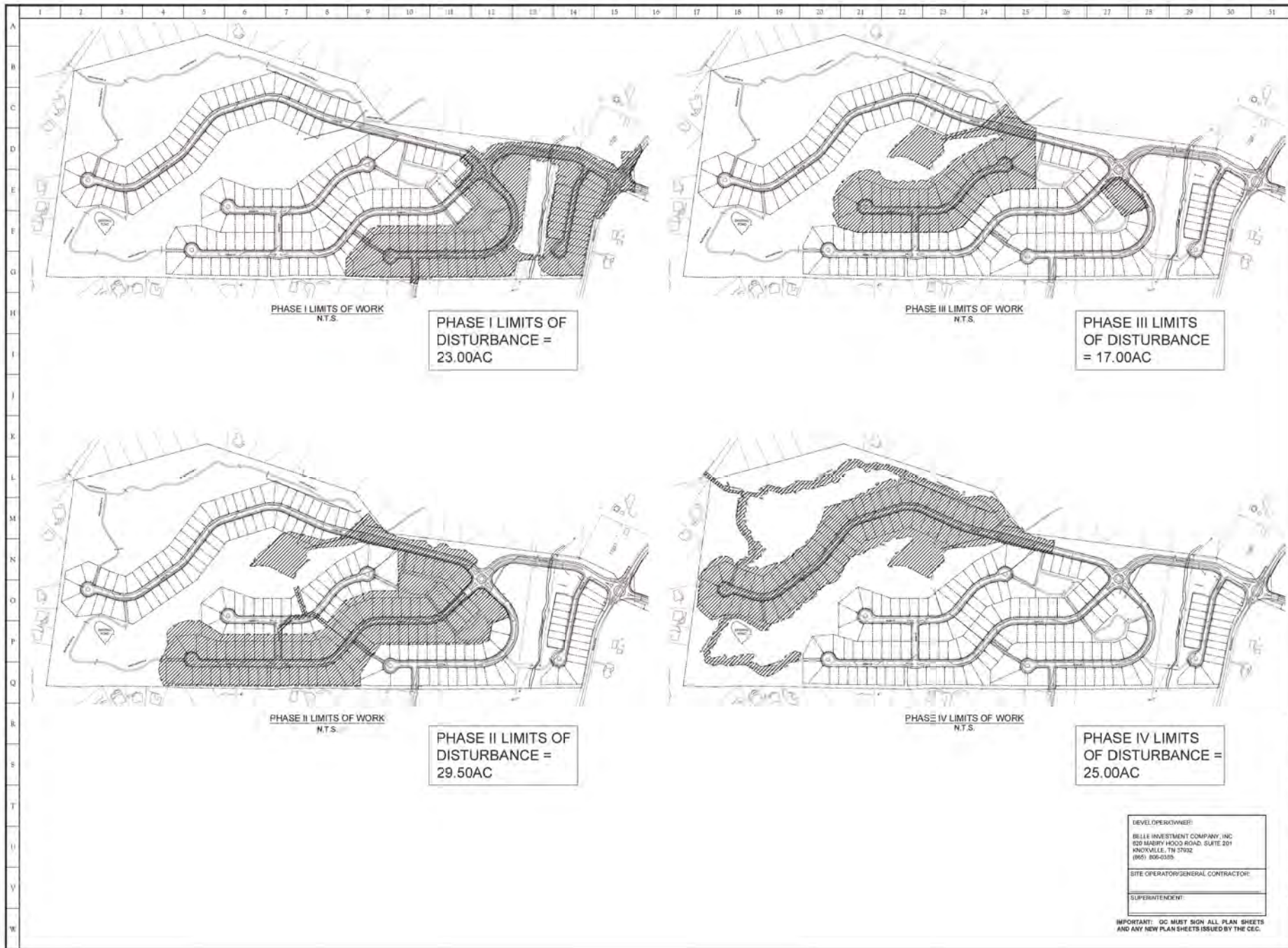
REPORT TO THE FARRAGUT MUNICIPAL PLANNING COMMISSION

PREPARED BY: Mark Shipley, Community Development Director

SUBJECT: Discussion and public hearing on approval of a final plat for the Ivey Farms Subdivision, Phases 2 and 3, Parcel 54.01, Tax Map 151, 30.39 Acres, 101 Lots, Zoned R-1/OSR (Goodall Homes, Applicant)

INTRODUCTION AND BACKGROUND: This agenda item involves a request for approval for the next two phases of the Ivey Farms Subdivision north of Union Road. As shown on the original phase exhibit included with the preliminary plat, Phases 2 and 3 involve the extension of Ivey Farms Road from its intersection with Baltica Lane and a new street off Ivey Farms Road named Oakley Ivey Drive. These phases include 101 lots, a stormwater detention basin, and some walking trail sections. Where sidewalks are required, those will be installed with home construction. The traffic calming islands will also be added later in the construction process. The applicant was concerned that the islands could be damaged during construction, and it would be preferable to install these later. The Town Engineer and Community Development Director have requested letters of credit to cover any required improvements that are to be added in the future. There will also be letters of credit required for maintenance. These completion and maintenance letters of credit will be conditions for approval of the final plat.

RECOMMENDATION: Included in the packet is the revised final plat. Staff will verify completion of the field items needed for Planning Commission consideration and will be making a recommendation for the meeting.



Storm Water Pollution Prevention Plan - Phasing

Ivey Farms

12733, 12737, 12743, & 12751 Union Road
Farragut, Tennessee 37934
Clayton Properties Group, Inc.

DATE	BY	REVISION
01/22/18	01/22/18	01/22/18
REVISIONS		
1	01/22/18	Initial Design
2	01/22/18	Revised Design
3	01/22/18	Revised Design
4	01/22/18	Revised Design
5	01/22/18	Revised Design
6	01/22/18	Revised Design
7	01/22/18	Revised Design
8	01/22/18	Revised Design
9	01/22/18	Revised Design
10	01/22/18	Revised Design
11	01/22/18	Revised Design
12	01/22/18	Revised Design

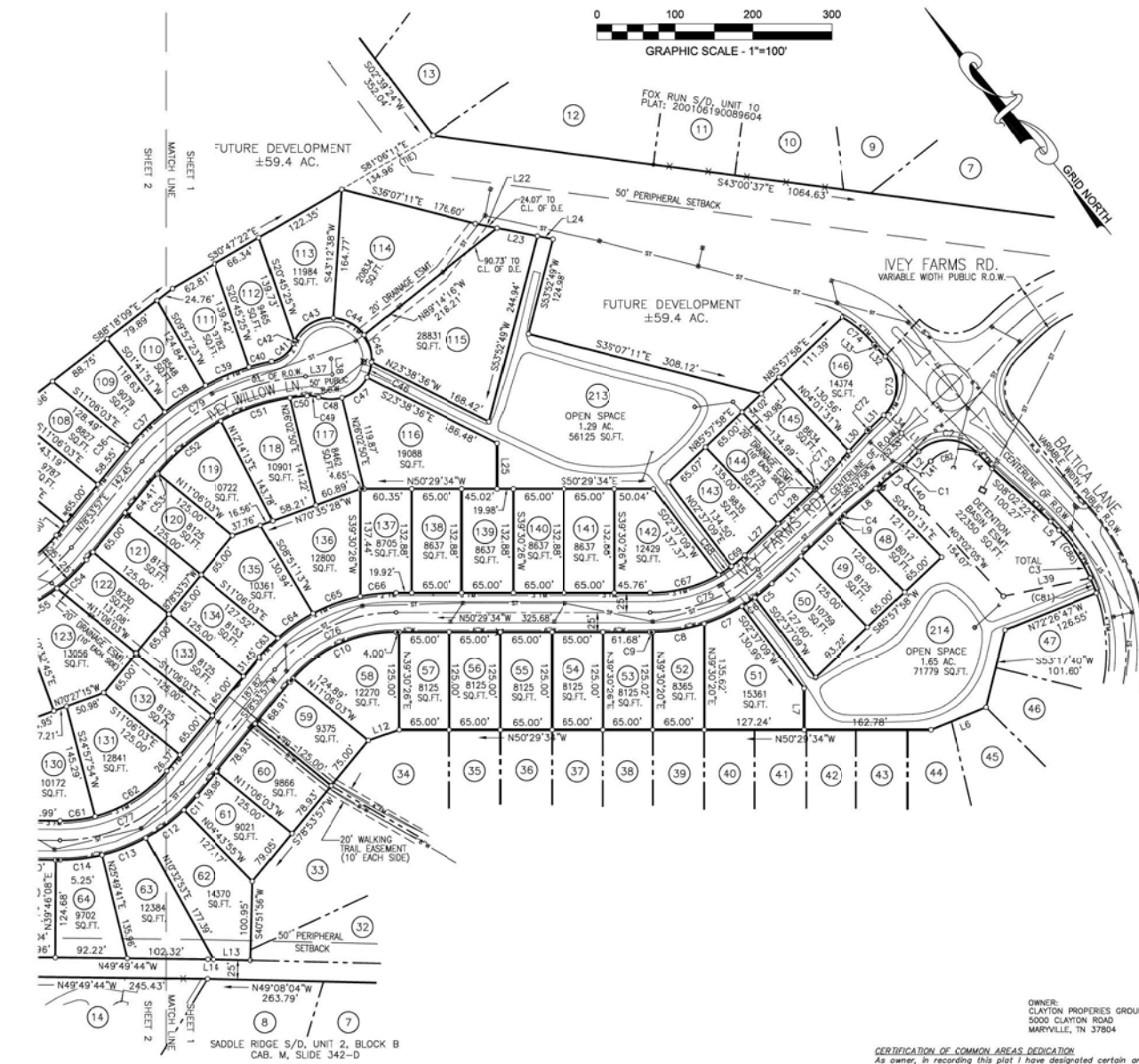
DEVELOPER/OWNER:
BILLY INVESTMENT COMPANY, INC.
820 MARY HOO ROAD, SUITE 201
KNOXVILLE, TN 37932
(606) 856-0385

SITE OPERATOR/GENERAL CONTRACTOR:

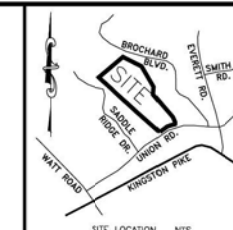
SUPERINTENDENT:

IMPORTANT: GC MUST SIGN ALL PLAN SHEETS
AND ANY NEW PLAN SHEETS ISSUED BY THE G.C.

C2.1
SHEET 7 OF 26



- LEGEND OF SYMBOLS
- FIRE HYDRANT
 - WATER LINE
 - FORCE MAIN
 - STORM DRAIN PIPE
 - FENCE
 - IRON PIN - OLD (FOUND)
 - SUBJECT PROPERTY LINE
 - ADJOINING PROPERTY LINE



SITE, INCORPORATED
CIVIL ENGINEERS & SURVEYORS
EST. 1997
10215 Technology Drive, Suite 304
Knoxville, TN 37932
(865) 777-4160
www.site-incorporated.com

CERTIFICATE OF SURVEY ACCURACY
I hereby certify that the plan shown and described hereon is a true and correct survey to the accuracy required by the Farragut Municipal Planning Commission and that the monuments have been placed as shown hereon, to the specification of the Subdivision Regulations. This is a Category I Land Survey and the ratio of precision of the unadjusted survey is equal to or greater than 1:10,000.
Surveyor / No. 1301 Date 10-5-22
THIS IS TO CERTIFY THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR THE STATE OF TENNESSEE.
SURVEYOR: HOWARD T. DAWSON, RLS 1301
10215 TECHNOLOGY DR.
KNOXVILLE, TN 37932
PH: (865) 777-4160

HOWARD T. DAWSON
REGISTERED LAND SURVEYOR
10-5-22
TENNESSEE No. 1301

- NOTES
- NOTIFY TENNESSEE ONE-CALL SYSTEM AT 1-800-351-1111 AND AN INDIVIDUAL UTILITY AUTHORITY BEFORE ANY EXCAVATION FOR EXACT LOCATION OF ALL UNDERGROUND UTILITIES.
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 - THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE LINE SHOWN IS THE EXACT LOCATION OF ANY UTILITIES SHOWN IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION SHOWN ALTHOUGH IT DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE. THIS SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.
--THE WATER AND SEWER LINES INSTALLED IN THIS SUBDIVISION AND/OR AS SHOWN HEREON SHALL HAVE AN EASEMENT, SUBJECT TO THE RESTRICTIONS AND CONDITIONS OF RECORD PER INSTRUMENT #200908100011396 ON FILE AT THE KNOX COUNTY REGISTER OF DEEDS OFFICE. THE FULL EXTENT OF ALL S&D WATER AND SEWER LINE EASEMENTS ARE EITHER LOCATED WHOLLY WITHIN THE PLATTED ROAD RIGHTS-OF-WAY AND/OR ARE WITHIN THE STANDARD LOT LINE UTILITY AND DRAINAGE EASEMENTS PROVIDED FOR IN THE FARRAGUT SUBDIVISION REGULATIONS. WHERE SUCH LINES ARE NOT LOCATED WHOLLY WITHIN EITHER, SUCH LINES ARE SHOWN SEPARATELY ON THIS PLAN.
 - 5/8" IRON PINS SET AT ALL CORNERS UNLESS NOTED OTHERWISE.
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--TAX MAP 151, PART OF PARCEL 054.01
--DEED REFERENCES: 201810290027479 AND 202009250025385
GRID NORTH IS BASED ON THE NAD 83, C.O.R. 4 NETWORK.
 - THE PURPOSE OF THIS PLAN IS TO CREATE THE 101 LOTS SHOWN HEREON AND TO DEDICATE EASEMENTS AND RIGHT-OF-WAYS AS SHOWN.
 - PER FLOOD INSURANCE RATE MAP (FIRM) 47093300250025385, LAST REVISED MAY 2, 2007, THE PROPERTY IS NOT LOCATED IN A SPECIAL FLOOD HAZARD ZONE.
 - PROPERTY OWNERS SHALL BE RESPONSIBLE FOR MAINTENANCE OF STORMWATER IMPROVEMENTS ON THIS PROPERTY.
 - THIS PLAN CONSISTS OF 98 RESIDENTIAL LOTS AND 2 OPEN SPACE LOTS AND PUBLIC RIGHT-OF-WAY TOTALING 30.39 ACRES. REFER TO PRELIMINARY PLAT OF IVEY FARMS FOR OPEN SPACE CALCULATIONS.
 - ALL WALKING TRAILS ARE CENTERED WITHIN A 20 FOOT EASEMENT RESERVED FOR PUBLIC USE. UPON COMPLETION AND RELEASE OF MAINTENANCE LETTER OF CREDIT THE TOWN OF FARRAGUT SHALL ACCEPT MAINTENANCE AND LIABILITY FOR THE TRAILS.
 - LOT AND BUILDING COVERAGE DETAILS ARE AS FOLLOWS:
TOTAL DEVELOPMENT AREA: 4,834,414 S.F.
TOTAL DEVELOPMENT BUILDING COVERAGE AREA ALLOWED: (75% X 4,834,414 S.F.) X 25% = 906,453 S.F.
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INDIVIDUAL LOT TOTAL BUILDING COVERAGE: 906,453 S.F. / 211 LOTS = 4,296 S.F.
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Signed: _____ Date: _____
Knox County Trustee

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License No. _____

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Secretary, Planning Commission _____ Date _____

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Knox County Addressing Division _____ Date _____

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This is to certify that every lot within this subdivision has available to it a source for the service identified by signature(s) below which service source is adequate to accommodate the reasonable needs of such lot as to such service within such subdivision.

Date	GAS- Name, Title, and Agency of Authorized Approving Agent
_____	_____

Date	ELECTRIC- Name, Title, and Agency of Authorized Approving Agent
_____	_____

Date	TELEPHONE- Name, Title, and Agency of Authorized Approving Agent
_____	_____

CERTIFICATE OF COMMON AREAS DEDICATION
As owner, in recording this plat I have designated certain areas of land shown hereon as common areas intended for use by the homeowners within Ivey Farms Phases 2 & 3 for recreation and related activities. The above described areas are not dedicated for use by the general public, but are dedicated to the common use of the homeowners within the named subdivision.

"Declaration of Covenants and Restrictions," applicable to the above named subdivision, is hereby incorporated and made a part of this plat.

Owner _____ Date _____

CERTIFICATE OF OWNERSHIP AND DEDICATION
I (we) hereby certify that I am (we are) the owner(s) of the property shown and described hereon as evidenced in Book Number _____, page _____, County Registers Office, and that I (we) hereby adopt this plan of subdivision with my (our) free consent, establish the minimum building restriction lines, and dedicate all streets, alleys, walks, parks, and other open space to public or private use as noted.

Owner _____ Date _____

CERTIFICATE OF APPROVAL OF WATER SYSTEM
I hereby certify that it has been certified to us that the water system(s) outlined or indicated on the final subdivision plat entitled Ivey Farms, Phases 2 & 3 have been installed in accordance with current local and state government requirements.

Date _____ Name, Title, and Agency of Authorized Approving Agent _____

CERTIFICATE OF APPROVAL OF SEWER SYSTEM
I hereby certify that it has been certified to us that the sewer system(s) outlined or indicated on the final subdivision plat entitled Ivey Farms, Phases 2 & 3 have been installed in accordance with current local and state government requirements.

Date _____ Name, Title, and Agency of Authorized Approving Agent _____

REVISIONS

NO.	DATE	COMMENTS
1	10-5-2022	COMMENTS ADDRESSED

ORIGINAL ISSUE: 09/16/2022
SITE PROJECT #: 1951
FILE: 180041R4

PLAT

DATA COLLECTION AND DRAFTING SERVICES PROVIDED BY SMOKEY MOUNTAIN LAND SURVEYING CO., INC.
S.M.S. DWG NO. 180041R4

CURVE	LENGTH	RADIUS	CHORD	BEARING	ANGLE
C1	4.33	62.00	4.33	N87°58'00"	2.17
C2	83.25	253.00	74.95	S49°02'00"	53.50
C3	144.77	450.00	134.07	S68°02'00"	48.10
C4	6.15	88.00	6.15	N87°58'00"	3.08
C5	27.99	225.00	27.97	S89°21'20"	14.01
C6	20.03	225.00	20.03	S84°21'20"	10.02
C7	53.55	225.00	53.43	S74°59'11"	26.90
C8	66.10	225.00	66.86	S59°45'09"	33.79
C9	13.92	225.00	13.92	S59°45'09"	6.89
C10	148.48	175.00	144.07	S74°47'59"	79.04
C11	25.01	225.00	25.00	N82°05'01"	12.52
C12	60.00	225.00	58.83	S68°02'00"	30.18
C13	60.00	225.00	59.83	S71°48'43"	30.18
C14	54.74	225.00	54.61	S57°15'05"	27.51
C15	73.13	110.00	73.12	S54°00'00"	35.49
C16	30.64	110.00	30.50	S48°22'31"	15.42
C17	36.23	52.00	35.50	S40°00'00"	18.88
C18	20.42	52.00	20.42	S45°45'00"	10.24
C19	20.22	52.00	20.10	S34°46'54"	10.24
C20	42.26	52.00	41.11	S67°12'26"	22.58
C21	71.42	52.00	69.83	S48°00'00"	35.81
C22	22.70	52.00	22.52	N07°41'07"	11.53
C23	44.05	52.00	41.83	N17°01'21"	24.88
C24	20.42	11.00	18.38	S84°48'12"	13.00
C25	18.13	13.00	16.74	S00°18'44"	10.94
C26	15.16	88.00	15.16	S45°20'00"	7.61
C27	10.13	52.00	10.12	S44°48'10"	5.08
C28	51.49	52.00	49.41	S10°49'20"	28.07
C29	40.29	52.00	39.29	S39°44'21"	21.22
C30	46.06	52.00	44.57	S87°18'44"	24.86
C31	68.43	52.00	63.60	N29°36'48"	40.19
C32	7.92	52.00	7.91	N1°06'56"	3.99
C33	44.09	52.00	41.83	N1°01'54"	24.88
C34	54.89	175.00	54.67	N59°15'43"	27.87
C35	100.34	175.00	98.97	N84°40'28"	51.59
C36	8.43	52.00	8.43	S45°20'00"	4.21
C37	60.74	325.00	60.68	S85°21'30"	30.48
C38	62.25	325.00	62.15	N83°46'02"	31.22
C39	62.25	325.00	62.15	N87°00'00"	31.22
C40	29.50	325.00	29.49	N64°47'28"	14.76
C41	37.39	38.00	35.90	S89°37'29"	20.36
C42	13.14	38.00	13.14	N83°39'48"	6.58
C43	61.75	52.00	58.18	N81°05'21"	35.10
C44	46.22	52.00	44.72	N12°15'19"	24.78
C45	16.96	52.00	16.19	N24°13'01"	8.42
C46	20.47	52.00	20.34	N30°51'55"	10.37
C47	42.25	52.00	41.09	S89°34'59"	22.57
C48	15.80	52.00	15.35	S45°20'00"	7.89
C49	14.92	58.00	14.82	S43°37'27"	7.56
C50	21.89	275.00	21.89	S57°09'09"	10.95
C51	106.44	275.00	105.78	S89°53'25"	53.89
C52	0.59	275.00	0.59	N89°54'37"	0.29
C53	58.32	225.00	56.18	S80°19'21"	29.49
C54	58.64	225.00	58.47	S69°25'21"	29.49
C55	15.04	88.00	15.02	S00°10'16"	7.54
C56	18.19	13.00	17.74	N79°31'08"	10.94
C57	44.42	13.00	43.39	N05°13'48"	13.00
C58	45.22	175.00	45.09	N57°37'59"	22.73
C59	110.18	175.00	108.38	N83°04'04"	56.97
C60	13.68	225.00	13.65	S81°11'14"	6.87
C61	54.00	225.00	54.86	N85°31'19"	27.84
C62	64.68	225.00	64.45	N70°17'04"	32.56
C63	45.36	225.00	45.31	N58°18'18"	22.56
C64	90.75	175.00	89.73	N65°20'50"	46.42
C65	20.05	175.00	20.05	N83°29'15"	10.04
C66	22.18	175.00	22.17	S89°55'51"	11.11
C67	1.47	88.00	1.47	S85°20'50"	0.74
C68	4.68	88.00	4.68	S83°29'03"	2.34
C69	14.30	88.00	14.30	S85°20'50"	7.17
C70	83.25	53.00	74.95	S40°57'58"	53.00
C71	54.78	146.22	54.46	S10°21'14"	27.02
C72	176.68	200.00	170.97	N75°47'48"	94.56
C73	177.52	200.00	171.79	N75°39'27"	95.12
C74	242.05	300.00	235.54	S77°59'11"	128.05

LINE	BEARING	DISTANCE
L1	S04°02'02"	52.00
L2	N85°57'58"	25.25
L3	N89°48'12"	51.18
L4	S04°01'31"	27.40
L5	S04°02'02"	15.68
L6	N72°48'12"	51.18
L7	N39°30'26"	53.01
L8	N89°58'13"	52.49
L9	N85°57'58"	65.00
L10	N85°57'58"	65.00
L11	N85°57'58"	50.54
L12	N89°48'12"	51.18
L13	N49°08'04"	W48.48
L14	N49°08'04"	W17.16
L15	S60°00'00"	15.49
L16	S42°21'43"	45.14
L17	S42°21'43"	14.27
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L19	N39°46'30"	26.00
L20	S40°23'43"	46.03
L21	S40°23'43"	17.77
L22	S38°58'55"	28.20
L23	S38°58'55"	51.46
L24	S39°30'26"	50.25
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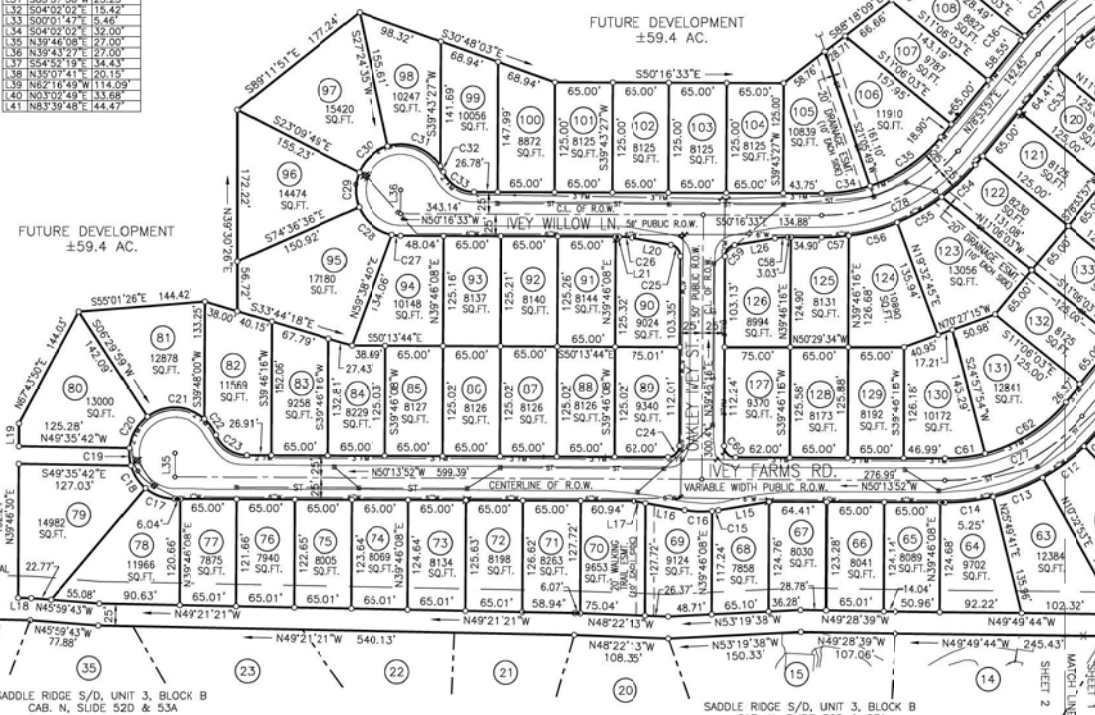
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_____	_____
Date	ELECTRIC- Name, Title, and Agency of Authorized Approving Agent
_____	_____
Date	TELEPHONE- Name, Title, and Agency of Authorized Approving Agent
_____	_____

CERTIFICATE OF OWNERSHIP AND DEDICATION

I (we) hereby certify that I (we are) the owner(s) of the property shown and described herein as evidenced in Book _____ page _____ County Registers Office, and that I (we) hereby adopt this plan of subdivision with my (our) fee consent, establish the minimum building restriction lines, and dedicate all streets, alleys, walks, parks, and other open space to public or private use as noted.

Owner	Date
_____	_____

CERTIFICATE OF APPROVAL OF WATER SYSTEM

I hereby certify that it has been certified to me that the water system(s) outlined or indicated on the final subdivision plat entitled Ivey Farms, Phases 2 & 3 have been installed in accordance with current local and state government requirements.

Name, Title, and Agency of Authorized Approving Agent

CERTIFICATE OF APPROVAL OF SEWER SYSTEM

I hereby certify that it has been certified to me that the sewer system(s) outlined or indicated on the final subdivision plat entitled Ivey Farms, Phases 2 & 3 have been installed in accordance with current local and state government requirements.

Name, Title, and Agency of Authorized Approving Agent

REVISIONS		
NO.	DATE	COMMENTS
1	10-5-2022	COMMENTS ADDRESSED
ORIGINAL ISSUE: 09/16/2022		
SITE PROJECT #: 1951		
FILE: 180041R4		
DATA COLLECTION AND DRAFTING SERVICES PROVIDED BY SMOKY MOUNTAIN LAND SURVEYING CO., INC. SMLS DWG NO. 180041R4		

PLAT

REPORT TO THE FARRAGUT MUNICIPAL PLANNING COMMISSION

PREPARED BY: Mark Shipley, Community Development Director

SUBJECT: Discussion and public hearing on approval of a final plat for the Grove at Boyd Station, Phase 1, Unit 2, 27.63 Acres, 66 Lots, Zoned R-1/OSMR (Lynch Surveys, LLC., Applicant)

INTRODUCTION AND BACKGROUND: This agenda item involves a request for approval of the next phase of the Grove at Boyd Station Subdivision. This is Unit 2 of Phase 1 and includes 66 single-family attached lots. Each building has three platted units with their respective lots. Unit 2 of Phase 1 extends Iron Plow Drive just past the second roundabout with Branch Hook Road looping into each roundabout along Iron Plow Drive. Branch Hook Road surrounds the development's amenity facility area that was approved through the site plan review process at the August 18, 2022, Planning Commission meeting.

In addition to the single family attached lots, this unit includes a stormwater detention basin, and some walking trail sections. Where sidewalks are required, those will be installed with home construction and will be covered with a completion letter of credit. There will also be maintenance letters of credit required as a condition for approval of the final plat.

RECOMMENDATION: Included in the packet is the revised final plat. Staff will verify completion of the field items needed for Planning Commission consideration and will be making a recommendation for the meeting.

GROVE AT BOYD STATION - PHASE 1 UNIT 2 CLT: 162 050 Town of Farragut, Tennessee District 6, Knox County, Tennessee	SHEET NO: 2 OF 3
	PROJECT NO. 4400

Property owners are responsible for maintenance of Stormwater facilities. The covenant for maintenance of stormwater facilities is recorded as instrument #

TOTAL AREA (THIS PHASE)
1,203,418 sq.ft.
27.63 Acres
TOTAL BUILDING LOTS THIS PHASE: 66
OPEN SPACE REQUIRED: 0.35 x 27.63 = 9.67 ACRES
OPEN SPACE THIS PHASE: 13.31 ACRES

LINE LEGEND		SYMBOL LEGEND	
—	CHAIN LINK FENCE	○	IRON ROD (SIZE/TYPE)
—	POWER/TELE. POLE	—	IRON ROD SET
—	LOT LINE	—	20" D.E. = 20" DRAINAGE EASEMENT
—	STRAIGHT LOT LINE	—	15" S.E. = 15" SANITARY SEWER EASEMENT

TOTAL BUILDING AREA
0.75 X 132.16 = 99.12AC
99.12 AC X 0.25 = 24.78 AC
24.78AC / 285 = 0.087 AC
=3787.4 SF/DU

TOTAL LOT COVERAGE
0.75 X 132.16 = 99.12 AC
99.12 AC X 0.35 = 34.69 AC
34.68 AC / 285 = 0.1217 AC
=5902.4 SF/DU

CERTIFICATE OF OWNERSHIP AND DEDICATION

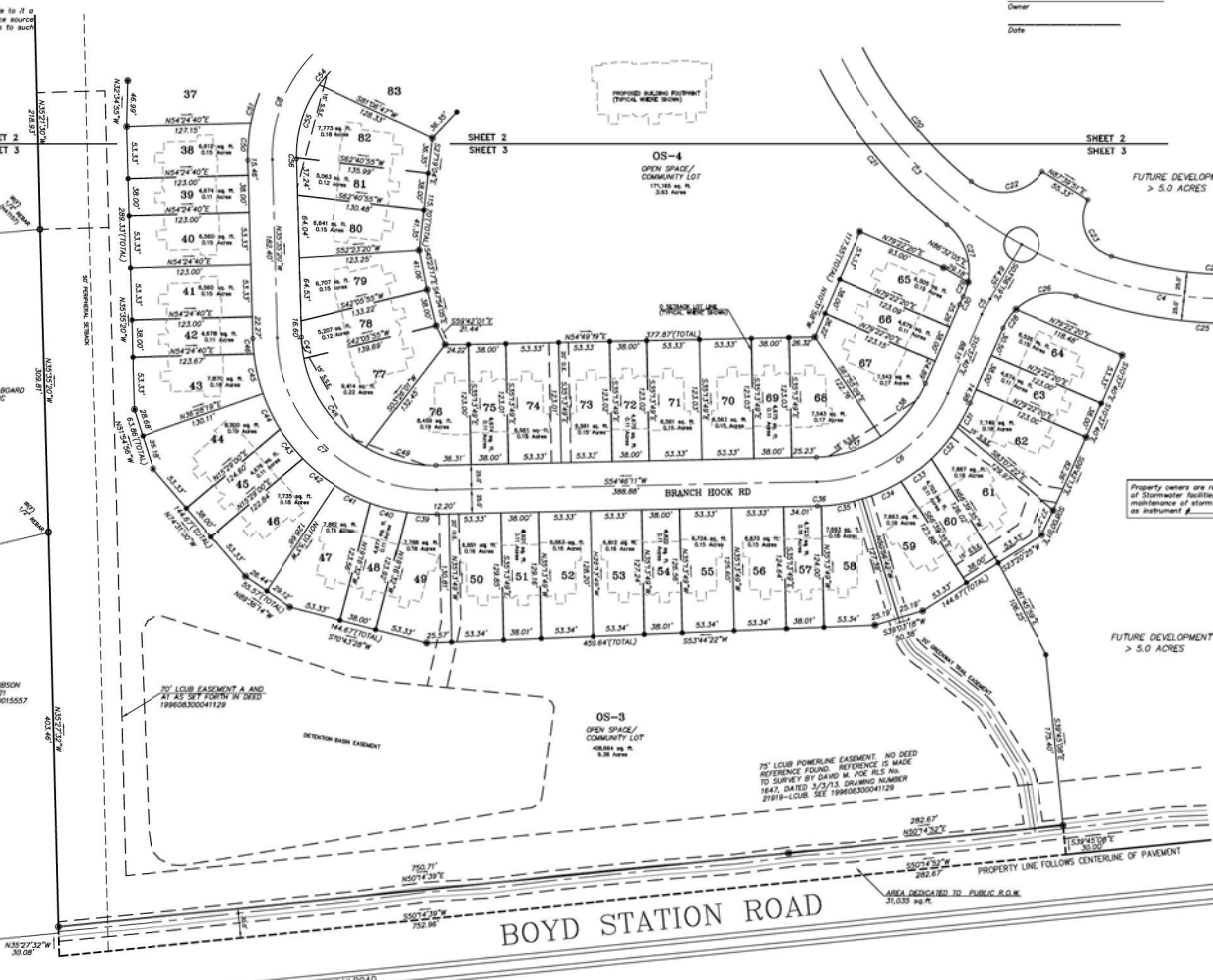
I (we) hereby certify that I am (we are) the owner(s) of the property shown and described herein as evidenced in Book Number _____ Page _____ County Register's Office, and that I (we) hereby adopt this plan of subdivision with my (our) free consent, establish the minimum building restriction lines, and dedicate all streets, alleys, walks, parks, and other open space to public or private use as noted.

Owner _____
Date _____



LOCATION MAP NO SCALE

- IRON PINS SET AT ALL CORNERS BY THIS SURVEY, UNLESS OTHERWISE NOTED.
- ALL NEW PROPERTY MONUMENTS ARE 1/2" x 1/2" x 16" REBAR IRON PINS WITH PLASTIC CAP STAMPED "Lynch 2447".
- CLT: 162 009.01, 162 050, 162 050.01, 162 054.01
- DEED REFERENCES - 050 = 20210335-0078400
- THIS PROPERTY IS ZONED: FARR-6-1 (COMM.)
- BUILDING SETBACKS FOR (R1, COMM) ZONING ARE AS FOLLOWS:
FRONT YARD: 20 FEET
FRONT FACING GARAGE: 30 FEET
SIDE YARD: (MINIMUM OF 20 FEET BETWEEN BUILDINGS) 10 FEET UNLESS SHOWN OTHERWISE
REAR YARD: 20 FEET
PROPERTY PROPERTY LINE: 50 FEET
- ATTACHED LOT SETBACKS, INCLUDING REQUIRED OFFSETS, ARE PER TOP ZONING ORDINANCE.
- THIS PROPERTY DOES NOT LIE WITHIN A 100/200 YEAR FLOOD ZONE PER FIRM FLOOD INSURANCE RATE MAP NUMBER: 4705030356F
EFFECTIVE DATE: MAY 01, 2007
- NORTH ARROW: NAD83(2011) (2011)
- ALL WATERS AND SEWER LINES SHALL HAVE A 15-FOOT-10-DEGREE EASEMENT IN FAVOR OF THE TOWN OF FARRAGUT AND ARE RESERVED FOR PUBLIC USE. UPON COMPLETION OF CONSTRUCTION OF WATERS, TRAILS, AND THE COMPLETION OF THE TWO YEAR MAINTENANCE LETTER OF CREDIT, THE TOWN OF FARRAGUT SHALL ACCEPT MAINTENANCE AND LIABILITY OF USE OF SAID EASEMENTS.
- REFERENCE TO TOWN R.O.M. MAP FOR MOORE ROAD LAST REVISED 03-18-2005 KNOX COUNTY PROJ. 47056-2015-5A TO DO PROJ. SEP-16-470530
- THE WATER AND SEWER LINES INSTALLED IN THIS SUBDIVISION AND/OR AS SHOWN HEREON SHALL HAVE A 15-FOOT-10-DEGREE EASEMENT, ON CENTER, SUBJECT TO THE RESTRICTIONS AND CONDITIONS OF RECORD PER INSTRUMENT #200800500130 ON FILE AT THE KNOX COUNTY DEPT. OF COM. OFFICE. THE FULL EXTENT OF ALL SAID WATER AND SEWER LINE EASEMENTS ARE OTHER LOCATED MOORE ROAD, THE PLATED ROAD RIGHTS-OF-WAY AND/OR MOORE ROAD STANDARD LOT LINE UTILITY AND DRAINAGE EASEMENTS, OR WHERE NOT LOCATED MOORE ROAD AND MOORE ROAD SHALL BE OVER SHOWN LANDSCAPING, WALKING TRAIL, AND CLIMBING, POOL, AND PLAYGROUND AREA.
- LANDSCAPING, WALKING TRAIL, AND CLIMBING, POOL, AND PLAYGROUND AREA SHALL BE FOR LANDSCAPING, WALKING TRAIL, AND DETENTION BASIN ALONG WITH GENERAL OPEN SPACE LOT. LANDSCAPING SHALL BE OVER SHOWN LANDSCAPING, WALKING TRAIL, AND CLIMBING, POOL, AND PLAYGROUND AREA.
- LANDSCAPING, WALKING TRAIL, AND CLIMBING, POOL, AND PLAYGROUND AREA SHALL BE FOR LANDSCAPING, WALKING TRAIL, AND DETENTION BASIN ALONG WITH GENERAL OPEN SPACE LOT. LANDSCAPING SHALL BE OVER SHOWN LANDSCAPING, WALKING TRAIL, AND CLIMBING, POOL, AND PLAYGROUND AREA.



CURVE TABLE					CURVE TABLE				
CURVE	BEARING	CHORD	RADIUS	LENGTH	CURVE	BEARING	CHORD	RADIUS	LENGTH
C1	N00°00'00"E	56.70	250.00	56.70	C24	N00°00'00"E	24.13	775.00	43.68
C2	N00°00'00"E	24.13	250.00	24.13	C25	N00°00'00"E	43.68	775.00	43.68
C3	N00°00'00"E	24.13	450.00	208.00	C26	N00°00'00"E	43.68	775.00	43.68
C4	N00°00'00"E	24.13	450.00	208.00	C27	N00°00'00"E	43.68	775.00	43.68
C5	N00°00'00"E	24.13	450.00	208.00	C28	N00°00'00"E	43.68	775.00	43.68
C6	N00°00'00"E	24.13	450.00	208.00	C29	N00°00'00"E	43.68	775.00	43.68
C7	N00°00'00"E	24.13	450.00	208.00	C30	N00°00'00"E	43.68	775.00	43.68
C8	N00°00'00"E	24.13	450.00	208.00	C31	N00°00'00"E	43.68	775.00	43.68
C9	N00°00'00"E	24.13	450.00	208.00	C32	N00°00'00"E	43.68	775.00	43.68
C10	N00°00'00"E	24.13	450.00	208.00	C33	N00°00'00"E	43.68	775.00	43.68
C11	N00°00'00"E	24.13	450.00	208.00	C34	N00°00'00"E	43.68	775.00	43.68
C12	N00°00'00"E	24.13	450.00	208.00	C35	N00°00'00"E	43.68	775.00	43.68
C13	N00°00'00"E	24.13	450.00	208.00	C36	N00°00'00"E	43.68	775.00	43.68
C14	N00°00'00"E	24.13	450.00	208.00	C37	N00°00'00"E	43.68	775.00	43.68
C15	N00°00'00"E	24.13	450.00	208.00	C38	N00°00'00"E	43.68	775.00	43.68
C16	N00°00'00"E	24.13	450.00	208.00	C39	N00°00'00"E	43.68	775.00	43.68
C17	N00°00'00"E	24.13	450.00	208.00	C40	N00°00'00"E	43.68	775.00	43.68
C18	N00°00'00"E	24.13	450.00	208.00	C41	N00°00'00"E	43.68	775.00	43.68
C19	N00°00'00"E	24.13	450.00	208.00	C42	N00°00'00"E	43.68	775.00	43.68
C20	N00°00'00"E	24.13	450.00	208.00	C43	N00°00'00"E	43.68	775.00	43.68
C21	N00°00'00"E	24.13	450.00	208.00	C44	N00°00'00"E	43.68	775.00	43.68
C22	N00°00'00"E	24.13	450.00	208.00	C45	N00°00'00"E	43.68	775.00	43.68
C23	N00°00'00"E	24.13	450.00	208.00	C46	N00°00'00"E	43.68	775.00	43.68
C24	N00°00'00"E	24.13	450.00	208.00	C47	N00°00'00"E	43.68	775.00	43.68
C25	N00°00'00"E	24.13	450.00	208.00	C48	N00°00'00"E	43.68	775.00	43.68
C26	N00°00'00"E	24.13	450.00	208.00	C49	N00°00'00"E	43.68	775.00	43.68
C27	N00°00'00"E	24.13	450.00	208.00	C50	N00°00'00"E	43.68	775.00	43.68
C28	N00°00'00"E	24.13	450.00	208.00	C51	N00°00'00"E	43.68	775.00	43.68
C29	N00°00'00"E	24.13	450.00	208.00	C52	N00°00'00"E	43.68	775.00	43.68
C30	N00°00'00"E	24.13	450.00	208.00	C53	N00°00'00"E	43.68	775.00	43.68
C31	N00°00'00"E	24.13	450.00	208.00	C54	N00°00'00"E	43.68	775.00	43.68
C32	N00°00'00"E	24.13	450.00	208.00	C55	N00°00'00"E	43.68	775.00	43.68
C33	N00°00'00"E	24.13	450.00	208.00	C56	N00°00'00"E	43.68	775.00	43.68
C34	N00°00'00"E	24.13	450.00	208.00	C57	N00°00'00"E	43.68	775.00	43.68
C35	N00°00'00"E	24.13	450.00	208.00	C58	N00°00'00"E	43.68	775.00	43.68
C36	N00°00'00"E	24.13	450.00	208.00	C59	N00°00'00"E	43.68	775.00	43.68
C37	N00°00'00"E	24.13	450.00	208.00	C60	N00°00'00"E	43.68	775.00	43.68
C38	N00°00'00"E	24.13	450.00	208.00	C61	N00°00'00"E	43.68	775.00	43.68
C39	N00°00'00"E	24.13	450.00	208.00	C62	N00°00'00"E	43.68	775.00	43.68
C40	N00°00'00"E	24.13	450.00	208.00	C63	N00°00'00"E	43.68	775.00	43.68
C41	N00°00'00"E	24.13	450.00	208.00	C64	N00°00'00"E	43.68	775.00	43.68
C42	N00°00'00"E	24.13	450.00	208.00	C65	N00°00'00"E	43.68	775.00	43.68
C43	N00°00'00"E	24.13	450.00	208.00	C66	N00°00'00"E	43.68	775.00	43.68
C44	N00°00'00"E	24.13	450.00	208.00	C67	N00°00'00"E	43.68	775.00	43.68
C45	N00°00'00"E	24.13	450.00	208.00	C68	N00°00'00"E	43.68	775.00	43.68
C46	N00°00'00"E	24.13	450.00	208.00	C69	N00°00'00"E	43.68	775.00	43.68
C47	N00°00'00"E	24.13	450.00	208.00	C70	N00°00'00"E	43.68	775.00	43.68
C48	N00°00'00"E	24.13	450.00	208.00	C71	N00°00'00"E	43.68	775.00	43.68
C49	N00°00'00"E	24.13	450.00	208.00	C72	N00°00'00"E	43.68	775.00	43.68
C50	N00°00'00"E	24.13	450.00	208.00	C73	N00°00'00"E	43.68	775.00	43.68
C51	N00°00'00"E	24.13	450.00	208.00	C74	N00°00'00"E	43.68	775.00	43.68
C52	N00°00'00"E	24.13	450.00	208.00	C75	N00°00'00"E	43.68	775.00	43.68
C53	N00°00'00"E	24.13	450.00	208.00	C76	N00°00'00"E	43.68	775.00	43.68
C54	N00°00'00"E	24.13	450.00	208.00	C77	N00°00'00"E	43.68	775.00	43.68
C55	N00°00'00"E	24.13	450.00	208.00	C78	N00°00'00"E	43.68	775.00	43.68
C56	N00°00'00"E	24.13	450.00	208.00	C79	N00°00'00"E	43.68	775.00	43.68
C57	N00°00'00"E	24.13	450.00	208.00	C80	N00°00'00"E	43.68	775.00	43.68
C58	N00°00'00"E	24.13	450.00	208.00	C81	N00°00'00"E	43.68	775.00	43.68
C59	N00°00'00"E	24.13	450.00	208.00	C82	N00°00'00"E	43.68	775.00	43.68
C60	N00°00'00"E	24.13	450.00	208.00	C83	N00°00'00"E	43.68	775.00	43.68
C61	N00°00'00"E	24.13	450.00	208.00	C84	N00°00'00"E	43.68	775.00	43.68
C62	N00°00'00"E	24.13	450.00	208.00	C85	N00°00'00"E	43.68	775.00	43.68
C63	N00°00'00"E	24.13	450.00	208.00	C86	N00°00'00"E	43.68	775.00	43.68
C64	N00°00'00"E	24.13	450.00	208.00	C87	N00°00'00"E	43.68	775.00	43.68
C65	N00°00'00"E	24.13	450.00	208.00	C88	N00°00'00"E	43.68	775.00	43.68
C66	N00°00'00"E	24.13	450.00	208.00	C89	N00°00'00"E	43.68	775.00	43.68
C67	N00°00'00"E	24.13	450.00	208.00	C90	N00°00'00"E	43.68	775.00	43.68
C68	N00°00'00"E	24.13	450.00	208.00	C91	N00°00'00"E	43.68	775.00	43.68
C69	N00°00'00"E	24.13	450.00	208.00	C92	N00°00'00"E	43.68	775.00	43.68
C70	N00°00'00"E	24.13	450.00	208.00	C93	N00°00'00"E	43.68	775.00	43.68
C71	N00°00'00"E	24.13	450.00	208.00	C94	N00°00'00"E	43.68	775.00	43.68
C72	N00°00'00"E	24.13	450.00	208.00	C95	N00°00'00"E	43.68	775.00	43.68
C73	N00°00'00"E	24.13	450.00	208.00	C96	N00°00'00"E	43.68	775.00	43.68
C74	N00°00'00"E	24.13	450.00	208.00	C97	N00°00'00"E	43.68	775.00	43.68
C75	N00°00'00"E	24.13	450.00	208.00	C98	N00°00'00"E	43.68	775.00	43.68
C76	N00°00'00"E	24.13	450.00	208.00	C99	N00°00'00"E	43.68	775.00	43.68
C77	N00°00'00"E	24.13	450.00	208.00	C100	N00°00'00"E	43.68	775.00	43.68



REVISIONS	
DRAWN BY: MSTRANGE	1 07/20/2022 - 1st COMMENTS
CHECKED BY: R. LYNCH	2 10/12/2022 - 1st COMMENTS
APPROVED BY: R.S.L.	3
SCALE: 1"=60'	4
DATE: 06/21/2022	5
	6

LYNCH SURVEYS LLC
SUBDIVISIONS | AS-BUILTS | SITE DESIGN
4405 COSTER RD. KNOXVILLE, TENN. 37912
865-584-2630 FAX: 865-584-2801 WWW.LYNCHSURVEY.COM

FINAL PLAT OF:
HOMESTEAD LAND HOLDINGS, LLC
122 Perimeter Park Drive
Knoxville, Tennessee 37922
Phone 865-966-8700

GROVE AT BOYD STATION - PHASE 1 UNIT 2
CLT: 162 009.01, 162 050, 162 050.01, 162 054.01
Town of Farragut, Tennessee
District 6, Knox County, Tennessee

SHEET NO:
3 OF 3
PROJECT NO.
4400

REPORT TO THE FARRAGUT MUNICIPAL PLANNING COMMISSION

PREPARED BY: Mark Shipley, Community Development Director

SUBJECT: Discussion and public hearing on a concept plan for the Virtue View Farm Subdivision, Parcels 33.03 and 33.04, Tax Map 152 033.03 and 152 033.04, 44.09 Acres, 13 Lots, Zoned R-1 (Steve Williams, Applicant)

INTRODUCTION AND BACKGROUND: This agenda was reviewed for discussion purposes only at the July 21, 2022, Planning Commission meeting. The following is a copy of what was presented as the staff report for that meeting:

INTRODUCTION AND BACKGROUND: This agenda item involves development of two tracts near the intersection of Virtue Road and Evans Road that were recently rezoned from Agricultural to Rural Residential. The applicant has requested that this be for discussion purposes only so that feedback could be provided on variance requests that have been included on their initial concept plan.

The concept plan shows the property being subdivided into 13 house lots ranging in size from 1.2 acres to almost 12 acres. The concept plan has been presented at two staff/developer meetings. At the initial staff/developer meeting, the applicant was asked to revisit some of the variances and re-submit a plan that was more consistent with variances that the Planning Commission has been presented with on other larger lot developments with a more rural character.

Those variances have included mainly street and right of way widths and an opportunity to have an unstructured drainage system that uses overland flow rather than curbing, catch basins, and storm sewers. As you will recall, both the Sassafras Meadows development off Dixon Road and the Ray Keeney development off Union Road included, to some extent, these variances. Staff would note, however, that in those developments there were fewer lots, and the lots were generally larger. Sassafras Meadows included four lots each greater than five acres and the Ray Keeney subdivision off Union Road includes six lots ranging in size from 1.85 acres to 6.43 acres.

DISCUSSION: Since Sassafras Meadows and the Keeney property were relatively recent developments with a desired rural character, staff will evaluate the applicant's variances in relation to those projects. The applicant has conveyed that they too desire a rural character so these two recent developments would help establish a baseline for evaluating the variances being requested at this time. The applicant's variances noted on their revised concept plan and staffs' comments (in italics) on each variance are as follows:

1. **No detention pond required.** *Given the proximity of the property to the lake, scale of the proposed subdivision, and size of the proposed lots, staff would support this variance.*
2. **Private 20-foot-wide road with no curbs. Grass swales/ditches instead of curb and gutter and storm sewer.** *Like the Sassafras Meadows and Keeney property subdivisions, staff is in support of grass swales in lieu of curb and gutter and storm sewer. For the lot sizes proposed, this provides*

for enhanced water quality. Staff is not in support of the request for this to be a private street. Private streets have not been permitted in subdivisions for several years. When they were permitted many years ago, the Town ended up being asked to take over streets that were originally private and were facing serious issues with maintenance that the HOA was not able to address. This cost the Town staff time and money. In addition to the private street prohibition in the Subdivision Regulations, the Farragut Zoning Ordinance also requires new lots to front for a minimum of 25 feet on a public street. So, in addition to a variance associated with the Subdivision Regulations, the requirement in the Zoning Ordinance for public street frontage would also have to be addressed and would involve the Board of Zoning Appeals and the parameters governing their consideration of variance requests. Staff would note that private streets also conflict with the Town's Comprehensive Land Use Plan (CLUP) and its objective to promote increased connectivity and a greater sense of community. A gated private street would be inconsistent with this objective. If gates are desired, those could be installed along the driveways of the house lots. Having the street as public would also benefit the future residents of this subdivision as they would not be responsible for the street's maintenance.

Like the Sassafras Meadows and Keeney subdivisions, staff would be open to a variance from the public street width to promote a more rural character and complement the natural drainage system. The Virtue View Subdivision includes more than twice the number of lots than Sassafras Meadows and the Keeney subdivision. In those developments the public street width was reduced from 26 to 20 feet which is also what the applicant is requesting for the Virtue View Subdivision. A question is whether, given the number of lots, a reduction to 20 feet is too much. Another important consideration is that the street will have to be constructed to a width and standard that can provide compliance with applicable fire code requirements.

3. **Gated entry with HOA responsibility for road, gated entry and landscaping in road entry.** Please see staff comments from previous variance request.
4. **Cul-de-sac with a length of 911 feet, exceeding the maximum 500 feet permitted.** Given the number of lots proposed and the property's topography, staff would support this variance.
5. **No vehicular connections to other roads or walking trails or sidewalk connections to any adjoining property.** Given the number of proposed lots, staff would support not having a vehicular connection to the right of way stubbed into the property from the Grove at Boyd Station Subdivision. Staff would not support a variance from the requirement to provide walking trail and/or sidewalk connections to abutting properties. The proposed subdivision includes 13 lots. Smaller developments like Old Stage Farms off Old Stage Road included both sidewalk and walking trail connections. Two recent one-acre house lots on Boring Road also were required to construct a walking trail across their frontages in a relatively rural portion of the Town. Even the Sassafras Meadows and Keeney subdivisions provided for walking trail easements and the ability to construct such facilities in the future. As mentioned earlier, these were both developments with a desired rural character and with less than half the density of the Virtue View Subdivision. Still, trail and/or sidewalk provisions were required.

Throughout its history the Town has been very proactive in its development of pedestrian and bicycle facilities and making the Town better connected by means other than the automobile. The Virtue View Subdivision, at a minimum, should provide a trail connection from the Grove at Boyd Station to the proposed cul-de-sac and provide for pedestrian facility easements along the abutting collector streets of Evans Road and Virtue Road. These are key connections and help implement the Town's adopted CLUP and Pedestrian and Bicycle Plan. The Town's walking trails and sidewalks are consistently referenced as making the Town a highly desirable place to live.

6. **Omit 10% open space.** *If the development is not required a detention basin and if water quality easements and protections for the aquatic buffer are platted, staff would be open to this variance given the number and size of the lots.*
7. **Lots 3-6, 8-9, and 11-13 exceed the maximum lot width to depth ratio.** *Though other elements of the lot layout would likely be affected by decisions made on other requested variances, staff has concerns about this variance because it is self-created in terms of the number of lots proposed. Lots 5-8 appear to be on steep areas and may need to be reduced by one lot to work better with the topography. This could potentially eliminate the need for this variance.*

Staff would also note that, although not listed as a variance request, the subdivision is required to improve its collector street frontages along Evans Road and Virtue Road to the Town's Complete Streets cross section in the Pedestrian and Bicycle Plan. This will likely be another discussion item. The applicant's revised concept plan is included in the packet.

Based on the discussion at the July workshop session, the Planning Commission expressed support for some of the variances listed in the above report due to the size of the development and topography. For the upcoming meeting, the Commission will need to provide guidance on provisions for pedestrian facilities. If none are required at this time, staff would recommend that easements be platted for the provision of pedestrian facilities where such facilities would make sense in the future. This would be similar to what the Commission required for the Sassafras Meadows and Keeney (Union Road) Subdivisions that involved large lots. Those subdivisions also included fewer than half of the number of lots being proposed at this time for the Virtue View Subdivision.

The applicant is still showing the proposed street as private and with a gated entrance and is requesting approval for variances that would provide for this. During the July workshop discussion, neither the staff nor the Planning Commission were supportive of the private street request. Staff will be recommending denial of this variance request. Another important clarification concerning this item is that this is only a concept plan with limited information provided at this time. Any approvals will need to be conditioned on such an understanding and that there could be modifications required when the more detailed preliminary plat is submitted.

NOTES:

1. THIS PLAN CONTAINS CONCEPTUAL INFORMATION WHICH IS NOT INTENDED FOR CONSTRUCTION PURPOSES.
2. EXISTING CONTOURS BASED ON STATE LIDAR DATA.
3. ACCESS TO LOTS 1-9 FROM INTERNAL ROAD SYSTEM ONLY. ACCESS TO LOT 11 FROM EVANS ROAD NOT CLOSER THAN 100' FROM THE CENTERLINE OF EVANS AND VIRTUE ROAD. ACCESS TO LOTS 12 & 13 FROM VIRTUE ROAD.
4. LAKE FRONTAGE TO BE A PART OF LOT 13.
5. THE PROPERTY OWNER(S) ARE RESPONSIBLE FOR MAINTAINING STORM WATER FACILITIES ON THIS PROPERTY. EASEMENTS TO BE PLATTED ALONG PRIVATE ROADS FOR ACCESS.
6. THE OWNER IS RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF CONSTRUCTION SITE POLLUTION PREVENTION CONTROLS THROUGHOUT THE LIFE OF THE PROJECT.
7. APPROXIMATE LOCATION OF EXISTING OVERHEAD POWER/TELEPHONE LINES NOT FIELD LOCATED.
8. APPROXIMATE LOCATION OF EXISTING SANITARY SEWER NOT FIELD LOCATED.
9. WATER PROVIDER: FUD
10. SEWER PROVIDER: FUD

VARIANCES:

1. NO DETENTION POND REQUIRED.
2. PRIVATE 20' WIDE ROAD WITH NO CURBS. GRASS SWALES/DRITCHES PROVIDE STORM WATER QUALITY. SITE DRAINS TO FORT LOUDOUN LAKE.
3. GATED ENTRY WITH HOA RESPONSIBLE FOR ROAD, GATED ENTRY, LANDSCAPING IN ROAD ENTRY.
4. CUL DE SAC ROAD AT 11-011.86' MEASURED FROM CENTERLINE OF EVANS ROAD TO CL OF CUL DE SAC.
5. NO VEHICULAR CONNECTIONS TO TO OTHER ROADS OR WALKING TRAILS OR SIDEWALK CONNECTIONS TO ANY ADJOINING PROPERTY.
6. CMT 10% OPEN SPACE.
7. LOTS 3-6, 8-9, & 11-13 EXCEED MAXIMUM LOT WIDTH TO DEPTH RATIO.
8. NO ROAD IMPROVEMENTS TO VIRTUE OR EVANS ROAD INTO EXISTING CONSTRUCTION OF ANY SIDEWALKS OR WALKING TRAILS.

TOTAL AREA: 44.44091 ACRES
 TREE COVERAGE (ACRES): 41-3.67
 TOBE COVERAGE (SQ. FT.): 41,159,896.20
 TOTAL LOTS: 13
 CLT MAP: 182
 PARCELS: 30.03 & 33.04
 DEED REFERENCE: BK: 1974 PG: 592 & BK: 2022 PG: 101
 ZONING: R-1
 30' FRONT SETBACK
 15' MINIMUM, 40' COMBINED SIDE SETBACK
 25' REAR SETBACK
 DEVELOPER MAY HAVE MORE RESTRICTIVE SETBACKS

CURVE	CHORD BEARING	CHORD LENGTH	RADIUS	ARC LENGTH
C1	S 07° 35' 25" E	34.88'	150.00'	90.00'
C2	S 51° 50' 19" E	261.56'	160.00'	317.69'



LEGEND

- PROPOSED FIRE HYDRANT
- EXISTING MANHOLE
- EXISTING UTILITY POLE WITH LIGHT
- EXISTING TREE LINE
- 120' - EXISTING DRIVE
- VEI WEATHER CONVEYANCE (WV)
- EXISTING OVERHEAD ELECTRIC
- DRAINAGE DIRECTION
- PROPOSED WATER LINE

DEVELOPER:
 STEVE AND VIRGINIA WILLIAMS
 721 VIRTUE ROAD
 KNOXVILLE, TENNESSEE 37904
 (865) 719-4491

ENGINEER:
 ROBERT G. CAMPBELL & ASSOCIATES, L.P.
 7503 TAGGART LANE
 KNOXVILLE, TN 37938
 (865) 947-5936

BOUNDARY SURVEY INFORMATION
 PROVIDED BY:

STANLEY C. HINDS (APRIL 6, 1980)
 REVISED (JANUARY 9, 1990)
 RICHARD S. LYNCH (APRIL 24, 2001)



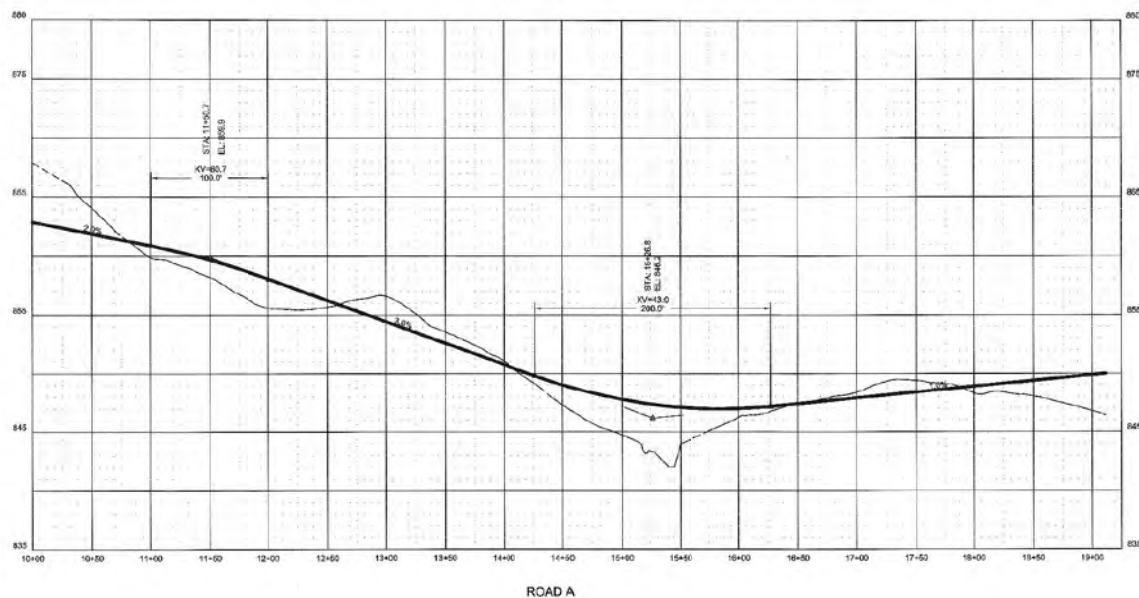
NO.	DATE	BY	CHKD.	ROD	TRG	REVISIONS	DESIGNED BY	CHECKED BY	SCALE	SHEET
							AJJ	RCG	1"=100'	NO. 1
							AJJ	DATE	FILED	OF 3 SHEETS



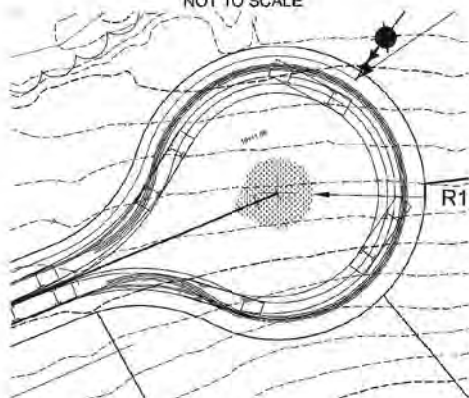
ROBERT G. CAMPBELL & ASSOC., L.P.
 CONSULTING ENGINEERS
 KNOXVILLE, TENNESSEE

CONCEPT PLAN FOR:
 VIRTUE VIEW FARM

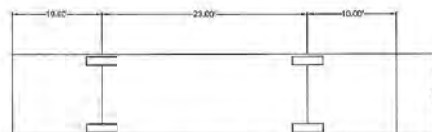
12444 EVANS ROAD
 721 VIRTUE ROAD



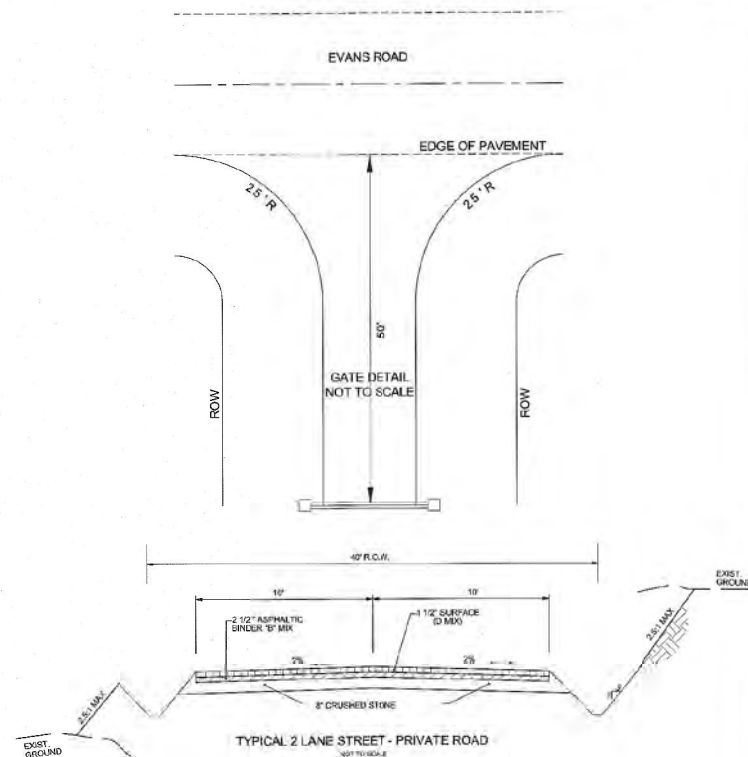
FIRE TRUCK TURNING MOVEMENT
DIAGRAM
NOT TO SCALE



DESIGN FIRE TRUCK DETAIL



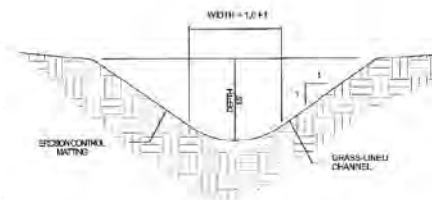
NOT TO SCALE



BORROW MATERIALS TO BE USED FOR FILL SHALL BE TESTED FOR MAXIMUM DRY DENSITY AND OPTIMUM MOISTURE CONTENT (STANDARD PROCTOR ASTM D698) PRIOR TO PLACEMENT OF FILL.

FILL SOILS SHALL BE COMPACTED IN LAYERS 8 INCHES OR LESS IN THICKNESS TO A MINIMUM OF 90 PERCENT STANDARD PROCTOR MAXIMUM DRY DENSITY AND WITHIN PLUS OR MINUS 3 PERCENT OPTIMUM MOISTURE CONTENT. NO LESS THAN SIX (6) DENSITY TESTS SHALL BE PERFORMED IN EVERY 10,000 SQUARE FEET OF AREA PER 3 INCH LIFT. (APPROX. 1 TEST PER EVERY 50 SQ. FT.)

* "D" MIX REQUIRED ON FINAL SURFACE WHERE GRADE IS 10% OR GREATER.



GRASS CHANNEL
TYPICAL DETAIL
NOT TO SCALE



NO.	DATE	DESCRIPTION	BY	CAD



ROBERT G. CAMPBELL & ASSOC., L.P.
CONSULTING ENGINEERS
KNOXVILLE, TENNESSEE

CONCEPT PLAN FOR:
VIRTUE VIEW FARM

ROAD PROFILE

DESIGNED BY AJJ	CHECKED BY RGC	SCALE 1"=50' H 1"=50' V	SHEET NO. 2
DRAWN BY AJJ	DATE 7/11/2002	FILE NO. 25129	OF 3 SHEETS



NOTE:
SHADED AREAS REPRESENT LOCATIONS ON
PROPERTY THAT EXCEED 15% SLOPE.



LOCATION MAP
N.T.S.

LEGEND

- PROPOSED FIRE HYDRANT
- EXISTING MANHOLE
- EXISTING UTILITY POLE WITH LIGHT
- EXISTING TREE 1 INCH
- EXISTING TREE 6 INCH
- NEW WOODEN CONVEYANCE (W.C.)
- EXISTING OVERHEAD ELECTRIC
- DRAINAGE DIRECTION
- PROPOSED WATER LINE



NO.	DATE	BY	CHK.	REVISIONS	DESIGNED BY	CHECKED BY	SCALE	SHEET
1	07-24-22	AW	RGC	ADD REWER LINE	AW	RGC	1"=100'	NO. 3
2	11-27-22	AW	RGC	LOT LINES/CONTACTS	AW	RGC	FILE NO.	OF 3 SHEETS
REVISIONS					CONCEPT PLAN OF: VIRTUE VIEW FARM			
12444 EVANS ROAD 721 VIRTUE ROAD					10/12/2022 2:12P			



ROBERT G. CAMPBELL & ASSOC., L.P.
CONSULTING ENGINEERS
KNOXVILLE, TENNESSEE

CONCEPT PLAN OF:
VIRTUE VIEW FARM

12444 EVANS ROAD
721 VIRTUE ROAD

DESIGNED BY	CHECKED BY	SCALE	SHEET
AW	RGC	1"=100'	NO. 3
DRAWN BY	DATE	FILE NO.	OF 3 SHEETS
AW	10/12/2022	2:12P	

REPORT TO THE FARRAGUT MUNICIPAL PLANNING COMMISSION

PREPARED BY: Bart Hose, Assistant Community Development Director

SUBJECT: Discussion on updates to the Farragut Sign Ordinance (Town of Farragut, Applicant)

INTRODUCTION AND BACKGROUND: This agenda item involves a workshop discussion of potential amendments to the Town's Sign Ordinance. As you may remember, the existing ordinance was adopted in the spring of 2020 after considerable work with the input of a steering committee. The project involved rewriting the Town's sign regulations in a more legally defensible content neutral form, while also making a number of other changes and updates to the requirements. The new ordinance has now been in place for approximately two and a half years, and the Town staff has been working with the Visual Resources Review Board (VRRB) to identify additional potential amendments to improve enforcement, clarify sections where needed, and provide for additional signage options where appropriate. The VRRB reviewed and recommended the current draft of the proposed amendments at its October meeting. Some of the more significant changes include the following.

- The reintroduction of General Occupant Signs as a permitted type of sign. This sign type includes small wall plaques and similar informational signs located around the entrances to buildings.
- Changes to the provisions for Peripheral Accessory Signs to allow for a second such sign along driveway entrances. Business owners often looked to utilize these accessory signs for entrance & exit signs and the current limitation of one per access street proved impractical for this use.
- Providing for General Occupant Signs and the updated standards for Peripheral Accessory Signs at residential subdivision club houses and similar HOA controlled recreation facilities.
- The addition of requirements for non-residential construction site signs.

Many of these amendments affect multiple sections of the ordinance and had to be coordinated throughout the code.

DISCUSSION: Included in the packet is a draft of the proposed new ordinance language for review. The proposed amendments are shown in blue text. Explanatory comments have been added after each proposed amendment and are shown in green italicized text. Staff is requesting feedback on these draft amendments before presenting an ordinance for formal recommendation to the Board of Mayor and Aldermen.

Possible Amendments to Sign Ordinance

Proposed amendments are in blue text.

Explanation of proposed amendments are in green italic text.

Chapter 109 – Signs.

Section 109-1. Authority.

This chapter shall be known as the "Sign Ordinance of the Town of Farragut, Tennessee." This chapter is adopted under the authority granted by T.C.A. § 6-2-201.

Section 109-2. Purpose, Intent, and General Scope.

(a) The purpose and intent of this chapter is the following:

- (1) Regulate the number, location, size, type, illumination, and other physical characteristics of signs within the Town in order to promote the public health, safety and welfare.
- (2) Maintain, enhance, and improve the aesthetic environment of the Town by preventing visual clutter.
- (3) Improve the visual appearance of the Town while providing for effective means of communication, consistent with constitutional guarantees.
- (4) Avoid signage that is a threat to safety due to its placement and other physical characteristics.
- (5) Ensure the safe construction and maintenance of signs, and
- (6) Support businesses in the Town by providing for fair and consistent sign allocations and enforcement of the sign regulations set forth herein.

(b) This ordinance is not intended to regulate the message on any sign, any building design, any display not defined as a sign, or any sign which cannot be viewed from outside a building.

Section 109-3. Provisions declared to be minimum requirements.

The provisions of this chapter are considered to be minimum requirements. Wherever there is a discrepancy between the minimum standards noted in this chapter and those contained in any other lawfully adopted regulation or ordinance of the town, the strictest standard shall apply.

Section 109-4. Severability.

If any section, subsection, sentence, clause, or phrase of this chapter is for any reason held to be invalid by a court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this ordinance.

Section 109-5. Substitution.

Signs containing noncommercial speech are permitted anywhere that advertising or business signs are permitted, subject to the same regulations applicable to such signs.

Section 109-6. Definitions.

The following words, terms, and phrases, when used in this chapter, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Abandoned sign means any sign, including its supporting structure, erected in conjunction with a particular use, for which the use has been discontinued for a period of 90 days or more, or a lawfully erected temporary sign for which the time period allowed for display of the sign has expired.

Architectural compatibility means visual harmony and consistency with regard to color, building/sign materials, style, mounting, and illumination.

Athletic field means a piece of land designed, approved, and dedicated for playing a game.

Banner sign means any sign of flexible lightweight material that allows movement caused by wind. A flag, as defined herein, shall not be considered a banner sign.

Changeable copy sign means any sign where letters or numbers displayed on the sign are designed to be changed frequently to display different messages.

Dilapidated sign means a sign that is in a bad, unsafe, or unsightly condition due to neglect or misuse.

Flag means a fabric sign of a non-commercial nature with a distinctive color and design that is used as an emblem, standard, decoration, or symbol and that is hoisted on a permanent freestanding flagpole or mounted with a pole attached to a building.

Freestanding sign means a sign that is either anchored in the ground or secured so that it is not subject to being moved by wind and that is independent of any building.

Freestanding building frontage sign means a non-illuminated sign of a solid material with copy that is meant to be readable only to a pedestrian and that is placed near the front of a building.

Gas pump signs means permanent signs, including Federally required safety information, adhered to a gas pump island, and reviewed through a sign permit process.

General occupant sign means a minor sign(s) located on the door or adjoining wall of a principal building's primary public entrance.

{This definition has been added to support the inclusion of General Occupant Signs as permitted signs in several subsequent sections of the proposed ordinance.}

Ground-mounted sign means a sign erected on a freestanding frame and not attached to any building. Such signs may be two-sided, provided that both sides cannot be seen simultaneously from any point. Such signs have a solid base with no exposed poles.

Interior accessory freestanding sign means a sign permitted interior to a development and not meant to be readable from a public street, public access easement, or adjacent property.

Interstate/interchange pole sign means a sign permitted near the interstate interchange as stipulated in this ordinance.

Legibility means how easy a sign is to read. This is based on the characteristics of letters, numbers, and characters that make it possible to differentiate one from another.

Manual on Uniform Traffic Control Devices (MUTCD) means the manual produced by the Federal Highway Administration that addresses three specific types of signs: guide, warning, and directional. The manual includes minimum size, height, and placement standards to achieve readability and prevent traffic accidents.

Non-commercial means not naming, advertising, or calling attention to a business or commercial product, service, or activity.

Normal maintenance means replacing lights, painting, staining, repairing a damaged element of a sign, or replacing a sign face that has faded over time with exposure to the elements with an identical sign face. Normal maintenance shall not include any other modifications to a sign.

Peripheral accessory freestanding sign means a sign permitted near the entrance and exit points to a development.

Permanent ground mounted subdivision sign means a permanent sign permitted near the entrance to a subdivision.

Permanent parcel sign means a wall mounted sign permitted on a principal dwelling unit.

Portable sign means a sign not permanently attached to the ground or a building and is easily removable using ordinary hand tools.

Primary permanent ground mounted sign means the primary sign permitted for a single-use or multiple use non-residential development.

Primary permanent wall mounted sign means the primary wall sign for a development or tenant.

Prohibited sign means any sign not specifically permitted in this ordinance or that is not compliant with the applicable provisions of this ordinance.

Projecting sign means a sign, other than a wall mounted sign, which is affixed to and projects from a building, wall, or support structure such as a column, forming an angle between said building or wall and the face of the sign.

Public access easement means a recorded access easement that runs with the land and that provides direct two-way public access to at least two parcels.

Roof sign means any sign attached to a building which projects in part or in whole above the top edge of a building wall.

Sandwich board sign means a freestanding temporary sign, with no moving parts or lights, displayed outside a business during business hours. It is not intended as permanent business signage.

Sign means any letter, number, figure, symbol, trademark, graphic, logo, design, or device mounted or otherwise placed and intended to be visible from outside of a building, used to attract attention in order to advertise, identify, announce, notify, direct, or communicate. Sculptures, artwork, and architectural accents shall not generally be considered a sign unless they would otherwise be used as outlined in this definition.

Sign area means the entire face of a sign, including the advertising surface and any framing, trim, or molding but not including the supporting structure.

Snipe sign means a sign affixed to trees, utility poles, light poles, fences, or other objects.

Temporary means related to an event or activity that has a limited amount of time.

Temporary freestanding subdivision entrance sign means a sign permitted on a temporary basis near the entrance to a subdivision.

Temporary parcel sign means a sign permitted on a parcel for a temporary event or activity.

Temporary freestanding subdivision sign means a sign permitted on a temporary basis for a subdivision.

Under-canopy sign means a sign that is hung perpendicular to a building under a canopy which projects over the public entrances into a building.

Visibility obstruction means a sign that by virtue of its placement has created a visibility obstruction harmful to the public safety.

Wall sign means a sign attached parallel to and projecting not more than 12 inches from the wall of a building and does not project in part or in whole above the top edge of a building wall.

Window sign means a sign that is painted on, attached to, or suspended directly behind or in front of a window or the glass portion of the door.

Section 109.7. Administration.

(a) *Sign administrator to enforce chapter.* The Town administrator or his/her designee shall act as the sign administrator and shall enforce and carry out all provisions of this chapter. In the event there is a question concerning the general intent or meaning of any provision of this chapter, the sign administrator shall have the authority to make such administrative decisions and interpretations. Administrative interpretation shall in no way be construed as permitting or granting an exception to the provisions of this chapter. When the definition of a sign or an issue concerning architectural compatibility, illumination, or some unique physical characteristics of a sign are questioned by the sign administrator, the sign administrator may consult with the Visual Resources Review Board about such question.

(b) *Application and permit process.* Unless otherwise provided by this chapter, permits are required for all types of signs. It shall be unlawful for any person, agency, firm, or corporation to erect, structurally repair (other than normal maintenance), replace, alter, relocate, change the panels of, change the establishment being advertised on a sign, as defined in this chapter, without first obtaining a permit to do so from the Town.

- (1) *General application requirements and fees.* Applicants shall submit a completed sign application and the required fee to the Town prior to commencing any work on installation of a new or replacement sign. The required fee is per the schedule approved by the Town Board of Mayor and Aldermen. Per the approved fee schedule, an additional penalty fee shall be paid if work is commenced prior to receiving a permit from the Town. Government or government sponsored entities are waived from the fee requirement. Applications shall be made in conformance with the requirements of this ordinance, and any other applicable regulations or standards of the Town. This includes, but is not limited to, specific zoning districts and/or the Farragut Architectural Design Standards.

{This language was added to better inform permit applicants that other regulations and standards may affect their project}

- (2) *Application required for each sign.* A separate application must be completed and submitted for each new or replacement sign.

- (3) *Wall mounted sign application reviews.* Wall sign applications shall be reviewed by the sign administrator for conformance with the requirements. The sign administrator shall approve or deny the application within 15 working days of submittal. When architectural compatibility, illumination, or some unique physical characteristics of a sign are questioned by the sign administrator, the sign administrator may consult with the Visual Resources Review Board about such matter.
- (4) *Wall mounted sign application submittal requirements.* All wall sign applications shall include the following:
- A dimensioned schematic drawing of the building showing the proposed sign location.
 - A photograph of the businesses located on either side which demonstrates the color, material, and illumination of these adjacent signs.
 - The width of the building wall or lease space upon which the sign is to be mounted.
 - A dimensioned colored drawing (or simulated photograph) of the sign showing the copy on the sign face
 - An indication of how the sign is to be mounted and illuminated, and
 - Information that may be requested by the sign administrator to help verify compliance with the Architectural Design Standards or any provision of this ordinance

{This item, "requirement f.", has been added to align with similar language in the ground sign application section and make it clear that the sign administrator (enforcing town staff) can request additional information when evaluating permit applications to ensure code compliance.}

- (5) *Ground-mounted sign application reviews.* Ground-mounted sign applications shall be reviewed by the Visual Resources Review Board for conformance with the requirements of this chapter and any overlapping regulations, including the Architectural Design Standards, as amended, prior to the issuance of a sign permit.
- (6) *Ground-mounted sign submittal deadlines.* Ground-mounted sign applications shall be submitted in accordance with the deadlines established by the Town for the meeting at which the ground mounted sign is to be considered by the Visual Resources Review Board.
- (7) *Ground-mounted sign coordination with site and landscape plans.* As part of a site plan and landscape plan review process with the Planning Commission and Visual Resources Review Board, applicants for new developments or redevelopments shall take into account anticipated locations for ground mounted signs. These should be shown on both the site and

landscape plans in order to help lessen conflicts with landscaping, utilities, and other site development components.

(8) *Ground-mounted sign application submittal requirements.* All ground-mounted sign applications shall be accompanied by complete sets of plans which include the following:

- a. A dimensioned site plan of the parcel showing the proposed sign location in relation to property lines and platted easements.
- b. A proposed landscaping plan for the area around the sign base.
- c. A detail of the sign lighting, including lighting placement, type, and lumens.
- d. A detail of the materials and colors used for the sign structure.
- e. A dimensioned colored drawing of the sign showing the copy on the sign face, height and length of the sign face and sign structure, overall height of the sign, and size of the address numbers required at the top of the sign.
- f. Information that may be requested by the sign administrator to help verify compliance with the Architectural Design Standards *or any provision of this ordinance.*

{This language was added to further clarify the intent of the requirement. Ensuring that all new signs comply with the provisions of this ordinance and the relevant sections of the Architectural Design Standards are our enforcement goals.}

- g. *The sign administrator may waive one or more of these application plan requirements for simple individual tenant panel sign installations on existing sign structures.*

{Item "g." has been added to allow the administrator to simplify the requirements for individual tenant panel sign applications where appropriate.}

- h. An acknowledgment that *a preconstruction site location survey and/or an as-built survey* may be required by the sign administrator to verify compliance with applicable provisions associated with ground-mounted signs.

{This language was added to provide the option of conducting a preconstruction site location survey as opposed to an as-built survey. The preconstruction location survey will allow an applicant to have the proposed ground sign located and staked out by a surveyor prior to construction. In most cases this will eliminate the need for an as-built survey and hopefully avoid costly location errors in the field.}

(9) *Expiration of sign permits.* A sign permit shall become null and void if installation of the sign has not been initiated within 180 days of issuance. If work authorized by such permit is suspended or abandoned for 180 days any time after the work has been initiated, the sign permit shall be void and a new permit shall be first obtained to resume work. After a permit expires, a

partially completed sign structure must be removed within 30 days if no new permit is issued.

- (10) *Changes to an approved sign permit.* A new permit may be required, as determined by the sign administrator, where changes have been made to an approved sign that would alter the physical characteristics of the sign.
- (11) *Temporary parcel sign application reviews.* Temporary parcel signs provided for in Section 109-12 (c)(2) and 109-12 (d)(2) and that are restricted to a total of 40 calendar days per year shall be permitted through a Town of Farragut Temporary Sign Permit Application. The application shall cover a ten-day period and an applicant is permitted to apply for four applications per calendar year. Each application shall be reviewed and approved by the sign administrator and shall include the following:
 - a. Verification that the entity has a valid Certificate of Occupancy.
 - b. An indication of the dates when the sign will be installed and removed.
 - c. A dimensioned drawing showing the height and length of the sign face and the overall height of the sign.
 - d. A verification that the material used is a minimum of ten millimeters (.39 inches) in thickness and will be supported by metal t-posts.
 - e. A verification that the sign will be set back at least 20 feet from the back of the public street curb or edge of street where curbing is not provided.
 - f. An acknowledgment that banners, pennants, streamers, and similar flexible or wind activated signs shall not be used.

- (c) *Text amendment process.* Amendments to the text of this chapter shall first be reviewed by the Visual Resources Review Board and the Town Municipal Planning Commission with recommendations regarding the proposed change forwarded to the Town Board of Mayor and Aldermen.

Section 109-8. Enforcement.

- (a) *Sign enforcement process.* Noncompliance with this chapter shall be deemed a violation. When the sign administrator finds violations of the provisions of this chapter; including but not limited to the installation of a sign without a permit, or a sign that does not conform with an approved permit and plan; the administrator shall document such findings and take the appropriate action to correct said violations. A citation to municipal court may be issued to the owner, agent, or employee for violations of this chapter.

{This language was added for enforcement clarity when municipal court action is required. These are the two most common violations that the enforcement staff encounters.}

- (b) *Separate offense.* Each day a violation continues shall be considered a separate offense. The owner or tenant of any building, sign, premises, or sign thereon, and any architect, builder, contractor, agent, or other person who commits, or participates in, assists in, or maintains any violation hereunder may be found responsible for a separate offense. Nothing herein contained shall prevent the town from taking such lawful action as is necessary to prevent or remedy any violation of this article.

Section 109-9. Appeals.

- (a) The Town Board of Zoning Appeals shall have the following responsibilities:

- (1) *Interpretations/General Appeals.* To hear and decide appeals where it is alleged by the appellant that there is an error in any order, requirement, permit, decision, or refusal made by the sign administrator and/or the Visual Resources Review Board in the carrying out or enforcement of any provision of this chapter, and
- (2) *Variances.* To authorize, upon an appeal relating to said property, a variance from such strict application so as to relieve such difficulties or hardship. Variances shall not be granted to allow a larger sign or a sign which is otherwise not permitted in this chapter. Variances shall be granted only whereby special physical characteristics of the lot, parcel, or tract exist, that the strict application of the provisions of this chapter would deprive the applicant of an otherwise permitted sign.

- (b) Appeals procedure.

- (1) *Denial required.* After a written denial of a sign permit from the sign administrator, a party may make an application for an interpretation or a variance.
- (2) *General application requirements and fees.* The application shall be submitted to the Town in accordance with the deadlines established by the Town for the meeting at which the application is to be considered by the Board of Zoning Appeals. The required fee associated with the application is per the schedule approved by the Town Board of Mayor and Aldermen. The Board of Zoning Appeals shall consider and decide all appeals within 30 days of first hearing the appeal, and
- (3) *Minutes.* The minutes of the Board of Zoning Appeals shall fully set forth such circumstances or conditions warranting the granting of a variance.

Section 109-10. Legal nonconforming signs.

- (a) *Definition.* Existing signs which were legally in existence prior to the adoption of the ordinance from which this chapter is derived which do not conform to the specific provisions of this article are declared legal nonconforming signs.
- (b) *Continuance.* Any legal nonconforming sign may be continued in operation and maintenance after the effective date of the ordinance from which this chapter is derived, provided:
 - (1) The sign is not relocated or replaced.
 - (2) The structure or size of the sign is not altered in any way except toward compliance with this chapter.
 - (3) No new or additional signs are added to the premises, and
 - (4) Other than changing the text of changeable copy signs or normal maintenance, no other existing permanent signs are changed or replaced on the premises.
- (c) *Maintenance/damage/deterioration.* A legal nonconforming sign is subject to all requirements of this chapter regarding safety, maintenance, and repair. However, if the sign suffers more than 50 percent damage or deterioration, as based on a certified appraisal, it must be brought into conformance with this chapter or removed.

Section 109-11. General restrictions.

- (a) All signs erected, replaced, reconstructed, expanded, or relocated on any property within the Town shall conform with the provisions of this section.
 - (1) *Signs not requiring permits.* The following types of signs are exempted from permit requirements but must be in conformance with all other requirements of this chapter:
 - a. Signs authorized in accordance with the Manual of Uniform Traffic Control Devices (MUTCD), as amended.
 - b. Signs placed by or on behalf of a governmental entity.
 - c. Street or address identification numbers/letters as stipulated in the adopted building and/or fire code.
 - d. Permanent parcel signs.
 - e. Political or campaign signs, as provided for in TCA, Title 2, Chapter 7, Section 143. Tennessee Freedom of Speech Act.

- f. Temporary signs of any kind, unless a permitting process is specifically required in association with specific events, programs, or community objectives promoted by the Town of Farragut.
- g. Flags, and
- h. Window signs.
- i. General occupancy signs.

{Provisions for General Occupant Signs, as defined in this ordinance, have been added. These minor signs are potentially useful for some property/business owners and had been permitted in past ordinances.}

(2) *Prohibited signs.* The following types of signs are prohibited within the Town:

- a. Abandoned or dilapidated signs, which shall be removed by the property owner or responsible entity.
- b. Any sign placed on public property or right-of-way without the written consent of the public authority having jurisdiction over the property.
- c. Any sign which bears or contains statements, or words of an obscene, pornographic, or immoral character, as defined by the United States Supreme Court.
- d. Any signs with flashing, chasing, pulsating, twinkling, dancing, scintillating, and/or oscillating lights, color changing lights, or any other rotating, revolving, or otherwise moving part or the appearance of moving parts or motion. This includes individuals holding signs not otherwise provided for in accordance with the United States Constitution.

{The term "color changing lights" has been added for clarity and enforcement purposes.}

- e. Electronic and digital changeable copy (message board) signs, TVs, monitors, and similar devices.

{Item "e." has been added for clarity and enforcement purposes.}

- f. Off-premises signs, unless required by and in accordance with the MUTCD or placed by or authorized on behalf of or by a governmental entity.
- g. Off-premises outdoor advertising (billboards).
- h. Banners, feather flags, pennants, ribbons, festoons, buntings, streamers, spinners, balloons, or other types of lighter-than-air or wind-activated signs and attention getting devices.
- i. Advertisement displays hung internal in an automobile service bay where such display is visible from a street or a public access easement.
- j. Bollard covers, tire stack covers, and similar signs.

- k. Portable signs that do not comply with the location, size, or use restrictions of this chapter.
 - l. Search lights.
 - m. Signs attached to, suspended from, or painted on any vehicle or similar mobile structure which is regularly parked or situated on any street, parking lot, or private property when one of the purposes of so locating such vehicle or similar mobile structure is to display, demonstrate, advertise, or attract the attention of the public.
 - n. Signs imitating or resembling official traffic or government signs or signals.
 - o. Roof signs, or signs extending beyond the main roof line, provided that signs may be mounted on an architectural feature extending beyond the roof line if such feature is fully enclosed and considered an integral part of the occupied space, such as an atrium or high ceiling.
 - p. Snipe signs, and
 - q. All other signs not specifically permitted or that are not a lawful nonconforming sign.
- (3) *Criteria in determining sign area.*
- a. Ground Mounted and Other Non-Wall Mounted Signs.
 - i. The sign area for all ground mounted (and other non-wall mounted) signs shall include and encompass the entire sign face, framing, trim, and associated moldings. The area shall not include the supporting sign structure.
 - ii. For a sign with two parallel faces, only the area of a single face shall be considered. If the faces of a sign are not parallel, then the total sign area shall be the sum of the areas of the individual, non-parallel faces.
 - iii. Where a ground mounted sign is mounted on a larger ornamental wall structure, such as on a subdivision entrance wall feature, its area shall be measured in the same fashion as a wall mounted sign (see part b. below).
 - b. Wall Mounted Signs.
 - i. For cabinet type/style signs, the sign area shall include the external perimeter of the entire cabinet measured to include all sign elements, including any internal spaces where such sign includes cut-out areas.
 - ii. For signs that include channel letters and/or other individual elements (letters, logos, etc.) mounted on raceways or directly on a wall, the sign area shall be measured by drawing an imaginary single, regular geometric shape of a rectangle, circle, or equilateral

triangle around and encompassing all sign elements. The text and other graphics (sign elements) do not have to be physically, visually, or topically related, or physically connected to be included in the measured area.

- iii. For window signs, the sign area shall be calculated separately for each window sign and, for each sign, shall include all background, framing, or other supporting material that forms the physical extent of the sign.
- (4) *Criteria in determining sign height for ground-mounted signs.* Unless provided for otherwise in this chapter, the sign height shall be measured by the vertical dimension from the ground level at the base of the sign, including the supporting structure, to the topmost point of the sign and/or its associated framing/support, exclusive of the additional 18 inches permitted to accommodate address numbers. Unless otherwise specified in this chapter, if the ground level at the base of the sign is lower than the adjacent street grade, the height shall be computed from the adjacent street grade, excluding elevated bridges or interchanges.
- (5) *Criteria in determining setback for ground-mounted and pole signs.* The setback shall be measured from the farthest most protrusion of the sign to the nearest point of a property line. All signs shall be located outside of the visibility triangle. For the purposes of this article, the interstate highway right-of-way shall be considered a side or rear lot line. Where the exact location of a property line is unknown and a survey is not reasonably available, the Sign Administrator may, at their discretion, allow the line locations to be approximated by the owner/applicant from best available information, including but not limited to previous permits and KGIS maps, supplemented by field evaluation. In the case of a front property line, however, the approximated location of the property line must be located at least one half the required road right-of-way width from the centerline of the road unless more definitive information is available. The required right-of-way width shall be based on the Town's Major Road Plan and the adopted Subdivision Regulations. Where an owner/applicant requests and is permitted to use approximated property line locations in the place of a surveyed line, they shall bear full responsibility for any location errors.

{This language has been added to provide for some flexibility and guidance when determining setbacks for ground sign locations. In some cases, the applicant for a ground sign permit may not have easy access to an existing property survey. This is particularly true of older previously developed sites. In these instances, previous permits are sometimes consulted, and field checks made where appropriate to determine whether or not a full survey will be required for the permit application. The front-line setback is typically the most critical because potential conflicts may exist between the road right-of-way and/or utility easements in that area. Using the "half the required right-of-way" minimum standard for approximating the front property

line is an attempt to avoid these conflicts as much as possible when a survey is not required.}

- (6) *Construction specifications.* All signs shall be installed in compliance with all building, **construction, and** fire codes adopted by the Town. All electrical service to ground-mounted and pole signs shall be under ground **and installed in accordance with all applicable electrical codes.** Any lighting of signs shall be installed to prevent any glare upon adjoining properties or rights-of-way.

{This language has been added to further clarify and expand upon the existing provisions of this section of the code.}

- (7) *Sign maintenance and removal.*

- a. All signs shall be properly maintained. Exposed surfaces shall be clean and painted if paint is required. Defective parts shall be replaced. The sign administrator shall have the right to order the repair or removal of any sign which is defective, damaged, or substantially deteriorated.
- b. When any sign is removed, all structural components shall be removed with the sign and such removal shall be in compliance with all building and fire codes adopted by the Town. All structural components of ground-mounted and pole signs shall be removed to ground level. The structural components of all other signs, including painted wall signs, shall be removed back to the original building configuration. All visual remains of the sign shall be removed.

Section 109-12. Sign regulations by land use and/or zoning districts.

All signs shall comply with the following regulations. Any sign that is not specifically permitted shall be prohibited.

- (a) *Signs permitted in all zoning districts.* The following signs are permitted in all zoning districts subject to compliance with all applicable provisions of this chapter or other applicable Town regulations, standards, or requirements:

- (1) Flags.
- (2) Signs authorized in accordance with the Manual of Uniform Traffic Control Devices (MUTCD), as amended.
- (3) Political or campaign signs, as provided for in TCA, Title 2, Chapter 7, Section 143. Tennessee Freedom of Speech Act.
- (4) Signs placed by or on behalf of a governmental entity.
- (5) Street or address identification numbers/letters as stipulated in the adopted building and/or fire code.
- (6) Temporary parcel sign, and

- (7) Temporary signs specifically authorized by the Town to promote specific events, programs, or community objectives.

(b) *Signs permitted on land for residential uses.* The following signs are permitted on land used for residential purposes. Recreational facilities developed as part of a residential development shall also follow these regulations:

- (1) *Permanent ground mounted subdivision sign.* Once a preliminary plat or a site plan has been approved in relation to a subdivision and the construction of the applicable entrance road has progressed to a point of finished grade and installation of base stone, a permanent ground mounted subdivision sign shall be permitted as follows:

{This language has been added to better align the actual construction of a subdivision and any permit applications for permanent ground mounted signs. There can be a significant time delay between plat/plan approval and the actual construction of a subdivision}.

- a. *Sign area.* A subdivision is permitted a total of 40 square feet per single-family or multi-family development entrance, with either one ground-mounted sign not to exceed 40 square feet or two ground mounted signs not to exceed 20 square feet each.
- b. *Sign placement.* Such signs and the structures/walls on which they are affixed shall be out of any platted drainage or utility easements and shall be set back a minimum of ten feet from any front property line(s) and five feet from any side or rear property line. Such signs and the structures/walls on which they are affixed shall be located on either a platted open space lot or within a platted sign easement. Any signs or structures proposed within the public right of way as part of a streetscape plan submittal, shall be recommended for approval by the Planning Commission and Visual Resources Review Board before being presented to the Board of Mayor and Aldermen for approval.
- c. *Sign height.* Permanent freestanding subdivision signs, excluding the supporting structure, shall not exceed six feet in height.
- d. *Sign illumination.* If such sign or its supporting structures are to be illuminated, external illumination shall be used and such illumination shall be directed only onto the sign face. Each individual light fixture shall not exceed 850 lumens per fixture and shall be shielded so that no glare is created, and
- e. *Sign landscaping.* Each sign shall be landscaped with at least six shrubs that are a minimum of 12 inches in height and/or an evenly distributed area of seasonal or perennial flowers with such area being not less than 50 square feet. All qualifying landscaping shall be within seven feet of the sign base.

- (2) *Temporary freestanding subdivision entrance sign.* One hard surface (minimum of one inch in thickness) non-illuminated temporary sign is permitted per public street entrance into a new subdivision development, provided the following criteria are met:
- a. The sign shall not exceed 32 square feet.
 - b. The sign shall not exceed ten feet in overall height.
 - c. The sign shall be set back a minimum of 20 feet from the back of street curb.
 - d. The sign shall not be erected until a preliminary plat or site plan has been approved, and
 - e. The sign shall be removed within 15 days of the installation of the permanent freestanding subdivision sign.
- (3) *Temporary freestanding subdivision sign.* One hard surface (minimum of one inch in thickness) non-illuminated temporary sign is permitted per new subdivision development provided the following criteria are met:
- a. The sign shall not exceed 32 square feet.
 - b. The sign shall not exceed ten feet in overall height.
 - c. The sign shall be set back a minimum of 20 feet from the back of street curb.
 - d. The sign shall not be erected until a preliminary plat or site plan has been approved, and
 - e. The sign shall be removed when at least 75% of the units/lots within the development, as based on the approved preliminary plat, have received Certificates of Occupancy.
- (4) *Permanent parcel sign.* Each individual house lot shall be permitted one non-illuminated permanent wall mounted sign not to exceed two square feet.
- (5) *Temporary parcel sign.* Each individual house lot shall be permitted one temporary parcel sign not to exceed six square feet in area and six feet in overall height. This may include a sign where the owner consents and the property is being offered for sale or lease. A temporary parcel sign shall be removed within two days of the termination of the event/activity for which the sign was used. Where the termination of an event/activity is questioned by the sign administrator, the burden shall be on the sign holder to verify that the event/activity has not terminated
- (6) *Flag.* Each single-family house lot with an occupied dwelling unit shall be permitted one freestanding flagpole not to exceed 25 feet in height with up to two flags not to exceed 15 square feet each being permitted on such pole. The flagpole shall meet the setbacks that apply to the principal building (the dwelling unit).

In lieu of a freestanding flagpole, one house mounted flagpole shall be permitted provided the pole does not exceed six feet in length and the flag does not exceed 15 square feet.

- (7) *Subdivision exit sign.* One non-illuminated ground-mounted sign not to exceed six square feet in size and four feet in height shall be permitted per single-family or multi-family development entrance. Such sign shall be placed at the rear of the permanent subdivision sign so that it is only visible to vehicles exiting the development.

Where a single-family or multi-family development does not have a permanent subdivision sign at its egress point or because of the setback or angle of the permanent subdivision sign is such that the message area would not be readable; one non-illuminated single-faced freestanding homeowner association notification sign shall be permitted per egress point. Such freestanding sign shall be set back a minimum of five feet from all property lines, shall be rear facing and only readable from vehicles or pedestrians exiting the development, and shall be located on property which is part of the subdivision, and which is zoned the same as the subdivision.

{This language has been added for additional clarity and to better align with the requirements listed in the paragraphs before and after.}

Where such sign is proposed on property which is not owned by the homeowners' association, an appropriate easement shall be recorded as a condition for approval of the sign. Such signs shall be landscaped per this chapter and the sign face shall be oriented so that it is only visible to vehicles exiting the development. The back of the sign face shall be constructed of material which is non-reflective, and the sign shall be generally compatible with other entrance features in the immediate area.

- (8) *Recreational and similar subdivision facilities signs.* The following signs shall be permitted for Homeowners Association (HOA) owned and controlled recreational buildings and similar facilities.
- a. *General Occupant sign(s).* General occupant sign(s) shall be permitted provided they are located on the door or the adjoining wall of the principal building's primary entrance, do not exceed a combined total of six square feet in area, are no more than seven feet in height, and are non-illuminated. Where plaques, boards, cabinets, and/or similar devices are utilized to mount or display the sign(s) they shall be architecturally compatible with the primary exterior material used on the principal building.
 - b. *Peripheral accessory freestanding sign.* For each accessway (driveway) that provides direct access to the property from a public street or approved public access easement, two peripheral accessory freestanding signs (one per each side of the accessway) shall be permitted provided the following criteria are met:

- i. Such sign(s) shall not exceed two square feet in sign area and 30 inches in overall height.
- ii. Such sign(s) shall be at least 15 feet from the back of the public street/access easement curb, at least five feet from any parking lot or accessway curb, but no more than 10 feet from any accessway curb.
- iii. Such sign(s) shall not create visibility obstructions; and
- iv. Such sign(s) shall have mounting pole(s) or structure(s), including any base, that are architecturally compatible with the building it is associated with.

For the purposes of this subsection, an accessway (driveway) with a dividing median shall be considered as a single accessway and shall be permitted a total of only two signs located along the outside edges of the access way.

{Subsection 8, parts a. and b. have been added to afford clubhouses and other subdivision community facilities similar opportunities for General Occupant Signs and Peripheral Accessory Signs as those permitted for non-residential facilities. These are minor signs and include such things as wall plaques and small enter /exit signs for parking lots.}

(c) Signs permitted for developments being used for single-use non-residential purposes, including freestanding churches and schools, are as follows:

- (1) *Primary permanent ground mounted sign.* Unless provided for otherwise in this chapter, one primary permanent ground mounted sign shall be permitted provided the following criteria are met:
 - a. *Sign area and setback determination.* The sign area is based on its setback from the front property line. The minimum setback from a front property line is ten feet with the maximum permitted sign face area being 20 square feet. For each additional foot that the sign is set back from the ten-foot minimum, the sign face area may be increased by two square feet with the maximum sign face area being 40 square feet at a 20-foot setback. Sign structures shall also be outside of any platted easements and at least ten feet from any side or rear property line.
 - b. *Corner lot.* If a property **fronts** two different public streets, a primary permanent ground mounted sign shall be permitted for each street provided the signs are at least 150 feet apart, as measured from a straight line connecting the closest points of each sign structure. Each sign shall face, in a perpendicular manner, the nearest public street **frontage**.

{The terms "fronts" and "frontage" have replaced "accesses" and "access". This may seem like a minor change, but it will actually allow many corner lots to have a ground sign along each street. The use of the term's "accesses" and "access" in the existing ordinance would only permit the second sign if the lot/business had a driveway cut

along both streets. There are still minimum separation requirements (150 feet) between any such signs to avoid visual clutter.}

- c. *Signs on same frontage.* If a property fronts the same public street for at least 400 feet, a second primary permanent ground-mounted sign shall be permitted along such frontage provided the structure of such sign is at least 350 feet from the structure of the other sign permitted along the same frontage.
- d. *Height Determination.* Permitted sign height is based on the setback from the front property line. Unless otherwise provided for in Section 109-11. (4), where the sign is set back the minimum of ten feet from the front property line, the maximum permitted height shall be six feet. Beyond this point, two inches of increased allowable sign height shall be permitted for each additional one foot of setback from the front property line up to a maximum of 7.66 feet (92 inches) in overall height (exclusive of addressing) at a 20-foot setback from the front property line.
- e. *Addressing.* An additional 18 inches of overall sign height is permitted to enclose or otherwise provide for address numbers. Address numbers shall be at the top of the sign and shall be eight inches in number height. Where a property abuts two public streets and has a sign facing each street, the address numbers shall be required on the sign that is perpendicular to the street with the assigned address.
- f. *Landscaping.* Each sign shall be landscaped with at least six shrubs that are a minimum of 12 inches in height and/or an evenly distributed area of seasonal or perennial flowers with such area being not less than 50 square feet. All qualifying landscaping shall be within seven feet of the sign base. Ground-mounted sign placement and site landscaping shall be coordinated to the greatest extent possible as part of the site plan and landscape plan review processes. Landscaping proposed around a ground mounted sign shall also be specifically evaluated in terms of ensuring that the copy on a sign face is not obstructed.
- g. *Illumination.* If external illumination is used, such illumination shall be directed only onto the sign face and shall be shielded so that no glare is created. Each individual light fixture shall not exceed 850 lumens per fixture, and
- h. *Sign base and architectural compatibility.* Each newly constructed or reconstructed primary permanent ground mounted sign, regardless of permitted height and sign face area, shall have a *minimum* two-foot above grade base below the sign face. The sign base shall be solid with no exposed poles. The base and other elements of the support structure of the sign shall be constructed of material that is compatible with the primary exterior material(s) used on the principal building(s). Existing

ground signs not undergoing reconstruction may be required to make incremental improvements in an effort to more fully comply with these standards (move towards compliance) wherever reasonably practicable.

{Item h. has been amended to clarify that the sign base and architectural compatibility requirements apply to newly constructed or reconstructed ground signs and should not be fully applied to existing sign structures. Additional language has also been added to allow the sign administrators and VRRB to require incremental improvements to existing sign structures when it is reasonable to do so. For example, an applicant might be refacing an existing sign with support poles and no base, that is only 1.5 feet off the ground. The ordinance would not require the sign to be rebuilt to meet the 2-foot base requirement, but the applicant would likely be required to add a 1.5-foot base under the sign to comply with the standard more fully.}

(2) *Temporary parcel sign.* Unless provided for otherwise in this chapter, one temporary parcel sign shall be permitted for the development provided the following criteria are met:

- a. Such sign does not exceed 20 square feet in area and six feet in overall height and is placed at least 20 feet from the back of the public street curb or edge of street where curbing is not provided. Temporary parcel signs shall be a minimum of ten millimeters (.39 inches) in thickness and supported by metal t-posts. Banners, pennants, streamers, and similar flexible or wind activated signs shall not be permitted.
- b. A temporary parcel sign shall be permitted for no more than 40 calendar days per year with such time tracked through a temporary sign permitting process. During any period when a parcel is offered for sale or property within the parcel is offered for lease, one additional temporary parcel sign shall be permitted on the parcel. Such additional sign shall not be subject to the 40-day limitation but shall be subject to all other physical requirements associated with temporary parcel signs and shall be removed within two days of the termination of the event/activity for which the sign was used. Where the termination of an event/activity is questioned by the sign administrator, the burden shall be on the sign holder to verify that the event/activity has not terminated.

(3) *Primary permanent wall mounted sign.* Unless provided for otherwise in this chapter, each principal building shall be permitted one wall mounted sign which may be installed on any single building elevation subject to the following criteria:

- a. *Sign area.* The sign area, unless provided for otherwise in this chapter, shall be based on the width of the building wall (same horizontal plane) on which the sign is to be mounted with one square foot of sign area being permitted for each one linear foot of building width, as measured from exterior wall edge to exterior wall edge. Such signs shall not exceed 350 square feet, unless provided for otherwise in this chapter.

- b. *Corner lot.* Where a principle building directly faces more than one public street or public access easement that provides access to the property, one wall mounted sign shall be permitted for up to two frontages. One of the permitted signs shall be limited to .75 square feet of sign area for each one (1) linear foot of building wall on which the sign is to be mounted.
 - c. *Buildings exceeding 300 linear feet of wall length.* If a building has more than 300 linear feet of wall length, there shall be a maximum of one sign per principal building entrance. Such signs shall be located within the entrance vicinity. One additional sign may be located anywhere on the building wall. All such signs shall be spaced a minimum of 50 feet apart. Each sign shall be calculated separately with the total sign area of all signs combined not exceeding a ratio of one square foot of sign area for each one linear foot of building wall on which the sign is to be mounted. No individual sign shall exceed 350 square feet. Such signage shall be limited to one wall.
 - d. *Developments with no paved surfaces in front yard.* If a building has no paved surfaces located in the front yard between the building and the street, one wall mounted sign shall be permitted on the side of the building which fronts upon a public street(s) and one wall mounted sign shall be permitted on the side of the building which faces upon a customer parking area. One of the permitted signs shall be limited to .75 square feet of sign area for each one linear foot of building wall on which the sign is to be mounted. In the case of a corner lot, the owner is permitted a total of two wall mounted signs. The owner may choose between placing the sign on any two of the three qualifying elevations. One of the two permitted signs shall be limited to .75 square feet of sign area for each one linear foot of building wall on which the sign is to be mounted.
 - e. *Developments abutting the Interstate.* Within the C-2, Regional Commercial District, one wall mounted sign shall be permitted on the building elevation that faces the interstate, provided such elevation is at least 100 linear feet in length. Such building elevation is permitted one square foot of sign area for each one linear foot of building wall on which the sign is to be mounted not to exceed 350 square feet, and
 - f. *Compatibility.* All wall signs shall be architecturally compatible with the principal building and shall be consistent in terms of sign material, general color, mounting style, and illumination with the other signs on the same building.
- (4) *Interior accessory freestanding sign.* For each public street or public access easement that provides direct access to the property, one interior accessory freestanding sign shall be permitted provided the following criteria are met:
- a. Such sign shall not exceed six square feet in sign area and four feet in overall height.

- b. Such sign shall be at least 60 feet from any property line.
- c. Such sign shall be at least five feet from any parking lot or accessway curb.
- d. Such sign shall not create a visibility obstruction, and
- e. Such sign shall have a base constructed of material that is compatible with the primary exterior material used on the principal building(s).

(5) *Peripheral accessory freestanding sign.* For each accessway (driveway) that provides direct access to the property from a public street or approved public access easement, two peripheral accessory freestanding signs (one per each side of the accessway) shall be permitted provided the following criteria are met:

- a. Such sign(s) shall not exceed two square feet in sign area and 30 inches in overall height.
- b. Such sign(s) shall be at least 15 feet from the back of the public street/access easement curb, at least five feet from any parking lot or accessway curb, but no more than 10 feet from any accessway curb.
- c. Such sign(s) shall not create visibility obstructions; and
- d. Such sign(s) shall have mounting pole(s) or structure(s), including any base, that are architecturally compatible with the building with which it is associated.

For the purposes of this subsection, an accessway (driveway) with a dividing median shall be considered as a single accessway and shall be permitted a total of only two signs located along the outside edges of the access way.

{This subsection has been amended to provide for two peripheral accessory freestanding signs as opposed to only one. These signs are often used for enter / exit signs at driveway locations. Other minor changes to the subsection were also made for clarity and to better account for the possibility of a second sign at each driveway.}

(6) *Window sign.* On each first-floor building elevation, window signage shall be permitted provided the following criteria are met:

- a. Window signage shall not exceed 25% of the total window area of a building elevation or 20 square feet (as measured by the cumulative total of all window signs on the same building elevation), whichever is less, and
- b. Up to six square feet of window signage may be internally illuminated but shall not have any moving, blinking, **color changing**, or flashing message.

{The term "color changing" has been added for clarity and to facilitate enforcement.}

(7) *Freestanding building frontage sign.* Along one building elevation, one non-illuminated freestanding building frontage sign shall be permitted, provided the following criteria are met:

- a. Such sign shall be placed within 10 feet of the building.
 - b. Such sign shall not obstruct pedestrian facilities.
 - c. Such sign shall not interfere with or cause the removal of landscaping.
 - d. Such sign shall not exceed six square feet in sign area and four feet in overall height.
 - e. Such sign shall only be readable by pedestrians at the building frontage of the development.
 - f. Such sign shall be removed during non-business hours, and
 - g. Such sign shall be of a solid (non-flexible) material, such as a sandwich board sign. Banners, pennants, streamers and similar flexible or wind activated signs shall not be permitted.
- (8) *Interstate/interchange pole sign.* Establishments located within the C-2 Regional Commercial District shall be permitted one internally illuminated interchange pole sign, subject to the following criteria:
- a. The existing lot of record (at the time of this ordinance adoption) for the establishment shall be located within 200 feet of the right of way of the Campbell Station Road/I40 Interchange.
 - b. Such sign shall not exceed 400 square feet.
 - c. Such sign shall be set back a minimum of 20 feet from the front property line and ten feet from the side and rear property lines.
 - d. Such sign shall have a maximum of two sides provided both sides cannot be seen simultaneously from any point, and
 - e. The maximum height for such sign relative to mean sea level shall be 1,030 feet or 60 feet above the centerline elevation of the interstate road at the point nearest the sign, whichever is less. A certified survey which verifies the sign height shall be submitted to the sign administrator within ten days after the sign is installed.
- (9) *Athletic fields.* Athletic field signage on non-government property shall not be visible from public rights of ways and adjacent properties.
- (10) *Flag.* Two flags shall be permitted on one freestanding flagpole per 400 feet of property frontage on a public street. Such flags shall not individually exceed 25 square feet in size and 25 feet in mounted height. Flag poles shall meet the setback requirements for principal buildings in the corresponding zoning district.

In lieu of a freestanding flagpole, one building mounted flagpole shall be permitted on the principal building provided the pole does not exceed six feet in length and the flag does not exceed 15 square feet.

- (11) *General Occupant sign(s).* General occupant sign(s) shall be permitted provided they are located on the door or the adjoining wall of the principal building's primary entrance, do not exceed a combined total of six square feet in area, are no more than seven feet in height, and are non-illuminated. Where plaques, boards, cabinets, and/or similar devices are utilized to mount or display the sign(s) they shall be architecturally compatible with the primary exterior material used on the principal building.

{Provisions for General Occupant Signs, as defined in this ordinance, have been added. These minor signs are potentially useful for some property/business owners and had been permitted in past ordinances.}

- (d) *Signs permitted on land for multiple use buildings or multiple building complexes for commercial purposes, offices, or government facilities.* The following signs are permitted on land used for multiple use buildings (including schools and churches with multiple buildings) used for commercial purposes, offices, or government facilities or land used for multiple building complexes used for commercial purposes, offices, or government facilities:

- (1) *Primary permanent ground mounted sign.* Unless provided for otherwise in this chapter, one primary permanent ground mounted sign is permitted provided the following criteria are met:
 - a. *Sign area and setback determination.* The sign area is based on its setback from the front property line. Signs with only one entity represented on the sign face shall be subject to the provisions for primary permanent ground mounted signs that govern freestanding establishments in Section 109-12 (c)(1).
 - i. Where a building has more than one tenant and more than one entity represented on the sign face, the minimum setback from a front property line is ten feet with the maximum permitted sign face area being 20 square feet. Beyond this minimum, for each additional one foot the sign is set back from the ten-foot minimum setback, the sign face area may be increased by four square feet up to a maximum permitted sign face area of 60 square feet at the 20-foot setback from the front property line.
 - ii. Where a development fronts the same public street for at least 400 feet, the above provided 60 square foot sign may be substituted with two smaller signs along the 400 feet of street frontage. Each smaller sign shall not exceed 40 square feet and shall be at least 150 feet apart, as measured from a straight line connecting the closest points of each sign structure. Such signs shall be set back a minimum of 15 feet from the front property line. This sign option shall be permitted for each 60 square foot sign that would otherwise qualify for the property based on its public street frontage.

- iii. In addition to the setback from the front property line, all primary permanent ground-mounted signs and the structures on which they are mounted shall be placed outside of any platted easements and set back at least ten feet from any side or rear property line.
- iv. An applicant may use the allocated sign face area to distribute tenant listings in any manner desired, provided the sign administrator and the Visual Resources Review Board approve the arrangement in terms of its legibility, compatibility, and general appearance. As a general guide, the outer dimension of an individual tenant panel should be at least eight inches in height to provide for the space necessary to improve legibility.
- b. *Corner lot.* If a property **fronts** two different public streets, a primary permanent ground mounted sign shall be permitted for each street provided the signs are at least 150 feet apart, as measured from a straight line connecting the closest points of each sign structure. Each sign shall face, in a perpendicular manner, the nearest public street **frontage**.

{The terms "fronts" and "frontage" have replaced "accesses" and "access". This may seem like a minor change, but it will actually allow many corner lots to have a ground sign along each street. The use of the term's "accesses" and "access" in the existing ordinance would only permit the second sign if the lot/business had a driveway cut along both streets. There are still minimum separation requirements (150 feet) between any such signs to avoid visual clutter.}

- c. *Signs on same frontage.* If a property fronts the same public street for at least 400 feet, a second primary permanent ground-mounted sign shall be permitted along such frontage, provided the structure of such sign is at least 350 feet from the structure of the other sign permitted along the same frontage.
 - i. Should a development qualify, as provided for in Subsection a. ii., above, for two smaller primary permanent ground-mounted signs in lieu of one larger 60 square foot primary permanent ground-mounted sign, each 400 feet of public street frontage may have two smaller signs, provided these smaller signs are at least 150 feet apart. Should an owner with the qualifying frontage mix a 60 square foot sign with two smaller 40 square foot signs, the sign nearest the 60 square foot sign shall be at least 350 feet from such sign.
- d. *Height Determination.* Permitted sign height is based on the setback from the front property line. Unless otherwise provided for in Section 109-11. (4), where the sign is set back the minimum of ten feet from the front property line, the maximum permitted height shall be six feet. Beyond this point, a sign with more than one tenant shall be permitted two inches of increased allowable sign height for each additional one foot of setback from the front property line up to a maximum of 7.66 feet (92 inches) in

overall height (exclusive of addressing) at a 20-foot setback from the front property line.

- e. *Addressing.* An additional 18 inches of overall sign height is permitted to enclose or otherwise provide for address numbers. Address numbers shall be at the top of the sign and shall be eight inches in number height. Where a property abuts two public streets and has a sign facing each street, the address numbers shall be required on the sign that is perpendicular to the street with the assigned address.
- f. *Landscaping.* Each sign shall be landscaped with at least six shrubs that are a minimum of 12 inches in height and/or an evenly distributed area of seasonal or perennial flowers with such area being not less than 50 square feet. All qualifying landscaping shall be within seven feet of the sign base. The placement of landscaping should be evaluated as part of the sign permit review process to ensure that selected landscaping will not block the sign message.
- g. *Illumination.* If external illumination is used, such illumination shall be directed only onto the sign face and shall be shielded so that no glare is created. Each individual light fixture shall not exceed 850 lumens per fixture.
- h. *Sign base and architectural compatibility.* Each newly constructed or reconstructed primary permanent ground mounted sign, regardless of permitted height and sign face area, shall have a minimum two-foot above grade base below the sign face. The sign base shall be solid with no exposed poles. The base and other elements of the support structure of the sign shall be constructed of material that is compatible with the primary exterior material(s) used on the principal building(s). Existing ground signs not undergoing reconstruction may be required to make incremental improvements in an effort to more fully comply with these standards (move towards compliance) wherever reasonably practicable.

{Item h. has been amended to clarify that the sign base and architectural compatibility requirements apply to newly constructed or reconstructed ground signs and should not be fully applied to existing sign structures. Additional language has also been added to allow the sign administrators and VRRB to require incremental improvements to existing sign structures when it is reasonable to do so. For example, an applicant might be refacing an existing sign with support poles and no base, that is only 1.5 feet off the ground. The ordinance would not require the sign to be rebuilt to meet the 2-foot base requirement, but the applicant would likely be required to add a 1.5-foot base under the sign to comply with the standard more fully.}

- i. *Legibility.* All written and numerical information included on a multiple tenant permanent ground mounted sign shall be legible for a person driving the posted speed limit on the corresponding street. Individual letters or figures used within a logo or emblem are not required to be

legible. However, the logo or emblem, as a whole, must be legible. The background color shall be consistent on all tenant panels so that the sign in its entirety has a general cohesion and no single tenant panel appears out of place.

- (2) *Temporary parcel sign.* Unless provided for otherwise in this chapter, each tenant is permitted one temporary parcel sign provided the following criteria are met:

- a. Such sign does not exceed 20 square feet in area and six feet in overall height and is placed at least 20 feet from the back of the public street curb or edge of street where curbing is not provided. Temporary parcel signs shall be a minimum of ten millimeters (.39 inches) in thickness and supported by metal t-posts. Banners, pennants, streamers, and similar flexible or wind activated signs shall not be permitted.
- b. A temporary parcel sign shall be permitted for no more than 40 calendar days per year with such time tracked through a temporary sign permitting process. During any period when a parcel is offered for sale or property within the parcel is offered for lease, one additional temporary parcel sign shall be permitted for the entire development (not each tenant). Window signage may be used for individual tenant spaces for lease. Such additional sign shall not be subject to the 40-day limitation but shall be subject to all other physical requirements associated with temporary parcel signs and shall be removed within two days of the termination of the event/activity for which the sign was used. Where the termination of an event/activity is questioned by the sign administrator, the burden shall be on the sign holder to verify that the event/activity has not terminated.

- (3) *Primary permanent wall mounted sign.* Unless provided for otherwise in this chapter, each separate use within a building which has its own separate and exclusive exterior public entrance to the building shall be permitted one wall mounted sign provided the following criteria are met:

- a. *Sign area.* The sign area shall be based on the width of the tenant space on the exterior building wall (same horizontal plane) on which the sign is to be mounted with one square foot of sign area being permitted for each one linear foot of tenant space width as measured from the centers of the exterior wall where the tenant separations occur. If a tenant is on the end of the building, the recognized tenant space would terminate at the end of the building. Such signs shall not exceed 350 square feet, unless provided for otherwise in this chapter. Such wall mounted sign shall be limited to the side of a building which fronts upon a public street/public access easement, faces upon a customer parking area, faces upon a pedestrian mall, or is the point of the principal public access into the establishment.

- b. *Corner lot.* Where a tenant directly faces more than one public street or public access easement that provides access to the property, one wall mounted sign shall be permitted for up to two frontages. One of the permitted signs shall be limited to .75 square feet of sign area for each one linear foot of building wall on which the sign is to be mounted.
- c. *Tenant space exceeding 300 linear feet.* If an individual tenant has more than 300 linear feet of building wall of lease space, there shall be a maximum of one sign per principal building entrance. Such signs shall be located within the entrance vicinity. One additional sign may be located anywhere on the building wall. All such signs shall be spaced a minimum of 50 feet apart. Each sign shall be calculated separately with the total sign area of all signs combined not exceeding a ratio of one square foot of sign area for each one linear foot of building wall on which the sign is to be mounted. No individual sign shall exceed 350 square feet. Such signage shall be limited to one wall.
- d. *Development with no paved surfaces in front yard.* If a building has no paved surfaces located in the front yard between the building and the street, an individual tenant space which is located in the building and fronts upon a public street and faces upon a customer parking area shall be permitted one wall mounted sign on the side of the building which fronts upon a public street(s) and one wall mounted sign on the side of the building which faces upon a customer parking area. One of the permitted signs shall be limited to .75 square feet of sign area for each one linear foot of building wall on which the sign is to be mounted.

In the case of a corner lot, the owner is permitted a total of two wall mounted signs. The owner may choose between placing the sign on any two of the three qualifying elevations. One of the two permitted signs shall be limited to .75 square feet of sign area for each one linear foot of building wall on which the sign is to be mounted.

- e. *Shared entrance building.* With the exception of the O-1-3 and O-1-5 Zoning Districts, a building with multiple uses that all share the public exterior entrances into the building shall be allowed to distribute wall mounted signage from an overall square footage determined by applying one square foot of sign area for each linear foot of building wall on which the sign(s) is(are) to be mounted. Such signs may be calculated separately provided the cumulative total square footage of all signs does not exceed the overall square footage permitted. Such signs shall be limited to the side of the building which fronts a public street or faces upon a customer parking area and shall be compatible in terms of sign material, general color, mounting style, and illumination.

- f. *Pedestrian mall.* In the case where a building has a pedestrian mall, the property owner may opt for a different wall signage alternative. When a wall has a pedestrian mall access, each separate use which faces upon such wall shall be permitted one wall sign not to exceed 25 square feet. In addition, each separate use which faces upon the pedestrian mall shall be permitted one wall sign not to exceed 25 square feet with the total signage for mall uses not to exceed 100 square feet. In no case shall a use have more than one sign. Such signs shall be placed on the wall that has the pedestrian mall access and which fronts upon a public street or faces upon a customer parking area. The maximum sign area allowed on such wall shall be one square foot per linear foot of building wall length.
- g. *Development abutting the interstate.* Within the C-2, Regional Commercial District, one wall mounted sign shall be permitted on the building elevation that faces the interstate, provided the individual tenant space has at least 100 linear feet of building wall abutting the interstate. Such building elevation is permitted one square foot of sign area for each one linear foot of building wall on which the sign is to be mounted not to exceed 350 square feet: and
- h. *Compatibility.* Wall mounted signage within a multiple tenant development shall be compatible in terms of sign material, general color, mounting style, and illumination. Where a center has an existing mixture of different types of signs, the property owner shall submit to the sign administrator and the VRRB a plan for ensuring compatibility as individual tenant signs transition. Where the property owner does not submit a tenant sign compatibility plan, the Sign Administer shall have the authority, in consultation with the VRRB, to determine compatibility and appropriate signage elements for the building/development. The objective is that over time the center will have wall mounted signs that are compatible with each other.

{This language was added for situations where the owner of a multi-tenant center is unwilling to submit an overall signage compatibility plan for the development.}

- (4) *Interior accessory freestanding sign.* For each public street or public access easement that provides direct access to the property, one interior accessory freestanding sign shall be permitted, provided the following criteria are met:
 - a. Such sign shall not exceed 12 square feet in sign area and six feet in overall height.
 - b. Such sign shall be at least 60 feet from any property line.
 - c. Such sign shall be at least five feet from any parking lot or accessway curb.
 - d. Such sign shall not create a visibility obstruction, and

- e. Such sign shall have a base constructed of material that is compatible with the primary exterior material used on the principal building(s).
- (5) *Peripheral accessory freestanding sign.* For each accessway (driveway) that provides direct access to the property from a public street or approved public access easement, two peripheral accessory freestanding signs (one per each side of the accessway) shall be permitted provided the following criteria are met:
- a. Such sign(s) shall not exceed two square feet in sign area and 30 inches in overall height.
 - b. Such sign(s) shall be at least 15 feet from the back of the public street/access easement curb, at least five feet from any parking lot or accessway curb, but no more than 10 feet from any accessway curb.
 - c. Such sign(s) shall not create visibility obstructions; and
 - d. Such sign(s) shall have mounting pole(s) or structure(s), including any base, that are architecturally compatible with the building with which it is associated.

For the purposes of this subsection, an accessway (driveway) with a dividing median shall be considered as a single accessway and shall be permitted a total of only two signs located along the outside edges of the access way.

{This subsection has been amended to provide for two peripheral accessory freestanding signs as opposed to only one. These signs are often used for enter and exit signs at driveway locations. Other minor changes to the subsection were also made for clarity and to better account for the possibility of a second sign at each driveway.}

- (6) *Window sign.* On each first-floor building elevation, window signage shall be permitted provided the following criteria are met:
- a. Window signage shall not exceed 25% of the total window area of an individual tenant or 20 square feet (as measured by the cumulative total of all window signs on the same lease space elevation), whichever is less, and
 - b. Up to six square feet of window signage may be internally illuminated but shall not have any moving, blinking, **color changing**, or flashing message.

{The term "color changing" has been added for clarity and to facilitate enforcement.}

- (7) *Freestanding building frontage sign – Mixed-Use Town Center and Mixed-Use Neighborhood.* Due to its emphasis on the pedestrian, within the Mixed-Use Town Center and Mixed-Use Neighborhood land use areas, each tenant within a multiple tenant development shall be permitted one non-illuminated freestanding building frontage pedestrian-oriented sign, provided the following criteria are met:
- a. Such sign shall be placed within ten feet of the building.

- b. Such sign shall not obstruct pedestrian facilities and shall only be permitted where the sidewalk along a frontage is at least eight feet in width.
 - c. Such sign shall not interfere with or cause the removal of landscaping.
 - d. Such sign shall not exceed six square feet in sign area and four feet in overall height.
 - e. Such sign shall only be readable by pedestrians at the multiple tenant development.
 - f. Such sign shall be removed during non-business hours, and
 - g. Such sign shall be of a solid (non-flexible) material, such as a sandwich board sign. Banners, pennants, streamers and similar flexible or wind activated signs shall not be permitted.
- (8) *Projecting sign – Mixed-Use Town Center and Mixed-Use Neighborhood.* Due to its emphasis on the pedestrian, within the Mixed-Use Town Center and Mixed-Use Neighborhood land use areas, an individual tenant may be permitted one non-illuminated projecting sign near the principal entrance not to exceed four square feet in size. Such sign shall comply with adopted building code clearance requirements and shall be hung perpendicular to the building.
- (9) *Under canopy sign.* When the roof of a building is extended as a canopy over the public entrances in the building, one non-illuminated sign per principal entrance shall be permitted. Such signs shall not exceed four square feet in size, shall comply with adopted building code clearance requirements, and shall be hung perpendicular to the building.
- (10) *Athletic fields.* Athletic field signage on non-government property shall not be visible from public rights of ways and adjacent properties.
- (11) *Flag.* Two flags shall be permitted on one freestanding flagpole per 400 feet of property frontage on a public street. Such flags shall not individually exceed 25 square feet in size and 25 feet in mounted height. Flag poles shall meet the setback requirements for principal buildings in the corresponding zoning district.

In lieu of a freestanding flagpole, one building mounted flagpole shall be permitted on the principal building provided the pole does not exceed six feet in length and the flag does not exceed 15 square feet.

- (12) *General Occupant sign(s).* General occupant sign(s) shall be permitted provided they are located on the door or the adjoining wall of a principal building's primary entrance(s), do not exceed a combined total of six square feet in area (per entrance), are no more than seven feet in height, and are non-illuminated. Where plaques, boards, cabinets, and/or similar devices are utilized to mount or display the sign(s) they shall be architecturally

compatible with the primary exterior material used on the principal building. In the case of multi-use (tenant) buildings, each use/tenant with a separate and exclusive entrance shall be treated separately.

{Provisions for General Occupant Signs, as defined in this ordinance, have been added. These minor signs are potentially useful for some property/business owners and had been permitted in past ordinances.}

(e) *Wall signs in the Office District, Three Stories (O-1-3) and Office District, Five Stories (O-1-5); shared entrance building.*

- (1) A building with multiple uses that all share the public exterior entrances into the building and that has more than 225 feet of building wall facing a public street shall be permitted four wall signs. Each sign shall be roughly proportional in size and general appearance. Such signs may be calculated separately provided the cumulative total square footage of all four signs shall not exceed one square foot of sign area for each linear foot of building wall which faces a public street. The cumulative square footage of all four wall signs shall not exceed 350 square feet. Such wall signs shall be limited to two on the side of a building which fronts upon a public street and shall be a minimum of 50 feet apart. Building elevations that do not face a public street shall be limited to one wall sign per elevation and shall be centered on said elevation, and
- (2) All such wall signs shall be architecturally compatible with the principal structure and shall be consistent in terms of style, color, and illumination with the other signs in the complex. All wall signage shall be limited to two colors on all building elevations.
- (3) *General Occupant sign(s).* General occupant sign(s) shall be permitted provided they are located on the doorway or the adjoining wall of the principal building's primary entrance(s), do not exceed a combined total of six square feet in area (per entrance), are no more than seven feet in height, and are non-illuminated. Where plaques, boards, cabinets, and/or similar devices are utilized to mount or display the sign(s) they shall be architecturally compatible with the primary exterior material used on the principal building.

{Provisions for General Occupant Signs, as defined in this ordinance, have been added. These minor signs are potentially useful for some property/business owners and had been permitted in past ordinances.}

(f) *Signs permitted on land for banks and other lending institutions.* In addition to the applicable regulations above, the following additional signs are permitted on land used for banks and other lending institutions:

- (1) *Automatic teller machines.* One sign which shall not exceed two square feet in sign area, and which is posted at the machine. One sign, which shall not exceed two square feet in sign area, and which is posted above the drive-thru lane on the overhead canopy, and

- (2) *Drive-thru teller lanes.* One sign which shall not exceed two square feet in sign area, and which is posted at the service window. One sign which shall not exceed two square feet in sign area per drive-thru lane, and which is posted above the lane on the overhead canopy.
- (g) *Signs permitted on land for theaters.* In addition to the applicable regulations above, the following additional signs are permitted on land used for theaters:
- (1) *Marquee sign.* A marquee sign shall be limited to the side of the theater building with the principal public entrance. Such sign shall not exceed one square foot of sign area for each linear foot of building wall on which the sign is to be mounted, not to exceed 350 square feet, and
 - (2) *Poster case signs.* One poster case sign is permitted per movie screen or stage, which shall each not exceed 16 square feet in sign area, including frames. Illumination shall be in such a manner as to light the poster for readability only. Poster case signs shall be used in lieu of any temporary window signs. Such signs shall be mounted on the building wall with the principal public entrance.
- (h) *Signs permitted on land for other businesses with drive-thru windows.* In addition to the applicable regulations above, the following additional signs are permitted on land used for other businesses with drive-thru windows:
- (1) *Wall signs.* One sign per drive-thru lane which shall not exceed two square feet in sign area, and which shall be posted at the ordering point. One sign per drive-thru lane which shall not to exceed two square feet in sign area, and which shall be posted at the pick-up point, and
 - (2) *Canopy signs.* One sign per drive-thru lane which shall not exceed two square feet in sign area, and which shall be posted above the lane on the overhead canopy.
- (i) *Signs permitted on land for restaurants with drive-thru windows.* In addition to the applicable regulations above, the following additional signs are permitted on land used for restaurants with drive-thru windows:
- Menu board signs (outside of the Mixed-Use Town Center land use area):
- (1) *Generally.* One sign per drive-thru lane which shall not exceed 30 square feet in sign area and six feet in overall height, and
 - (2) *Order box signs.* One sign per drive-thru lane which shall not exceed one square foot in sign area and 30 inches in overall height.

- (j) *Signs permitted for gasoline stations/convenience stores.* For the purposes of this chapter, gasoline service stations/convenience stores shall be considered single-use non-residential and such sign regulations shall apply. If such establishments also have a restaurant with a drive-thru window, such drive-thru window sign regulations shall apply. In addition to these signs, the following additional signs are permitted:
- (1) *Canopy signs.* Two signs which shall each not exceed nine square feet in sign area, and which shall be posted on two different sides of the canopy over the gas pumps.
 - (2) *Gas pump signs.* Any number of signs calculated separately, and which shall not exceed a cumulative sign area of eight square feet per side of each gas pump island. Only one sign permit shall be required for all the gas pump islands on the site.
 - (3) *Car wash signs.* In addition to the wall signs permitted elsewhere in this chapter, one additional wall sign shall be permitted on the wall of the vehicle entrance at a car wash. Such wall sign shall be permitted one square foot of sign area for each linear foot of building wall on which the sign is to be mounted, and
 - (4) *Car wash order box signs.* One sign per car wash entrance which shall not exceed one square foot in sign area and 30 inches in overall height.
- (k) *Signs permitted on land for large medical campuses on tracts of land ten acres or larger.* For the purposes of this chapter, large medical campuses shall be considered multiple use/multiple building complexes. In addition to the applicable regulations provided for in association with multiple use/multiple building complexes, the following additional signs are permitted on land used for large medical campuses located on tracts of land larger than ten acres:
- (1) *Parking lot directory signs.* Parking lot directory signs shall be located at key decision-making locations within the parking lot in relation to building entrances. The physical layout of the campus shall determine the total number of signs needed. Such signs are not intended to be legible from adjacent streets and shall meet the following criteria:
 - a. Such signs shall be set back a minimum of 35 feet from side and rear property lines, 60 feet from front property lines, and five feet from the edge of driveway pavement.
 - b. The entire sign structure shall not exceed 30 square feet, the sign area of such signs shall not exceed 12 square feet, and the sign shall not exceed six feet in overall height.
 - c. At a single key decision making location within the parking lot, if one parking lot directory sign is not large enough to accommodate the

essential directional information, two such signs may be placed side by side.

- d. The letters and numbers on the signs shall not exceed five inches in height with each tenant/occupant listing to be limited to the same color, size, and shape, and
- e. Such signs shall be architecturally compatible with the principal building.

(2) *Wall signs.*

With the exception of individual medical offices, each separate principal medical use within a building shall be allowed one wall sign. Such wall signs shall be limited to the side of a building which fronts upon a public street or faces upon a customer parking area. The permitted sign area shall be as provided for in this chapter.

Due to its unique safety related characteristics, an emergency room shall be allowed one wall sign for each building wall approach to the emergency room portion of the building. The permitted sign area shall be as provided for in this chapter.

(l) *Signs permitted on non-residential construction sites.* For the purposes of this subsection, multi-family (apartment) complexes shall also be considered commercial (non-residential) construction sites. In addition to the applicable regulations above, the following additional signs are permitted on non-residential construction sites.

- (1) *Temporary freestanding construction site sign.* One hard surface (minimum of one inch in thickness) non-illuminated temporary sign is permitted per public street frontage, provided the following criteria are met:
 - a. The sign shall not exceed 32 square feet,
 - b. The sign shall not exceed ten feet in overall height,
 - c. The sign shall be set back a minimum of 20 feet from the back of street curb and shall not create any site distance or hazard along any street,
 - d. The sign shall not be erected until site plan has been approved and at least a grading permit has been issued, and
 - e. The sign shall be removed within 10 days of Certificate of Occupancy or Temporary Certificate of Occupancy being issued.

{Subsection "(l.)" has been added to address construction signs on non-residential construction sites. The existing ordinance has no provisions for non-residential construction sites. Multi-family apartment complexes are included under this subsection. Subdivision development construction signs are already provided for in the residential land use portion of the ordinance (Section 109-12, Subsection (b)).}